Intimate Partner Violence Among Expectant Adolescent Couples: Psychological and Relational Predictors and Sexual Risk

Jessica Lewis
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INTIMATE PARTNER VIOLENCE AMONG EXPECTANT ADOLESCENT COUPLES:
PSYCHOLOGICAL AND RELATIONAL PREDICTORS AND SEXUAL RISK

by

JESSICA LEWIS

A dissertation to the Graduate Faculty in Social Welfare in partial fulfillment of the requirements
for the degree of Doctor of Philosophy, The City University of New York

2019
Intimate Partner Violence Among Expectant Adolescent Couples: Psychological and Relational Predictors and Sexual Risk

by

Jessica Lewis

This manuscript has been read and accepted for the Graduate Faculty in Social Welfare in satisfaction of the dissertation requirement for the degree of Doctor of Philosophy.

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ABSTRACT

Intimate Partner Violence among Expectant Adolescent Couples: Psychological and Relational Predictors and Sexual Risk

by

Jessica Lewis

Advisor: Sarah-Jane (SJ) Dodd

BACKGROUND/PURPOSE: Intimate partner violence (IPV) is prevalent and tends to be bilateral in adolescent relationships. Expectant adolescent couples are at even higher risk. Using the Actor-Partner Interdependence Model (APIM), this study sought to: (1) describe the patterns of physical/sexual and psychological IPV victimization of women and men in expectant adolescent couples from pregnancy through twelve months postpartum; (2) examine the associations between psychosocial and relational factors during pregnancy and postpartum IPV; and (3) investigate the relationship between IPV victimization and later sexual risk across the perinatal period.

METHODS: Data were collected from pregnant adolescents and their male partners (N=296) recruited from health clinics in Connecticut. APIM with distinguishable dyads was utilized, and path analyses were conducted using structural equation modeling (SEM) to examine the predictors and outcomes of IPV across the perinatal period.

RESULTS: (1) Men reported higher rates of IPV than women at every timepoint. Physical/sexual IPV was less prevalent among women during pregnancy and increased
considerably postpartum, whereas IPV was most prevalent for men during pregnancy and lower postpartum. Psychological IPV was more prevalent than physical/sexual IPV and was highest during pregnancy. Physical/sexual IPV was stable across the perinatal period for women and men, whereas psychological IPV was stable for women only. (2) Relationship equity during pregnancy was protective against postpartum physical/sexual IPV for women and men. Increased stress and lower social support during pregnancy was associated with postpartum physical/sexual IPV for men. Higher relationship satisfaction during pregnancy was protective against postpartum psychological IPV for women and higher relational power in pregnancy was protective against postpartum psychological IPV for men. Social support during pregnancy was associated with increased postpartum psychological IPV for women. (3) Women’s physical/sexual IPV victimization during pregnancy was related to lower condom use by men six months postpartum. Men’s physical/sexual IPV during pregnancy was related to higher sexually transmitted infections in women six months postpartum. Women’s physical/sexual IPV victimization at six months postpartum and women and men’s psychological IPV at six months were related to having multiple partners across the postpartum period. Women’s psychological IPV at six months postpartum was also related to their partner having less unprotected sex at twelve months postpartum.

CONCLUSIONS: IPV is prevalent and bilateral among expectant adolescent couples across the perinatal period. It is associated with sexual risk for both women and men. Interventions that target psychosocial factors, such as stress and social support, as well as those that target relational issues, such as equity, power, and satisfaction could be delivered to couples in the context of prenatal care to improve physical and mental health and safety for young families.
ACKNOWLEDGEMENTS

I would like to acknowledge and give heartfelt thanks to my wonderful Dissertation Committee, whose mentorship I appreciate. Special thanks to SJ Dodd, who is a wonderful Dissertation Chair, a fantastic mentor, and a great personal and professional role model. Deepest appreciation to Harriet Goodman, who takes a personal interest in every doctoral student, and has steadfastly supported me through the entire doctoral process. Her support and guidance have been critical, and I am so grateful. Many thanks to Heidi Jones for serving on a Committee outside of her department, so I could benefit from her public health and statistical expertise. Eternal thanks to Trace Kershaw, who generously provided his data, his statistical guidance, and his sense of perspective throughout this process.

Sincere thanks to the Social Welfare and Graduate Center faculty for their commitment to teaching at the highest level. My sincere thanks to the Graduate Center for providing University Fellowship and Florence Bloch Dissertation Fellowship funding. I am so lucky to have benefited from this amazing public institution. Thanks and cheers to my beloved Social Welfare cohort, each of whom I count as a friend. You taught me so much and made this process fun.

Many thanks to Jeannette Ickovics, my professional mentor, who provided the flexibility for me to pursue doctoral study while working fulltime, and to my wonderful colleagues who helped make this possible.

Heartfelt appreciation, sincere gratitude, and eternal love to my wife and children, who sacrificed time with me, so I could pursue this path, and to my family and friends who cheered me on throughout this process.

This project used data from a study funded by the National Institutes of Mental Health (R01- MH75685). No direct support was received from this grant to conduct these analyses.
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CHAPTER I: INTRODUCTION AND PROBLEM STATEMENT

Intimate partner violence (IPV) is pervasive in the United States. Every year, 4.7 million women and 5.4 million men are estimated to be victimized by IPV at a cost to U.S. mental and physical health systems between $2.3 billion and $7.0 billion (Black et al., 2011; Brown, Finkelstein, & Mercy, 2008). Those from disadvantaged populations (e.g., young, poor, minority, sexual minority) are most vulnerable to IPV (Beyer, Wallis, & Hamberger, 2015). In this paper, intimate partner violence is defined as violence between current or former heterosexual or same-sex spouses, partners, or dates; violence is the perpetration, attempt, or threat of physical, sexual, or psychological aggression with the potential for causing death, disability, injury, or harm (Sugg, 2015).

Intimate partner violence is prevalent in adolescent relationships. More than 70% of female IPV victims have their first IPV experience at 24 years or younger, and 26% are first victimized at 17 years or younger (Smith et al., 2018). Researchers have found that between 6% and 46% of adolescents report having experienced some form of IPV (Teitelman, Ratcliffe, Morales-Aleman, & Sullivan, 2008). Nationally representative studies have reported 10% of teens experience IPV, with higher rates among Black and Latino/a youth (Eaton et al., 2010). The Youth Violence Survey conducted with 7-12th grade students from a poor, urban public school found more than 30% of teens who dated in the past year were victimized by IPV (Swahn et al., 2008).

Pregnant adolescents are at higher risk of IPV than other adolescents and face adverse perinatal consequences (Covington, Justason, & Wright, 2001). The United States has the highest rate of teen pregnancy in the developed world (Sedgh, Finer, Bankole, Eilers, & Singh, 2015). In 2015, the teen birth rate in the United States was 21 births per 1,000 women 15-19 years of age.
compared to 10 per 1,000 in the European Union and 9 per 1,000 in Canada (The World Bank, 2017). Pregnant adolescent couples report more relationship conflict than other adolescent couples and are more likely to experience IPV in later adult relationships (Florsheim et al., 2003).

Research on intimate partner violence within pregnant adolescent couples is critical, because the transition to parenthood tends to be stressful (Cowan & Cowan, 2000). It may be more stressful for teen couples than adults, since teens tend to have fewer resources and are simultaneously negotiating the developmental tasks of adolescence. Traversing stressful life events can increase the likelihood a person will engage in violence (Stiffman, Dore, & Cunningham, 1996). Adolescent parenthood places additional expectations, stresses, and a lifetime commitment to co-parenting on partners that may or may not have continued their relationship in the absence of a pregnancy.

Historically, IPV research and intervention has been based on a paradigm of “male batterer-female victim” (Goldenson, Geffner, Foster, & Clipson, 2007). Contrary to expectations, research over the past 30 years—including more than 200 studies with data from both males and females, containing nationally representative samples of U.S. couples, as well as Canadian and UK national crime surveys—indicates that women perpetrate acts of violence against intimate partners at similar rates as men (Straus, 2011). However, women are more likely to be victims of severe physical violence, to be injured, and to suffer adverse consequences from IPV (e.g., injury, post-traumatic stress disorder) than men (Black et al., 2011).

Adolescent couples tend to be mutually violent, and there is more variability in the patterns of violence than traditionally believed (Hickman, Jaycox, & Aronoff, 2004). Research
has focused primarily on one type of IPV among pregnant adolescents: female victimization by male partners. This study examines both female and male victimization by their partner.

Few studies have explored how important relationship-level characteristics may predict IPV victimization among young couples. Research on IPV during pregnancy has focused primarily on individual-level psychosocial differences between women who are IPV victims and those who are not. This study examines relationship-level characteristics as well as individual-level psychosocial characteristics that predict female and male IPV victimization.

Many studies focus on a single type of intimate partner violence (e.g., physical intimate partner violence). This study examines physical/sexual IPV and psychological IPV separately, as these may have different etiologies and consequences (e.g., physical/sexual IPV could be driven by stress and lead to more unprotected sex, while psychological IPV could be related to unequal relationship power and lead to multiple partners postpartum) for young couples during the perinatal period.

Few studies include both members of a couple in IPV research. Studies that include a dyadic analysis of IPV suggest that individual and relationship factors that influence IPV can vary by sex (Marshall, Jones, & Feinberg, 2011). This study includes data from both men and women in couples. Including both partners allows for the examination of complex patterns of IPV, including both actor effects (the effects of women’s characteristics on women’s outcomes and the effects of men’s characteristics on men’s outcomes) and partner effects (the effects of women’s characteristics on men’s outcomes and the effects of men’s characteristics on women’s outcomes). Better understanding these complex dyadic relationships may help to inform the development of interventions for expectant adolescent couples.
Adolescents at highest risk for intimate partner violence are also at high risk for adverse sexual health outcomes, such as sexually transmitted infections (STIs) and unintended pregnancies (Coker, 2007). Intimate partner violence and adolescent pregnancy share determinants such as poverty, child sexual abuse, and family violence (Florsheim et al., 2003; Silverman, Raj, Mucci, & Hathaway, 2001). Initial evidence suggests that expectant adolescent couples engaging in IPV are vulnerable to high risk sexual behaviors and the sequelae of such behaviors (e.g., STIs). It is critical to investigate how different patterns of IPV may impact sexual risk for young couples. This study examines how intimate partner violence victimization of women and men in expectant adolescent couples predicts their own and one another’s sexual health outcomes over time.

The aims of this study are to:

1. Describe the intimate partner violence victimization experiences of expectant adolescent couples from pregnancy through twelve months postpartum.

2. Investigate the relationship between individual psychosocial (i.e., depression, stress, social support) and relational (i.e., attachment anxiety, attachment avoidance, equity, relational power, relationship satisfaction) factors during pregnancy and IPV victimization experiences six months postpartum for expectant adolescent couples, considering both actor and partner effects.

3. Examine the relationship between IPV victimization and later sexual risk (i.e., multiple partners, condom use, unprotected sex acts, sexually transmitted infections) among expectant adolescent couples—identifying both actor and partner effects—from pregnancy through twelve months postpartum.
There is much to understand about the dynamics of romantic relationships characterized by intimate partner violence—particularly for vulnerable populations, such as expectant adolescent couples. Expectant adolescent couples are at high risk for IPV but could be accessible for intervention through their frequent interface with the medical system during pregnancy. Changes made during this critical time in family development could affect IPV incidence and family health.
CHAPTER II: BACKGROUND AND SIGNIFICANCE

Adolescent Pregnancy Context

Epidemiology of Teen Pregnancy

More than 448,000 U.S. teenagers became pregnant in 2013 (Kost, Maddow-Zimet, & Arpaia, 2017). Overall in 2013, 4% of women 15-19 years old became pregnant, including 8% of Black women, 6% of Latinas, and 3% of non-Hispanic White women (Kost & Maddow-Zimet, 2016). Narrowing the focus to sexually active 15-19 year-old women, 10% became pregnant in 2013, and 29% terminated their pregnancy (Kost, Maddow-Zimet, & Arpaia, 2017). Teen mothers face less educational attainment and less income; they and their children are more likely to live in persistent poverty (Chau, Thampi, & Wight, 2010). The most recent estimates place the yearly cost of teen births to U.S. taxpayers at over $9.4 billion; this includes lost tax revenue, public assistance to mothers, child health and welfare costs, and higher incarceration rates for sons of teen mothers (National Campaign to Prevent Teen and Unplanned Pregnancy, 2013).

While most U.S. adolescents engage in sex at some point during their teen years, some adolescents are more likely than others to become involved in a pregnancy or to birth a child during their teen years (Kirby, 2002). Risk factors for teen pregnancy include: being Black or Hispanic, low socioeconomic status, physical or sexual abuse history, early dating, more sex partners, having an older boyfriend, substance use, engaging in risky or delinquent behaviors, having school difficulties, attending a troubled school, living in a poorer community, high rate of community violence, crime, residential mobility or stress, and living in a state with more restrictive contraceptive laws (Kirby, 2002). Many of these risk factors hint at the racial and class dimensions of adolescent pregnancy.
Positive or negative peer norms are a very strong predictor of teen sexual behavior and teen pregnancy (Santelli & Beilenson, 1992; Sieving, Eisenberg, Sandra, & Carol, 2006). Further, daughters of teen mothers and sons of teen fathers are 66% and 180% more likely to be involved in a teen pregnancy, respectively (Meade, Kershaw, & Ickovics, 2008; Sipsma, Biello, Cole-Lewis, & Kershaw, 2010). Consequently, an intergenerational cycle of early childbearing and deprivation is thought to exacerbate current racial, ethnic, and class disparities in the United States (Meade et al., 2008).

Factors protective against a teen pregnancy include: early school-based sex education, egalitarian gender and family roles, positive self-concept, being popular, playing a sport, having a strong future orientation, positive attitude toward school, good grades, higher education plans, good family relationships, appropriate parental monitoring, having parents who are married, attended college, and have a higher income, attending Catholic school, motivation to use contraception, greater use of condoms and contraception, wealthier community, and living in a state with coordinated teen pregnancy prevention programs (Kirby, 2002). Many of these protective factors suggest the significance of structural inequities, social location, and physical geography for adolescent pregnancy.

**Teen Pregnancy as a Social Problem**

Our current understanding of adolescent pregnancy as a social problem has been constructed through historically and culturally specific social processes that are influenced by medical, social welfare, and political systems. These systems shape our understanding of teen pregnancy and regulate the behavior of adolescent women and their families (Breheny & Stephens, 2007). Ideas about adolescent pregnancy determine our attitudes, research, policy, and service delivery for teens (Cherrington & Breheny, 2005). These dominant discourses mask the
conflicting nature of the evidence about adolescent pregnancy and silence alternative views on this issue.

Adolescent pregnancy was first conceptualized as a social problem in the United States in the late 1960s (Furstenberg, 2007; Vinovskis, 1988). However, the “teen pregnancy epidemic” lamented in U.S. political, public health, and social policy discourses represents more than a call to address the needs of a vulnerable population. It is also the latest manifestation of a construction of uncontrolled female sexuality, reproductive capacity, and illicit motherhood that has been used to maintain gender, racial, class, and heteronormative hierarchies in the United States throughout its history (Nathanson, 1991; Solinger, 1992a; Solinger, 1992b; Vinovskis, 1988).

Teen pregnancy has largely followed the trend of overall female fertility. In the 20th century, teen birth rates slowly declined until after World War II when fertility rates for all women increased sharply during the Baby Boom (Furstenberg, 2007; Vinovskis, 1988). Teen birth rates peaked in 1957 at 96.3 births per 1000 women aged 15-19 and then dropped precipitously (Ventura, Curtin, & Mathews, 1998). In 1965, there were 65.5 births per 1,000 women 15-19 (Ventura, Mathews, & Hamilton, 2001). In 2016, there were 20.3 births per 1,000 women 15-19 (Martin, Hamilton, Osterman, Driscoll, & Drake, 2018). The “discovery” of teen pregnancy as a social problem in the late 1960s occurred at a point of rapid decline in teen birth rates (Lincoln, Jaffe, & Ambrose, 1976). This discovery was less about adolescent pregnancy and more about the cultural changes of the time. The 1960s marked shifts in family formation patterns that informed the development of teen pregnancy as an area of concern (Furstenberg, 2007).
Premarital pregnancy rates have been high throughout the entirety of U.S. history (Bachu, 1999; Smith & Hindus, 1975; Vinovskis, 1988). Birth and marriage records dating back to the Puritans indicate that pregnancy has always preceded marriage for a proportion of the U.S. population (Vinovskis, 1988). However, unplanned pregnancies have been socially managed through marriage, particularly among White, middle class women (Furstenberg, 2007). In the 1960s, changes in economic and social conditions (e.g., fewer manufacturing jobs, businesses moving to suburbs, college requirements for work, rising divorce rates) led poor and minority teens, and soon the majority of teens, to conclude that marriage was a less desirable solution to a non-marital pregnancy (Furstenberg, 2007). Additionally, the stigma of non-marital sex was declining during this period with the increased visibility of ubiquitous, non-sanctioned sexual behavior (Kinsey, Pomeroy, Martin, & Gebhard, 1953).

The novelty of this issue in the 1960s was not that teens started to become pregnant, but rather that they became less likely to marry or to adopt out their babies. Thus, single parenthood among teens became more visible. While teen pregnancies were not increasing, births to (still) unmarried 15-19 year-olds increased by 64% between 1960 and 1977 (Vinovskis, 1988). This trend began in the Black community, and White women quickly followed (Furstenberg, 2007). By 1983, 40% of births to White teens and 90% of births to Black teens were non-marital (Vinovskis, 1988). By 1996, 84% of pregnancies to 15-17 year-olds overall were non-marital (Ventura et al., 1998).

**Single Motherhood**

Single motherhood has a much longer history as a social problem and directly informed *teen pregnancy* as a public concern (Fessler, 2007; Gordon & McLanahan, 1990; Lessa, 2006). After World War II, US cultural anxiety regarding uncontained female sexuality and single
motherhood culminated in what feminist historian, Rickie Solinger, labels the “White family imperative,” which demanded White women dedicate their lives to marriage, childbearing, and consumerism (1992b, p. 20). This norm considered any violation of sexual and gender boundaries to be anti-family. Non-marital pregnancy became a subversive act, and a highly racialized response to non-marital pregnancy followed (Fessler, 2007). The state enacted a decidedly pro-natal agenda for White women and an anti-natal agenda for Black women (Solinger, 1992b).

Professionals attributed non-marital pregnancies among White women to psychological explanations (Soloman & Kilgore, 1965). They desexualized and pathologized pregnancy. They posited that women became pregnant to act out a psychological problem (i.e., White women wanted pregnancy, not sex; Soloman & Kilgore, 1965). Medical and social welfare professionals deemed single pregnant women unfit to be mothers and treated them—often in maternity homes—so they could fulfill their destiny of becoming legitimate wives and mothers (Montague, 1964). Treatment success was signaled by remorse, relinquishment of the baby for adoption, and commitment to the White family imperative (Fessler, 2007). Stigma was individual and familial for pregnant White women, who were considered socially productive breeders providing a highly valued commodity: adoptable White babies (Williams, Thorner, & Ehrmann, 1956).

As Solinger describes, this construction of single White pregnancy absolved men of responsibility, punished women for non-marital sex, and contained women in domestic subjugation (1992b). It created a market of adoptable babies and a commodity for social service professionals to broker. By desexualizing pregnancy, it removed the stigma of illegitimacy, making babies adoptable and White women marriageable again (Solinger, 1992b).
For Black women, single pregnancy was another matter entirely. Medical and social welfare professionals viewed Black single pregnancy as stemming from inherent hypersexuality (Solinger, 1992b). It served as evidence of pure ‘id’ psychology and therefore biological inferiority, justifying segregation and repression. The stigma for single Black women was not personal but racial. Policymakers blamed illegitimacy for social ills and blamed Black culture for illegitimacy (Furstenberg, 1970). They considered Black women socially unproductive breeders, since there was no market for their babies (Solinger, 1992b). Critical race scholar Patricia Williams (1989) echoes this economic framing of reproduction and racism, writing:

Thus when black people were bought and sold as slaves, they were placed beyond the bounds of humanity. And thus, in the twistedness of our brave new world, when blacks have been thrust out of the market and it is white children who are bought and sold, black babies have become "worthless" currency to adoption agents-"surplus" in the salvage heaps of Harlem hospitals. (p. 16)

Black mothers were excluded from maternity homes. Those who tried to adopt out their children could be prosecuted for abandonment (Solinger, 1992b). Black single motherhood was a target of efforts to punish and even criminalize Black childbearing. Women lost access to social benefits and were threatened with child removal, sterilization, and imprisonment for further childbearing. This served a larger agenda of punishing Civil Rights efforts (Solinger, 1992b).

Women began to reject these norms in the 1960s (i.e., Sexual Revolution), changing the circumstances of single motherhood dramatically. In the 1960s, 90% of single White women gave up the babies they delivered for adoption; by the mid-seventies, 90% of single women, overall, kept their babies (Weatherby, 1987). These and other shifts contributed to the identification of teen pregnancy as a social problem.
The Medicalization of Pregnancy Prevention

Teen pregnancy emerged as a social problem during the same period that medical professionals claimed dominion over solutions to this problem (i.e., oral contraceptive pill, abortion). Physicians resisted taking an active role in patient education and provision of contraception, even for married couples, until after the introduction of the oral contraceptive pill in 1960 (Nathanson, 1991). The oral contraceptive pill provided a respectable contraceptive method that required a prescription, provided good fees, brought prestige to the general practitioner, and did not involve the embarrassment of fitting a diaphragm (Reed, 1978). The American Medical Association (AMA) had maintained a policy that it would take no position on “population control”1 dating back to 1938 (AMA, 1965). In 1964, it completely reversed its ambivalence to contraception, defining birth control as “a major responsibility” for physicians (AMA, 1964, p. 31). Medical professional discourses on birth control were posed in dual terms of “child spacing” for married couples and “population control” via “educating the ‘lower economic and intellectual levels of society’ on birth control” (i.e., poor/minority women; AMA, 1964; Wehrwein, 1966, June 28). Thus, the medical system became engaged in the control of women’s reproductive capacity with the advent of hormonal contraception—and later, abortion.

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1 The “population control” movement has a long history within (and outside) the US, fraught with race, sex, and class oppression; imperialist notions; eugenic aspirations; and wide-scale atrocities. Based on the writings of Thomas Malthus in 1798 (e.g., “An Essay on the Principle of Population”) and carried on through the period of our discussion by figures such as John D. Rockefeller, Jr. through the Bureau of Social Hygiene, the population control movement sought to curb population growth out of fears of scarce future resources, shifting demographics, and other consequences of uncontrolled human reproduction. A full discussion is beyond the scope of framing “teen pregnancy” as a social problem. For further reading, see: (1) Hartman, B. (1995). Reproductive rights and wrongs: The global politics of population control. Boston: South End Press; (2) Connelly, M. (2010). Fatal misconception: The struggle to control world population. Cambridge: Harvard University Press.
Margaret Sanger’s organization (now Planned Parenthood Federation of America) had shaped the birth control debate from the start of the century. In the 1960s, it promoted birth control with the aims of increasing women’s autonomy, improving marital sex, and helping poor women have fewer children (Nathanson, 1991). Discourses about reducing poverty through fertility control appealed not only to feminists trying to advance women’s autonomy, but also to those who favored population control among lower classes and minorities. Advocates courted the endorsement of the medical profession, which brought power and respectability. In turn, advocates abandoned the goal of women’s autonomy (i.e., pleasure without fear of procreation) and re-defined contraception as a de-sexualized medical and public health issue. This appeal to middle class values succeeded in garnering much wider support (Nathanson, 1991).

Contraception advocates campaigned to convince policymakers that birth control was the answer to poverty, illegitimacy, and welfare costs through publications such as “Five Million Women” in 1967 and “11 Million Teenagers” in 1976 (Lincoln, Jaffe, & Ambrose, 1976; Varky, Jaffé, Polgar, & Lincoln, 1967). These documents estimated the unmet need for contraceptive services among poor and near-poor women and highlighted the problem of teenage pregnancy, respectively.

The welfare state responded to the poverty-family planning problem through the “Family Planning and Population Research Act of 1970,” which added Title X funding for family planning services and established the Office for Population Affairs (Public Law 91-572, 1970). In the mid to late 1970s, the debate became reframed by the medical profession and generalized across racial and class dimensions. The underlying problem was transformed from poverty and single motherhood to “adolescent pregnancy” itself, which now had as its icon the image of a
White, middle class high school girl (Nathanson, 1991). This became the new metaphor for uncontrolled female sexuality and reproduction (Nathanson, 1991).

Adolescent pregnancy itself became an unqualified misfortune, without regard to wedlock, poverty, race, or wantedness. Because the problem became medicalized, the focus became adverse health outcomes; the responsible party became the physician (usually male); and the solution became patient treatment through medical intervention, education, and contraception. The federal government first codified the problem of “adolescent pregnancy” in its passage of the “Adolescent Health Services, and Pregnancy Prevention Act of 1978” (Public Law 95-626, 1978). This legislation was able to gain enough support for passage, in part, because of fears about rising abortion rates among teens (Furstenberg, 2007). Thus, teen pregnancy as a social problem was born.

Teen pregnancy has persisted as a defined problem since the 1970s, and its historical construction continues to inform current research and policy. A 2004 review comparing U.S. and U.K. research published on teen pregnancy between 1981 and 2000 found that no studies considered the intendedness or wantedness of a teen pregnancy, which was assumed to be a universally adverse outcome—even among older teens (Bonell, 2004). U.K. studies focused on economic and structural determinants of teen pregnancy, while U.S. research focused on individual and cultural determinants of teen pregnancy—such cultural determinants were specifically located among Black and Latino/a communities (Bonell, 2004). Further, U.S. studies were significantly more likely to justify research based on costs to social welfare systems (e.g., “intergenerational transmission of worklessness”; Bonell, 2004, p. 268). U.S. studies justified research based on teen pregnancy’s potential impact on unwed motherhood and abortion rates.
Alternative Narratives of Adolescent Pregnancy

The question remains, however, whether adolescent pregnancy itself poses a problem for individuals and society. Some research suggests that those who become pregnant during their adolescence are already poised for adverse medical, socioeconomic, and developmental outcomes regardless of the timing of their first birth by virtue of their social location (Geronimus, 1997; McCrate, 1990). Researchers have begun to critique the conclusion that adolescent motherhood leads to inevitable disadvantage (Breheny & Stephens, 2010; Clarke, 2015; Geronimus, 1997; Kibel-Gagne, 2017). They have begun to explore alternative mechanisms that explain adverse outcomes, including racial, economic, and gender disparities. The association between adolescent pregnancy and adverse outcomes is complicated by pre-existing structural disadvantages for women who become mothers during adolescence, including economic disadvantage, racial minority status, and residence in medically and educationally underserved areas (Breheny & Stephens, 2007). Researchers have used data from the National Longitudinal Survey of Youth (NLSY), the National Longitudinal Survey of Young Women (NLSYW), and other large studies to question whether teen childbearing actually disadvantages a group that is already disadvantaged (Brubaker, 2007; Geronimus, 1997; McCrate, 1990).

Pregnant adolescents are more likely to have been raised in extreme poverty and to have experienced school failure prior to pregnancy (Geronimus, 1997). Studies examining pairs of sisters (i.e., same level of disadvantage) reveal that teen childbearing has a very small effect on educational and economic outcomes, and that those who have teen births are no more likely to be welfare recipients past the age of 25 (Geronimus, 1997). Several studies have found that when compared to appropriate controls (e.g., teens who miscarried), teen mothers and teen fathers do not have significantly different social or economic outcomes (Hoffman & Maynard, 2008).
The most consistent findings on the adverse consequences of teen pregnancy are for the children of teen mothers. Children of teen mothers have significant psychosocial, educational, health, and economic disadvantages compared to their peers (e.g., low birthweight, worse standardized kindergarten test scores, behavior problems, foster care placement, lower educational attainment, higher incarceration rates). This suggests we should be doing far more to help support young families (Hoffman & Maynard, 2008; Kibel-Gagne, 2017).

What about the Men? What about the Couple?

Adolescent women are the focus of adolescent pregnancy discourse almost exclusively, but they do not become pregnant in isolation. They do so principally through sexual relationships with men. According to developmental theory, it is normative for adolescents to begin to explore sexual and romantic relationships to satisfy social needs (Rostosky, Galliger, Welsh, & Kawaguchi, 2000; Sullivan, 1953). These relationships contribute to identity and intimacy development and are part of a trajectory toward establishing long-term committed romantic attachments (Furman & Wehner, 1994, 1997). While much research has focused on individual behavior, pathology, and sexual health risks for adolescents in sexual relationships, far less attention has been given to adolescent sexual relationships as sources of intimacy, self-expansion, and relationship satisfaction and maintenance (Aron & Aron, 1991; Reiss, 1986; Sprecher & McKinney, 1993).

Adolescent relationships, including those among expectant couples, are at higher risk for dissolution than adult relationships, but many of these relationships persist over significant periods of time (Ng & Kaye, 2012). Data from the National Survey of Family Growth 2006-2010 demonstrates that about one-third of unmarried teen couples will be married by the time their child is five-years old (Ng & Kaye, 2012). And for teens who were cohabitating by the time of
their child’s birth, 58% remained together five years later (Ng & Kaye, 2012). In one study of expectant adolescent couples, 60% of couples cohabitated (Kershaw et al., 2014). Adolescents who become pregnant are more likely to maintain their relationship for a longer period of time than non-parenting adolescents (Kershaw et al., 2010). One study of sexually active female teens found that compared to non-pregnant teens, pregnant teens were more likely to have been in a relationship with their partners longer, and 18-months later, 52% of parenting teen couples were still together compared to 39% of non-parenting couples (Kershaw et al., 2010).

Expectant adolescent fathers are often demonized or overlooked entirely in adolescent pregnancy, though research has demonstrated continued relationships between expectant adolescent couples can have many positive effects for both adolescent mothers and the children of these couples (Gee & Rhodes, 1999; Westdahl et al., 2007). Studies have found that continued involvement in adolescent romantic relationships can provide emotional support for mothers and be protective against adverse mental health outcomes (e.g., depression) and negative life events postpartum, even for relationships of short duration (i.e., 1 year postpartum; Gee & Rhodes, 1999). Further, the maintenance of these relationships and continued father involvement can have positive and protective effects for children during infancy (e.g., reduced infant distress) and later in childhood (e.g., behavior problems; Coley & Chase-Lansdale, 1999; Cutrona, Hessling, Bacon, & Russell, 1998; Howard, Lefever, Borkowski, & Whitman, 2006; Kalil, Ziol-Guest, & Coley, 2005; Lewin, Mitchell, & Burrell, 2011; Lewin et al., 2015; Mezulis, Hyde, & Clark, 2004). Many fathers involved in adolescent pregnancy have ongoing caretaking relationships with their children, regardless of their romantic relationship with the mother, necessitating an

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2 This is the specific study population used for this study.
ongoing co-parenting relationship for these adolescent couples (Coley & Chase-Lansdale, 1999; Cutrona et al., 1998; Kalil et al., 2005; Lewin et al., 2011).

The quality of the relationship between adolescent couples is a significant predictor of outcomes for mothers, fathers, and babies. More supportive relationships with partners is associated with fewer distress symptoms during pregnancy for teen mothers (Milan, Lewis, Ethier, Kershaw, & Ickovics, 2004). Insecure romantic attachment between adolescent couples has been linked to depressive symptoms for both men and women (Desrosiers et al., 2014). Better relationship adjustment among expectant adolescent couples has been linked to improved physical and mental quality of life (Kershaw et al., 2013). Further, continued relationships are protective against sexual health risks (Kershaw et al., 2007). Adolescent relationship quality has been associated with parenting quality and outcomes for babies, including children’s behavioral development (e.g., peer relationships, aggressive behaviors) and adaptive language skills (Choi & Jackson, 2011; Erel & Burman, 1995; Grych, 2002; Jackson, Choi, & Franke, 2009; Krishnakumar & Buehler, 2000).

With nearly one-half of expectant adolescent couples’ relationships ending by the time their child is one-year, there are significant opportunities to intervene to improve relationships and outcomes for parents and babies (Gee & Rhodes, 1999; Kershaw et al., 2010). Adolescent relationships can be a source of mutual support or mutual violence (Kershaw et al., 2013; Lewis et al., 2017). Intervening to improve the relationships of couples expecting a baby could have both short- and long-term benefits for adolescents and families.

**Intimate Partner Violence**

Intimate partner violence (IPV) is a serious social and health problem in the United States. The most recent estimates indicate that 4.7 million women and 5.4 million men were the
victims of physical violence at the hands of an intimate partner in the past 12 months (Black et al., 2011). Further, an estimated 34 million women and 11 million men suffer from the adverse consequences of having been victimized during their lifetime by an intimate partner; consequences include fearfulness, injury, and post-traumatic stress disorder (PTSD; Black et al., 2011). Estimates of the costs to the medical system in the first 12 months following victimization by IPV range from $2.3 billion to $7.0 billion in the United States (Brown et al., 2008). These figures do not include the financial burden of IPV on policing, legal fees, incarceration, or lost earnings (Waters, Hyder, Rajkotia, Basu, & Butchart, 2005).

Historically, IPV research and intervention has been based on a paradigm of male batterer—female victim (Goldenson et al., 2007). National surveys indicate that 33% of U.S. women have experienced IPV (Black et al., 2011). However, thirty years of research, including more than 200 studies with data from both men and women, including nationally representative samples of US couples and Canadian and UK national crime surveys, indicate that women perpetrate acts of violence against intimate partners at similar rates as men (Archer, 2000; Bair-Merritt et al., 2010; Straus, 2011). It is important to note, however, that women are more likely to be victims of severe physical violence, to be injured, and to suffer adverse consequences from IPV (e.g., injury, PTSD) than men (Black et al., 2011; National Center for Injury Prevention and Control, 2003).

Nonetheless, most studies document that women are slightly more likely than men to perpetrate acts of physical aggression against a partner and to use such acts more frequently (Archer, 2000; Bair-Merritt et al., 2010; Black et al., 2011; Straus, 2011). Female perpetrators cite anger and not being able to get a partner’s attention as primary motivations, along with retaliation, self-defense, and control (Bair-Merritt et al., 2010; Straus, 2008). Some researchers
have theorized that population-level IPV data reflect *situational couple violence* (i.e., violence that arises when a couple cannot resolve an ordinary relationship conflict), whereas dominant paradigms reflect *intimate terrorism* (i.e., violence used within a pattern of coercion and control; Johnson, 2006, 2008). However, using Johnson’s definition, population studies have found that women are as likely as men to report behaviors reflecting *intimate terrorism* (Bogaerts, van der Veen, & van der Knaap, 2011; Capaldi et al., 2009; Frye & Karney, 2006; Graham-Kevan & Archer, 2005; Hines & Douglas, 2010; Laroche, 2005; Próspero, 2006; Straus & Gozjolko, 2014; Straus, 2011).

**Constructions of Intimate Partner Violence**

**Dominance theory.** Existing interventions, and much research, have been based on a conceptualization of intimate partner violence that casts men as (solely) aggressors and women as (solely) victims in violent relationships. This paradigm reflects a second wave feminist understanding of intimate partner violence as a symptom of male domination of women (i.e., dominance theory). As feminist legal scholar Catherine MacKinnon (1989) articulated, “women as a group are dominated by men as a group” and “since a woman’s problems are not hers individually but those of women as a whole, they cannot be addressed except as a whole” (p. 95). Thus, the personal is political.

In the 1970s, women shared experiences of domestic violence among themselves and then publicly, utilizing consciousness raising strategies (MacKinnon, 1989). Feminists involved in assisting female victims of IPV came to power during the 1970s and 1980s as the “battered women’s movement” (Schechter, 1982, p. 3). The battered women’s movement rejected both Freudian interpretations that blamed women and family systems theories that viewed women as participants in the relational dynamics that lead to violence. To address an issue they believed
stemmed from and enforced patriarchy, they engaged powerful agents of social control: the criminal justice system. They shaped the social policy response by calling on the police and courts to fight male domination within the private sphere. They focused on arrest and prosecution for male batterers and a shelter system and support toward escape for female victims. The battered women’s movement rejected the intrusion of professionals from male-dominated fields, such as psychology, into the sphere of domestic violence, where they could potentially define the issue and its policy solutions differently (Schechter, 1982).

In the early 1980s, activists and program leaders created a model of rehabilitation for batterers, known as the “Duluth Model,” which emphasized (1) the need for the legal punishment of male perpetrators and (2) the understanding of IPV as an act of patriarchy and a consequence of male control over women (Dutton & Nicholls, 2005). The goal of the program was to train men to accept a feminist viewpoint of IPV and to embrace empathy, emotional expressiveness, egalitarianism, accountability, and passivity (Schrock & Padavic, 2007). With no evidence base, this model was disseminated worldwide as a universal description of battering (e.g., the cycle of abuse; Bumiller, 2010).

Program evaluations have found very limited support for these battering intervention programs (Bumiller, 2010; Feder, 2005; Feder & Dugan, 2002; Schrock & Padavic, 2007; Taylor, Davis, & Maxwell, 2001). Research on whether egalitarianism and sex-role attitudes are correlated with engagement in partner violence is mixed (Holtzworth-Munroe, Bates, Smutzler, & Sandin, 1997). Some early studies found relationships between traditional sex-role attitudes and violence (Crossman, Stith, & Bender, 1990; Flynn, 1990; Follingstad, Rutledge, Polek, & McNeill-Hawkins, 1988; Sugarman & Hotaling, 1989). Other studies have found women who espouse more traditional gender roles and men who report more feminist sex-role attitudes to be
more violent (Bookwala, Frieze, Smith, & Ryan, 1992; Rosenbaum, 1986). One program evaluation found that men in batterer re-education programs formed interactional rituals that reinscribed hegemonic masculinity (Schrock & Padavic, 2007). Overall, these interventions have had limited success.

There are 1,894 identified domestic violence programs in the United states that provide emergency shelter (National Network to End Domestic Violence, 2015). Studies have reported that the majority of women believe their shelter stay reduced their IPV victimization, though 6-10% of women report escalated IPV as a result of a shelter stay (Bowker & Maurer, 1985; Goodkind, Sullivan, & Bybee, 2004). Some studies find shelter stays and justice services provide only short term improvements in women’s mental health and behavioral functioning (Koci et al., 2014). There have been few rigorous research studies (e.g., randomized controlled trials) on the impact of shelter programs and many calls for more rigorous evaluations and use of evidence based programming (Singer et al., 2013; Sullivan, 2006).

One intervention strategy that has faced enormous resistance from the battered women’s movement is conjoint treatment for violent couples. Conjoint treatment of IPV is based on family systems theory, which posits that couples can become stuck in a repetitive interactional dynamic, in which both parties participate, that leads to violence. Conjoint treatment requires a safety assessment and recognizes that, often, men in couples have the potential to do far more damage to female partners. However, it assesses how each member of a couple participates in the initiation and escalation of violence. Given the evidence about the bidirectionality of much intimate partner violence, particularly among teens, this model may be a promising strategy.

There is significant opposition to allowing conjoint treatment for violent couples (George & Stith, 2014; Straus, 2011). Indeed, 81% of state standards prohibit conjoint treatment for IPV
for court-involved families (Austin & Dankwort, 1997). Critics believe that working with couples conjointly is unsafe; does not adequately place blame on male batterers; and does not address the larger patriarchal causes of violence (George & Stith, 2014). However, the treatment programs most utilized with violent couples have done an exceedingly poor job at reducing intimate partner violence, suggesting current constructions may be flawed (Bumiller, 2010; Feder, 2005; Schrock & Padavic, 2007). Further, growing evidence suggests conjoint treatment can be effective (Lechtenberg et al., 2015; Madsen, Stith, Thomsen, & McCollum, 2012; McCollum, Stith, & Thomsen, 2012; Mendez, Horst, Stith, & McCollum, 2014; Stith & McCollum, 2011; Stith, McCollum, Amanor-Boadu, & Smith, 2012; Stith, McCollum, & Rosen, 2011).

**Problematising dominant constructions of intimate partner violence.**

**Intersectional considerations.** Feminist theory has evolved since the battered women’s movement first framed intimate partner violence. Critical race scholarship and intersectional feminism have questioned the ways second wave feminist conceptualizations rely on the notion of a unitary women’s experience that erases within-group distinctions such as race, class, and sexual orientation (Crenshaw, 1991; Harris, 1990; Matsudi, 1996; Rimonte, 1991). Intersectional feminism seeks to incorporate into theory the multiplicity of oppressive systems faced by women without privileging one category of oppression (i.e., gender) as primary. By understanding intimate partner violence only through dominance theory, scholars argue that we render invisible the experiences of women for whom gender oppression is merely one facet of their subjugation (Crenshaw, 1991; Harris, 1990; Matsudi, 1996).

Immigrant women may face deportation for leaving spouses on whose citizenship their residency depends; non-English speaking women face barriers to seeking help from shelters not
designed for them; Black women may be reluctant to engage a racist legal system to find safety; sexual and gender minorities may face discrimination from service providers and the criminal justice system or fear revealing their sexual or gender identity or relationships to their family or community (Crenshaw, 1991; Sokoloff & DuPont, 2005). Such women face multiple interconnected systems of power and oppression that do violence upon them in multiple ways. Women may be forced to choose an allegiance between their cultural, racial, and sexual communities and their gender. Do they voice the issue of partner violence or protect their community against stereotypes that enable dominant systems to do violence upon the whole of the community? Yet, these multiply oppressed groups are at highest risk of IPV victimization (Balsam & Szymanski, 2005; Black et al., 2011; Messinger, 2011).

Working at the couple-level to prevent IPV could allow for a broader investigation of the distribution of power, privilege, and oppression at work and how these operate in a particular relationship, while fully considering the unique individuals involved (and their safety). Rather than dividing along gender lines, couple-based interventions could allow the details of particular experiences to emerge while accounting for the structural realities within which couples are situated. Couple-based interventions account for—and move beyond—individual processes to engage interactional processes. Based on systems theory, well-executed couple interventions would take into account intersectional identities as multiple systems of power (e.g., gender, race, class, culture) play out in relationships. Couple-based IPV prevention interventions that directly tackle intersectional issues could be devised for expectant adolescent couples.

Intersectional considerations do not minimize the personal experiences of violence that women (or people of any gender identity) experience nor do they privilege culture, class, or other considerations over individual victims and their safety. Intersectional considerations do not
demote the significance of gender in violent interactions. Rather, intersectional considerations speak to the importance of ensuring that explanations of violence are inclusive of all women (or people of any gender identity) and truly reflect women’s (people of any gender identity’s) experiences of intimate partner violence. By complicating our understanding of intimate partner violence beyond dominance theory, we can add dimension to the conversation. By including in our understanding a wider range of systems that inform IPV, we make space for those who may have suffered in silence, unable to identify themselves in the rhetoric of past constructions, to speak out, and to lead us forward.

**Personal agency.** Third wave feminists have critiqued the way that dominance theory obscures women’s agency in intimate relationships. By creating a paradigm that removes individual responsibility and psychology and casts victims as necessarily innocent and trapped by social forces, third-wave feminists argue that women’s actual experiences of IPV are rendered invisible in service to their victimhood (Creek & Dunn, 2011). This narrative of innocent victimhood provides public sympathy but does not account for the complexity of women’s individual circumstances nor allow room for “women in questionable moral categories,” women with some agency, and female perpetrators of IPV (Creek & Dunn, 2011, p. 315; Loseke, 1989).

The complexity of women’s lives, relationships, and aggression cannot be held neatly in dichotomous categories of “victim” or “perpetrator.” Most research finds that both women and men behave violently in violent relationships (Straus, 2011). Moreover, laboratory experiments of behavioral and psychological reactions consistently refute the myth of female passivity and support notions of female aggression (Richardson, 2005). Kathleen Ferraro, who writes about the connections between women’s IPV victimization and perpetration argues that women who use violence against their partners or are complicit in violence against their children can also be
legitimate victims and are no less worthy of our compassion (Ferraro, 2006). Thus, it is important to investigate the complexities of relationship violence.

**State of the science.** Thirty years of research demonstrates that intimate partner violence is more mutual than the male batterer-female victim paradigm depicts (Straus, 2011). This issue remains hotly debated in the scientific literature, as public health and social service professionals struggle to wrest control of the problem definition and policy solutions from the battered women’s movement and the criminal justice system. The accumulating data from the health and social science literature regarding women’s use of intimate partner violence has led to a theoretical divide between those who understand intimate partner violence as a behavioral pattern undertaken to assert domination and control, which Shamita Das Dasgupta (2002) describes as the “activist perspective,” or simple physical assaults, which she describes as a “researcher perspective.” The interventions become, respectively, ending the oppression of women or ending the use of violence in relationships (Das Dasgupta, 2002). Das Dasgupta (2002) suggests that women’s use of aggression is more complex than either perspective and should be examined in an ecological nested framework, since IPV is colored by individual as well as historical, political, social, and ideological contexts in which gender matters.

Some who hold an “activist perspective” have provided a critique of the methodology of studies that support the “researcher perspective” (see DeKeseredy & Schwartz, 1998; Kimmel, 2002; Meier, 2015; White, Smith, Koss, & Figueredo, 2000). Others have conducted research on women’s use of aggression in relationships using different methodologies to explore context, motivations, and consequences (see Swan & Snow, 2006). Some have dismissed findings altogether and continue to conduct research that looks solely at male-perpetrated violence against women (see Reed, Raj, Miller, & Silverman, 2010). Or they rely solely on crime data from the
Bureau of Justice Statistics, despite evidence that victimized women are far more likely to report IPV to the police than victimized men—up to a 10-fold difference; women are more likely to have their perpetrator arrested than men when similarly injured; and male perpetrators are 16 times more likely to be charged than female perpetrators (Brown, 2004; Buzawa, Austin, Bannon, & Jackson, 1992; Stets & Straus, 1992).

A central critique from scholars who hold the activist perspective is that research has relied too heavily on standardized measures of IPV, which do not provide sufficient information about the context of violence (Frieze, 2005). Many feminists and scholars have criticized the Conflict Tactics Scale particularly, which catalogues the types, frequency, and severity of acts of intimate partner violence victimization and perpetration in relationships (Straus, Hamby, Boney-McCoy, & Sugarman, 1996). Some variant of the Conflict Tactics Scale has been used in hundreds—if not thousands—of studies to assess intimate partner violence (Straus & Douglas, 2004; Straus, 2011). Critiques of the Conflict Tactics Scale include: (1) timeframe: inquiring about particular acts within a particular period may not uncover more systematic patterns of violence and control; (2) context: size and strength of the person committing an act, the particulars of the relationship between them, the history of that relationship, who initiated the interaction and how; (3) reporting bias: potential recall bias and social desirability bias; (4) consequences: emotional and behavioral sequelae of violent acts are not captured; (5) rank ordering of acts based on severity: psychological abuse may be as damaging as physical acts; (6) not comprehensive: does not ask about every possible act; (7) situates acts within a framework of interpersonal conflict rather than a framework of patriarchal control: does not capture the coercive controlling behaviors of men toward female partners (DeKeseredy & Schwartz, 1998).
Acknowledging the limitations of standardized measurement and the reliance on
decontextualized behaviors, there are many reasons for feminists to pursue further research on
female-perpetrated and mutual IPV. First, women are not only adversely affected by being
victims of IPV, they are adversely affected by perpetrating violence. Perpetration of IPV relates
to negative relational and mental health consequences for women (Anderson, 2002; Milan,
Lewis, Ethier, Kershaw, & Ickovics, 2005). Additionally, by disregarding female perpetration of
violence and universalizing the experience of women who are the lone victims in a violent
relationship, we ignore the majority of women’s experiences in violent relationships (McHugh,
Livingston, & Ford, 2005). Attempts to create a singular narrative of women’s experiences often
come from those with the most access to power (e.g., White, middle class, professionals) and
marginalize the powerless (e.g., women in violent relationships; Lugones & Spelman, 1983).
Legitimizing only the IPV victimization experiences of some women is antithetical to the central
tenets of feminism and harms its claims. Finally, intimate partner violence is an interaction
between (at least) two people; only examining one-half of this interaction robs women of agency
in their relationships and decontextualizes IPV further.

While women hold less social power than men in contemporary U.S. society, overall,
women do not lack power or agency in their relationships (Carli, 1999; Carli & Eagly, 2001).
Sometimes they hold considerably more power or privilege than their partners based on systems
of oppression other than gender (e.g., race, class). Sometimes women have more interpersonal
power within their families, more power to sway their children’s behavior, or to command
loyalty. Sometimes health status or marital status convey more or less power within a
relationship. Couples can be acutely aware of their position with regard to policing and judicial
systems. Some couples expect women to be viewed as more sympathetic with respect to their use
of violence and the custody of children, should they separate.\textsuperscript{3} Some men face implicit—and sometimes explicit—threats by their partners regarding custody or policing. Further, having more power within a relationship is not necessarily protective against violence. In fact, from a structural family systems perspective, an imbalance of power held by women or men puts the person with more power at increased risk of violence victimization, as their frustrated partner seeks to even the scales (Minuchin & Nichols, 1994).

**Need for New Constructions of Intimate Partner Violence**

Gendered social structures differentially situate men and women in relationships. The logic of gendered choices leads U.S. women to pair commonly with men who are older, have more physical strength, and have higher economic status, leading to a physical, economic, and psychological power differential in heterosexual relationships (Anderson, 2005). Men and women’s behaviors are differentially perceived and sanctioned in relationships. Gender socialization leads women to feel responsible for emotional caretaking and perceive increased responsibility for conflict. Structural inequities and gender scripts punish women for leaving (violent) relationships. Women are more isolated by economic circumstances; they are more likely to face poverty at relationship dissolution; they are more likely to face cultural sanctions if they lose custody of their children; and they are more likely to face ostracism for the failure of their relationships (Anderson, 2005).

Gender is not the only factor that differentially situates participants in a relationship. Lesbians and gay men may fear outing by an abusive partner if they leave (Letellier, 1994; Letellier, 1994;)

\textsuperscript{3} This perception may not accurately reflect biases in the disposition of custody cases in families with intimate partner violence. There is evidence to suggest that courts have a long history of favoring violent fathers and further victimizing abused women and children (Hannah & Goldstein, 2010; Meier, 2015).
Merrill, 1998; Ristock, 2002). Black women may fear involving racist legal systems for protection (Crenshaw, 1991). Pacific-Asian women fear bringing shame to their community by revealing IPV (Rimonte, 1991). Poor women (and those economically dependent on a partner) may need the income of an abusive partner to support herself or her children. Being differentially situated in society changes the meaning and consequences of IPV for participants.

Research suggests that men perpetrate IPV when their access to masculinity (power) is threatened by structural or relational disadvantage (e.g., poverty, female partner earns more than male partner). However, the same may be true for women. Acts of violence may represent the frustration of powerlessness. A structural family systems perspective views acts of intimate partner violence as a way to rebalance an interactional hierarchy where there should be equity. In this construction, the person who hits in the relationship is the person who is at the bottom of the hierarchy trying to right the positional inequity in the relationship (Minuchin & Nichols, 1994). Considering that intimate partner violence tends to be mutual, this may signal that both relationship participants feel positionally disadvantaged within the relationship, though they may be differently situated in the larger culture.

The development of alternative constructions of IPV would not necessarily require disagreement with all assumptions of dominance theory. One could utilize MacKinnon’s (1989) conceptualization of sex inequality and expand upon how dominance and subordination, power and its maldistribution function and interact for multiple systems of oppression/privilege (e.g., race, class, heterosexism). Or we can decide—as some of MacKinnon’s contemporaries posited—that heterosexuality and marriage are social and legal mechanisms through which a woman’s personhood is erased, and women are herded into such arrangements of containment by the lack of support for alternative arrangements (Pateman, 1988; Rich, 1980). However, within
such arrangements, power and gender still may be locally and interactionally constructed. Or we can take a structural family systems perspective and view acts of violence (independent or mutual) as the attempt to access to relational power within an imbalanced family structure. We can simultaneously understand that larger external power structures constrain the authority of women (and other oppressed groups) outside this private sphere.

Intimate partner violence is a complex phenomenon that can be viewed through many different theoretical perspectives. It can be seen as an enactment of patriarchal control of women by men. It can be viewed as a gendered performance that is locally and interactionally constructed. It be viewed through examinations of intersecting oppressive systems or interactional hierarchies. Or intimate partner violence can be viewed from an ecologic perspective that suggests multi-level determinants of IPV and multiple levels through which systems of privilege and oppression (e.g., gender, race, class) operate. See Figure 1 for a depiction of the complex intersecting systems that could potentially relate to IPV.

We need new research that explores intimate partner violence in all of its complexity, including male- and female-perpetrated violence. We need research that examines the interactional dynamics that produce intimate partner violence and addresses the factors that lead to relational hierarchies (from individual to structural). We need research that explores the individual, relational, and social factors that relate to IPV perpetration and victimization. We need to investigate how structural inequities (based on gender, race, sexual orientation) contribute to, maintain, or interact with intimate partner violence. With further research, we can create multiple interventions that can address the myriad ways that intimate partner violence is locally enacted. We can create interventions that address the individual, relationship, community/societal, and structural determinants of intimate partner violence.
Implications for research, policy and practice. The problem definition and policy solution for intimate partner violence has begun to shift slowly away from the criminal justice system to the realm of public health and social service, which provides an opportunity to align research, therapeutic practice, and policy solutions with the values of such fields as social work, family therapy, and public health. From a public health and social service perspective, the goal of IPV prevention is to support behavior change by addressing individual, relational, family, peer, institutional, and community/social factors that contribute to IPV. This goal corresponds with social work ethics, which seeks to enhance human wellbeing; empower vulnerable and oppressed
populations; empower socioeconomically disadvantaged groups (which have the highest rates of IPV); focus on the social context and environmental conditions that contribute to IPV; and enhance the capacity of people to address their own needs (NASW Delegate Assembly, 2008). Such values are antithetical to a criminal justice approach to intimate partner violence, which labels and pathologizes individuals; focuses on punishment over rehabilitation; and, even when serving victims, is not empowering, but paternalistic in approach (Hudson, 1987). Emerging solutions, based on a public health and social service model, can include relational research and therapeutic interventions to engage individuals, couples, and communities.

To research the existence of different patterns of intimate partner violence in relationships does not suggest that intimate partner violence is gender-neutral or that there exists sexual symmetry in intimate partner violence. Rather, one can investigate the determinants and consequences of different types of relationship violence—explicitly considering sex differences. As George & Stith (2014) note:

Researchers and clinicians who advocate studying and/or treating females as primary perpetrators of intimate partner violence (IPV) or who advocate studying and/or treating couples who choose to remain together after experiencing IPV have been labeled “antifeminist.” …[however,] it is possible to be a “feminist”, based on a third-wave intersectional position that emphasizes social justice and advocates for eliminating essentialist practices, while rejecting patriarchy as the primary cause of IPV and embracing a variety of explanations and treatment options for individuals and couples in violent relationships…based on a more layered and complex model that “seeks both to hold violent partners accountable and to intervene to change couple interaction” (Stith et al., 2011, p. 10). (p.179)
This project takes a feminist position that emphasizes the importance of looking at data from both women and men as both potential victims and perpetrators of intimate partner violence, while underscoring the importance of sex oppression and other oppressive power systems in such violent interactions.

There is still much to learn about the correlates and consequences of different patterns of intimate partner violence, particularly among at-risk populations. It is critical to examine various patterns of intimate partner violence (i.e., not exclusively unilateral male violence against women) for a number of reasons. First, the phenomenon of female perpetration of intimate partner violence and mutual intimate partner violence are not well understood. Existing theories of intimate partner violence do not adequately address these phenomena. Research on female perpetration indicates that perpetration of partner violence has negative consequences for women, independent of their victimization in relationships (Milan et al., 2005). Far from being an indicator of empowerment or equality in a relationship, bidirectional aggression may indicate a particularly harmful relationship dynamic for both women and men. Moreover, while rates of male and female victimization may be similar, the effect of victimization is not. Women are more likely to become fearful of their partner, to be physically and psychologically injured by partner violence, and to die at the hands of their intimate partner than men (Straus, 2011).

Secondly, examining only female victimization may obscure other power structures operating in relationships that are not based on sex/gender (e.g., race, class, sexual orientation). Thirdly, it is important to understand all of the ways that intimate partner violence operates in relationships to build effective interventions to prevent IPV.

Couple-based interventions may be more effective than traditional programs to treat intimate partner violence with some populations (Lechtenberg et al., 2015; Mendez et al., 2014;
Stith et al., 2012). From a family systems perspective, treating one-half of a couple system can not only be ineffective at targeting the dynamics of couple violence but actually can create power imbalances that exacerbate violence in a couple system (Benson, McGinn, & Christensen, 2012; Goldenberg & Goldenberg, 2008). The Duluth model demands that men become subjects of the legal system (with race and class implications) and accept a viewpoint of IPV in which they assume unilateral responsibility and embrace empathy, emotional expressiveness, egalitarianism, accountability, and passivity (i.e., traditionally feminine gender norms; Babcock, Green, & Robie, 2004; Bumiller, 2010; Schrock & Padavic, 2007). This may exacerbate a relationship dynamic in which men feel disempowered and accelerate the use of IPV to balance that inequity. Along with treatment for men, women are supported and counseled to leave relationships (Buel, 1999), without necessarily building better relational skills, potentially replicating harmful patterns in their next relationships.

**Targeting Pregnant Adolescent Couples**

Intimate partner violence affects men and women of every age, race, and socioeconomic status. However, each population presents a different level of risk and may require a different strategy for screening, assessment, and intervention. Professionals must understand the risk factors and consequences of IPV for populations at special risk to intervene appropriately and mitigate this social and public health crisis. Expectant adolescent couples are a population requiring particular consideration. As many as one-half of adolescent women experience intimate partner violence; relationships tend to be bilaterally violent; and women suffer negative outcomes whether they are IPV victims, perpetrators, or both (Agrawal, Ickovics, Lewis, Magriples, & Kershaw, 2014; Milan et al., 2004; Milan et al., 2005).
The United States has the highest rate of teen pregnancy in the developed world (Sedgh, 2015). Although not all teen mothers have negative outcomes, adolescent childbearing has been linked to medical, socioeconomic, and developmental consequences for teen mothers and their children (Hoffman & Maynard, 2008). Adolescent pregnancy has been associated with pregnancy-induced hypertension, anemia, pre-term labor, and low birth weight babies, as well as depression, anxiety, lack of social support, and abuse (Arnold, Lewis, Maximovich, Ickovics, & Kershaw, 2010). Early pregnancy and parenting severely limits educational attainment for many adolescents, and parental education is one of the strongest predictors of child well-being for the next generation (Kane, Morgan, Harris, & Guilkey, 2013).

Research on intimate partner violence between expectant adolescent couples is critical because these couples are simultaneously negotiating the developmental tasks of adolescence and the transition to parenthood with fewer resources than adults (Cowan & Cowan, 2000). Such intense stressors can increase the likelihood that couples will engage in violence (Stiffman et al., 1996). Adolescent parenthood changes relationships and places expectations and commitments on partners that may or may not have continued their relationship in the absence of a pregnancy (Milan et al., 2005).

Intimate partner violence in the context of an adolescent pregnancy has been relatively neglected in the literature (Agrawal et al., 2014; Covington et al., 2001; Hickman et al., 2004; Lewis et al, 2017; Lindhorst & Oxford, 2008; Milan et al., 2005; Shneyderman & Kiely, 2013; Silverman et al., 2001; Udo, Lewis, Tobin, & Ickovics, 2016; Valentine, Rodriguez, Lapeyrouse, & Zhang, 2011). However, according to the most recent CDC surveillance data (i.e., Pregnancy Risk Assessment Monitoring System [PRAMS] 2011 data), pregnant women younger than 20 years of age are more than twice as likely to have been physically assaulted by their partner in
the 12 months prior to pregnancy than adult women (6.9% teens vs. 3.1% adults; CDC, 2011). Reported rates of IPV among pregnant adolescents in subpopulations vary widely (Mylant & Mann, 2008). A study of Northern Plains Native Americans reported that 61% of pregnant teens had experienced IPV (Mylant & Mann, 2008). A study of three urban centers in Connecticut reported 52% of teen mothers experienced IPV within the last year (Milan et al., 2005). A Galveston, Texas study reported that 12% of teens were physically abused by their baby’s father (Wiemann, Agurcia, Berenson, Volk, & Rickert, 2000). Methodological differences may account for variance in reported rates (Covington, Dalton, Diehl, Wright, & Piner, 1997). A study of IPV screening techniques found that 5% of pregnant teens reported IPV using standard screening, but 16% reported IPV using a structured repeated clinical measure (Covington, Dalton, Diehl, Wright, & Piner, 1997).

Intimate partner violence may present a special threat to the health of pregnant adolescents. Pregnant teens are more likely to suffer abdominal trauma from IPV than adults, who are more likely to be hit in the face or head, potentially masking IPV symptoms in pregnant teens (Covington et al., 2001). Pregnant teens are more likely to suffer additional abuse from their families and communities, whereas adults are abused by a partner almost exclusively (Covington et al., 2001; Parker, McFarlane, & Soeken, 1994). Abused adolescents are significantly more likely to begin prenatal care later in their pregnancy (Bailey & Daugherty, 2007). Teens victimized during pregnancy gain less weight, have infants who weigh less, and have more triage visits during pregnancy (Renker, 1999). They have a higher risk of first or second trimester bleeding, abnormal Pap results, smoking and substance use (Quinlivan, Petersen, Davy, & Evans, 2004; Quinlivan & Evans, 2001). They are more likely to have preterm labor and to miscarry (Curry, Perrin, & Wall, 1998; Jacoby, Gorenflo, Black, Wunderlich, &
Abused pregnant teens are more likely to have reproductive tract infections, DSM diagnoses, and newborn morbidity (e.g., sepsis, feeding difficulties) compared to those who did not report abuse (Quinlivan & Evans, 2001). They have higher medical costs and higher rates of anemia, sepsis, and depression (Quinlivan & Evans, 2001). Abused teen mothers have weaker attachment to their infants than non-abused teen mothers (Quinlivan & Evans, 2005). They have up to four times the risk of a repeat pregnancy within 1-2 years, and are more likely to drop out of high school than non-abused teen mothers (Curry, Doyle, & Gilhooley, 1998; Jacoby et al., 1999; Raneri & Wiemann, 2007). Teen mothers are almost three times more likely than non-pregnant/non-postpartum teens to be killed by a partner (Dietz, Rochat, Thompson, Berg, & Griffin, 1998).

**Gaps in the literature.** Most research on intimate partner violence during adolescent pregnancy focuses on one pattern of violence—i.e., male-perpetrated IPV against a female partner. Further, investigators have focused almost exclusively on the individual-level determinants and consequences of IPV (e.g., individual demography or psychology associated with victimization for women or perpetration for men). This ignores important relational issues. Intimate partner violence and adolescent pregnancy occur in the context of a relationship. Research that focuses on relational issues could better inform interventions to reduce IPV in expectant adolescent couples.

Relational issues that have not been adequately considered in the literature include: (1) intimate partner violence victimization of both women and men in expectant adolescent couples; (2) types of intimate partner violence found among expectant adolescent couples (physical/sexual IPV, psychological IPV) and how the prevalence differs for women and men; (3) relationship-level factors associated with IPV among expectant adolescent couples; (3)
differences between factors associated with IPV for women and men in expectant adolescent couples; (4) sexual risks associated with IPV for expectant adolescent couples; and (5) the actor and partner effects of both predictors of IPV and outcomes associated with IPV.

Adolescents at highest risk for intimate partner violence are also at highest risk for adverse sexual and reproductive health outcomes (Coker, 2007; Miller et al., 2007). Intimate partner violence and adolescent pregnancy share determinants such as poverty, child sexual abuse, and family violence (Anda et al., 2001; Florsheim et al., 2003; Horton, 2008; Mylant & Mann, 2008; O'Leary & Smith Slep, 2003; Raj, Silverman, & Amaro, 2000; Silverman et al., 2001; Van Horne, Wiemann, Berenson, Horwitz, & Volk, 2009). Initial evidence suggests that pregnant adolescent couples using IPV are vulnerable to adverse pregnancy and birth outcomes, high risk sexual behaviors, and the sequelae of such behaviors (e.g., sexually transmitted infections, rapid repeat pregnancies). It is critical to investigate how different types and patterns of intimate partner violence may impact the sexual health of young couples.

**Actor-Partner Interdependence Model**

Dyads are the fundamental unit of social relationships whether these relationships are mother-child, friend-friend, or romantic partners (Kenny, Kashy, Cook & Simpson, 2006). Interpersonal phenomena occur in a social context, and yet our bias as social scientists is to measure and analyze these phenomena at the individual level (Bond & Kenny, 2002). However, many psychosocial and relational phenomena are non-independent. For example, an individual may report his or her relationship satisfaction. However, that relationship satisfaction does not only describe something about the person who reported the satisfaction but may also describe something about, or be driven by, the person with whom he or she is in a relationship. Duncan and colleagues warned of a phenomenon they dubbed, “pseudounilaterality,” which describes the
interpretive error one makes when measuring a phenomenon at the individual level and ascribing a characteristic to that individual, when, in fact, an interactional process is occurring and it could be a characteristic of a partner or a product of the interaction between partners (Duncan, Kanki, Mokros, & Fiske, 1984). It can be misleading to examine interactive processes by measuring individuals in isolation. Further, many statistical tests assume independence of the values of observations, and dyadic data is non-independent.

Dyads can be non-independent in several ways that apply directly to couples in romantic partnerships. First, they can be compositionally non-independent; that is, members of couples are often similar before they are paired; this is described as “assortive mating” (e.g., same race, ethnicity, level of education; Robinson et al., 2017). Further, there can be partner effects by which a characteristic or behavior of one person in a couple affects their partner’s outcomes (e.g., her infidelity affects his relationship satisfaction; Kenny et al, 2006). Additionally, there can be mutual reciprocal influences, whereby each person’s outcomes directly affect the other person’s outcomes in a feedback loop (e.g., her affection level increases his affection level and his increases hers; Stanton & Welsh, 2012). And finally, there can be “common fate” non-independence, whereby both members of a couple are exposed to the same causal factors (e.g., neighborhood norms, stress of having a very sick baby; Ledermann & Kenny, 2011). Non-independence can be positive in couples (e.g., when one yells, the other yells) or negative (e.g., when one has more relational power the other has less relational power; Stanton & Welsh, 2012).

The Actor-Partner Interdependence Model (APIM) was devised to measure interdependence within interpersonal relationships (Cook & Kenny, 2005). In contrast to models that assume independent (uncorrelated) observations in the dependent variable, APIM is used when there is nonindependence of observation, as we would expect in romantic partner dyads.
APIM allows researchers to conduct dyadic analyses such that they may simultaneously estimate the effect of a person’s own independent variables on his or her dependent variables (actor effect) as well as their partner’s independent variables on his or her own dependent variables (partner effect; Figure 2; Cook & Kenny, 2005). Each member of a dyad is an actor and a partner; both members of a dyad have an actor effect and a partner effect.

Structural equation modeling (SEM) can be used to test the Actor-Partner Interdependence Model. SEM allows more than one equation to be estimated and tested at the same time and can specify the relations between parameters in different equations. The dyad is the unit of analysis (e.g., N=296 couples in this study, not 592 individuals) and the model is estimated from the covariance matrix of all the independent and dependent variables (Kline, 2015).
Research Questions

The research questions for this study aim to address gaps in the literature on intimate partner violence among expectant adolescent couples. This study asks:

(1) What are the patterns of intimate partner violence victimization within young expectant couples’ relationships over the perinatal period?

(2) What is the relationship between individual psychosocial (e.g., depression, stress, social support) and relational (i.e., attachment anxiety, attachment avoidance, equity, relational power, relationship satisfaction) factors of each member of an expectant adolescent couple during pregnancy and their own (actor effects) and their partner’s (partner effects) intimate partner violence victimization experiences postpartum?

(3) How do intimate partner violence victimization experiences of each member of an expectant adolescent couple relate to their own (actor effects) and their partner’s (partner effects) sexual risk (e.g., multiple partners, condom use, unprotected sex acts, sexually transmitted infections) across the perinatal period?

By answering these questions, we hope to contribute to the understanding of intimate partner violence among young expectant couples—including its course, predictors, and consequences—across the perinatal period.
CHAPTER III: METHODOLOGY

Aims and Objectives

Researchers, policymakers, and social service providers have approached intimate partner violence among expectant adolescent couples from vantage points that are colored by ideological and historical conceptualizations of adolescent pregnancy and intimate partner violence. These conceptual frameworks have influenced research questions, interpretations of data, policymaking, and social service delivery. This study describes the IPV experiences of both members of expectant adolescent couples across the perinatal period; identifies the relationship between individual psychosocial and relational factors during pregnancy and postpartum IPV victimization experiences; and examines the prospective relationship between IPV victimization and later sexual risk, empirically. Moving beyond assumptions regarding adolescent pregnancy and intimate partner violence, this study situates the issue of intimate partner violence in expectant adolescent couples in an ecologic framework. This framework allowed for theory-driven questions to be asked at both individual and dyad levels. These analyses may provide information valuable to the development of novel interventions to reduce IPV for expectant adolescent couples and to address the potential sexual health risks of IPV for such couples.

This study will begin to address the gaps and controversies in the literature. It examines both female and male IPV victimization across the perinatal period. It explores the individual psychosocial and relationship-level factors during pregnancy related to postpartum intimate partner violence victimization. Further, it examines the relationship between IPV victimization of women and men and their sexual risk across the perinatal period. It considers both physical/sexual IPV and psychological IPV. It utilizes the Actor-Partner Interdependence Model (Cook & Kenny, 2005) to examine both actor effects (the effect of one’s own independent
variables on one’s dependent variables) and partner effects (the effect of one’s partner’s independent variables on one’s own dependent variables).

The aims of this study are to:

1. Describe the intimate partner violence victimization experiences of expectant adolescent couples from pregnancy through twelve months postpartum.

2. Investigate the relationship between individual psychosocial (i.e., depression, stress, social support) and relational (i.e., attachment anxiety, attachment avoidance, equity, relational power, relationship satisfaction) factors during pregnancy and IPV victimization experiences six months postpartum for expectant adolescent couples, considering both actor and partner effects.

3. Examine the relationship between IPV victimization and later sexual risk (i.e., multiple partners, condom use, unprotected sex acts, sexually transmitted infections) among expectant adolescent couples—identifying both actor and partner effects—from pregnancy through twelve months postpartum.

**Research Questions**

The research questions for this study are:

1. What are the patterns of intimate partner violence victimization within young expectant couples’ relationships over the perinatal period?

2. What is the relationship between individual psychosocial (e.g., depression, stress, social support) and relational (i.e., attachment anxiety, attachment avoidance, equity, relational power, relationship satisfaction) factors of each member of an expectant adolescent couple during pregnancy and their own (actor effects) and their partner’s (partner effects) intimate partner violence victimization experiences postpartum?
(3) How do intimate partner violence victimization experiences of each member of an expectant adolescent couple relate to their own (actor effects) and their partner’s (partner effects) sexual risk (e.g., multiple partners, condom use, unprotected sex acts, sexually transmitted infections) across the perinatal period?

Study Methods

Study Design

This study involved secondary data analyses from the Parenting and Relationship Transition & Risk Study (PARTNRS). This dataset included 296 expectant adolescent couples and provided an opportunity to answer each research question through the quantitative analyses of data gathered through standardized psychosocial interviews (self-report data) and independent laboratory testing with both male and female participants in each couple. This dataset contained information on demographic, individual psychosocial, and relationship-level variables. It contained IPV victimization data from each member of the couple, allowing dyadic analyses, using the Actor-Partner Interdependence Model. Finally, this dataset contained longitudinal data, allowing for the examination of the relationship of variables over time. Permission was secured from the Principal Investigator (PI)\(^4\) of the original study to utilize this dataset for the purposes of this study.

Secondary data analysis is a valid approach to social science research (Goodwin, 2012). While primary data collection is considered by some to be the gold standard for social science research design, others have articulated the many benefits of secondary data analysis (Goodwin, 2012). Specifically, primary data collection is costly and time consuming, putting a burden on

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\(^4\) The Principal Investigator is Trace Kershaw, Ph.D., Chair and Professor, Social and Behavioral Sciences, Yale School of Public Health and an external member of the Dissertation Committee.
researchers, funders, and study participants. The Economic and Social Research Council (ESRC) in the UK, for example, has expressed a preference for secondary data use to ensure primary research efforts and funding are maximized (ESRC, 2011). Researchers have also suggested that using secondary data analysis to answer research questions reduces the intrusion and duplication imposed on study participants by primary data collection efforts (O'Connor & Goodwin, 2012). Some have suggested that secondary data analysis may reduce bias, as all researchers enter primary data collection with some idea of what they may (or hope to) find (Goodwin, 2012). Further, the feasibility of answering research questions through secondary data analyses is higher, because the study population and data are already available.

The use of secondary data has drawbacks, as well. Researchers using secondary data are limited to the particular questions asked within the existing dataset. Further, researchers are constrained by the quality of the existing dataset. This study is limited by the questions that were posed during original data collection and included in this dataset. However, this dataset contains the variables required to answer the research questions posed in this study. Thus, secondary data analyses are used.

**Study Sample**

The data for this study come from a longitudinal study of pregnant adolescent females and their male partners who are the fathers of their expected babies. Between July 2007 and February 2011, 296 pregnant adolescents and their male partners (592 total participants) were recruited from obstetric clinics and an ultrasound clinic in four university-affiliated hospitals in Connecticut to participate in a study on romantic attachment and the transition to parenting at Yale University (PI: Trace Kershaw, Ph.D.). Potential participants were screened for eligibility and research staff explained the study in detail and answered questions. If the baby’s father was
not present at the time of screening, research staff requested permission to contact him to explain the study; provided informational materials; and asked the potential participant to discuss the study with her partner.

Study inclusion criteria for couples were as follows: (a) female partner in the second or third trimester of pregnancy at time of baseline interview; (b) females between 14-21 years and males at least 14 years at time of the baseline interview; (c) both members of the couple report being in a romantic relationship with each other; (d) both report being the biological parents of the unborn baby; (e) both agree to participate in the study; and (f) both are able to speak English or Spanish. Because this was a longitudinal study, an initial run-in period was part of the eligibility criteria and participants were deemed ineligible if they could not be re-contacted before their estimated due date.

**Human participant protections.** A Yale research staff member obtained written informed consent at the time of the baseline interview. Parental consent was not required for minor participants, as participants were recruited from prenatal care and in the State of Connecticut, minors can consent to their own reproductive health care and their baby’s health care independently. Thus, the Yale University Human Investigation Committee and the Institutional Review Boards at study clinics determined that minors could independently consent to this related research. Participation was voluntary and confidential and did not influence the provision of health care or social services. Each study participant was reimbursed $25 at each data collection point for their time. All procedures were approved by the Yale University Human Investigation Committee and by Institutional Review Boards at study clinics. Further, the use of these data for the purposes of this study were evaluated and determined to be exempt from
review by the City University of New York Human Research Protections Program and Institutional Review Board (#2017-1301).

**Data Collection Procedures**

Separately, each member of the participating couple completed a structured interview via audio computer-assisted self-interviews (ACASI). ACASI interviews were completed by each member of the couple during pregnancy (Time 1); six months postpartum (Time 2); and twelve months postpartum (Time 3). A urine sample was also collected at each timepoint to test for current infection with *Chlamydia trachomatis* (Chlamydia) and *Neisseria gonorrhoeae* (Gonorrhea). Of 413 eligible couples, 296 (72.2%) couples enrolled in the study. Couples who agreed to participate were of greater gestational age (p = .03). Participation did not vary by any other pre-screened demographic characteristic (all p > .05). For the purposes of these secondary analyses, data were analyzed from the baseline and follow up assessments of all participants.

**Measures**

The following study measures were used to answer Research Questions 1-3. See Table 1.

**Intimate partner violence.** *Physical/Sexual IPV Victimization* was assessed using a modified version of the Revised Conflict Tactics Scale (CTS-2; Straus, 1996). Participants were asked, “Have you ever been shoved, punched, hit, slapped, or physically hurt by [initials of father/mother of baby, current partner]?” and “Has this happened since you have been pregnant?” to assess physical IPV victimization, and “Has [initials of father/mother of baby, current partner] ever used force (hitting, holding down, using a weapon) to make you have sex (vaginal, oral, or anal sex) with him/her?” and “Has this happened since you have been pregnant?” to assess sexual IPV victimization. A very small percentage of participants reported sexual IPV victimization across timepoints (0-2.4%); experiences of physical and sexual IPV...
were combined for each participant to create a combined dichotomous measure of physical/sexual IPV victimization for each timepoint.

_Psychological IPV Victimization_ was assessed using a modified version of the CTS-2 (Straus, 1996). Participants were asked, “Did [initials of father/mother of baby, current partner] ever swear at you, call you names (like fat, ugly, stupid) or insult you?” and “Has [initials of father/mother of baby, current partner] ever threatened to hurt you physically?” These experiences were combined for each participant to create a measure of psychological IPV victimization at each timepoint.

**Relationship factors.** _Romantic Attachment Avoidance and Romantic Attachment Anxiety_ were assessed using an adapted version of the 36-item Experiences in Close Relationships Inventory (Brennan, Clark, & Shaver, 1998). One item was modified from the original “I worry about being abandoned” to “I worry my partner will leave me” to better fit the study population. Participants responded to statements about their relationship on a 7-point Likert scale, ranging from _disagree strongly_ to _agree strongly_ on items such as, “I am nervous when partners get too close to me” and “I worry about being alone.” Attachment avoidance consists of 17 items and attachment anxiety consists of 19 items. Attachment avoidance score was comprised of the sum of responses to 17 questions with scoring ranging from 17 to 119, and attachment anxiety was comprised of the sum of responses to 19 questions with scoring ranging from 19 to 133. Reliability was good for both the avoidance ($\alpha = 0.85$) and anxiety subscales ($\alpha = 0.89$).

_Relationship Equity_ was assessed with a 21-item scale adapted from the Family Responsibility Index (Traupmann, Petersen, Utne, & Hatfield, 1981). Participants rated who contributes more to the relationship across a variety of dimensions (e.g. paying for things,
intelligence, showing affection) on a 5-point scale, ranging from My partner contributes much more than I do to I contribute much more than my partner does. The equity score was a count of all items that were answered as My partner and I contribute equally, with scores ranging from 0 to 21. Reliability for this measure was very good (α = 0.87).

Relationship Power was assessed by the 8-item Decision Making Dominance subscale of the 23-item Sexual Relationship Power Scale, which measures relationship power dynamics using two subscales (i.e., 15-item relationship control subscale and 8-item decision making dominance subscale; Pulerwitz, Gortmaker, & DeJong, 2000) Participants indicated who made social and sexual decisions for the couple (e.g., what you do together, when you talk about serious things) on a 3-point scale (1 = your partner, 2 = both of you equally, or 3 = you). Scores ranged from 8 to 24. Higher scores indicate more perceived power in the relationship. Reliability for this measure was somewhat low (α = 0.52).

Relationship satisfaction was assessed using the 32-item Dyadic Adjustment Scale (DAS; Spanier, 1976). Participants were asked about different facets of their relationship with their partner, including consensus on tasks and life decisions, partner communication and relationship cohesion, and affectional expression between partners. Sample items include, “How often do you or your partner leave the house after a fight,” and “How often do you laugh together?” A total relationship satisfaction score was computed by summing all items. Scores ranged from 0-151. The DAS has excellent internal consistency, with an alpha of (α = .96). The DAS has shown known-groups validity by discriminating between married and divorced couples on each item and has evidence of concurrent validity, correlating with the Locke-Wallace Marital Adjustment Scale (Spanier, 1976).
Psychosocial factors. Depression Symptoms were assessed using a 15-item version of the 20-item Center for Epidemiologic Studies-Depression Scale (CES-D), which was adapted to remove somatic symptoms that can be affected by pregnancy (e.g., eating, sleeping; Radloff, 1977). Participants indicated how often during the past week they felt or behaved in the specified way (e.g., “I felt that people disliked me,” “I was bothered by things that usually don’t bother me,” “I thought my life has been a failure”) on a 4-point scale ranging from 0=less than one day to 3=5-7 days. Items were summer to form a total score, ranging from 0 to 45. The CES-D discriminates strongly between patient and general population groups, is sensitive to levels of severity of depressive symptomatology, and reflects improvements after psychiatric treatment. This measure had good reliability ($\alpha = .82$).

Stress was assessed using the 10-item Perceived Stress Scale, which measures how unpredictable, uncontrollable, and overloaded individuals perceive their lives to be (Cohen & Williamson, 1988). Participants indicated how often in the past month they had experienced stressful feelings and thoughts (e.g., “upset by something that happened unexpectedly, unable to control important things in your life, that difficulties were piling up so high that you couldn’t overcome them”) on a 5-point scale ranging from never to very often. Responses were summed for a total score ranging from 0 to 40, with higher scores indicating more perceived stress. This measure had adequate reliability ($\alpha = .76$).

Social support was measured using a 10-item scale adapted from the Medical Outcomes Study Social Support Survey (Sherbourne & Stewart, 1991). The first item asks about how many close friends and relatives the participant has for descriptive purposes and is not scored. The remaining nine items ask how often others are available to the participant for companionship, assistance, and other forms of support (e.g., “How often is someone available to give you good
advice about a crisis?” “How often is someone available to take you to the doctor if you needed it?”). Participants respond on a 5-point scale from 0=none of the time to 4=all of the time. The nine items are summed to form a total score, ranging from 0 to 36, with higher scores indicating more social support. This measure had good reliability (α = .80).

Demographic factors and covariates. Demographics and covariates included age (years), race/ethnicity, relationship duration (months), and whether they were still in a relationship with the mother/father of their baby at each follow up timepoint. Because race/ethnicity was too highly correlated between members of a couple to add to the model, I used dichotomous variables for female Black race and female Latina race as covariates. Further, I used a dichotomous variable indicating whether the couple’s race was discordant (i.e., interracial).

Sexual risk outcomes.

Behavioral sexual risk outcomes. Sexual Behavior was determined using a scale developed by a team at Yale University (Kershaw, Magriples, Westdahl, Rising, & Ickovics, 2011). Participants were asked to describe their sexual partners and encounters in the past six months. Multiple partners at six and twelve months postpartum were assessed by asking participants how many people they had sex with in the past six months at each timepoint. Those who answered that they had more than one partner in the past six months were categorized as having multiple partners. For Aim 3 analyses, survey responses were combined across time, such that those who reported multiple partners at either six or twelve months postpartum were considered to have multiple partners in that analysis.

Percentage Condom Use was assessed by asking participants about each sexual partner they had over the past six months and then “in the past 6 months, of the times you had sexual
intercourse with [each partner], on a scale from 0% to 100% where 0% is never and 100% is always, what percent of the time did you use condoms.” Categorical responses for each 10% increment were offered. This variable was combined across all partners.

**Number of Unprotected Sex Acts** was assessed by asking participants about each sexual partner they had over the past six months and then about how many times they had sexual intercourse with that partner in the past month, and of those times, how many times did they use a condom. These data were combined across all partners to create a variable for the number of unprotected sex acts in the past month participants had.

**Biological sexual risk outcomes.** *Sexually transmitted infections (STIs)* were assessed by combining the following two variables to determine whether the participant had any sexually transmitted infections over the past six months. **Laboratory-Tested STIs** were measured by collecting urine samples from study participants at each follow up interview (six- and twelve-months postpartum) and testing for *Chlamydia trachomatis* (CT) and *Neisseria gonorrhoeae* (GC) using urine-based nucleic-acid amplification tests. Urine samples were analyzed at Quest Diagnostics laboratory in Connecticut. The first 146 urine samples were analyzed using the BD BeAware DNA Strand Displacement Amplification (SDA) test, while the remaining urine samples were analyzed using the APTIMA Combo 2 Chlamydia/Gonorrhea RNA, Transcription-Mediated Amplification (TMA) Assay because of its superior sensitivity (female urine=94.7% CT and 91.4% GC; male urine=97.9% CT and 98.5% GC). **Self-Reported STIs** for the past six months were assessed at six and twelve months postpartum for the following STIs: *Chlamydia trachomatis, Neisseria gonorrhoeae*, genital herpes, genital warts/HPV, and syphilis. Participants were asked the month and year of each positive diagnosis.
Table 1

Study Measures

<table>
<thead>
<tr>
<th>Level</th>
<th>Domain</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intimate partner violence</td>
<td>Physical/Sexual Intimate Partner Violence</td>
<td>Modified Revised Conflict Tactics Scale (CTS-2; Straus, 1996)</td>
</tr>
<tr>
<td></td>
<td>Victimization</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Psychological Intimate Partner Violence</td>
<td>CTS-2 (Straus, 1996)</td>
</tr>
<tr>
<td></td>
<td>Victimization</td>
<td></td>
</tr>
<tr>
<td>Relationship factors</td>
<td>Romantic Attachment Anxiety</td>
<td>Experiences in Close Relationships Inventory (ECRI) (Brennan, Clark, &amp; Shaver, 1998)</td>
</tr>
<tr>
<td></td>
<td>Romantic Attachment Avoidance</td>
<td>ECRI (Brennan, Clark, &amp; Shaver, 1998)</td>
</tr>
<tr>
<td></td>
<td>Relationship Equity</td>
<td>Family Responsibility Index (Traupmann, Petersen, Utne, &amp; Hatfield, 1981)</td>
</tr>
<tr>
<td></td>
<td>Relationship Power</td>
<td>Sexual Relationship Power Scale, Decision Making Dominance Subscale (Pulerwitz, Gortmaker, &amp; DeJong, 2000)</td>
</tr>
<tr>
<td></td>
<td>Relationship Satisfaction</td>
<td>Dyadic Adjustment Scale (Spanier, 1976)</td>
</tr>
<tr>
<td>Psychological factors</td>
<td>Depression Symptoms</td>
<td>Center for Epidemiologic Studies, Depression Scale (Radloff, 1977)</td>
</tr>
<tr>
<td></td>
<td>Stress</td>
<td>Perceived Stress Scale (Cohen &amp; Williamson, 1988)</td>
</tr>
<tr>
<td></td>
<td>Social support</td>
<td>Medical Outcomes Study Social Support Survey (Sherbourne &amp; Stewart, 1991)</td>
</tr>
<tr>
<td>Descriptors / Covariates</td>
<td>Age, Race, Relationship duration, Still in relationship at timepoint</td>
<td>Questions developed for study</td>
</tr>
<tr>
<td>Sexual health outcomes</td>
<td>Multiple sex partners in past 6 months at six or twelve months postpartum</td>
<td>Questions developed for study</td>
</tr>
<tr>
<td></td>
<td>Percent condom use in past 6 months across all partners, weighted by time having sex with partners</td>
<td>Questions developed for study</td>
</tr>
<tr>
<td></td>
<td># Unprotected sex acts in past 30 days across all partners</td>
<td>Questions developed for study</td>
</tr>
<tr>
<td></td>
<td>Self-Reported STDs</td>
<td>Chlamydia, gonorrhea, genital herpes, genital warts/HPV, hepatitis, syphilis</td>
</tr>
<tr>
<td></td>
<td>Laboratory-Tested STDs</td>
<td>Nucleic-acid amplification test for <em>Chlamydia trachomatis</em> and <em>Neisseria gonorrhoeae</em></td>
</tr>
</tbody>
</table>
Data Analyses

**Aim 1.** To meet Aim 1, descriptive statistics, such as frequency distributions or means and standard deviations, were obtained to summarize baseline demographic, psychosocial, and relational characteristics, as well as the longitudinal intimate partner violence victimization experiences and sexual risk of this study sample. Comparisons of baseline psychosocial and relational characteristics between female and male study participants were made using paired sample \( t \) tests. These analyses were conducted using IBM SPSS Statistics, version 24.

Data gathered from couples are interrelated and violate the statistical assumption of independence of observation. The Actor-Partner Interdependence Model (APIM) solves this dilemma, using a multilevel framework, whereby participants are nested within dyads (Kenny et al., 2006). Using this model, each individual within a couple functions as both an actor and a partner. Each individual’s outcomes can be influenced by his or her own predictor variables (e.g., *her* social support relates to *her* IPV victimization); this is considered an “actor effect.” Additionally, each individual’s outcomes can be influenced by their partner’s predictor variables (e.g., *his* social support relates to *her* IPV victimization); this is considered a “partner effect.”

The APIM with distinguishable dyads was utilized and path analyses were conducted using structural equation modeling (SEM) software to examine the relationship between male and female IPV victimization experiences over the perinatal period for both physical/sexual IPV and psychological IPV. Covariates included age, race, length of relationship, and whether they were still in a relationship with the mother/father of their baby at that timepoint. See Figure 3. Analyses were conducted using MPlus, version 8 (Muthen & Muthen, 2017). An \( \alpha \) level of .05 was used.
Figure 3. Aim 1: APIM conceptual models examining: (1) physical/sexual IPV victimization across the perinatal period and (2) psychological IPV victimization across the perinatal period. Paths labeled a = actor effects; paths labeled p = partner effects. Single headed arrows indicate predictive paths. Double headed arrows indicate correlations. Covariates include age, race, relationship duration, still in a relationship with co-parent at that timepoint.
**Aim 2.** To meet Aim 2, the APIM with distinguishable dyads was used. Path analyses were conducted using structural equation modeling (SEM) software to investigate the relationship between individual psychosocial and relational factors of women and men in couples during pregnancy and their postpartum IPV victimization experiences. The predictor variables of both members of the couple are regressed on the outcome variables of both members of the couple in a single model. Separate models were created for postpartum physical/sexual IPV victimization as an outcome (Figure 4) and postpartum psychological IPV victimization as an outcome (Figure 5). Covariates included age, race, length of relationship, whether they were still in a relationship with the co-parent of their baby at that timepoint, and whether they experienced that type of IPV during pregnancy. All analyses were conducted using MPlus, version 8 (Muthen & Muthen, 2017). An $\alpha$ level of .05 was used.

**Aim 3.** To meet Aim 3, the APIM with distinguishable dyads was used. Structural equation modeling (SEM) was used to examine the relationship between IPV victimization experiences of women and men in couples and their later sexual risk. Structural models were tested using path analysis between intimate partner violence victimization experiences measured at three times (pregnancy, six months postpartum, and twelve months postpartum) and sexual risk at two times (six months postpartum and twelve months postpartum). Age, race, length of relationship, and whether they were still in a relationship with the mother/father of their baby at that timepoint were included as covariates in the structural model. Separate models were created for postpartum physical/sexual IPV victimization as an outcome (Figure 6) and postpartum psychological IPV victimization as an outcome (Figure 7).
Figure 4. Aim 2: APIM conceptual model examining psychological and relational predictors of physical/sexual IPV victimization. Paths indicated by $a=$ actor effects; paths indicated by $p=$ partner effects. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint, and IPV during pregnancy.
Figure 5. Aim 2: APIM conceptual model examining psychological and relational predictors of psychological IPV victimization. Paths indicated by a= actor effects; paths indicated by p=partner effects. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint, and IPV during pregnancy.
Figure 6. Aim 3: APIM conceptual model examining the relationship between physical/sexual IPV victimization and later sexual risk outcomes. Paths indicated by a= actor effects; paths indicated by p=partner effects. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates include age, race, relationship duration, still in a relationship with co-parent at that timepoint.
Figure 7. Aim 3: APIM conceptual model examining the relationship between psychological IPV victimization and later sexual risk outcomes. Paths indicated by $a =$ actor effects; paths indicated by $p =$ partner effects. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates include age, race, relationship duration, still in a relationship with co-parent at that timepoint.
All models were evaluated for goodness of fit, using three fit statistics: the chi-square; the root mean square error of approximation (RMSEA), and the comparative fit index (CFI), as multiple fit statistics are recommended to assess goodness of fit (Jaccard & Wan, 1996). The chi-square indicates how well the data fits the proposed model, with non-significant chi-square values indicating a good fit. However, the chi-square is sensitive to sample size and other complexities (Hooper, Coughlan, & Mullen, 2008). The RMSEA tests the poorness of fit, with values ranging from 0 to 1, where 0 represents a perfect fit and values less than .08 demonstrate a good fit (Loehlin, 1998). The CFI assesses the goodness of fit, with values ranging from 0 to 1, where higher values indicate better fit and a value greater than .9 indicates a good fit (Cangur & Ilker, 2015; Jaccard & Wan, 1996; Loehlin, 1998). The model was evaluated by testing the effects specified in the model to determine which variables had an influence on each outcome. Lastly, R-square values were calculated for each outcome variable to determine the proportion of variance explained in the outcomes by the predictors (Kershaw et al., 2008; Loehlin, 1998).

For these models, missing data were addressed using the Full Information Maximum Likelihood (FIML) method, which handles missing data within the analysis model. In FIML, the population parameters are estimated that would most likely produce the estimates from the sample data that is analyzed. FIML parameter estimates have been found to have less bias and less sampling variability than listwise deletion, pairwise deletion, and mean imputation in cases where data is missing completely at random, missing at random, and nonrandom missing (Enders, 2001).

This study hypothesized that: (1) intimate partner victimization of women at one timepoint would influence intimate partner victimization of women at the next timepoint (actor effect) and (2) intimate partner victimization of men at one timepoint would influence intimate
partner victimization of men at the next timepoint (actor effect), indicating stability of IPV victimization across the perinatal period. Further, (3) intimate partner victimization of women at one timepoint would influence intimate partner victimization of men at the next timepoint (partner effect) and (4) intimate partner victimization of men at one timepoint would influence intimate partner victimization of women at the next timepoint (partner effect), indicating that IPV victimization leads to reciprocity by one’s partner over time.

Further, it was hypothesized that (5) psychosocial and relational factors of women during pregnancy would relate to intimate partner violence victimization of women six months postpartum (actor effect) and (6) psychosocial and relational factors of men during pregnancy would relate to intimate partner violence victimization of men six months postpartum (actor effect). Additionally, (7) psychosocial and relational factors of women during pregnancy would relate to intimate partner violence victimization of men six months postpartum (partner effect) and (8) psychosocial and relational factors of men during pregnancy would relate to intimate partner violence victimization of women six months postpartum (partner effect).

Additionally, it was hypothesized that (9) intimate partner violence victimization of women would lead to increased sexual health risk for women at the next timepoint (actor effect) and (10) intimate partner violence victimization of men would lead to increased sexual health risk for men at the next timepoint (actor effect). Finally, it was hypothesized that (11) intimate partner violence victimization of women would lead to increased sexual health risk for men at the next timepoint (partner effect) and that (12) intimate partner violence victimization of men would lead to increased sexual health risk for women at the next timepoint (partner effect).
CHAPTER IV: RESULTS

Characteristics of the Participating Couples

A total of 296 couples participated in this study (Table 2). Participants were mostly Black (44%) or Latinx (38%). In 28.4% of couples, individuals reported being a different race/ethnicity than their partner. Female participants ranged from 15 to 21 years of age and had a mean age of 18.7 years ($SD=1.6$); male participants ranged from 14 to 40 years of age and had a mean age of 21.0 ($SD=4.1$). Couples had been together a mean of 26.9 months ($SD=19.5$) at baseline, and relationship lengths ranged from 4.8 to 124.5 months. Median relationship duration was 20.4 months.

Table 2

Descriptive Summary of Participants

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Mean (SD) or % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Race/ethnicity</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td></td>
</tr>
<tr>
<td>Black, non-Latina</td>
<td>39.5 (117)</td>
</tr>
<tr>
<td>Latina</td>
<td>39.5 (117)</td>
</tr>
<tr>
<td>White or other, non-Latina</td>
<td>21.0 (62)</td>
</tr>
<tr>
<td>Men</td>
<td></td>
</tr>
<tr>
<td>Black, non-Latino</td>
<td>48.6 (144)</td>
</tr>
<tr>
<td>Latino</td>
<td>36.5 (108)</td>
</tr>
<tr>
<td>White or other, non-Latino</td>
<td>14.9 (44)</td>
</tr>
<tr>
<td>Interracial relationship</td>
<td>28.4 (84)</td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>18.7 (1.6)</td>
</tr>
<tr>
<td>Men</td>
<td>21.3 (4.1)</td>
</tr>
<tr>
<td>Length of relationship (months)</td>
<td>26.9 (19.51)</td>
</tr>
</tbody>
</table>
Baseline psychosocial and relational characteristics are reported in Table 3. Conservatively\(^5\), 22% of women and 17% of men were at risk for clinical depression. Mean stress scores for both women and men indicated moderate stress, with only 25.7% of women and 33.6% of men reporting low stress and 5.4% of women and 3.4% of men reporting high stress. Women had significantly higher scores for attachment anxiety \((t=3.370, p=.001)\), depression \((t=3.281, p=.001)\), and stress \((t=3.038, p=.003)\) than men during pregnancy. Men had significantly lower scores for relational power \((t=2.864, p=.004)\) and social support \((t=5.661, p<.001)\) than women during pregnancy.

Table 3

*Comparisons between female and male study participants on baseline psychosocial and relational characteristics at baseline*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Women</th>
<th>Men</th>
<th>Paired t</th>
<th>(P) value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Relational</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Attachment Anxiety</td>
<td>61.1 (21.6)</td>
<td>55.8 (18.7)</td>
<td>3.370</td>
<td>.001**</td>
</tr>
<tr>
<td>Attachment Avoidance</td>
<td>46.4 (15.7)</td>
<td>48.9 (16.5)</td>
<td>-1.970</td>
<td>.050</td>
</tr>
<tr>
<td>Equity</td>
<td>9.43 (3.90)</td>
<td>9.41 (4.25)</td>
<td>.057</td>
<td>.955</td>
</tr>
<tr>
<td>Relational power</td>
<td>2.00 (.253)</td>
<td>1.94 (.257)</td>
<td>2.864</td>
<td>.004**</td>
</tr>
<tr>
<td>Relationship satisfaction</td>
<td>116.10 (20.27)</td>
<td>114.32 (21.189)</td>
<td>1.614</td>
<td>.108</td>
</tr>
<tr>
<td><strong>Psychosocial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>10.55 (7.39)</td>
<td>8.88 (6.62)</td>
<td>3.281</td>
<td>.001**</td>
</tr>
<tr>
<td>Stress</td>
<td>16.73 (6.24)</td>
<td>15.45 (6.31)</td>
<td>3.038</td>
<td>.003**</td>
</tr>
<tr>
<td>Social support</td>
<td>28.20 (7.56)</td>
<td>24.67 (9.38)</td>
<td>5.661</td>
<td>.000**</td>
</tr>
</tbody>
</table>

\(^*P<.05, \ **P<.01\)

\(^5\) CES-D scores of 16 or greater indicate depressive symptomatology consistent with clinical depression (Lewinsohn, Seeley, Roberts, & Allen, 1997). However, our removal of the somatic items that are consistent with pregnancy (e.g., changes in diet, sleep) make this a higher threshold, and thus a probable underestimate of depression.
Intimate partner violence and sexual risk across the three study timepoints are reported in Table 4. Of the 296 couples who completed baseline data collection, 231 couples completed six-month postpartum data collection and 265 couples completed twelve-month postpartum data collection. A majority of couples were still together at six months (84.2%) and twelve months (75.7%) postpartum. During pregnancy, 4.4% of women and 17.6% of men reported physical/sexual IPV and 28.0% of women and 43.4% of men reported psychological IPV. Six months postpartum, 10.2% of women and 15.8% of men reported physical/sexual IPV and 20.9% of women and 30.6% of men reported psychological IPV. Twelve months postpartum, 11.1% of women and 11.9% of men reported physical/sexual IPV and 24.9% of women and 30.1% of men reported psychological IPV. See Figure 8.

The prevalence of psychological IPV for both women and men, and the prevalence of physical/sexual IPV for men only, was highest during pregnancy and decreased six months postpartum. However, physical/sexual IPV for women was lowest during pregnancy and increased six months postpartum, indicating that pregnancy is a time of higher conflict in couples, but that pregnancy may serve as a protective period for women for types of IPV that could harm the pregnancy. Both physical/sexual and psychological IPV increased slightly between six and twelve months for women and decreased modestly for men during the same period.

Study participants engaged in risky sexual behavior and contracted sexually transmitted infections at high rates across timepoints. During pregnancy, 6.1% of women and 12.2% of men had sex with multiple partners in the past 6 months; at six months postpartum, 7.8% of women and 7.4% of men had multiple partners; and at twelve months postpartum, 11.5% of women and 14.2% of men had multiple partners. Participants failed to use condoms during sex 66-83% of
Table 4

Study participants’ intimate partner violence victimization experiences and sexual health outcomes across the perinatal period

<table>
<thead>
<tr>
<th></th>
<th>During Pregnancy</th>
<th>6 Months Postpartum</th>
<th>12 Months Postpartum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M(SD) or % (n)</td>
<td>M(SD) or % (n)</td>
<td>M(SD) or % (n)</td>
</tr>
<tr>
<td><strong>Predictors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Physical/Sexual IPV victimization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>4.4 (13)</td>
<td>10.2 (23)</td>
<td>11.1 (29)</td>
</tr>
<tr>
<td>Men</td>
<td>17.6 (52)</td>
<td>15.8 (31)</td>
<td>11.9 (27)</td>
</tr>
<tr>
<td>Psychological IPV victimization</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>28.0 (83)</td>
<td>20.9 (47)</td>
<td>24.9 (65)</td>
</tr>
<tr>
<td>Men</td>
<td>43.4 (128)</td>
<td>30.6 (60)</td>
<td>30.1 (65)</td>
</tr>
<tr>
<td><strong>Longitudinal Covariates</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Still in relationship with co-parent</td>
<td>100 (296)</td>
<td>84.2 (171)*</td>
<td>75.7 (178)**</td>
</tr>
<tr>
<td><strong>Outcomes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple sex partners, past 6 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>6.1 (18)</td>
<td>7.8 (23)</td>
<td>11.5 (30)</td>
</tr>
<tr>
<td>Men</td>
<td>12.2 (36)</td>
<td>7.4 (22)</td>
<td>14.2 (34)</td>
</tr>
<tr>
<td>Percentage of condom use, past 6 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>17.0 (28.0)</td>
<td>32.8 (39.9)</td>
<td>31.2 (38.9)</td>
</tr>
<tr>
<td>Men</td>
<td>21.2 (31.4)</td>
<td>33.7 (39.1)</td>
<td>32.4 (39.7)</td>
</tr>
<tr>
<td>Number of unprotected sex acts, past month</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>9.3 (11.1)</td>
<td>7.7 (11.9)</td>
<td>7.8 (10.3)</td>
</tr>
<tr>
<td>Men</td>
<td>9.8 (16.3)</td>
<td>7.6 (12.8)</td>
<td>7.3 (11.0)</td>
</tr>
<tr>
<td>Sexually transmitted infections, past 6 months (lab + self-report)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>15.5 (46)</td>
<td>7.1 (21)</td>
<td>8.8 (26)</td>
</tr>
<tr>
<td>Men</td>
<td>8.4 (25)</td>
<td>6.8 (20)</td>
<td>6.8 (20)</td>
</tr>
</tbody>
</table>

*Data for this variable missing for 28 couples. **Data for this variable missing for 30 couples.
Figure 8. Percentage of participants reporting IPV victimization by IPV type and timepoint.
the time across the perinatal period. The mean number of unprotected sex acts in the past month at each timepoint ranged from 7.3 to 9.8. Sexually transmitted infection prevalence over the past six months in couples was 15.5% among women and 8.4% among men during pregnancy; 7.1% among women and 6.8% among men six months postpartum, and 8.8% among women and 6.8% among men twelve months postpartum.

**Aim 1: Description of IPV Experiences of Expectant Adolescent Couples from Pregnancy through 12 Months Postpartum**

Two separate APIM models were tested. In one model, the actor and partner effects of physical/sexual IPV over time were examined. In a second model, the actor and partner effects of psychological IPV over time were examined. Throughout these analyses, figures present (1) statistically significant predictive paths (single headed red arrows) and (2) statistically significant correlations (double headed blue arrows) between women and men’s exogenous variables or between the residuals of their endogenous variables. Parameter estimates are presented with standard errors in parentheses (in text and figures). $R^2$ values are presented above variables, indicating the amount of variance for which the model accounts, for each outcome variable. Covariates for Aim 1 included age, race, relationship duration, and whether they were still in a relationship with the co-parent at that timepoint.

Actor effects were found at each timepoint for both members of the couple for physical/sexual IPV. Physical/sexual IPV victimization of women during pregnancy was associated with physical/sexual IPV victimization of women at six months postpartum ($B=1.205$, $SE=.294$, $p<.001$). Physical/sexual IPV victimization of women at six months postpartum was associated with physical/sexual IPV victimization of women at twelve months postpartum ($B=.500$, $SE=.194$, $p=.010$). Physical/sexual IPV victimization of men during pregnancy was
associated with physical/sexual IPV victimization of men at six months postpartum (B=1.112, SE=.262, p<.001). Physical/sexual IPV victimization of men at six months postpartum was associated with physical/sexual IPV victimization of men at twelve months postpartum (B=.441, SE=.181, p=.015). See Figure 9.

That is, female victimization at each timepoint was related to female victimization at the next timepoint and male victimization at each timepoint was related to male victimization at the next timepoint across the perinatal period, indicating the stability of physical/sexual IPV victimization over the perinatal period for these couples. However, there were no significant partner effects across time for physical/sexual IPV. That is, there was no indication that one partner’s physical/sexual victimization at any timepoint related to the other partner’s victimization at the next point.

For physical/sexual IPV over time, the hypothesized model appears to be a good fit to the data. The chi-square is 36.247; the RMSEA is .018; the CFI=.898. The model accounted for 15.6% and 20.3% of the variance in physical/sexual IPV at six months postpartum for women and men, respectively, and 50.8% and 25.6% of the variance in physical/sexual IPV at twelve months postpartum for women and men, respectively.

Actor effects were found across each time point for women for psychological IPV. Psychological IPV victimization of women during pregnancy was associated with psychological IPV victimization of women at six months postpartum (B=1.031, SE=.318, p=.001). Psychological IPV victimization of women at six months postpartum was associated with psychological IPV victimization of women at twelve months postpartum (B=.684, SE=.218, p=.002). That is, psychological IPV victimization at each timepoint related to psychological IPV
victimization at the next timepoint for women, indicating the stability of that type of victimization for women over the perinatal period. This was different for men.

Men’s psychological IPV victimization during pregnancy was associated with his psychological IPV victimization six months postpartum (B=1.306, SE=.297, p<.001), but his psychological IPV victimization at six months postpartum was not associated with his psychological IPV victimization at twelve months postpartum (B=.247, SE=.170, p=.145), indicating that psychological victimization was stable from pregnancy through the early postpartum period for men, but not across the entire postpartum year.

Partner effects were found for psychological IPV. Men’s psychological victimization during pregnancy was related to his partner’s psychological victimization at six months postpartum (B=.712, SE=.266, p=.007) and women’s psychological victimization at six months postpartum was related to her partner’s psychological victimization at twelve months postpartum (B=.462, SE=.190, p=.015). For psychological IPV over time, the hypothesized model appears to be a good fit to the data. The chi-square is 36.118; the RMSEA is .000; the CFI=1.000. The model accounted for 40.5% and 42.6% of the variance in psychological IPV at six months postpartum for women and men, respectively, and 50.4% and 42.1% of the variance in psychological IPV at twelve months postpartum for women and men, respectively. See Figure 10.
Figure 9. Actor and partner effects of physical/sexual IPV victimization over the perinatal period. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=36.247, p=.320; \text{RMSEA}=.018, 90\% \text{CI}=0.000-0.048; \text{CFI}=.898.$
Figure 10. Actor and partner effects of psychological IPV victimization over the perinatal period. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=32.118, p=.511$; RMSEA=0.000, 90% CI=0.000-0.041; CFI=1.000.
Aim 2: Investigation of the Relationship between Individual Psychosocial and Relational Factors During Pregnancy and IPV Victimization Experiences Postpartum

Two separate APIM models were tested. In one model, the actor and partner effects of a set of individual psychosocial- and relational-level factors during pregnancy on physical/sexual IPV victimization at six months postpartum were examined, controlling for physical/sexual IPV victimization during pregnancy. See Figure 11. In a second model, the actor and partner effects of a set of individual psychosocial- and relational-level factors during pregnancy on psychological IPV victimization at six months postpartum were examined, controlling for psychological IPV victimization during pregnancy. See Figure 12. The first model, indicated that relationship equity had a negative actor effect for both women (B= -1.499, SE=.537, p=.005) and men (B= -.729, SE=.331, p=.028) on physical/sexual IPV, whereby the greater the equity reported by each member of the couple during pregnancy, the less likely that member was to report physical/sexual IPV at six months postpartum. Further, an actor effect was found for stress for men only (B=5.719, SE=2.707, p=.035), such that the more stress a man reported during pregnancy, the more likely he was to report physical/sexual IPV at six months postpartum. An actor effect was found for men’s social support in a negative direction (B= -3.857, SE=1.439, p=.007); that is, the more social support reported by men during pregnancy, the less likely it was that he would report physical/sexual IPV six months postpartum. No partner effects were identified. That is, women and men’s psychological and relational factors related to their own risk of postpartum IPV victimization, but not to their partner’s risk of IPV victimization, indicating that these factors are related to victimization, but not perpetration risk.

Several variables were correlated between male and female partners in couples. Depression, stress, attachment avoidance, equity, and relationship satisfaction were correlated
between partners. Relationship power was negatively correlated, such that higher relational power reported by one member of a couple was associated with lower relational power reported by the other member of the couple. For psychological and relational factors during pregnancy and postpartum physical/sexual IPV, the hypothesized model appears to be a good fit to the data. The chi-square is 264.339; the RMSEA is .051; the CFI=.899. The model accounted for 45.2% and 41.4% of the variance in physical/sexual IPV at six months postpartum for women and men, respectively.

The second model indicated actor effects but no partner effects for psychosocial and relational factors during pregnancy and psychological IPV six months postpartum. An actor effect was found for social support for women (B=3.914, SE=2.639, p=.042), such that with higher levels of social support reported during pregnancy, the more likely she was to report psychological IPV by her partner six months postpartum. A negative actor effect for relationship satisfaction was found for women (B= -1.769, SE=.893, p=.048), such that the higher her relationship satisfaction scores during pregnancy, the less likely she was to report psychological IPV six months postpartum. Additionally, a negative actor effect for relational power for men was found (B= -1.041, SE=.361, p=.004), whereby the more relational power men reported during pregnancy, the less likely they were to report psychological IPV six months postpartum. Depression, stress, attachment avoidance, equity, and relationship satisfaction were positively correlated between partners, and relationship power was negatively correlated between partners during pregnancy. For psychological and relational factors during pregnancy and post-partum psychological IPV, the hypothesized model appears to be a good fit to the data. The chi-square is 339.211; the RMSEA is .065; the CFI=.836. The model accounted for 55.8% and 47.7% of the variance in psychological IPV at six months postpartum for women and men, respectively.
Figure 11. Actor and partner effects of psychosocial and relational factors during pregnancy on physical/sexual IPV victimization at 6 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint, and IPV during pregnancy. Model fit statistics: $\chi^2=264.339, p=0.000; RMSEA=0.051, 90\% CI=0.041-0.061; CFI=0.899$. 
Figure 12. Actor and partner effects of psychosocial and relational factors during pregnancy on psychological IPV victimization at 6 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint, and IPV during pregnancy. Model fit statistics: $\chi^2=339.211$, $p=0.000$; RMSEA=0.065, 90% CI=0.056-0.075; CFI=0.836.
Aim 3: Examination of the Relationship between IPV Victimization and Later Sexual Risk

Eight separate APIM models were tested to evaluate the relationships between two types of intimate partner violence (i.e., physical/sexual and psychological) on four sexual risk outcomes (i.e., multiple partner, percent condom use, number of unprotected sex acts and sexually transmitted infections). The first four models examined physical/sexual intimate partner violence and sexual risk.

Physical/Sexual IPV Victimization and Sexual Risk

The first model examined the actor and partner effects of physical/sexual IPV on whether participants reported having had sex with multiple partners in the past six months at either six or twelve months postpartum. See Figure 13. An actor effect was found for women only, whereby her physical/sexual IPV at six months postpartum was related to her reporting multiple partners at any postpartum timepoint (B=.505, SE=.176, p=.004). A similar effect was not found for men, indicating physical/sexual victimization experiences may differentially impact sexual risk behaviors by sex. No other significant actors or partner effects were found for this outcome. The hypothesized model appears to be a good fit to the data. The chi-square is 47.865; the RMSEA is .028; the CFI=.863. The model accounted for 38.8% and 29.4% of the variance in multiple sex partners for women and men, respectively.

The next model examined physical/sexual IPV and percent condom use across all partners in the past six months. See Figure 14. A negative partner effect was found for physical/sexual IPV during pregnancy and condom use at six months postpartum (B= -.328, SE=.151, p=.030), such that IPV victimization during pregnancy for women was related to less condom use for men at six months postpartum. A similar partner effect was not found for men, again indicating there may be sex differences in the relationship between victimization
experiences and sexual risk. No other significant effects were found for condom use. The hypothesized model appears to be a good fit to the data. The chi-square is 47.602; the RMSEA is .014; the CFI=.950. The model accounted for 3.4% and 13.1% of the variance in condom use at six months postpartum for women and men, respectively, and 7.7% and 7.8% of the variance in condom use at twelve months postpartum for women and men, respectively.

The next model examined physical/sexual IPV and number of unprotected sex acts across all partners in the past month. See Figure 15. No significant effects were found for number of unprotected sex acts. The hypothesized model appears to be a good fit to the data. The chi-square is 49.810; the RMSEA is .019; the CFI=.985. The model accounted for 7.7% and 7.5% of the variance in number of unprotected sex acts at six months postpartum for women and men, respectively, and 7.7% and 12.0% of the variance in number of unprotected sex acts at twelve months postpartum for women and men, respectively.

The next model examined physical/sexual IPV and sexually transmitted infections. See Figure 16. A significant partner effect was found, such that men’s physical/sexual IPV during pregnancy was related to their partner reporting a sexually transmitted infection at six months postpartum (B=.663, SE=.280, p=.018). A similar partner effect was not found for women’s physical/sexual IPV. No other significant effects were found for sexually transmitted infections. The hypothesized model appears to be a good fit to the data. The chi-square is 49.383; the RMSEA is .016; the CFI=.979. The model accounted for 20.2% and 19.5% of the variance in STIs at six months postpartum for women and men, respectively, and 16.0% and 12.3% of the variance in STIs at twelve months postpartum for women and men, respectively.
Figure 13. Actor and partner effects of physical/sexual IPV across the perinatal period on multiple partners at 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=47.865, p=0.156$; RMSEA=0.028, 90% CI=0.000-0.051; CFI=0.863.
Figure 14. Actor and partner effects of physical/sexual IPV across the perinatal period on percentage of condom use at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=47.602, p=0.367$; RMSEA=0.014, 90% CI=0.000-0.042; CFI=0.950.
Figure 15. Actor and partner effects of physical/sexual IPV across the perinatal period on number of unprotected sex acts at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=49.810, p=0.288$; RMSEA=0.019, 90% CI=0.000-0.044; CFI=0.985.
Figure 16. Actor and partner effects of physical/sexual IPV across the perinatal period on sexually transmitted infections at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=49.383, p=0.338$; RMSEA=0.016, 90% CI=0.000-0.043; CFI=0.979.
Psychological IPV Victimization and Sexual Risk

The first model examined the actor and partner effects of psychological IPV on participants reporting having had sex with multiple partners in the past six months at either six or twelve-months postpartum. See Figure 17. Actor effects were found for both women (\(B=.340, SE=.169, p=.044\)) and men (\(B=.436, SE=.192, p=.023\)), whereby each partner’s psychological IPV at six months postpartum was related to their own report of having multiple partners at six or twelve months postpartum. No significant partner effects were found, indicating that victimization, but not perpetration, relates to having multiple sex partners for both women and men. This finding differs from that of physical/sexual IPV, which related to having multiple partners for women only, indicating that physical/sexual IPV and psychological IPV may be different both in the effects on sexual risk and the sex differences in such associations. The hypothesized model appears to be a good fit to the data. The chi-square is 40.901; the RMSEA is .013; the CFI=.984. The model accounted for 33.3% and 37.4% of the variance in multiple sex partners for women and men, respectively.

The second model examined the actor and partner effects of psychological IPV on the percentage of time participants used a condom when having sex in the past 6 months. See Figure 18. No significant actor or partner effects were found. This differs from physical/sexual IPV, indicating that different types of IPV relate differently to sexual risk outcomes. The hypothesized model appears to be a good fit to the data. The chi-square is 42.732; the RMSEA is .000; the CFI=1.000. The model accounted for 3.1% and 27.9% of the variance in condom use at six months postpartum for women and men, respectively, and 5.4% and 4.7% of the variance in condom use at twelve months postpartum for women and men, respectively.
The next model examined the actor and partner effects of psychological IPV on the number of unprotected sex acts in the past month. See Figure 19. No actor effects were found. One negative partner effect was detected; specifically, women’s psychological IPV victimization at six months postpartum was related to her partner reporting fewer acts of unprotected sex at twelve months postpartum (B = -.280, SE = .140, p = .046). No other significant effects were detected. The hypothesized model appears to be a good fit to the data. The chi-square is 42.853; the RMSEA is .016; the CFI = 1.000. The model accounted for 9.6% and 7.2% of the variance in number of unprotected sex acts at six months postpartum for women and men, respectively, and 13.5% and 14.4% of the variance in number of unprotected sex acts at twelve months postpartum for women and men, respectively.

The final model examined the actor and partner effects of psychological IPV on sexually transmitted infections. See Figure 20. No significant effects were detected. That is, psychological IPV for women and men at any time point was not significantly related to either partner acquiring a new sexually transmitted infection at the next timepoint. The hypothesized model appears to be a good fit to the data. The chi-square is 43.325; the RMSEA is .000; the CFI = 1.000. The model accounted for 8.2% and 7.3% of the variance in STIs at six months postpartum for women and men, respectively, and 5.8% and 3.3% of the variance in STIs at twelve months postpartum for women and men, respectively.
Figure 17. Actor and partner effects of psychological IPV across the perinatal period on multiple partners at 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=40.901$, $p=0.387$; RMSEA=0.013, 90% CI=0.000-0.043; CFI=0.984.
Figure 18. Actor and partner effects of psychological IPV across the perinatal period on percent condom use at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=42.732$, $p=0.569$; RMSEA=0.000, 90% CI=0.000-0.036; CFI=1.000.
Figure 19. Actor and partner effects of psychological IPV across the perinatal period on number of unprotected sex acts at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=42.853$, $p=0.563$; RMSEA=0.016, 90% CI=0.000-0.036; CFI=1.000.
Figure 20. Actor and partner effects of psychological IPV across the perinatal period on sexually transmitted infections at 6 and 12 months postpartum. Only statistically significant predictive paths and statistically significant correlations between exogenous variables/the residuals of endogenous variables between women and men are shown. Parameter estimates are presented with standard errors in parentheses. Single headed arrows (red) indicate predictive paths. Double headed arrows (blue) indicate correlations. Covariates included age, race, relationship duration, still in a relationship with co-parent at that timepoint. Model fit statistics: $\chi^2=43.325$, $p=0.543$; RMSEA=0.000, 90% CI=0.000-0.036; CFI=1.000.
CHAPTER V: DISCUSSION

Intimate partner violence among expectant adolescent couples is not a well understood phenomenon. Few studies have examined IPV victimization of both female and male partners during the perinatal period (Van Parys, Verhamme, Temmerman, & Verstraelen, 2014). Further, few studies have investigated both psychological and relational factors associated with IPV victimization (Frye & Karney, 2006; O’Leary & Slep, 2006). A limited number of studies have examined the sexual health outcomes associated with intimate partner violence among adolescents, and fewer still among adolescents in the perinatal period (Teitelman, Dichter, Cederbaum, & Campbell, 2008). Few studies have examined how these associations differ by type of IPV (e.g., psychological, physical) and by the sex of the victim (i.e., female, male). These gaps in the literature may help to explain why so few effective interventions exist to reduce intimate partner violence in the perinatal period, particularly for the youngest couples (Van Parys et al., 2014). Pregnancy represents a moment when couples are at high risk for conflict, are well connected to the health system, and are motivated to make behavioral changes to support a healthy pregnancy and a healthy family; thus, it is a window of opportunity for intervention (Kershaw et al, 2009; Phelan, 2010). It is critical to better understand expectant adolescent relationships to be able to design interventions tailored to meet the needs of these young families.

Intimate Partner Violence across the Perinatal Period

Consistent with the majority of IPV literature, though counter to common assumptions about intimate partner violence, a higher percentage of men reported both physical/sexual IPV and psychological IPV than women at every timepoint in this study (Straus, 2011). While the prevalence of IPV of each type is higher among men than women at every time point, it is important to note that this study did not examine the severity of IPV incidents, and previous
research indicates that women are more likely to be severely victimized and injured by IPV than men (Black et al., 2011).

More women and men in this study reported psychological IPV than they did physical/sexual IPV at each timepoint; about twice as many women and men reported psychological IPV compared to physical/sexual IPV. This is a larger discrepancy than found in previous literature on adults, which finds similar or slightly higher rates of psychological IPV among adult women (Thompson et al., 2006) and during the perinatal period (Charles & Perreira, 2007). However, it is consistent with literature on IPV among adolescents, which has reported much higher rates of psychological IPV than physical IPV among couples (Halpern, Oslak, Young, Martin, & Kupper, 2001; Richards, Tillyer, & Wright, 2017). Considerable overlap of different IPV types are reported across the literature, indicating many couples experiencing physical IPV also experience psychological IPV (Thompson et al., 2006).

More men experienced physical/sexual IPV during pregnancy than any other point during the perinatal period. More women and men experienced psychological IPV during pregnancy than any other point during the perinatal period. This suggests that conflict was highest during pregnancy for couples. However, physical/sexual IPV victimization was lowest for women during pregnancy. This suggest that many couples were able to manage their conflict in a way that did not physically endanger the pregnancy—i.e., women used both physical and psychological aggression, while men used more psychological aggression during pregnancy (Scribano, Stevens, Kaizar, & NFP-IPV Research Team, 2013).

There is disagreement in the literature about whether women are at higher risk of IPV during pregnancy or whether pregnancy serves as a protective period for women experiencing IPV, as the current study suggests (Taylor & Nabors, 2009). Unfortunately, there is limited
literature that prospectively examines the trajectory of IPV across the perinatal period (Hahn, Gimore, Aguayo, & Rheingold, 2018). Several researchers have found elevated levels of IPV among women during the perinatal period (Chang, Berg, Saltzman, & Herndon, 2005; Martin et al., 2004; Richardson et al., 2002). In contrast, a study of low-income pregnant women found that physical IPV decreased from pre-pregnancy to pregnancy and then increased postpartum beyond baseline levels (Scribano et al., 2013). Another study of urban adolescents similarly reported that IPV overall (i.e., any physical, sexual, psychological) and psychological IPV increase as women are further postpartum (Agrawal et al., 2014). Two other recent studies have found lower physical/sexual IPV rates during pregnancy compared to other timepoints, including lower rates of lethal IPV during pregnancy (Taylor & Nabors, 2009; Vatner & Bjørkly, 2010). One of the first studies to examine adolescent IPV across the perinatal period found that most women reporting postpartum IPV had not been victimized during pregnancy and that physical IPV decreased in prevalence, but increased in severity, across the perinatal period (Harrykissoon, Rickert, & Wiemann, 2002).

Intimate partner violence was prevalent among participants in this study. More than 10% of both women and men reported physical/sexual IPV over the perinatal period (except for women during pregnancy), and well over 20% of women and men reported psychological IPV over this period. Perinatal IPV prevalence in this study is higher than that of studies of adult populations (Hahn et al., 2018; Thompson et al., 2006). However, the prevalence of perinatal IPV in this study is comparable to figures reported in other studies of young, poor, and racial/ethnic minority populations (Agrawal et al., 2014; Hahn et al., 2018; Scribano et al., 2013).
Stability of Physical/Sexual IPV across the Perinatal Period

Physical/sexual IPV appears to be a particularly stable type of IPV across the perinatal period. Physical/sexual IPV at any timepoint was related to the continuation of that type of IPV victimization at the next timepoint for both women and men. Past victimization relates to future victimization for women and men across the perinatal period with respect to physical/sexual IPV. This is consistent with study hypotheses.

However, there was no indication that physical/sexual IPV victimization at any timepoint related to a partner’s physical/sexual IPV victimization at the next timepoint. That is, being victimized at one timepoint did not relate to one’s partner being victimized at the next timepoint (i.e., retaliation). This would refute the notion that physical/sexual IPV perpetration is instigated by an IPV victimization experience (e.g., fighting back, reciprocity). This disconfirms study hypotheses positing that this study would detect partner effects, such that IPV victimization at one timepoint would influence IPV victimization of one’s partner at the next timepoint.

While no studies have been identified that have examined the stability of physical/sexual IPV across the perinatal period and include both members of expectant adolescent couples, there have been a few studies among married adults that may be informative. Schumacher and Leonard’s (2005) study of married adults found that past physical aggression behaviors by both wives and husbands were good predictors of their continued physical aggression across time. However, this study also found that physical aggression by both wives and husbands at some (but not all) timepoints was associated with physical aggression by their partner at the next timepoint, suggesting reciprocity, which we did not observe in the current study. Murphy and O’Leary (1989) reported similar (inconsistent) partner effects, whereby physical aggression of wives and husbands at some timepoints during early marriage was associated with their partners’
physical aggression at a later timepoint. Again, we did not observe such reciprocity in physical/sexual IPV among expectant adolescent couples across the perinatal period in this study.

**Stability of Psychological IPV across the Perinatal Period**

Psychological IPV victimization was stable across the perinatal period for women in couples, but less so for men. Women’s psychological IPV victimization at any timepoint was related to the continuation of that IPV victimization at the next timepoint. Men’s psychological IPV victimization during pregnancy was quite high and contributed to their continued victimization at six months postpartum; however, men’s psychological victimization at six months was not related to their continued victimization at twelve months postpartum. Men’s psychological IPV victimization during pregnancy was related to their partner’s victimization at six months postpartum. Women’s psychological IPV victimization at six months postpartum, in turn, contributed to both their own and their partner’s psychological IPV victimization at twelve months postpartum. This suggests there may be some reciprocal and retaliatory psychological IPV occurring throughout the perinatal period.

Nearly one-half of men in this study reported psychological IPV, and nearly one in five reported physical/sexual IPV, during pregnancy. More than one-quarter of women reported psychological IPV during pregnancy. This high level of psychological aggression during pregnancy not only related to the continuation of psychological IPV in the early postpartum period for women and men, but may also have related to psychological retaliation by men, who may have been holding back (at least physical aggression) during pregnancy for the safety of the baby. Women appear to be experiencing psychological IPV as a stable phenomenon across time,
and may be retaliating against men’s psychological IPV in the early postpartum period (six months) by the later postpartum period (twelve months).

Again, no studies have been identified that have examined the stability of psychological IPV across the perinatal period and include both members of expectant adolescent couples. However, studies among married adults may be informative. Schumacher and Leonard (2005) found that husbands’ verbal aggression did not relate to wives’ verbal aggression at any later timepoint, and wives’ verbal aggression related to husbands’ later verbal aggression inconsistently—i.e., at one timepoint only.

**Need for Further Study**

It is unclear why physical/sexual IPV is stable for both women and men, while psychological IPV is stable only among women in this study. Further, it is unclear why physical/sexual IPV victimization does not relate to one’s partner’s later victimization, but psychological IPV does. Perhaps among young, largely unmarried (i.e., 85% unmarried) couples, retaliating with psychological IPV has lower perceived costs to the relationship or to personal safety than physical/sexual IPV, discouraging retaliation against one’s partner with physical aggression (Copp, Giordano, Longmore, & Manning, 2015; Milan et al., 2005). Because this phenomenon has not been investigated bilaterally in this way among expectant adolescent couples in previous studies, it will be important to conduct further research to investigate these findings more fully.

**Psychological and Relational Risk Factors for IPV**

This study identified several psychological and relational risk factors, which could be identified through screening efforts during pregnancy, that predict the use of aggression in the postpartum period. These risk factors differ for physical/sexual IPV and psychological IPV, and
they differ by sex. This is consistent with previous literature. Próspero (2008) found that some factors (i.e., prior victimization, controlling behaviors) were associated with multiple types of IPV perpetration (i.e., psychological, physical, sexual), whereas other factors were only associated with one specific type of IPV perpetration (i.e., violent attitudes related to physical IPV only; female sex, high masculinity, and low femininity each predicted psychological IPV perpetration only; male sex predicted sexual IPV perpetration). Further, Próspero (2008) found that sex itself was a significant individual predictor of certain types of IPV perpetration (i.e., women were more likely to perpetrate psychological IPV; men were more likely to perpetrate sexual IPV).

**Psychological and Relational Factors That Predict Physical/Sexual IPV**

**Relationship equity.** Previous literature has linked relationship equity and other indicators of power dynamics within couples to intimate partner violence (Dixon & Graham-Kevan, 2011; Gomez, 2011; Kaura & Allen, 2004; Teitelman et al., 2008). Further, higher relational equity among parenting adolescents has been associated with better relationship adjustment and improved infant outcomes (Gibson, Callands, Magriples, Divney, & Kershaw, 2015; Kershaw et al, 2013). In this study, higher relationship equity during pregnancy was associated with less physical/sexual IPV six months postpartum for both women and men, indicating that equity in relationships is an important protective factor against physical/sexual IPV in the perinatal period. Equity was the only significant predictor of women’s physical/sexual IPV victimization identified. Screening for relational equity could help identify couples at highest risk of IPV. Further, equity is a relational concept, which suggests that a relationship-level intervention may be appropriate to build or strengthen equity in relationships to protect women and men from physical/sexual IPV.
Social support. Social support has long been recognized as an important factor related to women’s physical and mental health during the perinatal period (Collins, Dunkel-Schetter, Lobel, & Scrimshaw, 1993; Gjerdingen, Froberg, & Fontaine, 1991; Norbeck & Tilden, 1983). Additionally, social support has been found to mitigate the mental health effects of IPV for women (Coker et al., 2002; Coker, Watkins, Smith, & Brandt, 2003). However, far less attention has been given to men’s need for social support during the perinatal period (Backström & Hertfelt Wahn, 2011; Deave & Johnson, 2008; Hildingsson, & Sjöling, 2011; Premberg, Hellström, & Berg, 2008). This study identified men’s level of social support as an important protective factor against physical/sexual IPV. While men reported significantly less social support than women at baseline, men’s social support was found to be protective against their physical/sexual IPV victimization six months postpartum.

Stress. Men reported significantly less stress than women during pregnancy in this study. However, higher stress among men related to increased physical/sexual IPV victimization of men. While the literature suggests that male stress is related to male IPV perpetration, our findings indicate that male stress is associated with male victimization (Caetano, Ramisetty-Mikler, Caetano Vaeth, & Harris, 2007; Moore, & Stuart, 2005). Previous literature has linked stress to both perpetration and victimization for women (Hammet, Karney, & Bradbury, 2018). Victimization of men in relationships is understudied, and further research is warranted to investigate this association.

Implications for intervention to prevent physical/sexual IPV. Social support has long been considered a buffer that can mitigate the effects of stress (Cohen & Wills, 1985). Among women, social support has been shown to mitigate the stress of IPV victimization, specifically (Beeble, Bybee, Sullivan, & Adams, 2009; Carlson, McNutt, Choi, & Rose, 2002; Coker et al.,
Screening for stress and social support could help identify couples at risk for IPV. Further, interventions that focus on stress reduction and improving social support for couples during pregnancy may be protective against physical/sexual IPV victimization for both women and men. A group-based intervention for couples that focused on stress reduction and relationship health (e.g., increasing equity) could provide a mechanism to build social support between young couples who participate.

**Psychological and Relational Factors That Predict Psychological IPV**

Entirely different factors related to psychological IPV than physical/sexual IPV. Further, women and men shared no predictors of psychological IPV.

**Social support.** There is considerable literature to support the benefits of social support for mitigating the effects of IPV on women’s physical and mental health (Beeble, Bybee, Sullivan, & Adams, 2009; Carlson, McNutt, Choi, & Rose, 2002; Coker et al., 2002; Coker et al., 2003; Thompson et al., 2000). However, the current study found that social support was associated with increased psychological IPV victimization for women. No studies were found in previous literature that identified a link between social support and increased risk for psychological IPV victimization.

It is important to note that these analyses controlled for psychological IPV during pregnancy, making it unlikely that women are seeking additional social support because of existing IPV, and that this prior IPV experience is ultimately driving this association. Instead, it is possible that men, who have significantly less social support during pregnancy than women, perceive their partner’s higher social support as a relational threat (i.e., “I am jealous that she is more engaged with her social network than with me”), an object of resentment (i.e., “why does she get all the support and I get none”), or a threat to their fatherhood status (i.e., “everyone
supports her as a mother, but no one supports me as a father, therefore I am perceived as the lesser parent”), and responds with psychological aggression (Campbell, Oliver, & Bullock, 1993; Edin, Hogberg, Dahlgren, & Lalos, 2009).

There is a growing literature that identifies some fathers’ feelings of neglect and dismissal in pregnancy care, pregnancy and parenting classes, and support programs (Backström & Hertfelt Wahn, 2011; Deave & Johnson, 2008; Hildingsson, & Sjöling, 2011; Premberg, Hellström, & Berg, 2008). Most literature only examines social support for mothers during pregnancy, and considers fathers as potential sources of social support only, ignoring men’s need for social support during the perinatal period. This finding requires further investigation to confirm this association and determine the potential mediators responsible for this association.

**Relationship satisfaction.** Relationship satisfaction has been consistently associated with intimate partner violence in the literature, particularly for women. A meta-analysis that included 32 studies found both an overall relationship between relationship satisfaction and IPV and a sex difference for that relationship; specifically, the meta-analysis found a stronger relationship between relationship satisfaction and IPV victimization for women than for men across studies (Stith, Green, Smith, & Ward, 2008). The current study found that women’s relationship satisfaction was protective against psychological IPV. The more satisfied women were with their relationship during pregnancy, the less likely they were to experience psychological IPV six months postpartum.

**Relational power.** The literature generally finds imbalances of relational power and control to be risk factors for increased IPV (Capaldi, Knoble, Shortt, & Kim, 2012; Giordano, Copp, Longmore, & Manning, 2016; Kaura, & Allen, 2004). While men in this study reported significantly less relational power than women and high levels of psychological IPV during
pregnancy, men’s relational power during pregnancy was found to be protective against their psychological IPV victimization six months postpartum. A study of women in South Africa found that higher relational power was associated with lower psychological IPV during the perinatal period, and the current study’s findings suggest this may apply to men, as well (Groves, McNaughton-Reyes, Foshee, Moodley, & Maman, 2014).

**Implications for intervention to prevent psychological IPV.** Screening for relationship satisfaction and relational power may help to identify those most at risk for IPV. Further, relationship satisfaction and relational power are relational concepts, which suggests that a relationship-level intervention may be appropriate to address the risks for psychological IPV during the postpartum period. Further, if imbalances in perceived social support are driving the finding that higher social support in women relates to increased psychological IPV, then a relationship-level intervention may be best suited to address that, as well. Screening programs and couple interventions could focus on the range of factors that are associated with multiple types of IPV. Addressing issues of power and equity, attending to issues of stress and social support as a couple, and improving overall relationship satisfaction could be key facets of a screening or intervention program that could reduce intimate partner violence in the perinatal period and build long-term relational skills for young families.

**Sexual Risk Consequences of Intimate Partner Violence**

**Expectant Adolescents are at High Risk for Adverse Sexual Health Outcomes**

On average, couples had been in a relationship for more than two years at the start of the study, and the vast majority were still in a relationship a year later. Yet, the prevalence of sexually transmitted infections was high at baseline and across the perinatal period. Using Pregnancy Risk Assessment Monitoring System (PRAMS) data from 5 states that included...
nearly 13,000 women, Williams and colleagues found that 3.3% of women reported a curable STI during pregnancy, with higher prevalence among those who were young, Black, socially disadvantaged, and had experienced IPV (Williams, Harrison, Llata, Smith, & Meites, 2018). The STI prevalence over the previous 6 months for women and men during pregnancy in the current study was much higher: 15.5% and 8.4%, respectively. Although couples were being tested and linked to treatment for the most common treatable bacterial STIs (i.e., Chlamydia trachomatis and Neisseria gonorrhoea) at each study timepoint, postpartum STI incidence remained double that reported by Williams and colleagues (2018). Thus, our study participants were engaging in high risk sexual behaviors (e.g., multiple partners, unprotected sex), and represent a population at particularly high risk of adverse sexual health outcomes.

**Intimate Partner Violence during Pregnancy and Sexual Risk**

**Women’s physical/sexual IPV victimization during pregnancy and male condom use at six months postpartum.** Several studies have demonstrated that physical IPV victimization of women is related to reductions in condom use—and more specifically, women’s agency to negotiate their partner’s condom use in relationships—though not in the perinatal period, specifically (Bogart et al., 2005; Cavanaugh et al., 2013; Gielen, McDonnell, & O’Campo, 2002; Hess et al., 2012; Silverman et al., 2011). The current study found that women’s physical/sexual victimization during pregnancy was related to her partner using condoms a lower percentage of the time six months postpartum. While the prevalence of women’s physical/sexual victimization was lowest during pregnancy, it may be that those who were being victimized during this vulnerable period had the least agency to negotiate condom use with their partners.

**Men’s physical/sexual IPV victimization during pregnancy and female STI acquisition at six months postpartum.** Conversely, the prevalence of men’s physical/sexual
IPV victimization was highest during pregnancy. Men’s physical/sexual IPV victimization during pregnancy was related to their female partner’s acquisition of a sexually transmitted infection six months postpartum. Several studies have found that physical IPV perpetration by men against their female partners is associated with high risk sexual behavior and male STI acquisition (Casey et al., 2016; Decker et al., 2009; Raj, Reed, Welles, Santana, & Silverman, 2008), and several studies have linked female IPV victimization with female STI acquisition (Seth, DiClemente, & Lovvorn, 2013; Wu, El-Bassel, Witte, Gilbert, & Change, 2003), including during pregnancy (Johnson & Hellerstedt, 2002). No studies were identified that examined male IPV victimization by female partners and sexual risk outcomes. However, studies of male IPV victimization by male partners may be informative. A recent systematic review and meta-analysis concluded that male IPV victimization by a male partner was associated with increased unprotected sex and HIV infection (Buller, Devries, Howard, & Bacchus, 2014). Further, previous research has found that same sex and opposite sex couples have similar health outcomes related to intimate partner violence in the United States (Blosnich & Bossarte, 2009).

Since male victimization was not linked to male STI acquisition and female victimization was not linked to female or male STI acquisition, the data from this study suggest that the relationship dynamics surrounding female perpetration (male victimization) are associated with women’s sexual risk-taking outside of their primary relationship, which is similar to what other studies have found with male perpetration (Casey et al., 2016; Decker et al., 2009).

**Psychological IPV victimization during pregnancy not related to sexual health outcomes at six months postpartum.** Several previous studies have found that psychological IPV victimization of women by a male partner is related to sexual risk (Ali et al., 2017; Bergmann & Stockman, 2015; Montgomery et al., 2015; Overstreet, Willie, Hellmuth, &
Sullivan, 2015; Peasant et al., 2018; Rosenbaum, Zenilman, Rose, Wingood, & DiClemente, 2016). Only one study was identified that examined this relationship during pregnancy. A cross-sectional study of pregnant women in Brazil found that psychological IPV during pregnancy was related to having multiple partners sex and having sex without condoms during pregnancy (Audi, Segall-Correa, Santiago, & Perez-Escamilla, 2012). No studies were identified that examined psychological IPV victimization of men by a female partner; though the systematic review and meta-analysis of the relationship between IPV and sexual risk among men who have sex with men cited above included psychological IPV (Buller et al., 2014).

While psychological IPV was highest during pregnancy for both women and men in the current study, no significant relationships were found between psychological IPV during pregnancy and unprotected sex, condom use, or sexually transmitted infections at six months postpartum. This was not due to having low sexual risk during pregnancy or postpartum. Women and men reported consistently high levels of multiple partners, unprotected sex, and sexually transmitted infections throughout the perinatal period. Psychological IPV during pregnancy was unrelated to any sexual risk outcome among women and men, however.

**Intimate Partner Violence during the Postpartum Period and Later Sexual Risk**

In the postpartum period, both physical/sexual IPV and psychological IPV were associated with later sexual risk outcomes.

**Postpartum IPV and multiple partners.** Physical/sexual IPV has been linked previously with having multiple sex partners (El Bassel et al., 2007), including among adolescent women (Silverman et al., 2011) and postpartum adolescent women (Martínez et al., 2017). No prior literature was identified that linked psychological IPV and multiple sex partners, specifically; however, psychological IPV of women by male partners has been linked to other
sexual risk behaviors and outcomes for women, such as unprotected sex, exchanging sex for commodities (e.g., drugs, money), having sex with a partner at high risk for HIV (i.e., IV drug user, HIV positive/unknown HIV status, partner having sex with others, sex trade), and sexually transmitted infection acquisition (Ali et al., 2017; Montgomery et al., 2015; Overstreet et al., 2015; Peasant et al., 2018; Rosenbaum et al., 2016). Further, no studies examining male IPV victimization by female partners and its relationship to sexual risk were identified.

In the current study, both physical/sexual IPV and psychological IPV victimization of women at six months postpartum were associated with having multiple sex partners across the perinatal period. For men, only psychological (and not physical/sexual) IPV victimization at six months postpartum was associated with having multiple partners across the perinatal period. Qualitative research has suggested that adolescent women may seek multiple sex partners as solace or as an act of resistance or revenge when they experience physical/sexual or psychological IPV in their relationships (Teitelman, Tennille, Bohinski, Jemmott, & Jemmott, 2013). Similar to women, men may be seeking comfort or reprisal through multiple sex partners when they experience psychological IPV in their relationships, as well.

**Psychological IPV victimization of women at six months postpartum related to reductions in men’s unprotected sex at twelve months postpartum.** Psychological IPV victimization of women has been associated with increases in women’s unprotected sex in the literature (Brady, Gruber, & Wolfson, 2016; Montgomery et al., 2015; Rosenbaum et al., 2016). However, no studies were identified that linked psychological IPV victimization of women with men’s frequency of unprotected sex acts. However, in this study, psychological IPV victimization of women at six months postpartum was related to their male partners reporting fewer acts of unprotected sex at twelve months postpartum. This finding may indicate that men
who perpetrate psychological IPV are engaging in fewer sex acts overall or that they are using protection more often to avoid a repeat pregnancy, because of relationship discord. Alternatively, it may be that men perpetrating psychological IPV are aware that their partners are engaging in sex with multiple partners at higher rates and are choosing not to engage in unprotected sex with their partner, given the increased risk for STIs and HIV this introduces.

**Implications for Intervention to Reduce Sexual Risk among Couples Experiencing IPV**

Both physical/sexual and psychological IPV are associated with particular sexual risk outcomes for women and men across the perinatal period, indicating the need for intervention with couples engaging in IPV behaviors during the perinatal period. Expectant adolescent couples require screening and intervention to reduce their risk of intimate partner violence and sexual risk. Couple-level interventions aimed at reducing intimate partner violence among expectant adolescent couples could explicitly address sexual risk in relationships. A program focused on building healthy relationships and families could include content that targeted mental health, relational skills, and health behaviors that would mitigate both intimate partner violence and sexual risk sequelae. Further, the links between engaging in IPV behaviors and sexual risk consequences in relationships could be made clear to participants to reduce both adverse health outcomes. Relationship strengthening interventions with these young couples can serve a dual purpose, building long-term skills and strategies for safety and health.

**Practice Implications**

Intimate partner violence is prevalent in the relationships of expectant adolescent couples. Both members of expectant adolescent couples should be screened for both physical/sexual and psychological intimate partner violence during prenatal care. Further, expectant couples in violent relationships were found to be at increased risk of engaging in risky sexual behaviors and having adverse sexual health outcomes. Both members of the couple should be targeted for
interventions to reduce their sexual risk in the perinatal period. Even young couples in long term relationships, as these couples typically were, require intervention to reduce their sexual risk, as they continue to engage in high risk behaviors and contract sexually transmitted infections at high rates across the perinatal period. Couple-based HIV/STI counseling and testing could be offered to both women and their partners during prenatal care to improve family health.

This study found both psychosocial and relational factors during pregnancy to be important predictors of postpartum IPV for women and men. Women and men had distinct predictors. Interventions that target psychosocial factors (e.g., stress, social support), as well as those that target relational issues (e.g., equity, power, satisfaction) could be delivered to couples during pregnancy. Pregnancy provides an excellent window of opportunity for intervention with young couples. It is a time that couples are regularly engaged with the healthcare system and are highly motivated to make behavioral changes in anticipation of becoming parents (Bloch & Parascandola, 2014; Ickovics, Niccolai, Lewis, Kershaw, & Ethier, 2003; Lee et al., 2015).

Prenatal care and ultrasound visits would be excellent recruitment opportunities to engage young couples in interventions to improve their psychosocial health and relationships. Interventions that support young couples at risk for IPV could improve the physical and mental health and safety for young families. It could also support the continuation of relationships that are beneficial to mothers, fathers, and children in these families. Couple-based interventions could be designed to address psychosocial and relationship health, family violence prevention, and sexual health in an integrated format that considers the strengths and risk factors of both women and men and recognizes these relationships as potential sources of mutual support. Couple-based interventions that address relationship issues such as power and equity can address gender, as well as race, class, and other potential levels of hierarchy or oppression.
Policy Implications

Screening for intimate partner violence during pregnancy has been recommended by the American Congress of Obstetricians and Gynecologists (ACOG), the American Medical Association (AMA), and the US Preventive Services Task Force (Fletcher, Clements, & Bailey, 2016; US Preventive Services Task Force, 2018). Yet studies demonstrate that prenatal care providers do not regularly screen for intimate partner violence, with only 22-39% being screened during prenatal care (Deshpande & Lewis-O’Connor, 2013; O’Reilly, Beale, & Gillies, 2010). Barriers to screening include a lack of screening instruments appropriate to the care context (Fletcher et al., 2016), a lack of knowledge/training for providers on intimate partner violence screening and intervention (Bacchus, Mezey, & Bewley, 2002; O’Reilly, 2007), and a lack of effective intervention resources to offer patients when IPV is detected (Bacchus, 2002; Sugg & Inui, 1992). Further, resources provided to obstetric clinicians to address intimate partner violence are often outdated and based on traditional conceptualizations of intimate partner violence, rather than current evidence (e.g., Deshpande & Lewis-O’Connor, 2013). No recommendations have been identified that suggest screening of expectant fathers, despite men’s high rates of victimization.

Appropriate, effective, evidence based interventions to reduce intimate partner violence must be developed and validated, so prenatal care providers may have interventions to offer to expectant parents who are identified during screening as being in a violent relationship. Screening during prenatal care should include both parents, as intimate partner violence is a relational phenomenon and both women and men are affected by relationship violence. Finally, prenatal clinicians need to be appropriately trained to address, and screen for, intimate partner violence. A recent Cochrane systematic review and meta-analysis concluded that screening for
intimate partner violence in healthcare settings was not effective at increasing referrals to supportive agencies or improving outcomes (O’Doherty et al., 2014). The detection rates for IPV were lower in healthcare than best estimates for prevalence of IPV, indicating that screenings are not being effectively performed (O’Doherty et al., 2014). Better provider training and effective intervention programs must be established to successfully reduce intimate partner violence during the perinatal period, particularly for populations at highest risk, such as expectant adolescent couples.

**Study Limitations**

This study had several limitations. Data were collected by self-report and are subject to measurement error, recall bias, and underreporting of sensitive topics. An attempt was made to minimize these issues using ACASI technology at the point of data collection. The measures used in this study do not assess the context of intimate partner violence (e.g., size and strength of the person committing an act, the dynamics of the relationship between them, the history of aggression in that relationship, who initiated the interaction and how). Qualitative studies are needed to address the context and motivations of acts of IPV. Further, we did not assess violence severity (e.g., injury) in these analyses, nor the emotional sequelae of violent acts (e.g., fearfulness of partner, post-traumatic stress). The measures asked about acts of violence during proscribed timeframes, which may not uncover more systematic patterns of violence and control. Further, this study did not include every possible act of violence that could have occurred (e.g., stalking, coercive controlling behaviors). Additionally, only female-male couples were included in this sample. While women who have sex with both women and men are at increased risk of having a teen pregnancy and being victimized by intimate partner violence, only female-male couples were included in this study, which was primarily interested in HIV risk behaviors.
(Goldberg, Reese, & Halpern, 2016; McCauley et al., 2015). Additionally, not all couples remained in relationships with one another throughout this study. Several couples reported not still being with their partner at particular timepoints; some broke up and got back together during the study; and several disagreed on whether they were still together at different timepoints. We controlled for whether couples were still in a relationship at each time point to account for this. Finally, this study relied on secondary data, which limited the study to the particular questions that were posed during original data collection and included in the dataset.

Despite its limitations, this study has several strengths. This study examined both physical/sexual and psychological IPV victimization among both women and men, providing a more complete understanding of IPV in the relationships of expectant adolescent couples. It examined both psychosocial and relational predictors of IPV, allowing the understanding of a broader set of factors on which one could intervene. It investigated sexual risk outcomes among expectant adolescent couples, an important aspect of adolescent health and wellbeing. This study used longitudinal data, which allowed the examination of changes over the perinatal period.

Finally, pregnancy is an important window of opportunity for IPV prevention for young couples. It is a time when couples have frequent interactions with the healthcare system and are motivated to make behavioral changes (e.g., stop smoking, stop drinking, change diet) in anticipation of parenthood (Bloch & Parascandola, 2014; Ickovics et al., 2003; Lee et al., 2015). IPV patterns are established early in adolescence and predict IPV later in adulthood (Lindhorst & Oxford, 2008). It is critical to understand adolescent relationship dynamics and how these contribute to IPV in young expectant couples as they begin family formation. Influencing intimate partner violence behaviors in young, nascent families can lead to changes in lifelong relationship patterns for couples and families. Intervening to prevent IPV at this moment may
prevent a trajectory of lifetime relationship violence and interrupt the intergenerational
transmission of interpersonal violence (Sutton, Simons, Wickrama, & Futris, 2014; Widom,
Czaja, & Dutton, 2014). It can also help keep these relationships intact, which has myriad
benefits to mother, father, and child long term. Finally, these findings highlight the importance of
considering the dyadic interactional qualities of intimate partner violence.
CHAPTER VI: CONCLUSION

Intimate partner violence is prevalent among expectant adolescent couples (Black et al., 2011; Covington et al., 2001). Despite common assumptions, both women and men experience IPV victimization in these relationships (Milan et al., 2005; Straus, 2011). Intimate partner violence endangers the health and wellbeing of expectant couples and their babies (Bailey & Daugherty, 2007; Covington, 2001; Próspero, 2006; Quinlivan et al., 2004; Quinlivan & Evans, 2001 Sarkar, 2008). This study examined the patterns of physical/sexual and psychological IPV victimization of women and men in expectant adolescent couples from pregnancy through twelve months postpartum; the psychosocial and relational predictors of each type of IPV; and the relationship between IPV victimization and later sexual risk across the perinatal period, using the Actor-Partner Interdependence Model.

This study found that men experienced higher rates of IPV victimization than women across the perinatal period. Relationship conflict was high during pregnancy, but women experienced less physical/sexual IPV during pregnancy, potentially protecting the pregnancy. Psychological IPV was more prevalent than physical/sexual IPV for women and men across the perinatal period and was highest during pregnancy. Physical/sexual IPV was stable across the perinatal period for both women and men, while psychological IPV was stable across this period for women only. No partner effects were detected for physical/sexual IPV over the perinatal period, providing no evidence of reciprocity. However, partner effects were detected for psychological IPV across the perinatal period, indicating potential retaliation between partners over time.

Several risk and protective factors were identified during pregnancy that related to postpartum IPV. Risk and protective factors differed between women and men and between
different types of IPV. Relationship equity was protective against physical/sexual IPV for both women and men. For men, increased stress and lower social support was associated with physical/sexual IPV victimization. For women, higher relationship satisfaction was protective against psychological IPV, while higher social support was related to increased psychological IPV. For men, higher relational power was protective against psychological IPV. One’s own psychological and relational factors were most salient to IPV risk. No partner effects were detected.

Intimate partner violence victimization was related to later sexual health risks. These risks differed by sex and by type of IPV. Both actor and partner effects were detected. Between pregnancy and six months postpartum, only partner effects were detected for physical/sexual IPV and no effects were detected during this period for psychological IPV victimization. Women’s physical/sexual IPV victimization during pregnancy was related to lower condom use among men six months postpartum. Men’s physical/sexual IPV during pregnancy was related to increased STIs in women six months postpartum.

Between six and twelve months postpartum, both actor and partner effects were detected for IPV. Women’s physical/sexual IPV victimization and women and men’s psychological IPV victimization were related to having multiple partners across the postpartum period (actor effects). Additionally, women’s psychological IPV was related to their partner having less unprotected sex.

Findings suggest that interventions targeting psychological factors, such as stress and social support, as well as those targeting relational issues, such as equity, power, and satisfaction could be delivered to couples in the context of prenatal care to improve physical and mental health and safety for young families. Pregnancy is an important window of opportunity for IPV
prevention for young couples, as they are well connected to the healthcare system and motivated to make behavioral changes in anticipation of parenthood (Bloch & Parascandola, 2014; Ickovics et al., 2003; Lee et al., 2015). Interrupting nascent IPV patterns in young families can have long term effects on family health (Lindhorst & Oxford, 2008; Sutton, Simons, Wickrama, & Futris, 2014; Widom, Czaja, & Dutton, 2014). Further, interventions that strengthen relationships can benefit each member of a young family (Coley & Chase-Lansdale, 1999; Cutrona et al., 1998; Gee & Rhodes, 1999; Howard et al., 2006; Kalil et al., 2005; Lewin et al., 2011; Lewin et al., 2015; Mezulis et al., 2004; Westdahl et al., 2007).

Little has been known about intimate partner violence among expectant adolescent couples. This study extends the literature by examining IPV victimization of both women and men in these couples. Further, this study investigates both physical/sexual and psychological IPV. This study considers both relationship level factors and individual psychological factors during pregnancy associated with IPV. Further, it examines how IPV relates to sexual risk for a population at high risk for adverse sexual health outcomes. Finally, this study explores both actor and partner effects of both the predictors of IPV and the outcomes associated with IPV. These findings can inform the development of interventions to reduce intimate partner violence among expectant adolescent couples and mitigate the effects of IPV on sexual health outcomes.

Future studies should seek to replicate and extend study findings by investigating bilateral victimization patterns in expectant adolescent couples. Little is known about female perpetration/male victimization of IPV during pregnancy, especially among expectant adolescent couples. Further investigation could help inform and refine interventions to reduce IPV among expectant adolescent couples.
There is much to understand about the dynamics of romantic relationships characterized by intimate partner violence, particularly for vulnerable populations such as expectant adolescent couples. Expectant adolescent couples are at high risk for IPV but could be accessible for intervention through their frequent interface with the medical system during pregnancy. Changes made during this critical time in family development could affect IPV incidence and family health.
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AUTOBIOGRAPHICAL STATEMENT

Jessica Lewis earned her Bachelor of Arts degree in Women’s Studies and Biology from Smith College, her Master of Family Therapy degree and Advanced Certification in Gestalt Psychotherapy from Southern Connecticut State University, and her Master of Philosophy degree in Social Welfare from City University of New York Graduate Center. She is a licensed Marital and Family Therapist in the State of Connecticut. Ms. Lewis serves as the Deputy Director of Pregnancy Research at Yale School of Public Health, Project Director and Co-founder of *Expect With Me*, and an Investigator on the National Institutes of Health (NIH) Prevention of Lower Urinary tract Symptoms for women and girls (PLUS) Consortium. She has directed research projects on women’s reproductive and pelvic health at Yale for 22 years. Her research investigates the interplay of complex biomedical, behavioral, social, and psychological factors that influence individual and family health. She uses this lens to examine challenges faced by those often marginalized by the health care system and by society. Ms. Lewis has expertise in running large, scientifically rigorous clinical trials in a community setting with methodological rigor and cultural sensitivity. Additionally, she has expertise in the design, clinical implementation, and evaluation of behavioral interventions in a healthcare setting, utilizing innovative technologies.