

PREGNANCY AND DOMESTIC VIOLENCE

A Review of the Literature

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Pregnancy-related violence is a serious public health issue. Although there is a growing body of research on this subject, there are still many unanswered questions regarding the prevalence of this type of victimization, the risk factors, and the consequences. The purpose of this literature review is to organize and synthesize the interdisciplinary empirical research on pregnancy-related violence and to provide direction for both researchers and practitioners for future work in this area.

Key words: *domestic violence, pregnancy*

ESTIMATES OF VIOLENCE against women suggest that almost 2 million women are physically assaulted annually and more than 50 million are assaulted in their lifetime (Tjaden & Thoennes, 2000). Although the sheer magnitude of this problem has generated a great deal of interest on the part of the public health, advocate, and academic communities, it has only been recently that significant attention has been paid to the intricacies of the relationship between pregnancy and violence. And, although the research literature is growing every day, it is often difficult to determine the exact nature of pregnancy-related violence. This has posed difficulties for both researchers and practitioners, who need a clear understanding of the relationship between intimate partner violence (IPV) and pregnancy to develop and implement effective prevention and intervention programs. The purpose of this literature review is to provide a framework for understanding the wide variety of research studies on the topic of pregnancy and violence.

To incorporate information from the variety of disciplines in which research on pregnancy-related violence takes place, the following databases were searched: Sociological Abstracts, PsychINFO, CINAHL, MEDLINE, Social Services Abstracts, and Ageline. The focus of this review is on research published after 1996, the date of the last comprehensive review of the literature on pregnancy-related violence (Gazmararian et al., 1996); however, occasionally research published prior to 1996 is used for illustrative purposes. In addition, the focus of this review is primarily on research conducted with samples from the United States, due to possible differences in health care systems cross-culturally.

Prevalence Rates of Pregnancy-Related Violent Victimization

One of the first areas of debate regarding the relationship between pregnancy and violence is the issue of prevalence. An early review synthe-

KEY POINTS OF THE RESEARCH REVIEW

- Estimates of the prevalence of pregnancy-related violence vary due to differences in research designs, measures used, and populations sampled.
- The debate about whether pregnant women are at increased risk for violence continues as hospital- and clinic-based studies find pregnancy a time of increased risk for violence, whereas national studies do not find an association between pregnancy and intimate partner violence.
- Consequences of pregnancy-related violence include later entry into prenatal care, low birth weight babies, premature labor, fetal trauma, unhealthy maternal behaviors, and health issues for the mother.
- Health care providers who have received training are more likely to screen for violence; however, very few providers have received training as part of their medical education.

sizing the results of 13 studies found that the prevalence of violence during pregnancy ranged from 0.9% to 20.1% (Gazmararian et al., 1996). It was suggested that the wide-ranging estimates were likely a result of the use of a variety of violence measures, and differences in both the populations sampled, and methodologies used. In fact, the study that found the lowest prevalence rate used a sample from a private clinic in which more than one third of the women reported incomes greater than \$50,000 a year. In contrast, the study that reported the highest prevalence rate used a sample of women from a public clinic in which two thirds of the women reported incomes of less than \$20,000 a year. Additional differences were apparent in the assessments used to determine victimization, the points during the pregnancy at which the assessment was administered, and the method in which the assessment was administered. Prevalence estimates reported in research that has taken place since the Gazmararian et al. (1996) review have remained primarily within this range. For example, domestic violence assaults accounted for 22% of the cases of pregnant patients seen in several North Carolina emergency rooms for trauma (Connolly, Katz, Bash, McMachon, & Hansen, 1997). The issue of research sample, however,

remains an important factor to consider when interpreting prevalence estimates. Notably, analysis of population-based data from the Centers for Disease Control and Prevention's (1999) Pregnancy Risk Assessment Monitoring System (PRAMS) 1996 Surveillance Report found reported rates of pregnancy-linked abuse to be much lower than studies using hospital-based samples, ranging from 2.9% to 5.7% among several thousand women across 11 states participating in PRAMS (also see Gazmararian et al., 1995).

Certainly the type of sample is an important factor to consider when examining the prevalence of pregnancy-related violence. For example, much of the research considering the relationship between pregnancy and violence uses primarily hospital- or clinic-based samples (e.g., samples of either postpartum women or interviews with women during a prenatal care visit) (Martin, Mackie, Kupper, Buescher, & Moracco, 2001; Muhajarine & D'Arcy, 1999; Rachana, Suraiya, Hisham, Abdulaziz, & Hai, 2002). Prevalence estimates using these samples are estimates of violence among women who are pregnant. In contrast, researchers using national probability samples are estimating the risk for victimization among either all women or all women of childbearing age regardless of pregnancy status. Researchers using national probability samples have found prevalence rates of 15% (Gelles, 1990), 14.5% (Anglo women), 23.6% (Hispanic women) (Jasinski & Kaufman Kantor, 2001), and 20.5% (couples in which the male partner was persistently violent) (Jasinski, 2001).

In addition to physical abuse, several researchers have also considered other forms of abuse, including verbal abuse and sexual abuse, as well as different severity levels of physical violence (Jasinski & Kaufman Kantor, 2001; Parker, McFarlane, & Soeken, 1994; Shumway et al., 1999), each of which could impact prevalence estimates of pregnancy-related victimization. Parker and associates (1994), for example, found that 23% of the teenagers in their sample and 28% of the adults were physically or sexually abused in the year prior to their first prenatal visit. More recently, Shumway et al. (1999) reported that 36% of their sample of women

attending an obstetrical clinic reported verbal abuse, 16% reported moderate physical violence, and 14% reported severe physical violence during their pregnancy. Although much of the research that considers pregnancy-related violence focuses primarily on abuse by intimate partners, some researchers have included any experience of violence regardless of the identity of the offender. A recent study found, for example, that although 11.9% of the adolescents who experienced some type of physical violence in the year prior to the research were assaulted by the father of the baby, the remaining victims reported experiencing violence at the hands of other family members or relatives or as a witness to a fight in which someone was seriously hurt (Wiemann, Agurcia, Berenson, Volk, & Rickert, 2000).

Although the increasing body of research examining pregnancy-related violence provides much-needed information, it remains difficult to compare individual studies. For example, the PRAMS 1996 Surveillance Report found reported rates of pregnancy-linked abuse to be consistent with only the lower-bound estimates of several other studies noted above. One explanation of the lower-than-anticipated rates may be that the PRAMS asks only a few limited questions on abuse and questions are not behaviorally specific. For example, women were asked only whether they were "physically abused by a husband or partner during the 12 months preceding their most recent pregnancy or during their most recent pregnancy." Both the limited number of items and the use of the term "abuse" (subject to varying interpretations) may lead to underestimates of assaults preceding or coinciding with pregnancy. In addition, comparisons of studies examining the pregnancy-violence relationship are difficult to make due to inconsistent terminology, a wide variety of instruments, and different methodological techniques (Petersen, Gazmararian, et al., 1997). For example, violence has been assessed with a number of different instruments including the Conflict Tactics Scales (Straus, 1979, 1990a), the Danger Assessment Scale (Campbell, 1986), and the Index of Spouse Abuse (Hudson & McIntosh, 1981), among others (See Table 1 for a list of recent studies). The

most commonly used measure of violence in research using clinical samples is the Abuse Assessment Scale. Most likely, this is due to the ease of administration and established reliability and validity of the scale. In contrast, research using nonclinical community samples has more commonly used the Conflict Tactics Scales to measure violence victimization. Terminology differences regarding marital status, time periods of exposure, and the definition of domestic violence also make comparisons nearly impossible (Peterson, Saltzman, Goodwin, & Spitz, 1997). As a result, it is extremely difficult to provide any reliable information for practitioners.

Are Pregnant Women at Greater Risk of IPV?

From a public health perspective, an important question is that of risk. If being pregnant increases the risk for violent victimization, then certain interventions are warranted. For the most part, however, the majority of the researchers examining pregnancy-related violence use small samples of either postpartum women or women attending a prenatal clinic without a comparison group of women who are not pregnant (Bullock & McFarlane, 1989; Campbell, Poland, Waller, & Ager, 1992; Gelles, 1974; Stark & Flitcraft, 1995; Stewart, 1994). Although much of this research suggests that pregnancy may be a time of increased risk for violence, at least for some women (Berenson, Stiglich, Wilkinson, & Anderson, 1991; Gelles, 1974; Smikle, Sorem, Stain, & Hankins, 1996; Webster, Sweett, & Stolz, 1994), the reliance on anecdotal reports from pregnant women or hos-

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TABLE 1: Prevalence of Pregnancy-Related Violence

<i>Author, Year</i>	<i>Sample Description</i>	<i>Violence Measure</i>	<i>Prevalence</i>
Cokkinides & Coker, 1998	6,718 women from South Carolina PRAMS project, includes women with live single births	Asked if woman was involved in physical fight in last 12 months before delivery? Was the woman physically hurt by male partner in last 12 months before delivery?	10.9% violence during pregnancy (physical fights and hurt by partner), 5.1% physical violence only
Goodwin et al., 2000	PRAMS: 39,348 women in 14 states who had delivered a live infant, sampled using birth certificates	Asked women if they were physically abused (pushed, hit, kicked, slapped) in the 12 months before they became pregnant and/or during their current pregnancy	3.2% abused only in year prior to pregnancy, 1.5% abused only during pregnancy, 4.1% abused both before and after pregnancy
Glander et al., 1998	486 women seeking outpatient abortion	Five questions on abuse asking about any victimization ever, within past year, and during current pregnancy? Also asked if pregnancy was result of forced sex and if first intercourse was forced?	39.5% had any history of abuse; no information given on percentage abused during pregnancy or within last year
Hedin, 2000	207 Swedish-born women attending antenatal clinics, mailed survey 8 weeks postpartum	Severity of Violence Against Women Scale modified to refer to pregnancy period as well as past year	24% reported threats, physical or sexual abuse during pregnancy
Jasinski, 2001	2,484 couples in which the female partner was younger than 50 years old, part of the National Survey of Families and Households	Two questions: In serious disagreements, how often did R end up hitting or throwing things at partner? During the past year, how many fights with partner resulted in you/your partner hitting, shoving, throwing things at him/her?	11.5% of male partners were violent in first wave, 8.9% were violent in second wave
Jasinski & Kaufman Kantor, 2001	1,336 Anglo and Hispanic families in which the female partner was 50 years of age or younger, part of National Alcohol and Family Violence Survey	Conflict Tactics Scale	Anglo: Violence reported in 14.5% of pregnant couples vs. 12.8% in nonpregnant couples. Hispanic: 23.9% for pregnant vs. 15.3 for not pregnant
Martin, Clark, Lynch, Kupper, & Cilenti, 1999	703 Women 12 to 19 years old, Prenatal interview at health department	Abuse Assessment Screen	29% victims of some type of violence
Martin, English, Clark, Cilenti, & Kupper, 1996	2,092 prenatal patients in health department	Abuse Assessment Screen	26% reported violence in lifetime, 23% only before current pregnancy, 2% before and during pregnancy
Martin, Mackie, Kupper, Buescher, & Moracco, 2001	2,648 women who recently delivered live infants: Part of North Carolina PRAMS	Asked if had been pushed, hit, slapped, kicked, or physically hurt in some other way during three periods: 12 months before becoming pregnant, during pregnancy, and after delivery	6.9% abused in 12 months before pregnancy, 6.1% abused during pregnancy, 3.2% abused postpartum
Muhajarine & D'Arcy, 1999	543 women receiving prenatal services interviewed in third trimester	Abuse Assessment Screen	8.5% abused in year preceding interview, 5.7% abused during pregnancy
Norton, Peipert, Zierler, Lima, & Hume, 1995	334 new registrants for prenatal care	Abuse Assessment Screen	15% in past year, 10% during current pregnancy

Rachana, Suraiya, Hisham, Abdulaziz, & Hai, 2002	7,105 women with single live birth between 1996 and 1999 attending clinics of two university teaching hospitals	Case file review. Physical violence: physically hurt by husband or involvement in physical fight 10 months before delivery	21% reported physical violence
Sable, Fieberg, Martin, & Kupper, 1999	80 pregnant prisoners and 1,623 matching women admitted to prenatal care at health department, 17 to 37 years old	Asked if ever had been hit, slapped, kicked, or otherwise physically hurt and if ever had been forced to have sexual activity with someone	37% of prisoners and 31% of patients experienced some type of violence
Shumway et al., 1999	401 women attending hospital clinic	Conflict Tactics Scales	66% experienced physical or verbal abuse, 16% moderate physical abuse, 14% severe violence
Smikle et al., 1996	563 questionnaires given to pregnant patients at prenatal orientation classes at medical center serving military personnel and their dependents	Adapted Abuse Assessment Screen (AAS)	18% history of physical or sexual abuse, 1.2% physically assaulted by partner during current pregnancy; lifetime prevalence of physical abuse 12%
Torres et al., 2000	1,004 Puerto Rican, Cuban American, Central American, African American, and Anglo Women from Florida and Massachusetts Hospital sample	Index of Spouse Abuse (ISA) and AAS	5.6% report abuse during pregnancy, 5.6% using ISA and 5.2% using AAS
Wiemann, Agurcia, Berenson, Volk, & Rickert, 2000	724 adolescents from hospital planning on keeping baby	Modified Abuse Assessment Screen	29% experienced violence in past year, 11.9% by the father of the baby

NOTE: Articles were included in this table if they met two criteria: (a) Part of their major focus was investigating the prevalence of pregnancy-related violence and (b) They were not included in the extensive review conducted by Gazmararian et al., 1996.

pital samples of pregnant women does not make it possible to empirically test whether or not pregnancy per se increases the risk for violence. Furthermore, this body of research is primarily focused on examining the consequences of violent behavior for the infant (e.g., preterm labor, fetal death, low birth weight) (Parker et al., 1994; Webster, Chandler, & Battistutta, 1996) as well as improving assessment techniques among physicians (McFarlane, Parker, Soeken, & Bullock, 1992; Norton, Peipert, Zierler, Lima, & Hume, 1995). Although this is likely to be beneficial in improving health care outcomes for women and children, it still does not address the following question: Are pregnant women at a greater risk of assault by their male partners compared to women who are not pregnant?

Research using national probability samples can address the question of risk as the sample studied includes both women who are pregnant and women who are not, and studies using these types of samples have consistently reported no difference in risk due to pregnancy. For example, Gelles's 1990 analysis of data from the 1985 National Family Violence Survey found, after controlling for age, that pregnant women were not significantly more likely to be victims of assaults by their male partners compared to women who were not pregnant. Unfortunately, this study did not consider other pregnancy-related factors (either pregnancy- or non-pregnancy-related) or demographic factors (e.g., ethnicity) as potential risk markers for violence. Similarly, researchers analyzing the 1992 National Alcohol and Family Violence Survey (Kaufman Kantor, Jasinski, & Aldarondo, 1994) found that for both Anglo and Hispanic families, there was no direct effect of pregnancy on risk for violent victimization after controlling for socioeconomic status, stressful life events occurring during the pregnancy year, and age (Jasinski & Kaufman Kantor, 2001). Although the latter study improved on Gelles's (1990) study, it was not able to consider the role of other pregnancy-related factors in the risk for violence. More recent research (Jasinski, 2001) has addressed this gap in the literature by using two waves of the National Survey of Families and Households (Sweet & Bumpass, 1996;

Sweet, Bumpass, & Call, 1988). The results indicated that pregnant women were no more likely to be victims of IPV than women who were not pregnant. However, persistent violence was more likely to occur among couples in which the male partner perceived that the pregnancy of his female partner occurred sooner than intended.

Although studies using probability samples seem to agree that pregnancy does not increase the risk for violent victimization, they were not designed to specifically look at this issue and therefore have not included the necessary questions to create a complete picture of the violence-pregnancy relationship. Both the Gelles (1990) and Jasinski and Kaufman Kantor (2001) studies, for example, used reference periods of the past year when asking about pregnancy and victimization status. No other pregnancy-related questions were asked. Jasinski's (2001) study used a data set that was not designed to address violence, and as a result, those questions are weak. In none of these studies is it possible to determine the causal order between pregnancy and violence. Furthermore, it should be noted that these studies, although finding no increased risk for victimization, also have not found a decreased risk.

Ethnicity and Pregnancy-Linked Abuse

In addition to the examination of pregnancy as a risk factor for violence, it is also important to consider the presence of other factors that may increase the possibility of violence. As with research on IPV in general, researchers are just now beginning to consider racial/ethnic differences in pregnancy-related violence victimization. What little research that does exist is inconclusive, with some researchers finding significant differences by race (e.g., Cokkinides & Coker, 1998; Dietz et al., 1997; Glander, Moore, Michielutte, & Parsons, 1998; Goodwin et al., 2000) and others finding no racial/ethnic differences (Campbell, Oliver, & Bullock, 1998; Renker, 1999; Seguin, 1998; Wiemann et al., 2000). Perhaps even more interesting is the inconsistency of the direction of the results in studies finding racial differences. For example, some studies have found White women to be at

a greater risk for violence victimization (Glander et al., 1998; McFarlane & Parker, 1996) or more severe abuse (McFarlane et al., 1992), whereas others have found greater levels of victimization among minority women (Cokkinides & Coker, 1998; Gazmararian et al., 1995). One study of 501 patients attending a low-risk obstetric clinic reported a prevalence rate of abuse that was 3 times higher among Anglo American women compared to Hispanic American women and 1.6 times higher among Anglo American women compared to African American women (Berenson et al., 1991). In contrast, another study using a sample of 12,612 new mothers selected from the PRAMS found that non-White mothers had higher rates of violence than mothers who were White. A more recent study using a national sample found that pregnant Hispanic women were significantly more likely than Hispanic women who were not pregnant to be victims of any assaults, particularly minor assaults by their male partners. Among Anglo women, pregnancy was associated with severe wife assault only (Jasinski & Kaufman Kantor, 2001). Similar to issues regarding prevalence of pregnancy-related violence, possible explanations for some of these inconsistencies in the research literature include different types of samples, different assessments of victimization, and confounding race and socioeconomic status. Whether or not race/ethnicity is a significant risk factor for pregnancy-related violence remains to be seen.

What Are the Motives/Risk Factors for Pregnancy-Related Violence?

Although the body of research examining pregnancy-related violence has grown in recent years and the issue has moved to the forefront of such organizations as the National Center for Injury Prevention, there has been relatively little examination of the epidemiology of risk for abuse among pregnant women. Consequently, definitive policy solutions remain absent. Examining research in this area shows two types of empirical findings: those studies that have found pregnancy to be a time of respite for some previously abused women (Campbell et al., 1998; Campbell, Pugh, Campbell, & Visscher,

1995; Martin, English, Clark, Cilenti, & Kupper, 1996) and those that find the opposite (Campbell et al., 1992; Campbell, Pugh et al., 1995; Evins & Chescheir, 1996; Helton, 1986; Stewart & Cecutti, 1993; Taggart & Mattson, 1996).

Among the studies concluding that pregnancy provides an interruption in victimization experience, Martin et al.'s (1996) study found that although 26% of their sample reported lifetime victimization, 23% experienced violence only before their current pregnancy, whereas less than 1% experienced violence only during the current pregnancy and 2% experienced violence both prior to and during the pregnancy. Evidence from the PRAMS 1996 Surveillance Report (1999) indicates that a greater proportion of women reported less physical violence during their pregnancy than before the onset of pregnancy. In another, more recent study, none of the women who reported abuse reported that the abuse began at the time of the pregnancy (Hedin, 2000).

In contrast to this research, others suggest that violence may actually escalate with pregnancy (Campbell et al., 1992; Campbell, Pugh et al., 1995; Helton, 1986; Stewart & Cecutti, 1993; Taggart & Mattson, 1996). In one study, almost one third of the women who were abused in their current pregnancy said the abuse increased in pregnancy (Berenson et al., 1991). In addition, Campbell and Alford (1989) found that many victims of marital rape have reported sexual assaults during pregnancy or soon after their delivery of the baby. What can be concluded from this contradictory evidence? Regardless of the exact dynamics of pregnancy-related violence, most of the research finds that women who were abused while

Regardless of the exact dynamics of pregnancy-related violence, most of the research finds that women who were abused while they were pregnant had a history of victimization (Glander et al., 1998; Horrigan, Schroeder, & Schaffer, 2000; Smikle et al., 1996). This would suggest that women who have a history of victimization should be identified as an at-risk group, with specific intervention efforts targeted to them.

TABLE 2: Correlates of Pregnancy-Related Violence

<i>Correlate of Violence</i>	<i>Author, Year</i>
Low socioeconomic status	Martin et al., 2001 Cokkinides & Coker, 1998 Goodwin et al., 2000 Curry & Harvey, 1998
Low levels of social support	Glander et al., 1998 Wiemann et al., 2000 Curry & Harvey, 1998 Curry, 1998
First time parenting Unexpected or unwanted pregnancy	Jasinski, 2001 Cokkinides et al., 1999 Goodwin et al., 2000 Jasinski, 20001 Gazmararian et al., 1999
Race/ethnicity	Goodwin et al., 2000 Glander et al., 1998 Cokkinides & Coker, 1998 Dietz et al., 1997 Jasinski & Kaufman Kantor, 2001
Older age	Hedin, 2000 Horrigan et al., 1999
Youth	Martin et al., 2001 Goodwin et al., 2000 Hedin, et al., 1999 Muhajarine & D'Arcy, 1999
Alcohol use	Grimstad & Backe, 1997 Martin et al., 1996 Curry, 1998

they were pregnant had a history of victimization (Glander et al., 1998; Horrigan, Schroeder, & Schaffer, 2000; Smikle et al., 1996). This would suggest that women who have a history of victimization should be identified as an at-risk group, with specific intervention efforts targeted to them. At the same time, it appears that although some women suffer abuse inordinately, the patterns and risk markers for abuse among these women have not been conclusively identified (Petersen, Saltzman, et al., 1997). This gap in the research literature makes the development of comprehensive prevention and intervention programs extremely difficult.

What is known about patterns of risk for violence is a result of research focusing on characteristics of the mother or the pregnancy as potential risks (See Table 2 for a summary of these risk factors). This body of work has produced several consistent patterns of risk that could be used to develop prevention programs aimed at reducing violence experienced during preg-

nancy. One factor that has emerged as a consistent risk factor for violence is low socioeconomic status (measured with educational levels, income, and/or employment) (Cokkinides & Coker, 1998; Evins & Chescheir, 1996; Gazmararian et al., 1995; Goodwin et al., 2000). It also appears as if women who are abused do not have the same levels of social support as do women who are not abused (Glander et al., 1998; Wiemann et al., 2000). Each of these two factors, low socioeconomic status and low levels of social support, may also be related to elevated levels of stress and in combination may increase the risk for violence. It may also be appropriate to consider other pregnancy-related factors that may increase the level of stress experienced by a couple and consequently increase the risk for IPV. For example, first-time parents may feel more stress related to the pregnancy than couples that have already had children. At least one study has examined the relationship between IPV and first-time parenting (Jasinski, 2001). This study found that having a first child was associated with violence cessation. The implications of this finding, however, are somewhat double sided. On one hand, this is consistent with prior work suggesting that the birth of a child may provide a time of respite for previously abused women (Campbell, Harris, & Lee, 1995; Campbell, Oliver, & Bullock, 1993). At the same time, it would be inappropriate to suggest that women victims actively try to get pregnant as a strategy to stop violence. In addition, couples expecting an unplanned or unwanted child may be facing a greater level of stress compared to those couples who have children that were planned, consequently increasing the risk for violence (Cokkinides, Coker, Sanderson, Addy, & Bethea, 1999). Goodwin et al.'s (2000) study, for example, found that the prevalence of abuse was greater when the male partner did not want the baby. In this study, women with unintended pregnancies were 2.5 times more likely to experience abuse compared to women with intended pregnancies. This is consistent with Jasinski's (2001) study finding that persistent violence was more likely to occur among couples in which the male partner perceived that the pregnancy of his female partner occurred

sooner than intended. Other researchers have also found similar results. Specifically, Gazmararian and associates found that violence rates were highest for unwanted pregnancies and lowest for intended pregnancies (Gazmararian, Arrington, Bailey, Schwarz, & Koplan, 1999). Possible explanations for this pattern of behavior include jealousy of the unborn child and the perception that the pregnancy would interfere with the woman's role as caretaker for her partner (Campbell et al., 1993; Campbell, Harris, et al., 1995). It is also possible that a pregnancy not planned by the male partner might represent something that he could not control and therefore increases the risk for violence.

Normative transitions associated with the entrance or exit into a social role (e.g., parenthood) may also increase the risk for victimization as being associated with stress (Lavee, McCubbin, & Olson, 1987; Pearlin, Lieberman, Menaghan, & Mullan, 1981). As such a transition, pregnancy, or the anticipation of parenthood for both new and experienced parents, may increase the level of stress in the family and the risk for violence (Curry & Harvey, 1998). In addition to creating new strains, pregnancy or the birth of a child may intensify preexisting strains such as low socioeconomic status. Several studies have also found that young pregnant women are more likely to have been abused than older pregnant women (Hedin, Grimstad, Moller, Schei, & Janson, 1999; Muhajarine & D'Arcy, 1999; Parker et al., 1994; Stewart & Cecutti, 1993), suggesting that the combination of pregnancy and youth may be particularly stressful. This is also consistent with the domestic violence literature finding that youth is a consistent risk factor for victimization. In addition, the cumulative effect of multiple stressors can affect parental perceptions of newborns, family environment, and attitudes toward parenting (Fisher, Fagot, & Leve, 1998) and levels of marital discord. A variety of studies have found more life stress among physical child abusers (Chan, 1994; Conger, Burgess, & Barrett, 1979), an association predicted by most models of family violence. Stress associated with financial hardships and chronic poverty and unemployment has the potential to

tax family functioning, and the cumulative effect of multiple stressors can affect levels of marital discord. Stress may also affect the ability to process information effectively and the selection of particular conflict resolution behaviors in given circumstances and may add to frustration and ultimately to violence. Violence tends to be higher when certain conditions are present, such as a high level of conflict and stress in the family, and intervening variables such as belief in the legitimacy of violence to deal with family members who do wrong (Straus, 1980, 1990b). In one study, for example, although there was no direct effect of pregnancy on risk for violent victimization after controlling for socioeconomic status, stressful life events, and age, life stressors were significantly associated with increased odds of IPV for Hispanic individuals only (Jasinski & Kaufman Kantor, 2001). This suggests the possibility that other stressful events co-occurring with pregnancy may contribute to the increased risk for wife assault among Hispanic women.

What Are the Consequences of Pregnancy-Related Violence?

Aside from the disturbing fact that women who are pregnant are physically and sexually abused, there are a number of consequences of pregnancy-related violence both for the unborn child and for the pregnant mother. These consequences include late entry into prenatal care, low birth weight babies, premature labor, unhealthy maternal behaviors, fetal trauma, and health issues for the mother (See Table 3 for a summary of these consequences). Although a significant body of research finds that violence during pregnancy is associated with negative maternal outcomes, it has also been suggested that many of the factors associated with increased risk

One of the relatively consistent empirical findings in the research literature on pregnancy-related violence is the delay of prenatal care among victims of violence (Dietz et al., 1997; Gazmararian et al., 1995; Goodwin et al., 2000; McFarlane et al., 1992; Parker, 1993; Parker et al., 1994; Parker, McFarlane, Soeken, Torres, & Campbell, 1993).

TABLE 3: Consequences of Pregnancy-Related Violence

<i>Consequence</i>	<i>Author, Year</i>
Delayed prenatal care	Dietz et al., 1997 Goodwin et al., 2000
Low birth weight	Campbell et al., 1999 (bivariate only) Currey & Harvey, 1998 Fernandez & Krueger, 1999 Bullock & McFarlane, 1989 Parker et al., 1994
Premature labor	Rachana et al., 2002 Cokkinides et al., 1999 Fernandez & Krueger, 1999 Shumway et al., 1999
Fetal trauma	Rachana et al., 2002 Jacoby, Gorenflo, Black, Wunderlich & Eyler, 1999 Connolly et al., 1997 Renker, 1999
Health issues for mother	Berrios & Grady, 1991 Cokkinides et al., 1999 Horrigan et al., 2000 Parker et al., 1994

for victimization (e.g., youth, alcohol use, poverty) are the same factors associated with negative maternal outcomes (Cokkinides et al., 1999).

Later entry into prenatal care. One of the relatively consistent empirical findings in the research literature on pregnancy-related violence is the delay of prenatal care among victims of violence (Dietz et al., 1997; Gazmararian et al., 1995; Goodwin et al., 2000; McFarlane et al., 1992; Parker, 1993; Parker et al., 1994; Parker, McFarlane, Soeken, Torres, & Campbell, 1993). This is particularly relevant as one of the goals of Healthy People 2010 is that 90% of pregnant women will begin prenatal care in the first trimester. Dietz and associates (1997), for example, found that abused women were 1.8 times more likely to delay prenatal care compared to women who were not abused. Other researchers have found that abused women are twice as likely to begin prenatal care in their third trimester (McFarlane et al., 1992). In addition, one study found that 38% of women in abusive relationships registered for prenatal care later than 20 weeks gestation compared to 23% of the women who were not abused (Norton et al., 1995). Late entry into prenatal care per se may

be a risk factor for pregnancy complications such as low birth weight babies and premature labor.

Low birth weight infants. Although there is general agreement that abuse is associated with delays in prenatal care, the same level of agreement does not exist in other areas of research on the outcomes of pregnancy-related violence. It has been argued, for example, that battered women are more likely than nonbattered women to give birth to preterm and low birth weight infants (Bullock & McFarlane, 1989; Campbell et al., 1999; Curry & Harvey, 1998; Parker et al., 1994). In one study of the 100 patients who were victims of domestic violence, 16% had low birth weight babies compared to 6% of the 389 patients who were not domestic violence victims (Fernandez & Krueger, 1999). Other researchers have found that the percentage of victims with low birth weight babies was twice as high as that of nonvictims (Bullock & McFarlane, 1989). In addition to the violence experienced by pregnant women, low birth weight may also be associated with late entry into prenatal care as well as other unhealthy behaviors by the mother (e.g., smoking, poor nutrition) (Bohn & Holz, 1996).

In contrast, there are also a number of studies that have not found any relationship between violence and low birth weight infants. For example, Cokkinides et al. (1999) found that violence was not significantly associated with low birth weight. Their study used the South Carolina PRAMS data from 6,143 women who delivered live infants between 1993 and 1995. Similarly, Shumway and associates' (1999) study indicated that birth weight and gestational age at delivery did not vary significantly with a history of, or the degree of, violence experienced during pregnancy. Some researchers, however, have suggested that the findings of no relationship between low birth weight and violence may be a function of confounding variables such as low socioeconomic status and poor nutrition (Bullock & McFarlane, 1989). Moreover, studies do not always control for gestation length when looking at consequences such as low birth weight. Differences in sample size and type as well as a lack of stan-

dard cutoff points for what constitutes low birth weight could also account for differences across studies.

Premature labor. In addition to low birth weight, there is also contradictory evidence regarding the relationship between violence and premature labor. Berenson and associates (1994), for example, found that assaulted women were almost twice as likely to experience preterm labor compared to those who were not assaulted. Similarly, Shumway et al. (1999) found that women who were abused were 2.3 times more likely to experience preterm labor. In addition, an increased risk for preterm labor was associated with more serious violence. Fernandez and Krueger's (1999) study found that of the 100 patients who were victims of domestic violence, 22% had preterm deliveries compared to only 9% of the 389 patients who were not victims of domestic violence. Other researchers have found the risk of preterm labor to be as much as 5 times greater among victims of severe abuse compared to women who were not abused (Shumway et al., 1999). There are also several studies that have not found a relationship between violence and premature labor (Cokkinides et al., 1999; Grimstad, Schei, Backe, & Jacobsen, 1997). Differences in empirical findings may be due to a variety of factors, including the failure to control for other variables that may contribute to preterm labor as well as differences in research design.

Fetal trauma. Perhaps one of the most serious negative consequences of pregnancy-related violence is fetal trauma (e.g., miscarriage, spontaneous abortion, etc.). Research focusing on this type of negative outcome has been relatively consistent in its findings; experiencing abuse puts the unborn baby at great risk. Jacoby and associates' (1999) study of 100 women receiving prenatal care found that women who experienced any form of abuse were significantly more likely to miscarry (42.3% vs. 16.2%) (Jacoby, Gorenflo, Black, Wunderlich, & Eyler, 1999). In addition, they found an association between current abuse and at least one spontaneous abortion in the woman's obstetric history. The authors suggest that these women may

have been experiencing violence and pregnancy loss over a long period of time. Other researchers have also found an increased risk for miscarriages among abused women (Berrios & Grady, 1991; Renker, 1999). In an investigation of pregnancy complicated by trauma, Connolly and associates (1997) found that a greater percentage of placental abruptions (separation of placenta from uterine wall) were related to domestic violence compared to motor vehicle accidents. Based on these results, the authors suggested that violence might be directed against the pregnancy. Violence has also been associated with fetal injury and death (Bohn, 1990; Webster et al., 1996).

Unhealthy maternal behaviors. In addition to the direct effects of violence on the health and well-being of the unborn child, violence may also indirectly contribute to negative consequences by increasing the risk for unhealthy maternal behaviors. For example, several studies have found that abused women are more likely to smoke than women who are not abused (Cokkinides & Coker, 1998; Cokkinides et al., 1999; Grimstad et al., 1997; Martin et al., 1996; McFarlane & Parker, 1996; Wiemann et al., 2000). In addition, much of the same research has also found an association between violence victimization and alcohol and drug use. Martin et al.'s (1996) study of 2,092 prenatal patients in North Carolina found that during pregnancy, victims were more likely to smoke, drink, and use drugs. Moreover, after controlling for demographic factors, victims were more likely to be in the more severe substance abuse categories during pregnancy than women who were not victims of violence. In one of the few studies with a diverse sample, Berenson and associates (1991) found that drug use was related to battering for White and Black women in their sample but not for Hispanic women. These unhealthy behaviors may be associated with negative consequences for the unborn child as well as for the mother.

Health issues for mothers. In addition to the negative health consequences experienced by the unborn child, several studies have found that violence is associated with negative health

consequences for the mother as well. Moreover, many of these health issues are also relevant for the health of the unborn child. Bohn and Holz's (1996) review of the literature identifies health issues such as an unhealthy diet, severe postpartum depression, and breastfeeding difficulties that are associated with victimization.

In addition, although there are a number of studies using primarily hospital samples, comprehensive research using probability samples and longitudinal designs are needed to make more definitive conclusions about the relationship between pregnancy and wife assault and to understand the array of factors involved and the patterns of relationship violence.

Other researchers have found that abused women suffer from more stress and receive less support from their partner and others (Curry & Harvey, 1998). In addition, maternal health issues such as severe depression (Horrigan et al., 2000), lower self-esteem (Curry & Harvey, 1998), kidney infections (Cokkinides et al., 1999), poor weight gain (Parker et al., 1994), anemia (Parker et al., 1994), and first or second trimester bleeding (Parker et al., 1994) have all been associated with violence victimization. Other researchers have focused on the interval between pregnancies, finding that victims of abuse tend to have a

very short interval between pregnancies (termed rapid repeat pregnancies) (Jacoby et al., 1999; Parker et al., 1994). Unlike the body of research that is fairly consistent in its findings regarding many maternal health issues, there are mixed findings with regard to cesarean deliveries. For example, Cokkinides and associates (1999), in their study of 6,143 women from the South Carolina PRAMS, found that abused women were 1.5 times more likely to deliver by C-section. In contrast, Berenson et al. (1994) found no relationship between victimization and cesarean delivery among their sample of 384 poor pregnant women examined at a low-risk prenatal clinic in Galveston, Texas. It is possible, however, that these observed differences could be a result of different sample types.

Issues for Future Research: What Do We Need in Future Studies on Pregnancy-Related Violence?

Although there is a substantial body of research focused on pregnancy-related violence, there are still many areas in which there is little empirical evidence. Certainly one consideration for future research is the inclusion of more ethnically diverse samples to make comparisons among ethnic groups possible. Until recently, these types of samples have been virtually nonexistent in the literature. Sample diversity is not limited, however, to racial or ethnic groups. Many hospital- or clinic-based studies have used primarily economically disadvantaged samples, making generalizations about all social classes impossible. Future research should make attempts to include individuals from all social classes. In addition, although there are a number of studies using primarily hospital samples, comprehensive research using probability samples and longitudinal designs are needed to make more definitive conclusions about the relationship between pregnancy and wife assault and to understand the array of factors involved and the patterns of relationship violence. Clinic- and hospital-based samples are useful for understanding the contextual information about pregnancy-related violence as well as the consequences of such violence, but without a comparison group of women who are not pregnant, these types of studies cannot answer questions regarding risk for victimization among women as a group. Finally, there are a diverse number of disciplines involved in pregnancy-related violence research including such fields as sociology, psychology, criminal justice, nursing, education, and public health, to name a few. Each of these disciplines offers a unique perspective on this research topic; however, it is relatively uncommon for researchers in these fields to work together to develop a multidisciplinary research project. Such collaboration could prove to be extremely beneficial in increasing the range of knowledge on the subject of pregnancy-related violence and ultimately working toward its reduction.

**Issues for Practice:
What Can Health Care Providers Do?**

For many women, pregnancy is often the first point of entry into the health care system and perhaps the first contact with a helping profession. Consequently, professionals who deal with pregnant women and new mothers are in a unique position to screen for marital violence and initiate intervention (Sampselle, Petersen, Murtland, & Oakley, 1992). Evidence also suggests that women want their health care providers to inquire about violence victimization (Webster, Stratigos, & Grimes, 2001). Several studies have suggested that screening questions should be direct (Naumann, Langford, Torres, Campbell, & Glass, 1999; Norton et al., 1995). Naumann and associates (1999), for example, found that although women often find it difficult to start a conversation about abuse, they will answer direct questions. Others have suggested that the very process of assessment can be just as important as a particular form of assessment, as it acknowledges that violence against pregnant women is a very serious issue (Parker, McFarlane, Soeken, Silva, & Reel, 1999).

Guidelines for assessment have been developed, however, based on empirical research outside the clinical field. This research suggests that the screening process should include thorough assessments of pregnancy-related stressors, including areas such as mistimed or unplanned pregnancies. Information from both members of the couple should also be included, as research has demonstrated the importance of both individuals wanting the pregnancy. In addition, screening should include an assessment of stressors in addition to pregnancy that may contribute to risk for experiencing wife assault. Research examining the association between stress and violence suggest that interventions that reduce couple stress and aid in role transition may have the potential to decrease marital discord and violence. Interventions may also include a careful assessment of family risk markers (e.g., family of origin exposure, substance abuse), family stressors, and current conflict management strategies, along with providing individuals with linkages to appropriate services. Screening for domestic violence is also es-

sential among women presenting with trauma and non-trauma-related symptoms in hospital emergency departments (Dienemann et al., 1999). This may be particularly relevant for pregnant women. Connolly et al. (1997) suggested that injury prevention programs should be incorporated into all prenatal care programs because not all traumas may be correctly classified as domestic violence. In fact, because a pattern of greater health care use has been identified among victims of physical or sexual violence (Koss, Koss, & Woodruff, 1991), some view universal screening of women seeking any health care as essential to comprehensive care.

The role of health care professionals does not end at the screening stage, however. Pregnant women who are screened for previous violence in their relationship should be provided with information about available services if they should need them either during or after the child is born. Health care providers should also provide follow-up services to women postpartum in order to prevent any reoccurrence of violent behavior.

Although much of the research on pregnancy-related violence suggests the importance of the health care provider in prevention and intervention, there is also some evidence to suggest that health care professionals do not receive enough information and training (Naumann et al., 1999). Horan and associates (1998), for example, found that only two thirds of the obstetricians and gynecologists they studied reported that they screened patients for domestic violence (Horan, Chapin, Klein, Schmidt, & Schulkin, 1998). Among those doctors who screened, one quarter reported that they were not very confident about their ability. They also found that doctors who have been trained in the last 15 years conducted domestic violence screenings at higher rates compared to those trained earlier. In addition, female doctors were more likely than male doctors to screen for violence at the first prenatal visit. Similarly, Molliconi and Runyan (1996) found that family practitioners asked fewer than 7% of their female patients about abuse. Domestic violence training also may not occur while doctors are in medical school but later during the residency period (Horan et al., 1998). These findings are

TABLE 4: Clinical Recommendations for Assessment of Pregnancy-Related Violence

<i>Recommendation</i>	<i>Author, Year</i>
Assessment of stressors (pregnancy and non-pregnancy-related)	Jasinski, 2001 Jasinski & Kaufman Kantor, 2001 Curry, 1998
Screen all women seeking health care for domestic violence	Dienemann et al., 1999 Connolly et al., 1997 Koss, Koss, & Woodruff, 1991
Ask multiple direct questions to women about domestic violence	Norton et al., 1995
Training/education for health care providers	Naumann et al., 1999 Horan, Chapin, Klein, Schmidt, & Schulkin, 1998 Molliconi & Runyan, 1996 Gremillion & Evins, 1994 Parsons, Goodwin, & Peterson, 2000

consistent with other research that has found that most medical textbooks do not contain much information on domestic violence. For example, Parsons and Moore (1997) found that only 37.5% of obstetric and gynecology texts and primary care texts contained information on domestic violence. More promising, almost two thirds of nursing texts contained domestic violence information. Evidence also exists suggesting that training can be effective in increasing the screening rate for domestic violence (Janssen, Holt, & Sugg, 2002). Gremillion and Evins's (1994) review of the literature suggests that, in addition to these training barriers, physicians must also deal with contemporary social issues including societal tolerance for abuse, desensitization, and power inequities in relationships. They must also come to terms with their own personal factors that might include victimization, gender bias, and ideal notions of the family unit. Additional barriers cited by Molliconi and Runyan (1996) include the physician's personal knowledge of either the patient or her partner. Table 4 summarizes research-based clinical recommendations for assessment of pregnancy-related violence.

In addition to the obvious improvements in health care delivery for pregnant victims of domestic violence and the importance of prevention for both the unborn child and the mother,

there is another important reason for more complete training for health care professionals. In a recent National Institute of Justice research brief, Isaac and Enos (2001) discussed the importance of documenting abuse for legal proceedings that may take place. Medical documentation can be used to substantiate assertions of abuse, to obtain protective relief in the form of a restraining order, and/or to be eligible for certain exemptions or statuses related to housing, insurance, and financial assistance. Isaac and Enos suggested that health care providers can be of most assistance legally by improving their record keeping. Specifically, they suggested that only factual information, rather than summary statements or conclusions, should be documented; photographs of all injuries should be taken; any patient statements should be clearly indicated as such; statements about the reliability of the patient should be avoided; and all documentation should be legible. Although this is helpful information, physicians may still fear legal reprisal and the possibility of insurance loss, and they may be uncertain about the policies of their office (Gremillion & Evins, 1994).

SUMMARY AND CONCLUSIONS

A growing body of research suggests that violence during pregnancy has detrimental consequences for both the mother and the unborn child. Concerns about these effects have led both researchers and practitioners to take a closer look at pregnancy-related violence in terms of risk factors and consequences as well as the physician's role in prevention and intervention efforts. Although differences in research designs and assessments have made it difficult to definitively conclude that pregnant women are at a greater risk for IPV compared to women who are not pregnant, the consequences for pregnant victims remain serious. What is perhaps most disconcerting, however, is that many practitioners who come into contact with these victims have not been exposed to any or enough training so that they can ask the right questions and offer assistance to victims. Moreover, even those who have received some training express concern about their own ability to properly assess the existence of IPV among their patients.

Certainly the first steps have been taken. Researchers are continuing to investigate the dynamics of pregnancy-related violence and, as suggested by some of the studies of practitioners, are taking a close look at how they interact with patients. Future work would benefit

greatly from joint projects that unite researchers with practitioners with the ultimate goal of healthy women, healthy babies, and violence-free relationships.

IMPLICATIONS FOR PRACTICE, POLICY, AND RESEARCH

Practice

- All women should be screened for domestic violence in health care settings.
- Health care professionals should be trained in the areas of domestic violence dynamics and screening techniques.
- Health care providers should work to improve record keeping so that medical documentation can be more useful in legal proceedings.

Research

- Comparisons between studies are difficult due to inconsistent use of terminology, definitions, and time periods of exposure.
- Research samples need to be ethnically and economically diverse.
- Probability samples and longitudinal research designs are needed to better understand the relationship between pregnancy and violence.
- Interdisciplinary research teams are needed to provide a more holistic understanding of the pregnancy-violence relationship.

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SUGGESTED FUTURE READINGS

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