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## Violence during Pregnancy: Measurement Issues

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### Introduction

According to a recent review, the prevalence of women experiencing violence during pregnancy has been estimated to be between 0.9% and 20.1%, while the prevalence of violence at any time ranges from 9.7% to 29.7%.<sup>1</sup> Research has not yet confirmed whether pregnant women are at greater risk for violence initiated during pregnancy. Nor has it been confirmed, for women experiencing ongoing violence, whether the severity or frequency of violent incidents increases or decreases or whether violence ceases altogether during pregnancy. Further research is needed to understand the occurrence and timing of violence in relation to pregnancy and the context in which such pregnancy-related violence occurs. This knowledge will facilitate the development of data-based prevention and intervention programs addressing the specific needs of pregnant women who experience violence. In this paper, we provide several suggestions for improving investigation of the association of violence with pregnancy.

### Measuring Frequency of Violence in Relationship to Pregnancy

Although many epidemiologic studies of violence during pregnancy report the prevalence of violence during the pregnancy under investigation as well as the prevalence of having a history of experiencing violence, few have specified a time period that excludes periods of pregnancy. For example, having a history of violence

may mean ever experiencing violence, experiencing it during the year preceding a prenatal interview, or experiencing it during the 12 months preceding birth. In these examples, violence during the pregnancy under investigation is included as part of the definition of the history of violence.<sup>1</sup> To study whether violence occurring during pregnancy is specific to the pregnancy or is simply part of an ongoing pattern of violence, we suggest that the prevalence of violence be investigated during the following mutually exclusive time periods: violence during the pregnancy under study and violence during a specific time period before the pregnancy. Depending on whether violence occurred during each of those periods, 4 distinct patterns emerge: (1) no violence before pregnancy but vio-

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## ABSTRACT

**Objectives.** Standardized quantitative methods are needed to study occurrence and timing of violence in relation to pregnancy and to study the context in which pregnancy-related violence occurs.

**Methods.** Data from three published studies of prevalence of violence during pregnancy are used to illustrate ways to measure the association of violence in relation to pregnancy.

**Results.** Four patterns of violence in relation to pregnancy are identified, and related research issues are discussed. Also, 2 population-based surveys that address the suggestions presented here are discussed.

**Conclusions.** Better measurement of the association between violence and pregnancy will facilitate development of data-based prevention and intervention programs. (*Am J Public Health*. 1998;88:274-276)

lence during pregnancy (violence starts), (2) violence both before and during pregnancy (violence continues), (3) violence before pregnancy but not during pregnancy (violence ceases), and (4) no violence either before or during pregnancy.

Using data from 3 published studies that included this information, we illustrate several ways to measure the association of violence in relation to pregnancy.<sup>2-4</sup> The top section of Table 1 lists the prevalence estimates most commonly found in published clinic-based studies: the overall prevalence for having experienced violence at some time, including the current pregnancy (10.4% to 23.4%), and the prevalence of violence during the current pregnancy (6.6% to 8.3%). By contrast, the bottom section of Table 1 provides other information about violence starting, continuing, or ceasing during pregnancy. The "violence starts" item lists the prevalence of women for whom violence starts during pregnancy. In the Stewart and Helton studies, 12% to 14% of women reporting violence during pregnancy did not experience it any time prior to their current pregnancy.<sup>2,3</sup>

In Amaro's study, 88% of women reporting violence during pregnancy did not experience it during the 3 months prior to becoming pregnant.<sup>4</sup> The proportion of women for whom violence starts during pregnancy appears to depend on the length of the time period before pregnancy under consideration (e.g., at any time or within the past 6 months). The "violence continues" items in Table 1 demonstrate two alternative ways to describe violence that continues into pregnancy: (1) the proportion of women experiencing violence during pregnancy who also experienced it before becoming pregnant and (2) the proportion of pregnant women experiencing violence before the pregnancy of interest who continued to experience it during the pregnancy. The proportions calculated for the latter item (22.9% to 51.7%) indicate that, for many women, existing violence continues after they become pregnant. For clarity, we suggest that women be asked about violence occurring during a short period before pregnancy. This should minimize the chance of recording violence from a previous pregnancy or from many years before and should facilitate recall.

The prevalence calculations shown in Table 1 can be determined from studies in clinic settings of women who are pregnant or who have recently delivered, as well as from population-based studies of postpartum women and surveys of the general population that ask women about recent pregnancies. Patterns of violence experience during pregnancy may be used as variables in

**TABLE 1—Prevalence Measures of Violence during Pregnancy: An Example from 3 Published Studies**

Prevalence Description	Stewart <sup>2</sup> (n=548), %	Helton <sup>3</sup> (n=290), %	Amaro <sup>4</sup> (n=1243), %
Prevalence of violence among women in study population			
Women with history of violence (not specific to pregnancy of interest)	11.9 <sup>a</sup>	23.4 <sup>a</sup>	10.4 <sup>b</sup>
Women experiencing violence during pregnancy of interest	6.6	8.3	7.4
Comparison of time periods before and during the pregnancy of interest for the potential occurrence of violent events			
<b>Violence starts:</b> Women experiencing violence during pregnancy of interest whose violence started during the pregnancy	13.9	12.5	88.0
<b>Violence continues:</b> Women experiencing violence during pregnancy of interest who also experienced violence before the pregnancy	86.1	87.5	12.0
<b>Violence continues:</b> Women experiencing violence before pregnancy of interest who continued to experience violence during the pregnancy	51.7	32.3	22.9
<b>Violence ceases:</b> Women experiencing violence before pregnancy of interest whose violence ceased during the pregnancy	48.3	67.7	77.1

<sup>a</sup>Violence experienced "ever" was queried.

<sup>b</sup>Only violence experienced in the 3 months before becoming pregnant was queried. The estimate of prevalence has been recalculated with published data but was not reported as such in the original article.

descriptive or prevalence studies or in etiologic analyses comparing violence experiences of different groups of women while controlling for confounding variables. Retrospective investigations of women who have given birth at least once or prospective studies of women followed over a time period that includes 1 or more pregnancies may also highlight patterns of violence related to pregnancy. Such patterns might include violence that increases or decreases in severity or frequency during pregnancy, violence that occurs only during pregnancy and is absent during nonpregnancy periods, or violence that stops during pregnancies but resumes after the women give birth. Our example assumes that the current pregnancy is the first pregnancy; however, the terminology "violence before pregnancy" could be adapted to "violence during or before your xth pregnancy" and "violence between your xth and yth pregnancy" for multigravid women when separate questions are included about past pregnancies.

### *Studying the Context of Violence during Pregnancy*

In addition to measuring the frequency with which violence occurs during and out-

side of pregnancy, it is also important to know whether the violence is associated with the pregnancy or is simply part of an ongoing pattern. Knowing the context in which the violence during the pregnancy occurred may help provide clarification on this issue. We suggest the inclusion of contextual factors such as whether the same person inflicted violence both before and during pregnancy in an established relationship, whether the pregnancy was intended, and whether the perpetrator knew of the pregnancy at the time of the violence.

Collecting information about the victim's relationship to the perpetrator(s) of violence during both the prepregnancy and pregnancy periods can help distinguish continuing patterns of violence with the same intimate partner from violence perpetrated by multiple partners or family members during the two periods. The "violence ceases" item in Table 1 shows that 48.3% to 77.1% of women who reported past violence did not report experiencing it during the current pregnancy. However, without knowing whether the person inflicting violence before the pregnancy was the current partner, it cannot be said that violence truly ceased during the pregnancy; violence may never have occurred in the relationship.

Unintended pregnancy, including a pregnancy that occurs sooner than desired or one that is not planned to occur at any time, may be associated with violence by a partner. Gazmararian et al. addressed the issue of intendedness and pregnancy in their analysis of data from an ongoing state-specific population-based study of new mothers.<sup>5</sup> They found that women with unwanted pregnancies had 4.1 times the odds of experiencing physical violence by a husband or partner during the 12 months prior to delivery than did women with intended pregnancies. Other researchers have also found that violence during pregnancy was greater among women whose partner was unhappy about the pregnancy or for whom the pregnancy was not planned.<sup>2,4,6</sup> Whether the partner knew about the pregnancy may also have had an impact on violence.

### **Using Survey Questions That Incorporate the Proposed Methods**

Two surveys have recently incorporated items that address the suggestions made here. The Georgia Women's Health Survey collected violence-related data from women 15 to 44 years of age during 1995.<sup>7</sup> A sample of 3130 telephone interviews provided information about the history of abuse by a partner or ex-partner, abuse by the partner during the past 12 months, and abuse just before and during pregnancy for women having had a pregnancy within the previous 5 years. Findings from such surveys will be able to address several key issues: whether abuse before and during pregnancy was perpetrated by the same partner; whether abuse occurred both before and during the pregnancy or only before or during the pregnancy; whether abuse during pregnancy occurred after the partner knew about the pregnancy; and, for women who were abused after the partner

knew about the pregnancy, whether the frequency of abuse increased, decreased, or stayed the same after the partner knew about the pregnancy.

The Pregnancy Risk Assessment Monitoring System (PRAMS) is an ongoing, population-based surveillance system.<sup>8</sup> The survey collects self-reported information from new mothers sampled from birth certificates, with approximately 2000 completed questionnaires per state each year. A questionnaire revision implemented since Gazmararian et al.<sup>5</sup> incorporates new questions related to violence during pregnancy. Like the items in the Georgia Women's Health Survey, the new PRAMS items address several of the issues just raised: whether violence was experienced during the 12 months before pregnancy and who perpetrated it; whether the same people perpetrated abuse during the pregnancy as had before the pregnancy; and whether the woman was abused more often, less often, or about the same during pregnancy as before. It should also be possible to examine contextual factors that may be related to the pregnancy-violence relationship by analyzing other PRAMS items, such as whether the woman's partner said he did not want her to be pregnant and whether the woman argued with her husband or partner more than usual during pregnancy.

The addition of violence-related items to surveys such as PRAMS and the Georgia Women's Health Survey has several advantages. These items provide population-based information and help refine ways to ascertain whether pregnant women experience violence more frequently than nonpregnant women. It will be helpful if future researchers can incorporate similar items into other survey instruments and examine their reliability and validity; such information is currently unavailable. (For a description of sample questions from the Georgia Women's Health Survey and PRAMS, the reader is invited to contact Linda E. Saltzman.)

### **Conclusion**

We have suggested improved methods to better compare frequency of violence occurrence during pregnancy and during periods of nonpregnancy. Better measurement of the frequency of violence during pregnancy and identification of risk factors and other psychosocial phenomena associated with violence during pregnancy will help in the development of effective public health intervention programs to protect women from violence that endangers them as well as their unborn children. □

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