Violence Against Women and Family Violence: Developments in Research, Practice, and Policy

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Introduction

Since the 1970s, researchers and practitioners from a wide spectrum of disciplines have documented that violence against women and family violence are substantial problems in the United States (see Crowell and Burgess, 1996). Because of their persistent efforts, Congress passed the Violence Against Women Act of 1994 (Title IV of Public Law 103–322, the Violent Crime Control and Law Enforcement Act of 1994), and the Violence Against Women Office, now called the Office on Violence Against Women (OVW), was established in the U.S. Department of Justice. These Federal acts marked violence against women and family violence as national problems in need of both interdisciplinary scientific inquiry and development of community-based prevention and intervention policies and practices.

In the Violence Against Women Act, Congress directed the National Research Council to convene the Panel on Research on Violence Against Women to "develop a framework for clarifying what is known about the nature and scope" of these problems (Crowell and Burgess, 1996: 2). In the resulting publication, *Understanding Violence Against Women* (Crowell and Burgess, 1996*)*, panel members presented a comprehensive, yet critical, synthesis of the current state of research and practices. In their overview, the panel members identified gaps in the knowledge about the extent and nature of violence against women and family violence and recommended a research agenda that highlighted four major areas:

- Improving research methods.
- Building knowledge.
- Preventing violence.
- Developing a research infrastructure.

In each of the four areas, the panel members made several recommendations with two complementary goals:

- To increase the quality of research that informs practitioners' decisions about program and service development, implementation, and evaluation.

- To integrate practitioners' experiences into research efforts that can lead to the development of innovative and effective interventions.

One purpose of the current compendium is to document how knowledge gaps in research and practice identified in *Understanding Violence Against Women* have been addressed by recently funded projects. In doing so, the contributions to this compendium—

- Provide readers with important new substantive knowledge about the extent and nature of violence against women and family violence.

- Describe innovative collaborations, policies, programs, services, and interventions that have been implemented and evaluated, especially those that involve a criminal justice response.

To date, no volume exists that reflects the Federal Government's collective commitment to fund and disseminate the results from rigorous research that employs diverse theoretical and data analysis strategies—as well as innovative practices, policies, and evaluations—in the fields of violence against women and family violence. This compendium addresses that void. One of its purposes is to disseminate new knowledge produced by research conducted by the OVW grant recipients. Contributors presented results of their respective funded projects at the National Institute of Justice-sponsored Research Conference on Violence Against Women and Family Violence in October 2000.

This compendium has four sections:

- The Extent and Context of Violence Against Women and Family Violence.
- Antecedents to and Consequences of Violence Against Women and Family Violence.
- Prevention and Intervention: Collaborations, Policies, Programs, and Services.
- Building an Infrastructure to Improve Research Capacity and Practice and Strengthening Researcher-Practitioner Collaborations.

Overviews in each section briefly outline the gaps in knowledge that were identified in *Understanding Violence Against Women* and detail how the new knowledge addresses key gaps in research and practice.

The contributors provide diverse perspectives on violence against women and family violence. They represent numerous disciplines, including criminal justice, public health, psychology, sociology, anthropology, psychiatry, and medicine. Many of their contributions are the result of collaborations or partnerships with other interested parties—researchers across academic disciplines, service providers, and experts employed by private or not-for-profit research organizations.

The contributions are organized in a similar format. Each discusses the issue(s) that is(are) the focal point of the study, describe the research design, and present the results.

Each paper concludes with implications for researchers and practitioners. Providing researchers and practitioners with state-of-the-art research results and innovative practices and policies is key to successful prevention and reduction of the negative effects of violence against women and family violence.

Reference

Crowell, N.A., and Burgess, A.W., eds. 1996. *Understanding Violence Against Women.* Washington, DC: National Academy Press.

Section I: The Extent and Context of Violence Against Women and Family Violence

Overview

by Bonnie S. Fisher

In estimating the extent of violence against women and family violence and examining the context in which each happens, two methodological issues have been particularly salient: the quality of data and the measurement of violence. Despite the longstanding controversies and debates surrounding these two issues, many researchers remain committed to improving the quality of data and measurement of violence. Beginning with Kanin's (1957) pioneering work in the 1950s on "offensive male sexual aggression" committed against college women at one university, several influential studies have advanced the methodological understanding of the extent of violence against women and family violence. Among the most noteworthy studies conducted during the 1980s are Russell's (1982) study of the prevalence and incidence of forcible and attempted rape among adult female residents of San Francisco and Koss, Gidycz, and Wisniewski's (1987) development of the Sexual Experience Survey and subsequent first-time study of the incidence and prevalence of sexual aggression and victimization in a national sample of college women.

Interest in data and measurement issues did not diminish in the 1990s. Four national-level studies—Kilpatrick, Edmunds, and Seymour's (1992) report, *Rape in America*; Tjaden and Thoennes's (1998) Violence Against Women Survey; Fisher, Cullen, and Turner's (2000) National College Women Sexual Victimization Study; and Fisher and Cullen's (2000) National Violence Against College Women Study—focused not only on investigating substantive issues concerning the extent and context of violence against women but also on addressing methodological issues.

Despite committed efforts by researchers, inadequacies in data and measurement still exist in the fields of violence against women and family violence. Among the data gaps noted in *Understanding Violence Against Women* (Crowell and Burgess, 1996) were the following:

- Lack of information about the prevalence of violence among specific subpopulations, such as women of color, Native American women, and pregnant women.

- Little conceptual understanding of ethnicity, race, and other structural factors that may affect the context in which women experience violence.

- Unanalyzed secondary datasets, consisting primarily of measures of women's health status and behaviors (see Crowell and Burgess, 1996).

The most notable measurement issues are the following:

- Defining terms such as violence against women, interpersonal violence, rape and sexual assault, and intimate partner violence.

- Developing new and enhancing established measures (e.g., combining local health data with local criminal justice data).

- Comparing estimates from different measures and providing methodological explanations about the outcome.

- Employing multiple measures that include both qualitative and quantitative measurement strategies (see Crowell and Burgess, 1996; Fisher and Cullen, 2000).

The contributions in section I are united by an emphasis on improving the quality of data and measurement to advance both research and practice. Research has begun to fill some of the data and measurement gaps noted in *Understanding Violence Against Women* and has expanded knowledge and understanding on several dimensions.

First and foremost, all the contributors have built a methodological foundation by identifying data and measurement issues that are salient to the focus of each study. For example, Michael Rand and Callie Rennison discuss the methodological differences that can contribute to varying estimates of violence against women, with particular reference to the differences among the National Crime Victimization Survey, the National Violence Against Women Survey, and the National College Women Sexual Victimization Survey. These differences, particularly in the screening questions, help in understanding why estimates of violence against women differ among these three national studies. Lorraine Halinka Malcoe and Bonnie M. Duran detail the barriers to collecting lifetime prevalence and previous year incidence data about intimate partner violence from Native American women in the United States. These barriers include low population density, rural locations, and lack of a telephone in many residences.

Jana L. Jasinski addresses key limitations of intimate partner violence research, which include focusing on a single pattern of violence escalation and persistence, using small samples, and collecting information from only one member of the couple. Using a national dataset and information from both members of the couple, she examines four patterns of intimate partner violence—"persistently violent, newly violent, violence cessation, and nonviolent." Bonnie S. Fisher discusses the controversies surrounding the measurement of rape and the subsequent methodological contributions to such measurement. Employing a quasi-experimental research design, she examines the effect that survey questions have on national estimates of completed and attempted rape and threats of rape (see Fisher, Cullen, and Turner, 2000). Building on previous studies, Harold B. Weiss, Bruce A. Lawrence, and Ted R. Miller use a multi-State hospital discharge database to estimate the hospitalization rate for assault among pregnant women and compare it to the rate among all women of reproductive age.

Second, these studies specifically collect and analyze data from particular subpopulations. Although the papers in this section are not exhaustive of the subpopulations identified in *Understanding Violence Against Women* as in need of study, they examine violence within or among understudied subpopulations. Rand and Rennison compare intimate partner violence rates for white males and females with those for black males and females and between Hispanics and non-Hispanics. Malcoe and Duran examine intimate partner violence among Native American women of reproductive age. Jasinski examines racial/ethnic differences in violence patterns among white, African-American, and Hispanic couples. Fisher reports estimates of completed and attempted rapes and threats of rape against college women. Weiss and his colleagues provide insight into the nature of the pregnancy-associated hospitalized assaults and their costs.

Third, these papers address data gaps through the use of various datasets. For example, Jasinski used data from the first and second waves of the National Survey of Families and Households, which focuses on family structures, processes, and relationships. Other contributors collected primary data and then created new datasets. Fisher and her colleagues, for example, designed two national datasets (see Fisher, Cullen, and Turner, 2000). One was developed from a survey that used screening questions modeled from the work of Kilpatrick, Edmunds, and Seymour (1992) and the National Violence Against Women Survey (Tjaden and Thoennes, 1998). The second dataset was modeled after the National Crime Victimization Survey—the same survey Rand and Rennison employed in their study. Because intimate partner violence data for Native American women is limited, Malcoe and Duran collected both quantitative and qualitative data by interviewing Native American women in Oklahoma.

Fourth, as noted in *Understanding Violence Against Women* (Crowell and Burgess, 1996, 47), "consideration of the context in which women experience violence is vital to understanding the nature of the problem, as well as to the consequences to the woman, and effectiveness of interventions" targeted to victims and perpetrators. Rand and Rennison, Malcoe and Duran, and Jasinski provide new insights into the multidimensional context in which violence against women and family violence occur.

Collectively and individually, the contributions in section I address multiple data and measurement issues identified by the Panel on Research on Violence Against Women and provide guidance to researchers and practitioners. But the value of this emergent research for both researchers and practitioners extends beyond its application to the identified data and measurement gaps. Researchers and practitioners can use these contributions to advance the quality of data and of techniques for the measurement of violence against women and family violence.

References

Crowell, N.A., and Burgess, A.W., eds. (1996). *Understanding Violence Against Women.* Washington, DC: National Academy Press.

Fisher, B.S., and Cullen, F.T. (2000). "Measuring the Sexual Victimization of Women: Evolution, Current Controversies, and Future Research." In *Measurement and Analysis of Crime and Justice*, vol. 4 of *Criminal Justice 2000.* Washington, DC: U.S. Department of Justice, National Institute of Justice, NCJ 182411.

Fisher, B.S., Cullen, F.T., and Turner, M.G. (2000). *The Sexual Victimization of College Women.* Research Report. Washington, DC: U.S. Department of Justice, National Institute of Justice and Bureau of Justice Statistics, NCJ 182369.

Kanin, E.J. (1957). "Male Aggression in Dating-Courtship Relations." *American Journal of Sociology*, 63, 197–204.

Kilpatrick, D.G., Edmunds, C.N., and Seymour, A. (1992). *Rape in America: A Report to the Nation.* Arlington, VA: National Victim Center.

Koss, M.P., Gidycz, C.A., and Wisniewski, N. (1987). "The Scope of Rape: Incidence and Prevalence of Sexual Aggression and Victimization in a National Sample of Higher Education Students." *Journal of Consulting and Clinical Psychology*, 55 (2), 162–170.

Russell, D.E.H. (1982). "The Prevalence and Incidence of Forcible Rape and Attempted Rape of Females." *Victimology: An International Journal*, 7 (1–4), 81–93.

Tjaden, P., and Thoennes, N. (1998). *Prevalence, Incidence, and Consequences of Violence Against Women: Findings From the National Violence Against Women Survey.* Research in Brief. Washington, DC: U.S. Department of Justice, National Institute of Justice, and U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, NCJ 172837.

How Much Violence Against Women Is There?

By Michael Rand and Callie Rennison

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Findings and conclusions of the research reported here are those of the authors and do not reflect the official position or policies of the U.S. Department of Justice.

The National Crime Victimization Survey (NCVS) examines violence against women from a somewhat different perspective than other studies discussed at the conference. NCVS measures the extent and characteristics of crimes occurring in the United States. Other surveys, such as the National Violence Against Women Survey (NVAWS) and the National College Women Sexual Victimization Study (NCWSV), estimate violence experienced by women whether or not the victims regarded such violence as criminal. Such contextual differences, as well as other methodological differences among the surveys, contribute to differences in estimates of the incidence of violence against women. However, comparisons of the characteristics of violence against women across surveys also yield many similarities.

NCVS is one of two key ongoing national measures of the amount and type of crime occurring in the United States that are maintained by the U.S. Department of Justice. Although the other measure, the Uniform Crime Reporting (UCR) program, is based on crimes reported to law enforcement agencies, NCVS is a survey of the Nation's residents that measures crimes not reported to police as well as those reported.

Survey Methods

About NCVS

Ongoing since 1972, NCVS is conducted for the Bureau of Justice Statistics (BJS) by the U.S. Census Bureau. The survey's sample is address based and drawn from the decennial census. Households remain in a sample for 3 years and are interviewed seven times at 6-month intervals. All persons age 12 and older are interviewed about their experiences; proxy respondents are allowable only in a restricted set of circumstances. In 1999, about 160,000 people in 86,000 households were interviewed for NCVS.

NCVS measures the numbers and characteristics of seven major types of crime: rape/sexual assault, robbery, aggravated assault, simple assault, household burglary, motor vehicle theft, and theft. The survey obtains a broad array of information about victims, crime incidents, offenders, and consequences of crime.

NCVS incorporates a number of methodological features that enhance its ability to produce estimates of crime victimization. First, its large sample enables robust estimates of events that are relatively rare and difficult to measure. It uses a short reference period of 6 months and a bounding procedure to encourage accurate reporting and eliminate problems related to such faults of memory as telescoping (incorrectly remembering events as occurring more recently than they actually did). Bounding ensures that crime incidents reported in one interview are not duplicated in a later interview with the respondent.

Differences Between NCVS and Other Violence Against Women Surveys

Many of the methodological differences between NCVS and other surveys that measure violence against women, especially differences in the crime-screening questions, have been well documented. The impact of contextual differences among NCVS and NVAWS and NCWSV has not been as well examined. NCVS focuses on crime and events that victims of violence perceive to be crimes. In contrast, NVAWS is presented to respondents as a personal safety survey, and NCWSV gauges "unwanted sexual experiences."

The crime context of NCVS is made very clear to survey respondents and is pervasive throughout the NCVS interview:

- It is part of the survey title: National Crime Victimization Survey.
- Preliminary questions include the phrase: "Before we get to the crime questions …"
- Some screening questions focus specifically on perceived crime: "Did anything happen to you that you thought was a crime …"
- Interviewers fill out a Crime Incident Report for every incident elicited by the crime-screening questions.

The crime focus is an integral part of the survey and not accidental. Providing a more complete picture of crime victimization in our Nation than could be obtained from the FBI's Uniform Crime Reports was one of the survey's primary goals when it was introduced in 1972. When the survey began, the Nation's big crime problem was believed to be "street crime" typified by stranger robbery or mugging.

"Victimization," for NCVS, means "criminal victimization." Victimizations reported to NCVS are by design those that respondents judged to have been criminal in nature. Incidents that respondents did not think of as criminal are less likely to be reported to NCVS than they are to other surveys that lack a strong crime focus.

Another key difference between NCVS and recent violence against women surveys is that NCVS is an ongoing rather than a one-time survey. It can track trends in overall violence and violence against women.

The following section presents some trend data as well as descriptive findings about violence against women from NCVS, much of which is quite similar to data derived from the NVAWS and NCWSV.[1] Also included, for completeness, are data on homicides drawn from the UCR.

Findings

Intimate Partner Violence, 1998

In 1998, about 1 million violent crimes were committed against persons by their current or former spouses, boyfriends, or girlfriends.[2] Such crimes, termed *intimate partner violence,* are committed primarily against women. About 85 percent of nonfatal victimizations by intimate partners in 1998 (about 876,340) were against women. About 157,330 violent crimes committed by an intimate partner during 1998 were perpetrated against men.

Women were victims of nonfatal intimate partner violence at a rate about five times that of men (767 versus 146 per 100,000 persons). Among all victims of violence, women were more likely to be victimized by a nonstranger (e.g., a friend, family member, or intimate partner), while men were more likely to be victimized by a stranger. Sixty-five percent of intimate partner violence against women and 68 percent of intimate partner violence against men involved a simple assault.

In 1998, intimate partner homicides accounted for about 11 percent of all murders nationwide. They constituted about 33 percent of murders of women but only 4 percent of murders of men. Female murder victims were substantially more likely than male murder victims to have been killed by an intimate partner; of the 1,830 persons murdered by intimates in 1998, 72 percent (1,320) were women.

Trends in Violence Against Intimate Partners, 1993–98

Women experienced a 21-percent lower rate of intimate partner violence in 1998 than in 1993. From 1993 to 1997 the rate of intimate partner violence fell from 9.8 to 7.5 victimizations per 1,000 women. (See exhibit 1.) The 1998 rate was virtually unchanged from that in 1997 (7.7 per 1,000 women).

Men experienced intimate partner violence at similar rates in 1993 and 1998 (1.6 and 1.5 per 1,000 men, respectively), despite some fluctuation during intervening years. In 1997, for example, the male victimization rate dipped slightly to 1.0 per 1,000 men.

Homicide by Intimate Partners, 1976–98

By 1998, murders attributable to intimate partners (1,830) had declined substantially from 3,000 murders in 1976. In general, the number of women killed by an intimate partner remained stable between 1976 and 1993 and then declined 23 percent between 1993 and 1997. Between 1997 and 1998, the rate increased 8 percent. In contrast, the number of men murdered by an intimate partner fell 60 percent from 1976 to 1998. (See exhibit 2).

Most victims of intimate partner homicide were killed by their spouses, although less frequently in recent years. In 1998, murders by spouses represented 53 percent of all intimate partner homicides, down from 75 percent in 1976.

Exhibit 1. Rate per 1,000 of Intimate Partner Violence, by Victim's Gender

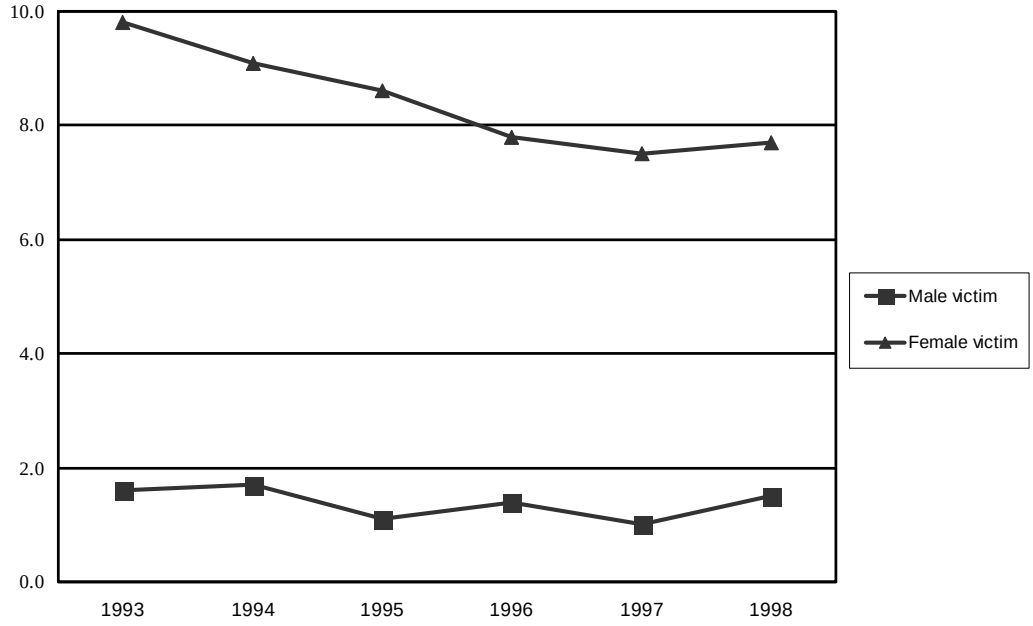
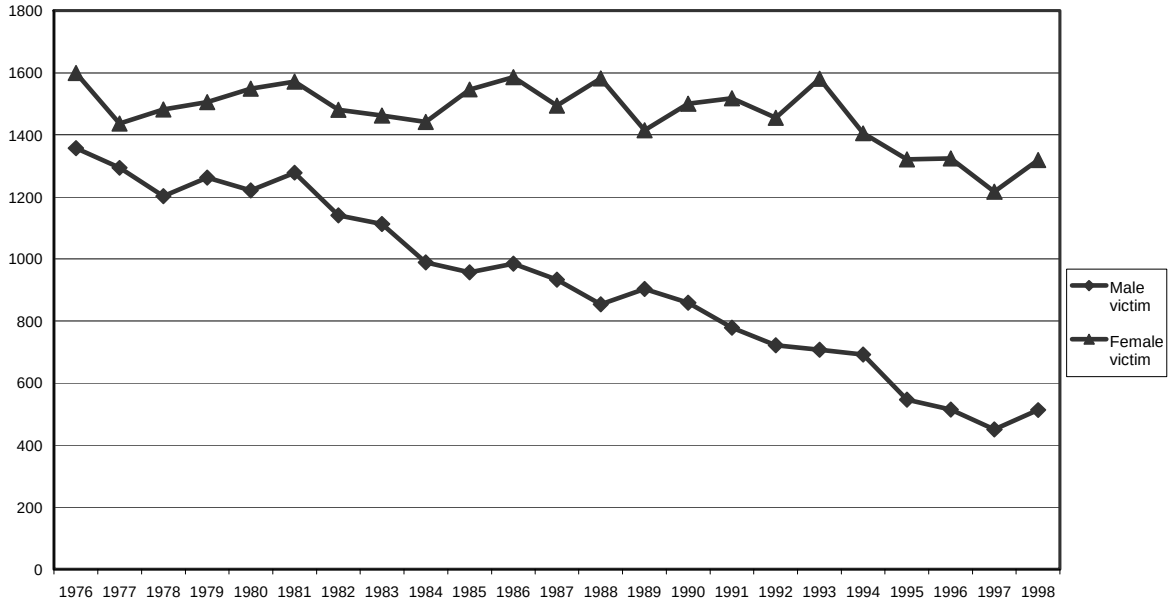


Exhibit 2. Number of Intimate Partner Homicide Victims, by Victim's Gender



White females represent the only racial category of victims for whom intimate partner homicide has not decreased substantially since 1976. The number of intimate partner homicides for all other racial and gender groups declined during the period. The number of black females killed by intimates dropped 45 percent; black males, 74 percent; and white males, 44 percent. But between 1997 and 1998, the number of white females killed by an intimate partner increased 15 percent.

Characteristics of Nonfatal Intimate Partner Violence Victims, 1993–98

Women experienced intimate partner violence at higher rates than men across all demographic categories between 1993 and 1998. Although intimate partner violence can occur in any social class, some demographic groups experienced it at higher rates than others. Among women, being black, young, divorced or separated, earning a lower income, living in rental housing, or living in an urban area were all associated with higher rates of intimate partner victimization between 1993 and 1998. Men who were young, black, divorced or separated, or living in rental housing had significantly higher rates of intimate partner violence than other men.

Race and Hispanic Origin

Overall, blacks were victimized by intimate partners at significantly higher rates than persons of any other race between 1993 and 1998. Black women experienced intimate partner violence at a rate 35 percent higher than white women, and about 2.5 times the rate of women of other races. Black men experienced intimate partner violence at a rate about 62 percent higher than that of white men and about 2.5 times the rate of men of other races.

No difference was seen in intimate partner victimization rates between Hispanic and non-Hispanic persons, regardless of the victim's gender.

Age

For both women and men younger than age 16 or older than age 50, the rate of violence by an intimate was less than 3 victimizations per 1,000 persons. Women ages 20 to 24 were victimized by an intimate partner at the highest rate (21 victimizations per 1,000 women). This rate was about eight times the peak rate for men (3 victimizations per 1,000 men ages 25 to 34).

Household Income

Women living in households with relatively lower annual incomes experienced intimate partner violence at significantly higher rates than women in households with higher annual incomes. Intimate partners victimized women living in households with the lowest annual household income at a rate nearly seven times that of women living in households with the highest annual income (20 victimizations compared with 3 victimizations per 1,000 females). No discernible relationship emerged between male victims of intimate partner violence and average annual household income.

Marital Status

For both men and women, divorced or separated persons were subjected to the highest rates of intimate partner victimization, followed by never-married persons. Because NCVS reflects a respondent's marital status at the time of the interview, it is not possible to determine whether a person was separated or divorced at the time of the victimization or whether separation or divorce followed the violence.

Home Ownership

Intimate partner victimization rates were significantly higher for both men and women living in rental housing. Women living in rental housing were victimized by intimate partner violence at more than three times the rate of women living in owner-occupied housing, and men living in rental housing were victimized by an intimate partner at more than twice the rate of men living in owner-occupied housing.

Urban, Suburban, and Rural Households

Women in urban areas were victims of intimate partner violence at significantly higher rates than suburban women and at somewhat higher rates than rural women. Between 1993 and 1998, urban women were victims of intimate partner violence at higher rates (10 victimizations per 1,000) than suburban and rural women (8 victimizations per 1,000).

Urban males were victimized by intimate partner violence at about the same rate as suburban males, but they experienced violence at a slightly higher rate than men in rural areas. No significant difference in rates between suburban and rural men emerged.

The Nature of Intimate Partner Victimization

Location and Time

Between 1993 and 1998, almost two-thirds of intimate partner violence against women and about half of all intimate partner violence against men occurred in the victim's home. Intimate partner violence occurred most often between 6 p.m. and 6 a.m., accounting for about 6 in 10 victimizations of both women and men by intimate partners (60 percent and 59 percent).

Children Younger Than 12 Present in the Household

Between 1993 and 1998, children under age 12 resided in 43 percent of the households where intimate partner violence occurred. Population estimates suggest that in general, 27 percent of households in the United States were home to children under age 12. Although suggestive, this analysis is not able to determine the extent to which these young children witnessed intimate partner violence.

Injuries and Treatment

Between 1993 and 1998, about two-thirds of the male and female victims of intimate partner violence were physically attacked. The remaining one-third were victims of threats or attempted violence.

Although percentages of males and females who were attacked were similar, the outcome of these attacks differed. Fifty percent of female victims of intimate partner violence were injured by an intimate partner compared with 32 percent of male victims.

Among those injured, similar percentages of men and women suffered serious injuries (4 percent and 5 percent, respectively). A significantly higher percentage of women than men sustained minor injuries (more than 4 in 10 women and fewer than 3 in 10 men). Most victims injured by an intimate partner did not obtain professional medical treatment for their injuries. About 6 in 10 female and male victims of intimate partner violence were injured but not treated. In general, injuries involved cuts and bruises, and most of those who were injured and who received treatment received care at home or at the scene of the victimization (17 percent of women and 24 percent of men).

Reporting to Police

About half of all intimate partner victimizations that occurred between 1993 and 1998 were reported to law enforcement authorities (53 percent of victimizations against women and 46 percent of victimizations against men). The percentage of victimizations reported to police differed by race and ethnicity of the victim. Violence against black women was reported to police at significantly higher percentages (67 percent) than that against black men (48 percent), white men (45 percent), and white women (50 percent). Intimate partner violence against Hispanic females was reported to the police at higher percentages than was violence against non-Hispanic females (65 percent compared with 52 percent).

The percentage of intimate violence against women reported to the police was greater in 1998 (59 percent) than in 1993 (48 percent). There was no significant difference in the percentage of reporting by male victims of intimate partner violence between 1993 and 1998.

In 1997 and 1998, a significantly higher percentage of intimate partner violence against females was reported to the police than in earlier years, when the percentage not reported was similar to the percentage reported.

With the exception of 1997, during the 1993–1998 period, approximately half of victimizations against males were not reported to the police; that year, the percentage unreported was slightly more than half. Half of male victims and a third of female victims state as their reasons for not reporting violence to the police their belief that it was a “private or personal matter.” Although this reason was the most frequently stated by both male and female victims, it was cited by male victims at a significantly higher percentage.

Fear of reprisal by the perpetrator accounted for 19 percent of the reasons women gave for not reporting their victimization to police. About 1 in 10 male victims and fewer than 1 in 10 female victims said they did not report the crime to police because they did not want to get the offender in trouble with the law.

Discussion

Although not included in this paper, a comparison of the NCVS estimates presented above with estimates from the NVAWS and NCWSV would show many similarities, but also many differences, especially in estimates of rates or magnitude of violence against women. How does one reconcile the differences across the various estimates of violence against women? As discussed above, several methodological differences among the surveys can explain some portion of the differences in estimates of the magnitude of the problem. The estimates from NVAWS and NCWSV may be higher than those from NCVS, in part because the two focused studies include a larger universe of events than NCVS. For example—

, Among women who were categorized by NCWSV as victims of a completed rape based on the characteristics of the incidents, almost half did not consider themselves to be the victims of rape.

, As shown in exhibit 3, the percentage of NVAWS and NCWSV victims of violence who reported the crime to the police was extremely low, much lower than NCVS.

Exhibit 3. Percent of Victims of Violence Against Women Who Say They Reported to Police

	NCVS	NVAWS	NCWSV
Rape	28	17	4
Assault	40	—	27

Note: — no estimate available

These differences are indications of the effect of NCVS's crime focus. Violent acts or threats that victims do not believe are criminal are not as likely to be reported to police as are those acts that victims believe to have been crimes. There are many reasons victims do not report violent acts to police. They may be afraid or unable to report the violence, or they may believe that the police will not improve their situation. The NCVS estimates of the percentage of intimate violence reported are much higher than those of the other two surveys, which indicates substantive differences between the types of behaviors estimated by the various surveys.

Although many factors contribute to the differences between NCVS and other violence against women surveys, the impact of contextual differences has not received the attention it warrants. The NCVS focus on crime acts as a filter in that some victims of violence may not report the incident to the survey because they did not perceive what happened to them as a crime. The other surveys do not have a crime focus and may include some violence that victims did not consider criminal. This is neither bad or good, nor does it indicate a flaw in NCVS. The survey's purpose is to measure the kinds of events likely to come to the attention of the criminal justice system, and it does so.

Implications for Practitioners

The disparity among the three surveys' findings suggests that a great deal of violence suffered by women is not viewed by victims as criminal. Thus we are challenged to continue to press the message to men and women that violence is a crime, and that using force to have sex is a crime.

It is possible that the recent downward trends in intimate partner violence are indications that attitudes are changing. As the data presented at the workshop show, intimate partner violence rates have not declined as steeply as overall crime rates during the past several years. The downward trend may indicate an actual leveling off, but it could also be an indication of a change in attitude by some victims about what they have experienced. That is, victims may have become more likely to report these incidents to surveys like NCVS.

Implications for Future Research

It is imperative that researchers not get lost in issues about whether one study is right and another wrong and which study presents the "truth." The truth is that the issues are exceedingly complex and the extent of violence against women extremely difficult to measure. It requires gathering information in a variety of ways to fully capture the nature and extent of a variety of acts subsumed under the heading "violence against women." Only by approaching this problem using all tools available and from many different angles can we hope to further our knowledge. By understanding the differences between estimates from different studies, we take full advantage of the opportunities for enhancing our understanding of the problem.

Notes

1. Many of the findings presented below were drawn from Callie Rennison and Sarah Welchans, *Intimate Partner Violence,* Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, 2000, NCJ 178247.

2. As defined in this paper, intimate relationships involve current or former spouses, boyfriends, or girlfriends. These individuals may be of the same gender. Violent acts examined include murder, rape, sexual assault, robbery, aggravated assault, and simple assault.

Intimate Partner Violence and Injury in the Lives of Low-Income Native American Women

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Since the mid-1970s, an increasing number of national, community, and clinic-based studies have investigated the prevalence of intimate partner violence against women in the United States. However, few studies have focused on violence against Native American women (Chester et al., 1994; National Research Council, 1996). The lack of prevalence data specific to Native women is particularly problematic because current levels of violence in Native American communities may be largely a consequence of colonial and U.S. governmental policies. Native peoples in the United States have been subjected to a long history of colonization, resulting in massive loss of lands and resources, and in severe disruption of traditional gender roles and family structures (Brave Heart and DeBruyn, 1998; Duran and Duran, 1995; LaRocque, 1994, pp. 72–89; McEachern, Van Winkle, and Steiner, 1998). Although documentation is insufficient to gauge the exact extent of violence against women in precolonial Native societies, most scholars argue that colonization greatly exacerbated the problem (Allen, 1986; Brave Heart and DeBruyn, 1998; LaRocque, 1994, p. 75; McEachern, Van Winkle, and Steiner, 1998).

Furthermore, there are more than 500 recognized tribal entities in the United States, with distinct customs, languages, and traditions (Chester et al., 1994; Norton and Manson, 1997). Without historically and culturally specific data on intimate partner violence against the 1.5 million Native women ages 15 and older in the United States (U.S. Census Bureau, 2001), it is not possible for tribes, Native American urban organizations, practitioners, and researchers to design effective prevention or intervention programs to address their needs.

The authors conducted an extensive search of several databases and found seven published studies that report prevalence data on intimate partner violence against Native women in the United States (Bachman, 1992, pp. 89–108; Bohn, 1993; Fairchild, Fairchild, and Stoner, 1998; Hamby and Skupien, 1998; Norton and Manson, 1995; Robin, Chester, and Rasmussen, 1998; Tjaden and Thoennes, 2000). However, three of these studies had very small samples (fewer than 100 women). Still, the available data suggest that rates of intimate partner violence against Native American women are substantially higher than the national average.

Recent national telephone survey data indicate that 22.1 percent of U.S. women are physically assaulted and 7.7 percent are sexually assaulted by an intimate partner in their lifetime (Tjaden and Thoennes, 2000). The few larger studies of lifetime intimate partner violence against Native American women suggest even higher rates. Hamby and Skupien (1998) conducted in-person interviews with 117 women living on the San Carlos Apache reservation and found that in their current relationship, 75.2 percent had experienced physical partner violence and 61.5 percent had been injured by their partner. In addition, a recent study of 341 women who visited health clinics located on the Navajo reservation found that 41.9 percent had been physically assaulted and 12.1 percent had been sexually assaulted by a partner in their lifetime (Fairchild, Fairchild, and Stoner, 1998). Tjaden and Thoennes (2000) also found higher lifetime physical (30.7 percent) and sexual (15.9 percent) intimate partner violence among the 88 Native American women in their national sample.

Together, these three studies suggest that lifetime rates of physical and sexual intimate partner violence are higher among *some* Native women than the national average and that wide variations exist in lifetime rates of physical partner violence among Native women. However, a number of methodological issues should be considered before formulating solid conclusions.

First, although the three studies all used intimate partner violence measures based on the Conflict Tactics Scales (CTS) (Straus et al., 1996; Straus, 1990), the lifetime measures were not comparable across the studies. For example, Tjaden and Thoennes (2000) used a five-item measure of sexual partner violence that included attempted or completed forced vaginal, oral, or anal sex; whereas, it is unlikely that Fairchild, Fairchild, and Stoner (1998) used such a comprehensive measure (no information on the sexual partner violence measure was provided). Likewise, Hamby and Skupien (1998) measured physical intimate partner violence within a single relationship, but Tjaden and Thoennes (2000) and Fairchild, Fairchild, and Stoner (1998) measured lifetime physical partner violence across all intimate relationships. In addition, Hamby and Skupien's (1998) study was the only one to report intimate partner injury rates.

Second, the studies differed in sampling and survey administration methods. Tjaden and Thoennes (2000) used a telephone survey with random-digit dialing to select participants. Fairchild, Fairchild, and Stoner (1998) used in-person interviews conducted among medical clinic populations. Hamby and Skupien (1998) used in-person interviews, but recruited volunteers through several public-advertising venues.

Third, the sampling frames for the three studies were different. Tjaden and Thoennes sought a nationally representative sample but in effect excluded many Native Americans living on reservations or in rural areas who did not have telephones. The other two studies were each conducted among a specific tribe. In addition to differences in tribal affiliation, the three studies included populations of varying ages and socioeconomic circumstances. For example, the San Carlos Apache study (Hamby and Skupien, 1998) included mostly younger women who had very low incomes, whereas the Navajo study (Fairchild, Fairchild, and Stoner, 1998) included more older women who had somewhat higher incomes. Thus, none of these studies should be viewed as representative of all Native American women in the United States.

Many more studies are needed that investigate the extent and nature of intimate partner violence among diverse samples of Native American women in the United States. The authors' study was designed to address this need and, specifically, to determine lifetime and 1-year prevalence rates of various types of partner-perpetrated violence and injury in a sample of Native women from western Oklahoma. This paper will describe the lifetime prevalence findings.

Methods

Study Design and Population

The study was conducted in two phases. In phase one, semistructured, indepth qualitative interviews were conducted with 37 Native American women. Women who had experienced physical or sexual intimate partner violence were compared with those who had no history of such violence. The primary purpose of the qualitative study was to generate culturally, historically, and socially specific hypotheses regarding risk and protective factors for intimate partner violence against Native American women. A secondary purpose was to examine the words Native women used to describe their victimization experiences to determine which commonly used quantitative instrument(s) would best assess partner violence against Native women, as well as how these instruments should be modified for this population.

In phase two, a cross-sectional survey was conducted with 431 Native American women to assess lifetime and past-year prevalence of intimate partner violence and related injury and to test etiologic hypotheses generated in phase one. A large sample was sought that would be reasonably representative of Native women of childbearing age in western Oklahoma. Several obstacles to obtaining such a representative sample existed. Because the State has no reservations, Native Americans in western Oklahoma live in numerous small towns and rural areas spanning a wide geographic area, making a household-based survey too costly. In addition, because many rural households in Oklahoma do not have telephones, a population-based telephone survey would not have been representative of the target population. After discussion with tribal and community representatives, two sample sources were selected. First, participants were recruited from tribally operated WIC clinics in western Oklahoma. The WIC clinics serve low-income (less than 185 percent of the Federal poverty level) women who are pregnant, lactating, or up to 6 months postpartum, and infants and children less than 5 years of age. Eligible participants consisted of all Native American women and teens who visited the clinics during a 6-month period in 1999 to pick up vouchers for themselves and/or their children. Second, a convenience sample of Native women ages 18 through 45 was recruited from fliers describing the *Native Women's Health Survey*, which were placed in tribal facilities and at a local vocational school.

Data Collection

The study protocol was approved by the pertinent tribal leaders and by the Institutional Review Board of the University of Oklahoma Health Sciences Center. In-person interviews, lasting 40 to 70 minutes, were conducted in private office settings by one of two Native American women interviewers who obtained written informed consent from each participant before the interviews. Women were paid $15 cash for their participation and were offered information on available local counseling and family services. A total of 431 interviews were completed, but because 9 surveys had missing information on lifetime intimate partner violence, the final sample size for analyses is 422 women (see exhibit 1). The final sample consisted of 245 WIC clients, who represented 79.3 percent of all WIC-eligible women, and 177 other volunteers, who represented 79.7 percent of eligible non-WIC women who inquired about the survey.

Measures of Lifetime Intimate Partner Violence

The survey asked separately about lifetime and past-year intimate partner violence. The standard CTS introduction was not used. Instead, for lifetime intimate partner violence, women were asked to think about—

> *all* of the intimate or romantic relationships you've had with men in your lifetime, including when you were a teenager. This includes past husbands, boyfriends, or men or boys you've dated, as well as your (current partner). I'm going to read through some items and I'd like you to tell me, yes or no, if you *ever* had a boyfriend, husband, or date (including your current partner) do any of these things to you, even if it only happened one time.

Lifetime intimate partner violence was measured using modified 16-item revised Conflict Tactics Scales (CTS2) (Straus et al., 1996). The scales assessed minor and severe physical and sexual intimate partner violence in which severity was defined in accordance with Straus et al., (1996). With the exception of small wording changes and the addition of one item (being dragged or thrown across the room), the physical assault scale items were similar to the CTS2 items. However, the seven-item CTS2 sexual coercion scale was reduced to a three-item scale because the latter was judged to be more culturally appropriate. Individual scale items are listed in exhibit 2.

Women who reported lifetime intimate partner violence (see exhibits 2 and 3) were asked to view a card listing 13 different types of injuries and to indicate all of the injuries they had received in their lifetime from fights with a partner. The severity of injury types was determined in consultation with emergency room and trauma physicians and was based on the likelihood of requiring medical assessment and treatment and on the probable amount of resulting morbidity. Specific injury items and their assigned severity are listed in exhibit 4. Women who reported lifetime injuries were also asked how many different times they had been injured by a partner in their lifetime.

Sample Characteristics

Socioeconomic and demographic information was collected for individuals and the household. Each woman was asked about her relationship status, tribal enrollment, educational attainment, past-year employment status, and age. Household data included receipt of various types of public assistance in the past 12 months, monthly family income, and number of adults and children supported by this income. Household income data were used to compute the ratio of the family's income to the 1999 Federal poverty level. Women also reported on whether they currently had a working telephone in their home.

Statistical Analyses

Survey data were entered into an EpiInfo Version 6.04C database and validated to minimize errors. Except where noted, Statistical Analysis Software® (SAS) Version 8.01 was used for analyses. Lifetime prevalence and associated 95-percent confidence intervals (*CI*s) were computed for intimate partner violence and intimate partner injury by type and severity. The chi-square statistic was used to test for associations between categorical variables, the Mantel-Haenszel chi-square statistic to test for linear associations among ordinal variables, and the non-parametric Wilcoxon Sum Rank Test to assess associations between continuous variables and intimate partner violence. Confounding was assessed by comparing unadjusted and adjusted estimates using logistic regression modeling techniques.

Findings

Socioeconomic and demographic sample characteristics are presented in exhibit 1. More than half (58.3 percent) of study participants were clients of the Women, Infants, and Children (WIC) Program and the remaining 41.7 percent comprised the convenience sample (see Methods). Participants ranged in age from 14 to 45 years ($\bar{O}$ = 28.8). WIC participants were significantly younger ($\bar{O}$ = 26.2) than other study participants ($\bar{O}$ = 32.5) ($p < 0.001$). At the time of the

Exhibit 1. Socioeconomic and Demographic Characteristics of Native American Women Study Participants (*n* = 422), Oklahoma, 1999

Characteristic	Value
Sample Source, Percentage	
WIC clinics	58.3
Tribal facilities/other	41.7
Age, *y*, Median (range)	28 (14–45)
Relationship Status, Percentage	
Married	27.6
Common law	31.0
Separated/divorced	11.9
Single	29.5
Enrolled Tribal Member, Percentage	99.3
Education, Percentage	
< High school graduate	23.5
High school graduate/GED	51.7
Some college courses	18.7
Associate/bachelor's degree	6.2
Employment Status, Percentage	
Employed full time	27.3
Employed part time	12.3
Employed intermittently	18.7
Unemployed	41.7
Federal Poverty Level, Percentage	
# 50%	12.9
51–100%	41.0
101–185%	40.1
> 185%	6.1
Public Assistance in Past 12 Months	
Food stamps, %	48.9
TANF[a], %	18.3
Tribal housing assistance, %	38.5
No Functioning Telephone in Home, Percentage	41.9

[a]Temporary Assistance to Needy Families.

interview, 58.6 percent of women were married or in common-law relationships and 11.9 percent were separated or divorced. The vast majority (85.6 percent) of women had a relationship with a man in the previous year. All but 3 women were enrolled members of 1 of 36 tribes, and most (89 percent) were members of 1 of 8 tribes located in western or southwestern Oklahoma. Although all of the women were Native American, 32.5 percent of those in current relationships had non-Native partners.

Socioeconomic characteristics of study participants are also shown in exhibit 1. Most participating women (76.5 percent) had at least a high school degree, but only 6.2 percent had earned a 2- or 4-year college degree. In the year before the survey, 27.3 percent of women were employed full time, 41.7 percent were unemployed, nearly half (48.9 percent) had received food stamps, and 18.3 percent had received Temporary Assistance to Needy Families (TANF). A total of 53.9 percent of women lived below the Federal poverty level. In addition, 41.9 percent of women did not have a working telephone in their home.

Lifetime Prevalence of Intimate Partner Violence

The vast majority (82.7 percent, 95 percent *CI* [confidence level] = 78.7, 86.1) of study women had experienced physical or sexual intimate partner violence in their lifetime (exhibit 2). Two-thirds (66.6 percent) reported severe physical partner violence and one-fourth (25.1 percent) reported severe sexual partner violence. Common forms of severe partner-perpetrated physical assault included being punched or hit with a fist or something that could hurt (57.8 percent), slammed against a wall (49.3 percent), dragged or thrown across a room (40.3 percent), kicked (39.1 percent), and choked (35.4 percent). Approximately half (49.3 percent) of participants reported being beaten up by a boyfriend, husband, or date in their lifetime, and one in six (17.1 percent) women reported that a partner had pulled or used a knife or gun on them. Lifetime prevalence of forced sex by a partner was 20.9 percent (95 percent *CI* = 17.1, 25.1). A strong association was found between lifetime experiences of severe physical and severe sexual intimate partner violence (chi-square = 49.0; $p < 0.001$): More than one-third (35.6 percent) of women who reported severe physical partner violence also reported being threatened or physically forced to have sex with a partner, compared with 4.3 percent of women who reported no severe physical partner violence.

Lifetime prevalence of severe partner violence varied by certain sample characteristics (exhibit 3). As expected, lifetime reports of severe sexual and physical intimate partner violence increased with the participant's age ($p < 0.001$). Likewise, women who received TANF in the year before the interview had substantially higher rates of lifetime severe physical and sexual partner violence than women who did not receive TANF ($p < 0.01$). Although the sample source was significantly associated with severe physical ($p < 0.001$) and sexual ($p = 0.035$) intimate partner violence in univariate analyses, these associations were no longer significant after controlling for a participant's age ($p_{\text{physical}} = 0.09$; $p_{\text{sexual}} = 0.41$). No significant differences were found in rates of severe partner violence by family poverty level, participant's education, employment status, tribal affiliation, or whether there was a telephone in the home.

Exhibit 2. Lifetime Prevalence of Intimate Partner Violence Against Native American Women Participants (*n* = 422), Oklahoma, 1999

Type of Intimate Partner Violence (IPV)	Lifetime Prevalence	
	%	(95% *CI*)
Any Physical and/or Sexual IPV	82.7	(78.7, 86.1)
Minor only	14.7	(11.5, 18.5)
Severe	68.0	(63.3, 72.4)
Any Physical IPV	81.3	(77.2, 84.8)
Minor only	14.7	(11.5, 18.5)
Severe	66.6	(61.8, 71.0)
Any Sexual IPV	49.1	(44.2, 53.9)
Minor only	23.9	(20.0, 28.4)
Severe	25.1	(21.1, 29.6)
Physical Assault Scale Items[a]		
Throw something at you that could hurt[b]	52.0	(47.1, 56.9)
Twist your arm or pull your hair[b]	59.1	(54.3, 63.9)
Push or shove you in anger[b]	73.7	(69.2, 77.8)
Grab you in anger[b]	73.4	(68.9, 77.5)
Slap you[b]	57.8	(52.9, 62.6)
Punch or hit you with his fist or something that could hurt[c]	57.8	(52.9, 62.6)
Kick you[c]	39.1	(34.4, 44.0)
Choke you[c]	35.4	(30.9, 40.2)
Slam you against a wall[c]	49.3	(44.4, 54.2)
Beat you up[c]	49.3	(44.4, 54.2)
Burn or scald you on purpose[c]	4.8	(3.0, 7.4)
Pull or use a knife or gun on you[c]	17.1	(13.7, 21.1)
Drag or throw you across the room[d]	40.3	(35.6, 45.2)
Sexual Assault Scale Items[a]		
Insist on any type of sex with you, when you did not want to, but did not use physical force[b]	45.5	(40.7, 50.4)
Use verbal threats to make you have any type of sex with him	16.1	(12.8, 20.1)
Use force, like hitting you, holding you down, or using a weapon, to make you have any type of sex with him	20.9	(17.1, 25.1)

[a]Not mutually exclusive categories; women were asked: "Did any boyfriend, husband, or date EVER …?"
[b]Classified as minor violence according to Straus et al. (1996).
[c]Classified as severe violence in accordance with Straus et al. (1996).
[d]Added item; not in CTS2; classified as severe violence.

Exhibit 3. Lifetime Prevalence of Severe Intimate Partner Violence (IPV) by Violence Type and Sample Characteristics, Native American Women Participants, Oklahoma, 1999

Sample Characteristic	Severe Physical IPV		Severe Sexual IPV	
	%[a]	(95% *CI*)	%[a]	(95% *CI*)
Participant's Age, Years				
#22	52.2	(42.7, 61.5)	15.7	(9.8, 23.9)
23–34	66.5	(59.6, 72.8)	24.3	(18.7, 30.8)
35+	83.2	(74.1, 89.6)	37.6	(28.3, 47.9)
Received TANF[b] in Past Year				
Yes	83.1	(72.5, 90.4)	39.0	(28.3, 50.8)
No	63.0	(57.6, 68.1)	21.9	(17.7, 26.7)
Sample Source				
WIC clinic	59.2	(52.7, 65.3)	21.2	(16.4, 27.0)
Other	76.8	(69.8, 82.7)	30.5	(23.9, 37.9)

[a]Percentage of women in each stratum reporting intimate partner violence.
[b]Temporary Assistance to Needy Families.

Intimate Partner Injury

The authors examined the occurrence of intimate partner injuries among women who reported any partner violence (see exhibit 4). Most (88.8 percent; 95 percent *CI* = 84.9, 91.8) women who had experienced physical or sexual partner violence had also been injured by a partner, and 72.5 percent reported moderate or severe injuries. Although the most common injuries were minor scratches and cuts (84.1 percent), more than half of assaulted women reported injuries to their face (e.g., 49.9 percent had a black eye), and nearly one in five (18.6 percent) reported a broken bone or nose. Other severe injuries included reports of chipped or knocked out teeth (14.4 percent) and being knocked unconscious (15.2 percent).

The number of different times women were injured by a husband, boyfriend, or date also was investigated. Injured women reported being injured by a partner between 1 and 500 (median = 6) times in their lifetime. Nearly one out of four women (22.2 percent) reported more than 20 different injury incidents. Occurrence of lifetime injuries was highly correlated with injury severity. All women who had received only minor injuries were injured 10 or fewer times. In contrast, 27.4 percent of moderately injured women and 63.6 percent of severely injured women had been injured on more than 10 occasions. Moreover, 21.7 percent of severely injured women, representing 6.6 percent of all study participants, reported being injured by an intimate partner more than 50 times.

Exhibit 4. Intimate Partner Injury Among Native American Women Reporting Lifetime Intimate Partner Violence (*n* = 349), Oklahoma, 1999

Type of Intimate Partner Injury	%	(95% *CI*)
Any Intimate Partner Injury, Prevalence[a]	88.8	(84.9, 91.8)
Highest Injury Severity[b]		
Minor	16.3	(12.7, 20.7)
Moderate	35.5	(30.6, 40.8)
Severe	37.0	(31.9, 42.3)
Type(s) of Intimate Partner Injury, Prevalence[a, c]		
Small scratches, scrapes, bruises, cuts, welts, or rug burns[d]	84.1	(79.8, 87.7)
Sore muscles, sprains, strains, or pulls[d]	73.1	(68.0, 77.6)
Bruising or welts on neck[d]	37.5	(32.4, 42.8)
Irritation or bleeding in genital area[d]	5.8	(3.6, 8.9)
Severe bruising[e]	54.5	(49.1, 58.8)
Deep cut or burn[e]	19.3	(15.4, 23.9)
Bloody lip or welts on face[e]	52.4	(47.1, 57.8)
Black eye[e]	49.9	(44.5, 55.2)
Knocked unconscious or passed out[f]	15.2	(11.7, 19.5)
Chipped or knocked out teeth[f]	14.4	(11.0, 18.7)
Broken or fractured bones or broken nose[f]	18.6	(14.8, 23.2)
Internal injuries[f]	1.4	(0.5, 3.5)
Miscarriage or complications of pregnancy[f]	10.7	(7.7, 14.5)
Total times injured by intimate partner in lifetime[g]		
1	14.2	(10.6, 18.7)
2–4	25.2	(20.5, 30.4)
5–10	18.7	(14.6, 23.6)
11–20	15.2	(11.5, 19.8)
21–50	11.6	(8.4, 15.8)
>50	10.6	(7.5, 14.8)
Unknown	4.5	(2.6, 7.6)

[a]Among women reporting any IPV.
[b]Mutually exclusive categories based on the most severe injury reported, e.g., women reporting only moderate and minor injuries are included in the moderate injury stratum.
[c]Not mutually exclusive categories.
[d]Classified as minor injury.
[e]Classified as moderate injury.
[f]Classified as severe injury.
[g]Among participants (*n* = 310) reporting any intimate partner injury.

Discussion

This study contains the largest sample of any published investigation of lifetime rates of intimate partner violence against Native American women. It is the first to examine rates of lifetime physical and sexual intimate partner violence and related injury in a sample of Native American women from western Oklahoma. The authors found exceedingly high rates of lifetime physical and sexual partner violence: Two-thirds of the women had been severely physically assaulted,

one-half had been beaten up, and one-fourth had been raped by a partner. The lifetime rates of intimate partner violence in this sample are among the highest reported in the literature, comparable only to those reported for San Carlos Apache women, homeless women, long-term welfare recipients, and women on public assistance (Hamby and Skupien, 1998; Tolman and Raphael, 2000). Still, even within this low-income sample, significantly higher rates of severe physical and sexual partner violence were observed among women receiving TANF.

Implications for Researchers

These findings have significant implications for researchers. First, the rates of lifetime intimate partner violence observed in this study further suggest that at least some Native American women are at increased risk for physical and sexual partner violence. Lifetime rates in the sample are substantially higher than those observed among a nationally representative sample of U.S. women (Tjaden and Thoennes, 2000). They are higher, as well, than rates among women (n > 1,600) ages 18 through 39 visiting community hospital emergency departments in Pennsylvania and California (Dearwater et al., 1998) and rates among a large random sample of non-Latina white, African-American, and Latina women ages 18 through 45 visiting public clinics in San Francisco (Bauer, Rodriguez, and Perez-Stable, 2000).

Second, the results support the hypothesis that rates of intimate partner violence vary substantially among different populations of Native women. The current study's rates are similar to those observed in a sample of San Carlos Apache women of similar age and socioeconomic circumstances (Hamby and Skupien, 1998). However, they are substantially higher than those found for a sample of Navajo women (Fairchild, Fairchild, and Stoner, 1998) and for a sample of Native American women who participated in a national telephone survey (Tjaden and Thoennes, 2000).

Further research is needed to determine rates of intimate partner violence among other populations of Native American women. In addition, longitudinal or life history studies are needed to examine intimate partner violence among Native American women throughout their lifecourse. For example, the current study could not determine whether the observed high rates of lifetime intimate partner violence reflect victimization over many years and across multiple relationships, or whether the violence occurred more intermittently. Future studies should—

- Include sufficiently large samples of Native women to provide relatively precise rate estimates.
- Seek samples that are representative of particular tribes or groups of Native women.
- Include measures of physical, sexual, and emotional intimate partner violence.
- Assess the medical and social consequences of partner violence against Native American women.

It is unclear whether the differences in rates of intimate partner violence against Native women observed among the few studies conducted thus far are due to methodological differences in study protocols, socioeconomic differences among the samples, or true differences among the

populations studied. Future studies also will need to assess the validity and reliability of their intimate partner violence measures for use in Native American populations, using both qualitative and quantitative techniques, and to examine socioeconomic variability in violence rates within their samples.

Finally, although the precise magnitude of the problem of violence against Native American women is not yet known, all available data indicate that a large proportion of Native women experience violence from their intimate partners. Thus, there is an urgent need for research on the causes of intimate partner violence against Native women, as well as on the effectiveness of different violence intervention and prevention strategies for Native women. Both etiologic and prevention/intervention research will need to take into account the social and historical context of Native American women and their families. The authors believe this research will require a theoretical basis that addresses the brutality of U.S. colonization of Native Americans and its aftermath, as well as the varied responses of Native people to their oppressive conditions. Current theories of intergenerational trauma and historical unresolved grief offer such a potential grounding for etiologic and intervention research on intimate partner violence against Native women (Brave Heart and DeBruyn, 1998; Duran et al., 1998; Duran and Duran, 1995).

Implications for Practitioners

This study's findings have implications for tribes, Native American urban organizations, and other criminal justice, medical, and social service personnel who provide services and support to Native women. In particular, the finding that the vast majority of Native American women sampled had experienced severe physical and sexual intimate partner violence underscores the need for programs and services designed to address the needs of abused Native women. Anecdotal data and the authors' qualitative interview findings suggest that Native American women would prefer intimate partner violence services run by and for Native women. In western Oklahoma, there are exceedingly few such services, and most Native women who were interviewed did not access the other limited services available in the region. Accordingly, more tribal and Federal money should be allocated for intimate partner violence prevention and intervention programs for Native American women.

Nationally, intimate partner violence programs and services have focused on a combination of strategies, including—

- Immediate shelter (and shelter-based services such as counseling and long-term self-sufficiency planning) for abused women and their children.
- Criminal justice interventions such as protective orders, arrest and prosecution of perpetrators, and legal advocacy for abused women.
- Telephone hotlines for emergency assistance.
- Batterer treatment programs.
- Universal screening to identify victims of intimate partner violence in medical care settings.

Tribes and Native American advocacy groups will need to assess the applicability of these approaches for Native women. For example, more than 40 percent of the women in this study did not have a working telephone in their homes; thus, innovative programs are needed to assist these women in obtaining access to emergency services (including urgent medical care). Likewise, jurisdictional issues (e.g., tribal versus State) and severe lack of policing resources on reservations and in remote rural areas make criminal justice responses problematic. It is possible that intimate partner violence programs for Native women would be best placed within other programs that Native American women are already accessing, such as WIC and primary care clinics, as long as women's confidentiality and safety can be maintained. Moreover, many scholars and practitioners concerned with contemporary health and social problems among Native Americans are calling for a return to interventions based on traditional Native American spirituality and cultural practices (Brave Heart, 1999; Brave Heart and DeBruyn, 1998; Duran and Duran, 1995; Norton and Manson, 1997; Parker, 1990). The authors advocate long-term partnerships among tribes, Native American urban agencies, researchers, and practitioners so that a range of innovative intervention and prevention programs can be developed, funded, implemented, and rigorously evaluated to determine the most effective strategies for addressing the problem of violence against Native American women.

References

Allen, P.G. (1986). *The Sacred Hoop: Recovering the Feminine in American Indian Traditions.* Boston, MA: Beacon Press.

Bachman, R. (1992). *Death and Violence on the Reservation: Homicide, Family Violence, and Suicide in American Indian Populations.* Westport, CT: Auburn House.

Bohn, D. (1993). "Nursing Care of Native American Battered Women." *AWHONNS Clinical Issues in Perinatal Women's Health Nursing,* 4, 424–436.

Bauer, H.M., Rodriguez, M.A., and Perez-Stable, E.J. (2000). "Prevalence and Determinants of Intimate Partner Abuse Among Public Hospital Primary Care Patients." *Journal of General Internal Medicine,* 15, 811–817.

Brave Heart, M.Y.H. (1999). "Oyate Ptayela: Rebuilding the Lakota Nation Through Addressing Historical Trauma Among Lakota Parents." *Journal of Human Behavior in the Social Environment,* 2, 109–126.

Brave Heart, M.Y.H., and DeBruyn, L.M. (1998). "The American Indian Holocaust: Healing Historical Unresolved Grief." *American Indian and Alaska Native Mental Health Research,* 8, 56–78.

Chester, B., Robin, R.W., Koss, M.P., and Goldman, D. (1994). "Grandmother Dishonored: Violence Against Women by Male Partners in American Indian Communities." *Violence and Victims,* 9, 249–258.

Dearwater, S.R., Coben, J.H., Campbell, J.C., Nah, G., Glass, N., McLoughlin, E., and Bekemeier, B. (1998). "Prevalence of Intimate Partner Abuse in Women Treated at Community Hospital Emergency Departments." *Journal of the American Medical Association,* 280, 433–438.

Duran, E., Duran, B., Brave Heart, M.Y.H., and Yellow Horse-Davis, S. (1998). "Healing the American Indian Soul Wound." In Y. Danieli (Ed.), *International Handbook of Multigenerational Legacies of Trauma* (pp. 341–354). Norwell, MA: Kluwer Academic Publishers.

Duran, E., and Duran, B. (1995). *Native American Postcolonial Psychology*. Albany, NY: State University of New York Press.

Fairchild, D.G., Fairchild, M.W., and Stoner, S. (1998). "Prevalence of Domestic Violence Among Women Seeking Routine Care in a Native American Health Care Facility." *American Journal of Public Health,* 88, 1515–1517.

Hamby, S.L. and Skupien, M.B. (1998). "Domestic Violence on the San Carlos Apache Reservation: Rates, Associated Psychological Symptoms, and Current Beliefs." *The IHS Primary Care Provider,* 23, 103–106. Also at: http://www.ihs.gov/PublicInfo/Publications/HealthProvider/provider.asp.

LaRocque, E.D. (1994). *Violence in Aboriginal Communities.* Ottawa, Canada: National Clearinghouse on Family Violence.

McEachern, D., Van Winkle, M., and Steiner S. (1998). "Domestic Violence Among the Navajo: A Legacy of Colonization." *Journal of Poverty,* 2, 31–46.

National Research Council (1996). N.A. Crowell and A.W. Burgess, eds., *Understanding Violence Against Women* (pp. 41–42). Washington, DC: National Academy Press.

Norton, I.M., and Manson S.M. (1997). "Domestic Violence Intervention in an Urban Indian Health Center." *Community Mental Health Journal,* 33, 331–337.

Norton, I.M., and Manson, S.M. (1995). "A Silent Minority: Battered American Indian Women." *Journal of Family Violence,* 10, 307–318.

Parker, L. (1990). "The Missing Component in Substance Abuse Prevention Efforts: A Native American Example." *Contemporary Drug Problems,* 17, 251–270.

Robin, R.W., Chester, B., and Rasmussen, J.K. (1998). "Intimate Violence in a Southwestern American Indian Tribal Community." *Cultural Diversity and Mental Health,* 4, 335–344.

Straus, M.A., Hamby, S.L., Boney-McCoy, S., and Sugarman, D.B. (1996). "The Revised Conflict Tactics Scales (CTS2): Development and Preliminary Psychometric Data." *Journal of Family Issues,* 17, 283–316.

Straus, M.A. (1990). "Measuring Intrafamily Conflict and Violence: The Conflict Tactics (CT) Scales." In M.A. Straus and R.J. Gelles, eds. *Physical Violence in American Families: Risk Factors and Adaptations to Violence in 8,145 Families* (pp. 29–47). New Brunswick, NJ: Transaction Publishers.

Tolman, R.M., and Raphael, J. (2000). "A Review of Research on Welfare and Domestic Violence." *Journal of Social Issues,* 56, 655–682.

Tjaden, P., and Thoennes, N. (2000). *Extent, Nature, and Consequences of Intimate Partner Violence: Findings From the National Violence Against Women Survey.* Washington, DC and Atlanta, GA: U.S. Department of Justice, National Institute of Justice, and U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. NCJ 181867. Also available at http://www.ncjrs.org/pdffiles1/nij/181867.pdf.

U.S. Census Bureau, Population Division, Racial Statistics Branch (2001). "Table 3: General Demographic Characteristics for the American Indian and Alaska Native Population." In *General Demographic Characteristics by Race for the United States: 2000 (PHC–T–15).* Retrieved December 20, 2001, from http://www.census.gov/population/www/cen2000/phc-t15.html.

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Physical Violence Among White, African American, and Hispanic Couples: Ethnic Differences in Initiation, Persistence, and Cessation[1]

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More than 20 years of research, together with media attention, has created an image of intimate violence against women as a single pattern of violence escalation and persistence that is stopped only by the termination of the relationship or some outside intervention (Pagelow, 1981; Walker, 1984). More recent research, however, suggests that this is only one of several patterns of violence against women (Aldarondo, 1996; Aldarondo and Kaufman Kantor, 1997; Aldarondo and Sugarman, 1996). Although more and more researchers are beginning to focus on the possibility and importance of different patterns of intimate partner violence, the literature in this area is still lacking. Of the studies that have considered patterns of persistence and cessation, relatively few have used large samples (Wofford, Mihalic, and Menard, 1994). In fact, many of what can be considered landmark studies in this area have relied on very small samples (Aldarondo and Sugarman, 1996; Feld and Straus, 1989; Kaufman Kantor and Aldarondo, 1997). Moreover, previous research has relied on information from only one of the individuals in the intimate relationship. A growing body of research suggests that more reliable data can be obtained when information on violent behavior comes from both individuals (Bohannon, Dosser, and Lindley, 1995; Szinovacz, 1983; Szinovacz and Egley, 1995). Existing research on patterns of intimate partner violence has also all but ignored the issue of race/ethnicity. This neglect results, in part, from the small sample sizes in many studies that would make analyses by racial or ethnic group impossible. By using a larger sample and information from both members of the couple, the current study addresses many of these limitations and asks two questions: Are there racial/ethnic differences in patterns of male violence against women? And, do these differences remain when other theoretically relevant variables are introduced into the model?

Data

The data used for this study come from the first and second wave of the National Survey of Families and Households (NSFH), conducted by members of the Center for Demography and Ecology at the University of Wisconsin–Madison (Sweet, Bumpass, and Call, 1988; Sweet and Bumpass, 1996). NSFH was designed to cover a broad range of family structures, processes, and relationships with a large enough sample to permit subgroup analysis (Sweet, Bumpass, and Call, 1988; Sweet and Bumpass, 1996). The first wave of NSFH (NSFH1) was conducted in 1988 and included a national probability sample of 13,017 respondents. Interviews were conducted with a cross-sectional sample of households and an oversample of blacks, Puerto Ricans, Mexicans, single-parent families, families with stepchildren, cohabiting couples, and recently married persons. One adult in each household was randomly selected as the primary respondent. Five years after the original interview, the first wave sample was reinterviewed. The second wave consisted of face-to-face interviews with surviving members of the original sample and a personal interview with the current spouse or partner. The sample used for the current study consisted of all couples who were either married or cohabiting at the time of the first wave and who were still together at the time of the second wave (n = 3,584).

Measurement of Key Variables

Violence. NSFH uses several questions to assess intimate partner violence. Responses to the following two questions were used to create a violence variable:

There are various ways that married (cohabiting) couples deal with serious disagreements.

1. When you have a serious disagreement with your husband/wife (partner), how often do you end up hitting or throwing things at each other?

2. Sometimes arguments between partners become physical. During the past year has this happened in arguments between you and your husband/wife (partner)? During the past year, how many fights with your husband/wife (partner) resulted in YOU hitting, shoving, or throwing things at him/her?

If either the male or female partner or both indicated that the male partner had used physical force, the violence variable was coded as violent. Violent behavior consisted of hitting or throwing things and/or physical arguments by the male partner against the female partner. Answers to these questions at both survey administrations made it possible to create a violence typology that included four categories: persistently violent, newly violent, violence cessation, and nonviolent.

Race. Race/Ethnicity was a self-identification measure assessed with the following question: "Which of the groups on this card best describes you?" The response choices were black; white, not of Hispanic origin; Mexican American; Chicano; Mexican; Puerto Rican; Cuban; other Hispanic; American Indian; Asian; or other. For this study, only those individuals that self-identified as either black, white but not Hispanic, or as one of the Hispanic national origin groups were included. The race of the male partner was used because only a very small percentage (3.6 percent) of the couples were mixed race.

Findings

Ethnic Differences in Sample Characteristics

Exhibit 1 presents the results of analyses that look at ethnic differences in selected sample characteristics and illustrates the necessity of considering race and ethnicity in any analysis. Caucasian individuals in this sample were least likely to be cohabiting with a partner compared with African-American and Hispanic/Latino individuals. Consistent with Census data, Hispanic men were younger than either white or African-American men. Although no significant ethnic differences in total couple income were evident at either wave 1 or wave 2, there was a significant relationship between ethnicity and income change. Specifically, Hispanic couples were the only ones to experience a significant increase in income between the first survey and the followup survey.

Exhibit 1. Sample characteristics

	Caucasian (*n* = 3,473)	African American (*n* = 235)	Hispanic/Latino (*n* = 240)
Working fewer weeks at wave 2	13.6	14.8	19.2
Working more weeks at wave 2	12.5	12.3	15.2
Cohabiting	3.2	6.8	7.1***
Male partner age wave 2	51.6	49.6	46.6***
Income wave 1 (in dollars)	62,399	45,049	30,688
Income wave 2 (in dollars)	56,209	42,002	38,070
Income change (in dollars)	-5,152	-1,904	4,673*

* $p < .05$
** $p < .01$
*** $p < .001$

Demographic Differences in Violence Patterns

The data presented in the top section of Exhibit 2 show the results of separate chi-square tests evaluating the relationship between each violence category and several demographic characteristics. Several variables were significantly associated with each violence category.

Cohabiting individuals were significantly more likely than married individuals to persist in using violence and to have initiated violence between the first and second wave. Compared with men who had worked the same amount or more hours in wave 2 than in wave 1, male partners who worked fewer hours at wave 2 were significantly more likely to become violent. Males who were working more hours at wave 2 were significantly more likely to cease violent behavior by the second survey administration.

Race/ethnicity was also significantly associated with the violence category. Specifically, black men were more likely to have stopped violent behavior, but Hispanic men were significantly more likely to have started. Consistent with existing violence research, men in all three violence categories were significantly younger than nonviolent men (Aldarondo and Sugarman, 1996; Kaufman Kantor and Aldarondo, 1997). Income was significantly associated with one violence type only. Couples with lower incomes were significantly more likely to have stopped the violence compared with couples in which no violence was reported at either wave 1 or wave 2.

Exhibit 2. Associations between selected demographic variables and violence category

	Violence Category		
	Persistently Violent	Violence Cessation	Newly Violent
Male partner working less	2.9	8.6	8.3
Other	3.3	6.9	4.3
Male partner working more	4.9	10.1*	4.2
Other	3.0	6.7	4.8
Married	2.8**	6.4	3.9***
Cohabiting	8.3	8.3	13.2
White	2.8	6.2*	3.8**
Black	3.9	11.0	5.8
Hispanic	4.1	7.3	9.7

	Persistently Violent		Violence Cessation		Newly Violent	
	Yes	No	Yes	No	Yes	No
Male partner age (years)	36.4	45.3***	40.2	45.3***	36.7	45.3***
Wave 1 income (in dollars)	50,613	62,226	51,865	62,226***	57,817	62,226
Wave 2 income (in dollars)	52,724	57,539	54,808	57,539	56,443	57,539

Note: The omitted group is the nonviolent group. The top half of the exhibit represents chi-square analyses. The bottom half of the exhibit represents tests of differences in means.
* $p < .05$
** $p < .01$
*** $p < .001$

Multivariate Analyses

Multinomial logistic regression was used to examine which risk factors were significantly associated with a particular violence category (see exhibit 3). In contrast to the bivariate results (see exhibit 2), ethnicity was not a significant predictor of all of the violence categories. Black men were more likely to have ceased violent behavior between wave 1 and wave 2. At the same time, they were at a greater risk of initiating violence. The age of the male partner was negatively related to all violence categories. In other words, younger men were at an increased risk of being persistently violent, stopping violent behavior, or initiating violence compared with the likelihood of being in the nonviolent group. Employment status was significantly associated with starting and stopping violence. Men who were employed fewer weeks at wave 2 were at more than twice the risk of first engaging in violent behavior between wave 1 and wave 2, but they also had greater odds of stopping their violence compared with men who worked the same or greater number of weeks.

Exhibit 3. Multinomial logistic regression predicting male partner violence category (*n* = 2,409)

Violence Category	Relative Risk Ratio	Standard Error	*p* Value
Persistently violent			
Male Hispanic	1.65	.68	.22
Male black	.99	.47	.99
Male employed less	1.11	.43	.79
Male employed more	1.40	.42	.27
Income difference	1.00	.00	.58
Male age W2	.95	.01	.00
Cohabiting	1.10	.49	.82
Violence cessation			
Male Hispanic	.76	.31	.50
Male black	1.76	.45	.03
Male employed less	1.84	.42	.01
Male employed more	1.47	.32	.08
Income difference	1.00	.00	.65
Male age W2	.97	.001	.00
Cohabiting	1.12	.35	.71
Newly violent			
Male Hispanic	1.30	.48	.48
Male black	1.78	.52	.05
Male employed less	2.15	.52	.00
Male employed more	.82	.24	.49
Income difference	1.00	.00	.81
Male age W2	.95	.01	.00
Cohabiting	1.62	.49	.11
Likelihood ratio $chi^2(df, 21) = 85.29$			
Prob > $chi^2 = 0.0000$			
Log likelihood = -1404.80			

Note: Nonviolent is the comparison group.
* $p < .05$
** $p < .01$
*** $p < .001$

Discussion

Previous research considering patterns of persistence and cessation of intimate partner violence has not been able to distinguish any consistent risk markers for a particular type of behavior. However, this research has also been limited by small sample sizes and a reliance on information from one person in the couple (Aldarondo and Sugarman, 1996; Wofford, Mihalic, and Menard, 1994). The current study used the National Sample of Families and Households (Sweet,

Bumpass, and Call, 1988; Sweet and Bumpass, 1996) to examine ethnic differences in the types of violent behavior. At the multivariate level, youth was significantly associated with all violence categories. This suggests several different ways in which age and violence intersect. Those men who stopped their violent behavior between wave 1 and wave 2 may have, in fact, aged out of such behavior. Analyses of the age of men in each of the violence categories indicated that men in the persistently violent and newly violent categories were, on average, the youngest; men who were never violent were the oldest. Men who had ceased violent behavior between the first and second waves of the survey were on average 5 years younger than those who were never violent and 4 years younger than both those who were continually violent and those who initiated violence during the same time.

Being employed fewer weeks at the time of the second wave was also significantly associated with two of the violence categories: violence cessation and initiation. A curvilinear relationship may exist between level of employment and violence. For example, working overtime may be a source of stress (Hochschild, 1997) that increases the risk for violence. Once that stress is relieved (by working less), the risk for violence may decrease. On the other hand, working fewer weeks directly affects income, which may also increase stress levels and result in an increased risk for violence (Straus, Gelles, and Steinmetz, 1980). Different types of stressor mechanisms may influence different individuals in a variety of ways. The relationship between race/ethnicity was also somewhat complex. African-American men were more likely than white men to stop their violent behavior. However, African-American men were also more likely to have engaged in violence for the first time between the first and second waves. Because of the complex interpretations of the impact of both employment level and race/ethnicity on violence category, separate analyses were conducted for each racial/ethnic group.

What emerged from these analyses were slightly different patterns of risk markers for each group. Among Hispanic couples, cohabitation and being employed more hours at wave 2 were both significantly associated with persistent violent behavior, while being employed fewer weeks at the time of the second wave was associated with greater risk of violence initiation. Among African-American couples, youth was associated with both persistent violence and the initiation of violence, while being employed fewer weeks at wave 2 was associated with both violence cessation and initiation. Finally, among white couples, younger men were at a greater risk of being in all three of the violence categories than with being in the nonviolent group. White men who were employed fewer weeks by the time of the second wave were also at a greater risk of initiating violent behavior. These results should be interpreted with some caution, however, because of the relatively small Hispanic and African-American samples.

Although this study improves on existing research, it has limitations. Specifically, because the Conflict Tactics Scales (Straus, 1990a; Straus, 1990b) were not the violence measure used, comparison with research that uses this measure is difficult. In addition, although the sample could be broken down by racial and ethnic groupings, the African-American and Hispanic samples were very small relative to the Caucasian sample. Furthermore, the cell sizes were too small to consider Hispanic national origin groups, the importance of which has been demonstrated by prior research (Kaufman Kantor, Jasinski, and Aldarondo, 1994). Finally, information is available about only two points in time separated by 5 years. Although behaviors

may have changed from the first to the second wave, not enough is known about what happened during that 5-year period to understand the factors that may have influenced a change in behavior.

Implications for Research

Despite these limitations, the current study addresses the multidimensional nature of violent behavior and suggests that, not only do batterers differ in type, but that different mechanisms may lead to particular types of behaviors. Future research should continue to examine the changing dynamics of intimate partner violence. In addition, researchers should consider using larger sample sizes or targeted samples that make it possible to consider racial and ethnic differences, something that has been addressed in a limited manner in other research of this type. Finally, the ability to use information obtained from both members of a couple may be of vital importance for more reliable and valid research on male violence against women.

Implications for Practice

The impact of research that demonstrates both different patterns of violent behavior and different risk markers for each violence type can provide a more focused approach for prevention and intervention efforts. Acknowledging that a one-size-fits-all approach is not sufficient has implications for how practitioners deal with intimate partner violence. The results from this study, for example, suggest that level of employment is related in different ways to different patterns of violence for different racial/ethnic groups. Individuals who design and implement prevention and intervention efforts should be aware of these differences and respond accordingly. This may entail stress reduction programs offered through employers for individuals working overtime, or perhaps lobbying for better-paying jobs or more full-time employment for individuals who are underemployed.

What is important for one pattern of violence against women may not be relevant for another pattern. This point is especially important for the enhancement of treatment programs and better targeting of intervention efforts. In this study, social structural characteristics were not significantly related to persistent violence; however, they were important risk markers for violence initiation. Regardless of the specific prevention or intervention effort, the results from the current study suggest that the same factors that might increase the initial risk for violent behavior may not affect whether or not this behavior continues. Therefore, it may be most important to target intervention and prevention efforts specifically toward those factors that are most applicable to the behavior that is being addressed.

Note

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References

Aldarondo, E. (1996). "Cessation and Persistence of Wife Assault: A Longitudinal Analysis." *American Journal of Orthopsychiatrics,* 66(1), 141–151.

Aldarondo, E., and Kaufman Kantor, G. (1997). "Social Predictors of Wife Assault Cessation." In G. Kaufman Kantor and J.L. Jasinski (eds.), *Out of the Darkness: Contemporary Perspectives on Family Violence.* Thousand Oaks, CA: Sage Publications, Inc.

Aldarondo, E., and Sugarman, D.B. (1996). "Risk Marker Analysis of the Cessation and Persistence of Wife Assault." *Journal of Consulting and Clinical Psychology*, 64(5), 1010–1019.

Bohannon, J.R., Dosser, D.A., Jr., and Lindley, E.S. (1995). "Using Couple Data to Determine Domestic Violence Rates: An Attempt to Replicate Previous Work." *Violence and Victims,* 10(2), 133–141.

Feld, S.L., and Straus, M.A. (1989). "Escalation and Desistance of Wife Assault in Marriage." *Criminology,* 27(1), 141–161.

Hochschild, A.R. (1997*). The Time Bind: When Work Becomes Home and Home Becomes Work.* New York: Metropolitan Books.

Kaufman Kantor, G., and Aldarondo, E. (1997). "Social Predictors of Wife Assault Cessation." In G. Kaufman Kantor and J.L. Jasinski (eds.), *Out of the Darkness: Contemporary Perspectives on Family Violence* (pp. 183–193). Thousand Oaks, CA: Sage Publications, Inc.

Kaufman Kantor, G., Jasinski, J., and Aldarondo, E. (1994). "Sociocultural Status and Incidence of Marital Violence in Hispanic Families." *Violence and Victims,* 9(3), 207–222.

Pagelow, M.D. (1981). *Woman-Battering: Victims and Their Experiences* (Vol. 129). Beverly Hills, CA: Sage.

Straus, M.A. (1990a). "The Conflict Tactics Scales and Its Critics: An Evaluation and New Data on Validity and Reliability." In M.A. Straus and R.J. Gelles (eds.), *Physical Violence in American Families: Risk Factors and Adaptions to Violence in 8,145 Families* (pp. 49–73). New Brunswick, NJ: Transaction Publications.

———. (1990b). "Measuring Intrafamily Conflict and Violence: The Conflict Tactics (CT) Scales." In M.A. Straus and R.J. Gelles (eds.), *Physical Violence in American Families: Risk Factors and Adaptions to Violence in 8,145 Families* (pp. 29–48). New Brunswick, NJ: Transaction Publications.

Straus, M.A., Gelles, R.J., and Steinmetz, S. (1980). *Behind Closed Doors: Violence in the American Family.* Garden City, NJ: Anchor Press.

Sweet, J., Bumpass, L.L., and Call, V. (1988). *The Design and Content of the National Survey of Families and Households* (NSHF Working Paper #1). Madison, WI: Center for Demography and Ecology.

Sweet, J.A., and Bumpass, L.L. (1996). *The National Survey of Families and Households—Waves 1 & 2: Data Description and Documentation.* Madison: University of Wisconsin.

Szinovacz, M.E. (1983). "Using Couple Data as a Methodological Tool: The Case of Marital Violence." *Journal of Marriage and the Family,* 45, 633–644.

Szinovacz, M.E., and Egley, L.C. (1995). "Comparing One-Partner and Couple Data on Sensitive Marital Behaviors: The Case of Marital Violence." *Journal of Marriage and Family,* 57, 995–1010.

Walker, L.E. (1984). *The Battered Woman Syndrome.* New York: Springer.

Wofford, S., Mihalic, D.E., and Menard, S. (1994). "Continuities in Marital Violence." *Journal of Family Violence,* 9(3), 195–225.

Measuring Rape Against Women: The Significance of Survey Questions

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In the early 1980s, estimates of rape against women were derived from two primary sources, the nationwide crime victimization survey (the National Crime Survey [NCS]) and the "official" statistics from the Uniform Crime Report (UCR) (for exceptions, see Kirkpatrick and Kanin, 1957; Kanin, 1957; Kanin and Parcell, 1977; Russell, 1982). Scholars claimed, however, that these data sources substantially underestimated the true incidence of rape. UCR, for example, relied on reported crimes, but many rapes are not reported to the police. Two methodological reasons led NCS to underestimate rape. First, its definition of rape was considered too narrow because it included only carnal knowledge and, therefore, excluded "many acts within the scope of contemporary rape statutes, such as offenses other than penile-vaginal penetration" (Koss, 1996, p. 58). Second, critics contended that NCS was poorly designed to elicit reports of rape from interviewees who had in fact been raped (Gordon and Riger, 1989; Koss, 1992, 1993a, 1993b; Russell, 1982). The crux of this criticism was that NCS did not ask directly about rape (Eigenberg, 1990; Bachman and Taylor, 1994; Koss, 1993a, 1993b; Lynch, 1996a, 1996b). The critical issue was how to develop measurement strategies that would reveal the real extent of not only rape but also other forms of sexual victimization in American society.

Aware of the measurement limitations inherent in these two sources of rape estimates, Koss and her colleagues (Koss and Oros, 1982; Koss and Gidycz, 1985) built on Russell's work (1982) and developed the Sexual Experiences Survey (SES) to overcome the problem of underestimating the true extent of rape and other forms of sexual victimization. SES pioneered several methodological advances. It—

- Used legal statutes as a basis for developing measures of rape.

- Included "behaviorally specific" questions that used graphic language to describe the elements of the criminal victimization and to cue the respondents to recall experiences of victimization.

- Assessed a wide range of victimization (e.g., unwanted sexual contact, sexual coercion, and attempted and completed rape) (see Fisher and Cullen, 2000a).

Koss, Gidycz, and Wisniewski's (1987) groundbreaking national-level study of college women was among the first studies to employ SES (see also Koss, 1985). Their study sparked the exponential growth of rape research that used the original or a modified SES to provide lifetime and annual rape estimates for various samples (e.g., navy recruits, precollege-age women) in specific situations (e.g., dating) (see Fisher and Cullen, 2000a). This body of research ignited a longstanding debate between feminist scholars and their critics over whether the extent of women's rape is a true social problem or a misguided social construction of reality (see Fisher, Cullen, and Turner, 2000; Gilbert, 1997, 1995, 1994, 1992; Koss, 1996, 1992; Roiphe, 1993). In particular, critics contend, the definitions of rape and the survey questions used by SES to measure rape, are so broadly or poorly phrased that they "pick up" and count as rape a wide range of conduct, most of which could hardly be considered criminal in a legal sense. This is why many women who answer "yes" to questionnaire items purporting to measure rape do not, when asked subsequently in the same survey, report that they have been raped (Gilbert, 1992, 1994, 1995;

1997; compare with Koss, 1996, 1993a, 1993b, 1992). Consequently, the critics steadfastly have maintained that SES *overestimates* the extent of rape.

The measurement of rape has evolved into one of the leading issues in rape research. The debate about the measurement of rape has contributed to several methodological advances. First, several studies have examined the effects of different research designs, operationalizations of rape, and wording in survey questions. As a consequence, they have provided methodological explanations for why such widely diverging estimates of the level of rape occur (see Bachman, 2000; Lynch, 1996a, 1996b; Schwartz, 2000).

Second, the redesigned NCS—now called the National Crime Victimization Survey (NCVS)—was administered in 1992. This survey addressed many of the methodological shortcomings inherent in NCS, such as the need for a broader definition of rape and the use of additional screen questions to uncover incidents of rape and sexual assault (Bachman and Taylor, 1994).

Third, Bachman (2000) statistically compared annual rape estimates from two different national-level studies: NCVS and the National Violence Against Women Survey (NVAWS).[1] To do so, Bachman made NCVS "as comparable as possible" to NVAWS (Bachman, 2000, p. 839).[2] Given that the two studies were not originally designed to be compared, she could not make comparable several methodological eccentricities that other researchers have argued are reasons for diverging rape estimates (see Fisher and Cullen, 2000a). For example, NCVS uses a two-stage measurement process: screen questions and incident reports. An incident is classified into a crime category in the second stage (i.e., the incident report). In contrast, NVAWS uses a one-stage measurement process: behaviorally specific questions (see Tjaden and Thoennes, 1998). Despite the previously noted changes in NCVS, Bachman concluded that, "the NVAWS has a greater likelihood of capturing incidents of intimate-perpetrated rape . . . compared to the NCVS" (Bachman, 2000, p. 860). Her conclusion supports the critics who first argued that NCS, the precursor to NCVS, underestimates rape.

To date, there are no published studies designed to test how methodological differences among the surveys affect rape estimates (specifically, how rape is operationalized). One of the goals of the two projects described in this paper—the National College Women Sexual Victimization Study (NCWSV) and the National Violence Against College Women (NVACW) Study—was to use a quasi-experimental research design to compare self-reported rape estimates from two nationally representative samples of college women.

NCWSV and NVACW Research Designs

Administrative decisions concerning the two studies created a unique opportunity to compare rape estimates generated from a quasi-experimental research design. This design addressed several methodological issues (e.g., sampling design, question wording) that previous scholars had speculated influenced diverging estimates of rape. Some attributes of the design were identical across the two studies, while others were manipulated so that they differed (see Fisher, Cullen, and Turner, 2000). Exhibit 1 details the research design attributes for NSVCW and NVACW.

Exhibit 1. Overview Comparison of the National College Women Sexual Victimization Study and National Violence Against College Women Study

Research Design Attribute	National College Women Sexual Victimization Study	National Violence Against College Women Study
Sampling design		
Sampling frame	4-year and 2-year institutions of higher education in the United States that had a total student enrollment of at least 1,000 students	4-year and 2-year institutions of higher education in the United States that had a total student enrollment of at least 1,000 students
Sampling design	Two stages: (1) stratified institutions of higher education by total student enrollment and location of school, and (2) randomly selected women enrolled in selected institutions of higher education	Two stages: (1) stratified institutions of higher education by total student enrollment and location of school, and (2) randomly selected women enrolled in selected institutions of higher education
Sample size: schools	233 institutions of higher education total: 194 4-year institutions of higher education and 39 2-year institutions of higher education	233 institutions of higher education total: 191 4-year institutions of higher education and 42 2-year institutions of higher education
Sample size: students	4,446	4,432
Context of study in the cover letter		
Title of survey	The Extent and Nature of Sexual Victimization of College Women	Victimization Among College Women
Description of study context	Unwanted sexual experiences that women may experience during college[1]	Criminal victimization that women may experience during college
Interviewing		
Survey firm	Schulman, Ronca, and Bucuvalas, Incorporated (SRBI)	SRBI
Interviewers	Professionally trained women	Professionally trained women
CATI	Yes	Yes
Average interview time	25.9 minutes	12.7 minutes
Field period	21 February 1997 to 5 May 1997	27 March 1997 to 14 May 1997
Response rate[2]	85.6%	91.6%
Introduction to survey		
Wording used in introduction to telephone interview	As you may recall, the purpose of the study is to better understand the extent and nature of criminal victimization among college women. Regardless of whether or not you have ever personally been victimized, your answers will help us to understand and deal with the problem of victimizations at your campus and nationally.	As you may recall, the purpose of the study is to better understand the extent and nature of criminal victimization among college women. Regardless of whether or not you have ever personally been victimized, your answers will help us to understand and deal with the problem of victimizations at your campus and nationally.
Definition of rape		
Completed rape	Unwanted completed penetration by physical force or the threat of physical force. Penetration includes penile-vaginal, mouth on your genitals, mouth on someone else's genitals, penile-anal, digital-vaginal, digital-anal, object-vaginal, and object-anal. [3]	Forced sexual intercourse, including both psychological coercion as well as physical force. Forced sexual intercourse means vaginal, anal, or oral penetration by the offender(s). This category also includes incidents where the penetration is from a foreign object such as a bottle.[4, 5]

Research Design Attribute	National College Women Sexual Victimization Study	National Violence Against College Women Study
Attempted rape	Unwanted attempted penetration by force or the threat of force.	Attempted forced sexual intercourse, including both psychological coercion as well as physical force.
Threat of rape	Threat of unwanted penetration with force and threat of force.	Threatened forced sexual intercourse, including both psychological coercion as well as physical force.
Operationalizing rape		
Measurement approach	Two stages: (1) screen questions and (2) detailed incident report	Two stages: 1) screen questions and 2) detailed incident report
Screen questions cueing strategy	Behaviorally specific	Short cue, direct, broad net
Incident questions	Multiple questions concerning (1) type of completed, attempted, and threatened penetration, and (2) physical force used or threatened with physical force	Multiple questions concerning (1) what actually happened, how attacked, how tried to attack, how threatened, and (2) clarification if raped, attempted to rape, or unwanted sexual contact with force
Reference period	Since school began in fall 1996	Since school began in fall 1996
Victimization Categorization criterion	Hierarchical scoring procedure	Hierarchical scoring procedure

[1] Examples, such as sexual harassment, stalking, and sexual assault, were provided.
[2] For both samples, we summed the total number of respondents completing the survey and the total number of respondents that were screened out and divided this figure by the total number of potential respondents contacted by SRBI.
[3] This definition for penetration is used by NCWSVS for attempted and threat of rape.
[4] This is the definition used in the National Crime Victimization Survey, see Bureau of Justice Statistics. (2000). *Criminal Victimization in the United States, 1995: A National Crime Victimization Survey Report*. Washington, DC: U.S. Department of Justice, page 175.
[5] This definition for forced sexual intercourse is used by NVACWS for attempted rape and threat of rape.

Sampling Design

The sampling designs employed in NCWSV and NVACW were identical (see exhibit 1, rows 2–5). The population included all 4-year and 2-year institutions of higher education that had a total student enrollment of at least 1,000 students. The sampling frame for both studies was provided by the American Student List Company.

Both studies used an identical two-stage sampling design. First, a total of 233 respective institutions of higher education were selected from 12 strata (3 categories of locations and 4 categories of total student enrollment). Institutions in each stratum were selected using a probability proportionate to the size of the female enrollment. Second, within each selected institution, female students were randomly selected. For each stratum, the sample size for institutions of higher education and students was determined based on a standard acceptable margin of error. The total sample size for NCWSV and NVACW is large—4,446 and 4,432 college women, respectively.

Study Context: Informing Respondents

A cover letter was sent to each sample member at her school address approximately 2 weeks prior to a telephone interview (see exhibit 1, rows 7– 8) to inform her about the context of either the NCWSV or NVACW studies. Both the title and description of the two respective studies' contexts were worded somewhat differently in the cover letter. NCWSV referred to "unwanted

sexual experiences," whereas NVACW referred to "criminal victimizations." Other than these two wording differences, the content of the cover letters was the same. Each letter provided information about the sponsor of the respective study, whom to contact if the sample member had questions about the legitimacy of the study and/or wanted a copy of the results (e.g., an 800 number and e-mail address were provided), and indicated that participation was voluntary.

Interviewing

Interviewing for both studies was conducted by female interviewers who were hired and professionally trained by Schulman, Ronca, and Bucuvalas, Inc., to administer the respective surveys using a CATI (computer assisted telephone interviewing) system[3] (see exhibit 1, rows 10–15). The two field periods overlapped, but were not identical. NCWSV's field period began February 21, 1997, and ended May 5, 1997. NVACW's field period started approximately 1 month later on March 27, 1997, and ended 9 days after the NCWSV's, on May 14, 1997. The administration of the NCWSV survey took twice as long as the NVACW survey (26 minutes compared to 13 minutes).

Both surveys used identical wording in the introduction to the telephone interview, which interviewers read to all respondents, both those who had and had not recalled receiving the cover letter. After assessing whether the respondent had received the cover letter, if she agreed to participate in the respective study, and if she was eligible to participate,[4] the interviewers read the same introduction to NCWSV and NVACW respondents. In this introduction, interviewers also explained the context in which information about the respective victimizations was solicited (see exhibit 1, row 16).

Defining Rape

Each study measured completed, attempted, and threatened rape (see exhibit 1, rows 18–20). In their definitions of rape, both studies include forced vaginal, anal, or oral penetration by the perpetrator(s), which could also include penetration from a foreign object. Both definitions of rape explicitly refer to physical force and the threat of physical force. The NVACW definition of rape also incorporates "psychological coercion." Koss (1996) noted that this term "is probably meant to refer to verbal threats of bodily harm or rape, which are crimes" (p. 60). She further noted that it could also suggest verbal strategies to coerce sexual intercourse (e.g., continual nagging), which are undesirable but not crimes.

Operationalizing Rape

There were similarities and differences in how rape was operationalized in the studies (see exhibit 1, rows 22–26). As with NCVS, these studies employed a two-stage measurement process that included screen questions and incident reports. Both studies asked a series of screen questions to determine if a respondent had experienced an act "since school began in the fall of 1996" that could be defined as a victimization. If the respondent answered yes, she was asked by the interviewer to complete an incident report for each time that experience happened. This report contained detailed questions about the nature of the incident. The incident report was used to classify the type of victimization that took place; that is, *responses* to questions in the incident

report—not the screen questions—were used to categorize the type of victimization, if any, that occurred.

Rape was operationalized differently in the NCWSV and NVACW surveys in two ways: the number and wording of the screen questions and the wording of the incident-level questions used to determine the type of incident. NCWSV substantially modified the NCVS format, most notably to include a range of 12 behaviorally specific sexual victimization screen questions (including one for stalking). A behaviorally specific question is one that does not ask simply if a respondent had been raped but rather describes an incident in graphic language that covers the elements of a criminal offense (e.g., someone "made you have sexual intercourse by using force or threatening to harm you . . . by intercourse I mean putting a penis in your vagina") (see Fisher, Cullen, and Turner, 2000, exhibit 1). Each completed rape screen question asked the respondent about a different form of penetration in which force or the threat of harm was used. A statement defining the type of penetration followed each question. For example, anal sex is defined as "putting a penis in your anus or rectum." The other screen questions provided examples of the types of behavior that respondents were asked about. The work of Koss, Gidycz, and Wisniewski (1987); Kilpatrick, Edmunds, and Seymour (1992); and Tjaden and Thoennes (1998) was influential in the development of the sexual victimization screen questions.

In contrast, NVACW used a format that was as closely aligned as possible with the survey format of NCVS. All seven individual-level screen questions used in the NVACW study came directly from NCVS, as did the incident-level questions used to determine what type of violent victimization the respondent experienced.[5] The NCVS screen question that specifically asked about whether a respondent "has been forced or coerced to engage in unwanted sexual activity" was employed, as were questions that asked about having something stolen or experiencing an attempted theft, being attacked, and being threatened (Klaus and Maston, 2000, p. 129). The former NCVS question does not include a behaviorally specific definition or example of "unwanted sexual activity."

For each study, within an incident, the same categorization criterion was used—a hierarchical scoring procedure. An incident was categorized using the most serious type of victimization reported. For example, if in one incident two victimizations took place—for example, a completed rape and a simple assault or sexual coercion—the incident would be categorized as a completed rape.

The two studies also differed in how rape was operationalized within an incident report. The NCWSV study specifically asked about what acts were completed, attempted, and/or threatened. For each of these three degrees of behavior, respondents were asked multiple response questions to identify which type(s) of penetration they had experienced. After these questions, two questions asked whether physical force or threat of physical force was used. In contrast, if a respondent in the NVACW study indicated in any of the "what happened?" questions (e.g., what actually happened, how did the offender try to attack you, or how were you threatened) that an unwanted, forced sexual contact occurred, she was then asked if she meant forced or coerced sexual intercourse, including attempted intercourse. If she answered "yes," the incident was categorized as a rape. Also, if the respondent indicated that the offender hit her, knocked her

down, or attacked her, and that among her injuries was rape or attempted rape, she was asked if she meant forced or coerced sexual intercourse, including attempts. The incident was then categorized according to one of three types of rape.

In sum, every effort was made to ensure that, aside from using different screen and incident report questions, the methodology used in NCWSV and NVACW was the same. To date, this is the strongest research design employed to examine how these two differences affect rape estimates.

Estimates of Rape from NCWSV and NVACW

Past studies—mostly recently Tjaden and Thoennes (1998) and Bachman (2000)—have reported that studies using behaviorally specific questions generally find higher levels of sexual victimization than those reported by NCVS (see Crowell and Burgess, 1996). Examining exhibit 2, it is clear that the estimates for completed rape, attempted rape, and threats of rape from the NVACW study are statistically significantly lower than the estimates from the NCWSV study (see footnotes 2, 3, and 4).

Exhibit 2. Estimates From the National College Women Sexual Victimization Study and the National Violence Against College Women Study

Type of victimization	National College Women Sexual Victimization Study		National Violence Against College Women Study	
	Percentage of victims (*CI*)[1] (*n*)	Rate of victimization per 1,000 female students (*n*)	Percentage of victims (*CI*) (*n*)	Rate of victimization per 1,000 female students (*n*)
Rape				
Completed rape[2]	1.66 (1.29–2.04) (74)	19.34 (86)	0.16 (0.04–0.27) (7)	2.0 (9)
Attempted rape[3]	1.10 (0.80–1.41) (49)	15.97 (71)	0.18 (0.06–0.30) (8)	1.8 (8)
Verbal threat of rape[4]	0.31 (0.15–0.48) (14)	9.45 (42)	0.07 (-0.01–0.14) (3)	0.7 (3)

[1] The confidence interval (*CI*) is based on a critical value of 1.96.
[2] Comparing the completed rape proportions from the two studies resulted in a $Z = 248.41$. Because the test statistic 248.41 exceeds the critical value of 1.96 ($a = 0.05$), there is a statistically significant difference between the two completed rape proportions.
[3] $Z = 83.58$. See note 2.
[4] $Z = 28.81$. See note 2.

The percentage of victims in the NVACW study who reported experiencing a completed rape was 10 times smaller than the percentage in the NCWSV study (0.16 percent compared with 1.66 percent). The NVACW attempted rape estimate was six times smaller than the NCWSV attempted rape estimate (0.18 percent compared with 1.10 percent). A similar pattern was evident for threats of rape: The NVACW estimate was four times smaller than the NCWSV estimate (0.07 percent compared with 0.31 percent).

What accounts for these differences? Given the other similarities between the two studies, it seems that the NCWSV study's use of a wide range of behaviorally specific screen questions accounts for the difference. Compared with the NCVS screen questions employed in the NVACW study, the use of a number of graphically worded screen questions in NCWSV likely prompted more women who had potentially experienced a sexual victimization to report this fact to the interviewer. Not all of those answering yes to a rape screen question were subsequently classified as rape victims based on their responses in the incident report (see Fisher and Cullen, 2000a).[6] Even so, it appears that behaviorally specific screen questions are more successful in prompting women who have in fact been sexually victimized to answer in such a way that they are then "skipped into"[7] the incident report by the interviewers on the victimization survey. Therefore, supportive of results reported by Tjaden and Thoennes (1998) and Bachman (2000), it seems likely that NCVS underestimates the true incidence of rape in the United States.

Conclusion

Measuring rape (as well as other forms of sexual victimization) is a complicated and, to a degree, imperfect enterprise. According to Smith (1987, p. 185), it is the "biggest methodological challenge in survey research." The challenges are especially daunting when attempting to discern when, in an intimate encounter, a sexual advance crosses the line from imprudence to criminal behavior. But the salience of the methodology of measuring rape is intensified even further because the findings are integral to the ongoing debate between feminist and conservative scholars over whether the extent of women's rape is a true social problem or a misguided social construction of reality. No single study, including the comparison between NSVCW and NVACW, can fully resolve this debate. However, the comparison of these studies illustrates several points that are noteworthy for researchers and practitioners.

Implications for Researchers

The results have four important methodological implications for the measurement of rape (and by extension, other forms of sexual victimization). First, the importance of behaviorally specific questions cannot be overemphasized, not necessarily because these questions produced larger estimates of rape, but because they use words and phrases that describe to the respondent exactly what behavior is being measured. Using behaviorally specific questions appears to cue more women to accurately recall what they experienced. The use of such questions is not by itself a panacea for addressing measurement error associated with estimating rape (and other forms of victimization), but it is a step forward in understanding how question wording affects self-report survey responses (see Fisher and Cullen, 2000a).

Second, drawing on the strength of NCVS, the two-stage measurement process—screen questions and incident report—appears promising in addressing measurement errors associated with a single-stage measurement process (see Fisher and Cullen, 2000a). For example, of the 325 incidents that screened in[8] on the rape screen questions, 21 could not be classified because the respondent could not recall enough detail; 59 were classified as "undetermined" because she refused to give an answer or answered "don't know" to one or more questions in the incident report that would have allowed the incident to be categorized as a rape; 155 were classified as a type of sexual victimization other than rape; and 90 were classified as rape (completed, attempted, or threatened). The other 109 incidents classified as rape incidents screened in from the other sexual victimization screen questions (see Fisher and Cullen, 2000b). These results provide some understanding about how using only behaviorally specific questions would fail to count women whose recall is prompted by other types of screen questions. To date, we have only a preliminary understanding of what sources of measurement error the use of incident reports might introduce. Further research is needed on this issue. One avenue of research might consider how the use of structured qualitative questions that allow respondents to tell their own story helps us to understand the sources of measurement error in both behaviorally specific questions and the incident report.

Third, one other possible factor might have contributed to significant differences between the NCWSV and NVACW studies: the "context" of the two surveys (see exhibit 1, rows 7–8). It is plausible that the NCWSV respondents were sensitized to report a broad range of sexual victimization incidents, while NVACW respondents limited their reports to incidents they defined as criminal. If so, the contextual difference would mean that the NVACW study was measuring a much narrower domain of sexual victimization. One caution in this line of reasoning is that nearly half of the completed rape victims said yes when asked if they considered the incident as a rape. Even when the count of completed rape is limited to this group, the incidence of rape victims is still several times greater in NCWSV than in NVACW. The impact of the survey question context on respondents' answers to sexual victimization questions warrants further methodological examination.

Fourth, to advance understanding of rape and other forms of victimization, comparative work employing experimental designs should not be overlooked. The strength of these designs allows researchers to manipulate sources of measurement error to measure their effects on estimates of rape and other types of victimization. At present, this type of research is still in its beginning stages and warrants further rigorous research.

Implications for Practitioners

At first glance, some commentators might conclude that the risk of rape for college women is not high, with "only" 2.24 to 3.66 percent of women in the NCWSV experiencing a completed rape, attempted rape, or threat of rape in an academic year. Such a conclusion, however, would rest on a limited view of the study's results and ignore its potentially disquieting implications.

The estimates from this study measure the victimization women experience for slightly more than half a year (6.91 months). Projecting results beyond this reference period is problematic because it rests on several assumptions (e.g., the risk of victimization is the same in the summer

months and stable over a person's time in college). With this caveat, it can broadly be stated that a 3.07-percent victimization figure, if calculated for 1 year, would mean that just over 5 percent (5.34 percent) of college women are victimized in any given calendar year. During the course of their college careers—which now last an average of 5 years—the completed/attempted/threatened rate for rape victimization might climb from one-fifth to more than one-quarter of the women in institutions of higher education.

From a policy perspective, college administrators might be disturbed to learn that, for every 1,000 women attending their institution, 45 incidents of completed, attempted, or threatened rape may occur in a given academic year (based on a victimization rate of 44.76 per 1,000 college women). For a campus with 10,000 women, this would mean the number of completed, attempted, and threatened rapes would be close to 450. On any one campus, and more broadly, when projected over the Nation's female population enrolled in institutions of higher education, these figures suggest that rape is a potential problem of large proportion and of public policy interest.

The U.S. Congress has maintained a steady interest in campus crime, passing legislation that requires Title IV-eligible institutions to collect and publish campus crime statistics and address the rights of victims of sexual crimes.[9] In 1999, Congress authorized monies for a national-level study of how these institutions respond to a report of sexual assault. The final report from this study, with its policy recommendation, was released in 2002 (see Karjane, Fisher, and Cullen, 2002). Congress also authorized several million dollars through the U.S. Department of Justice for selected institutions to design, implement, and evaluate innovative programs and policies to combat sexual assault, domestic violence, and stalking. A national evaluation is under way to examine the implemented changes.[10]

These studies and evaluations represent new knowledge in an area of practice that is lacking in two basic dimensions. First, to date, little information systematically documents what is being done on college campuses to address rape and other forms of sexual victimization. Second, although several case studies exist, few rigorously evaluate the effectiveness of what institutions of higher education are doing to educate students about awareness, prevention, and reporting of rape and other forms of sexual victimization, or how effectively colleges respond to the report of a sexual assault (see Ottens and Hotelling, 2001). Together, this new information will help to fill the knowledge gaps in these two areas and shed light on "what works" to reduce rape and other types of sexual victimization within a college-student population.

Notes

[1] See Bachman (2000), page 860. For a comparison to NCVS, see Tjaden and Thoennes (1998).

[2] Bachman noted that several transformations and restrictions were performed in each dataset to make them "as comparable as possible" (p. 847). These transformations and restrictions included (1) selecting only respondents ages 18 years and older, (2) using only those victimizations that had occurred within the past 12 months from NVAWS, (3) using the bounded incidents obtained from NCVS that occurred in 1995, (4) using the series incidents as "*n*" according to the number of times NCVS respondents reported being victimized, (5) constructing different weights for each survey, and (6) using only incidents from NCVS involving one-on-one or lone-offender victimizations.

[3] Interviewers for both studies were trained in a general overview of interviewing (e.g., properly recording responses, CATI, callback protocol). Additional training was given that included properly asking sensitive questions and handling respondents who became emotionally upset as a result of the questions and/or memories evoked by the past experiences or who wanted to reschedule the interview. This included providing an e-mail address to the principal investigator so she could send local- and national-level victim services or counseling information via overnight mail to the respondent and/or an 800 number for a crisis services hotline.

[4] Only women who were currently enrolled at the school, enrolled since the fall 1996 term at the respective school, and employed less than full time at the school were eligible to participate.

[5] Some of the incident-level questions had to be modified to reflect the characteristics of a college sample. For example, locations where an incident occurred included such on-campus locations as a residence hall room and the library.

[6] Rape victims also have screened into an incident report based on answering yes to other sexual victimization screen questions (see Fisher and Cullen, 2000a). See note 8.

[7] This term is used in survey research when a specific response to a question (for example, a yes response) directs or "skips" the respondent into a series of questions that are different from the series that a respondent who responded no is directed into (skips into). In this example, if a woman said yes to any sexual victimization screen question, she then skipped into an incident report. If she said no to all of the screen questions (and hence did not have the experience), she did not skip into an incident report.

[8] The term "screened in" describes the purpose of a question—to cue respondents so that those who answer in a certain way (for example, say yes to a victimization screen question) skip into the appropriate series of questions. Hence, this type of question is called a screen question.

[9] Congress passed the Student Right-to-Know and Campus Security Act in 1990. In 1992, Congress amended the act to include the Campus Sexual Assault Victim's Bill of Rights. The 1998 amendments to the act officially changed its name to the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act and included, among other requirements, additional reporting obligations (see 20 U.S.C. § 1092).

[10] See Burt et al., 2001, *Evaluation of the STOP Formula Grants to Combat Violence Against Women, 2001 Report,* Washington, DC: The Urban Institute.

References

Bachman, R. (2000). "A Comparison of Annual Incidence Rates and Contextual Characteristics of Intimate-Partner Violence Against Women From the National Crime Victimization Survey (NCVS) and the National Violence Against Women Survey (NVAWS)." *Violence Against Women,* 6(8), 839–867.

Bachman, R., and Taylor, B. (1994). "The Measurement of Family Violence and Rape by the Redesigned National Crime Victimization Survey." *Justice Quarterly,* 11 (September), 499–512.

Burt, M.R., Zweig, J.M., Andrews, C., Van Ness, A., Parikh, N., Uekert, B.K., and Harrell, A.V. (2001). *Evaluation of the STOP Formula Grants to Combat Violence Against Women, 2001 Report,* Washington, DC: The Urban Institute.

Crowell, N.A., and Burgess, A.W. (1996). *Understanding Violence Against Women.* Washington, DC: National Academy Press.

Eigenberg, H.M. (1990). "The National Crime Survey and Rape: The Case of the Missing Question." *Criminology*, 7 (December), 655–671.

Fisher, B.S., and Cullen, F.T. (2000a). "Measuring the Sexual Victimization of Women: Evolution, Current Controversies, and Future Research." In *Measurement and Analysis of Crime and Justice: Criminal Justice 2000,* Volume 4, David Duffee (ed.). Washington, DC: U.S. Department of Justice, National Institute of Justice, NCJ 182411.

————. (2000b). "Errata." Division of Criminal Justice, University of Cincinnati.

————. (1998). *The Sexual Victimization of College Women: Findings from a National-Level Study*. Draft of final report submitted to the National Institute of Justice, August, 1998.

————. (1999). *The Victimization of College Women: Findings from a National-Level Study*. Draft of final report to be submitted to the Bureau of Justice Statistics, March, 1999.

Fisher, B.S., Cullen, F.T., and Turner, M. (2000). *The Sexual Victimization of College Women.* Washington, DC: U.S. Department of Justice, National Institute of Justice and Bureau of Justice Statistics, NCJ 182369.

Gilbert, N. (1997). "Advocacy Research and Social Policy." In *Crime and Justice: A Review of Research,* Volume 22. Michael Tonry (ed.) Chicago, IL: University of Chicago Press, 101–148.

————. (1995). "Was It Rape? An Examination of Sexual Assault Statistics." Menlo, CA: Henry J. Kaiser Family Foundation.

————. (1994). "Miscounting Social Ills." *Society*, (March/April), 18–26.

————. (1992). "Realities and Mythologies of Rape." *Society*, (May/June), 4–10.

————. (1991). "The Phantom Epidemic of Sexual Assault." *The Public Interest*, 103 (Spring), 54–65.

Gordon, M.T., and Riger, S. (1989). *The Female Fear.* New York: The Free Press.

Kanin, E.J. (1957). "Male Aggression in Dating-Courtship Relations." *The American Journal of Sociology*, 63 (September), 197–204.

Kanin, E.J., and Parcell, S.R. (1977). "Sexual Aggression: A Second Look at the Offended Female." *Archives of Sexual Behavior,* 6(1), 67–76.

Karjane, H.M., Fisher, B.S., and Cullen, F.T. (2002). *How Colleges and Universities Respond to the Report of a Sexual Assault.* Final Report submitted to the National Institute of Justice, Washington, DC.

Kilpatrick, D.G., Edmunds, C.N., and Seymour, A.K. (1992). *Rape in America: A Report to the Nation*. Arlington, VA: National Victim Center.

Kirkpatrick, C., and Kanin, E. (1957). "Male Sex Aggression on a University Campus." *American Sociological Review,* 22 (February), 52–58.

Klaus, P., and Maston, C. (2000). *Criminal Victimization in the United States, 1995.* Washington, DC: U.S. Department of Justice, Bureau of Justice Statistics, NCJ 171129.

Koss, M.P. (1996). "The Measurement of Rape Victimization in Crime Surveys." *Criminal Justice and Behavior,* 23 (March), 55–69.

————. (1993a). "Detecting the Scope of Rape: A Review of Prevalence Research Methods." *Journal of Interpersonal Violence,* 8 (June), 198–222.

————. (1993b). "Rape: Scope, Impact, Interventions, and Public Policy Responses." *American Psychologist,* 48 (October), 1062–1069.

————. (1992). "The Underdetection of Rape: Methodological Choices Influence Incidence Estimates." *Journal of Social Issues,* 48 (No. 1), 61–75.

————. (1985). "The Hidden Rape Victim." *Psychology of Women Quarterly,* 48, 61–75.

Koss, M.P., and Gidycz, C.A. (1985). "The Sexual Experiences Survey: Reliability and Validity." *Journal of Consulting and Clinical Psychology,* 53(3), 442–443.

Koss, M.P., Gidycz, C.A., and Wisniewski, N. (1987). "The Scope of Rape: Incidence and Prevalence of Sexual Aggression and Victimization in a National Sample of Higher Education Students." *Journal of Counseling and Clinical Psychology,* 55(2), 162–70.

Koss, M.P., and Oros, C. (1982). "Sexual Experiences Survey: A Research Instrument Investigating Sexual Aggression and Victimization." *Journal of Consulting and Clinical Psychology,* 50(3), 455–457.

Lynch, J.P. (1996a). "Clarifying Divergent Estimates of Rape From Two National Surveys." *Public Opinion Quarterly,* 60 (3), 410–430.

————. (1996b). "Understanding Differences in the Estimates of Rape from Self-Report Surveys." In *From Data to Public Policy: Affirmative Action, Sexual Harassment, and Domestic*

Violence, and Social Welfare, Rita J. Simon (ed.). Lanham, MD: University Press of America, Inc.

Ottens, A.J., and Hotelling, K. (2001). *Sexual Violence on Campus: Politics, Programs, and Perspectives.* New York: Springer Publishing Company, Inc.

Roiphe, K. (1993). *The Morning After: Sex, Fear, and Feminism on Campus*. Boston: Little, Brown.

Russell, D.E.H. (1982). "The Prevalence and Incidence of Forcible Rape and Attempted Rape of Females." *Victimology: An International Journal*, 7(1–4), 81–93.

Schwartz, M.D. (2000). "Methodological Issues in the Use of Survey Data for Measuring and Characterizing Violence Against Women." *Violence Against Women,* 6(8), 815–838.

Smith, M.D. (1987). "The Incidence and Prevalence of Women Abuse in Toronto." *Violence and Victims,* 2(3), 173–187.

Tjaden, P., and Thoennes, N. (1998). *Prevalence, Incidence, and Consequences of Violence Against Women: Findings From the National Violence Against Women Survey*. Research in Brief. Washington, DC: U.S. Department of Justice, National Institute of Justice, and U.S. Department of Health and Human Services, Centers for Disease Control and Prevention, NCJ 172837.

Pregnancy-Associated Assault Hospitalizations: Prevalence and Risk of Hospitalized Assaults Against Women During Pregnancy[1]

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Violence against women during pregnancy is an issue that elicits broad interest. It is disturbing even to imagine that violence can intrude upon this poignant period in a woman's life. But intimate partner violence, if it exists in a relationship prior to pregnancy, does not always stop because a woman becomes pregnant. Furthermore, the answer to the question of whether it is more likely to begin, increase, or decrease during this period has remained elusive.

Violence against pregnant women has received a fair amount of attention in the literature through three perspectives. The most common has addressed issues related to fetal outcome. These studies have examined the impact of violence on fetal outcomes such as low birthweight, prematurity, or mortality (Bullock and McFarlane, 1989; Gazmararian et al., 1996; Parker, McFarlane, and Soeken, 1994; Cokkinides et al., 1999; Berenson et al., 1994; Dye et al., 1995; Campbell et al., 1999; McFarlane, Parker, and Soeken, 1996; Murphy et al., 2001). Complementing these studies are those that explore the impact of violence on maternal health and look at physical, reproductive, and psychological parameters of health and disease (Gazmararian et al., 1995; Campbell, Moracco, and Saltzman, 2000; Campbell, 1998; Campbell et al., 1995; Gazmararian et al., 2000).

Both fetal and maternal perspectives benefit from a third focus that measures the prevalence of violence against pregnant or recently pregnant women to understand whether pregnancy changes the risk or nature of violence. The older literature on violence and pregnancy often reported higher rates of violence against pregnant women than against women who were not pregnant (Gelles, 1974; Eisenberg and Micklow, 1997; Berrios and Grady, 1991). However, these findings began to be questioned when it was found that both violence and pregnancy rates are higher in younger women (Gelles, 1988). Design weaknesses (nonpopulation-based, small shelter- or clinic-based populations, lacking representativeness), differences in definitions of violence (physical, sexual, threats, psychological), different periods of coverage (violence around the time of pregnancy compared with violence during pregnancy), and a lack of comparison populations have left the question of pregnancy and the risk of violence unanswered (Gazmararian et al., 1996; Campbell, 2001; Campbell, Moracco, and Saltzman, 2000; Gazmararian et al., 2000; Ballard et al., 1998).

Although most victims of violence against women are not hospitalized, focusing on hospitalized cases has several advantages. First, it highlights serious injury, not often considered separately in the spectrum of such incidents. This is important because of the severity of the injury to the individual, the increased risk to the fetus, and the cost to society. Second, the existence of large population-based hospital discharge data systems makes it possible to examine the prevalence of violence against pregnant women and make comparisons, even though, relatively speaking, serious assaults to pregnant women make up a small proportion of all injuries. Third, hospital data are standardized across States, making aggregation and comparison on a large scale feasible. Fourth, discharge data contain charge information and can be used to model cost estimates. Finally, unlike clinic and emergency department settings, where the encounter is brief, hospital inpatients have more time to confide in and relate the abusive nature of their injuries to health care personnel.

The first population-based study of hospitalized maternal injury was conducted in 1997 by Greenblatt, Dannenberg, and Johnson, who looked at Maryland hospital discharge data for the

12-year period from 1979 to 1990. Among 80,311 injured women ages 15 to 45, 2.7 percent were reported to be pregnant. Ten percent of the injuries involving pregnant women were assault-related, and the rate ratio (comparing pregnant patients to all women ages 15 to 45) for assault-related hospitalization was 1.14 (not statistically significant). Although this study brought a fresh understanding of this serious problem and used creative methodological approaches, it contained several drawbacks, including incomplete E-coding (external cause of injury codes used for mechanism and intent) and use of screening codes that were not as refined or as expansive as desired. Further, the study was done before accreditation mandates for hospital identification of victims of abuse were common. Recognizing these issues, the authors recommended that their analyses of pregnancy-associated injury hospitalizations be repeated.

This recommendation was taken up in a study by Weiss, who borrowed from the Greenblatt study's methods and applied them to Pennsylvania's 1995 hospital discharge data (Weiss, 1999). This study, which had more diagnosis fields to search and an improved search algorithm, found that 761 (4.6 percent) of the discharges of injured women of reproductive age were associated with pregnancy. Rate ratios were significantly higher for assaults [rate ratio = 3.04, 95 percent confidence interval (*CI*) = 2.45, 3.78], with the increased risk concentrated in young women. This study recognized the challenge of differentiating between how much of the observed increases were due to increased injury rates compared with increased hospitalization rates because of evidence that pregnant women are more likely than nonpregnant women to be hospitalized for minor conditions (Greenblatt, Dannenberg, and Johnson, 1997; Poole et al., 1996). However, the small numbers of pregnancy-associated assaults in that study (89) limited the utility of trying to adjust for this concern. In addition, there were no perpetrator codes in 1995 from which one might distinguish intimate partner violence from other forms of violence. The current study fills those gaps by focusing on assault-related hospitalizations from a large, population-based, multi-State hospital discharge database.

Materials and Methods

Specific Aims

The study hypothesis was whether the hospitalization rate for assault was higher among pregnant women than among all women of reproductive age (ages 15 to 49), once controlled for age and severity. Secondary aims included quantifying the prevalence of hospitalized assaults in a large population-based sample of pregnant women and comparing and contrasting the patterns of assault injury mechanisms, severity, demographics, and costs.

Data Sources

Data were solicited from States that mandated E-coding for 2 years or more or had an E-code completeness rate of 90 percent or better and at least five diagnosis fields to search for pregnancy-associated codes. Three States that had large populations and fairly good completeness (> 60 percent) but had not mandated E-coding were also included (this lowered the overall E-coding rate but enhanced case finding). The data collection year of 1997 was chosen because it was the first complete year that perpetrator-specific codes and improved ICD–9–CM E-coding guidelines for intent were used (International Classification of Diseases, version 9, Clinical Modification), and it followed by 2 years the adoption of Joint Commission on

Accreditation of Healthcare Organizations hospital screening rules for domestic violence. States were contacted and arrangements were made to receive nonconfidential versions of statewide discharge data. Data were received from 19 States (Arizona, California, Florida, Maine, Maryland, Massachusetts, Michigan, Nebraska, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont, Virginia, Washington, and Wisconsin) whose populations made up 51.9 percent of U.S. women ages 15 to 49. These 19 States represented the hospitalization experience of 36 million women who were residents of those States and 1.9 million resident births (National Center for Health Statistics, 1999). The combined dataset covered complete counts from about 2,000 hospitals and 13 million discharges for women, of which 176,267 were injuries to women ages 15 to 49.

Database Preparation and Case Selection

The data underwent extensive editing, filtering, grouping, and development of derived variables to enhance compatibility, ICD coding validity, and usability. Detailed algorithms were applied to identify injuries based on both diagnosis codes and E-codes and to exclude cases of noninjury such as complications of surgical and medical care, injuries coded only by place of injury, adverse effects of therapeutic drugs, and late effects of injury.

Costs were imputed for each record using a model derived from charges listed in the discharge record and diagnosis codes. Inputs into the cost model included data from the National Medical Expenditure Survey (NMES), the National Health Interview Survey (NHIS), Civilian Health and Medical Program of the Uniformed Services (CHAMPUS) [now TRICARE], and national and State hospital discharge systems. Monetary measures in this study included total hospital charges, lifetime medical costs, lifetime productivity loss, and lifetime monetized quality-adjusted life years (QALY). Costs were not assigned to duplicate records, readmissions, or fatalities. Costs were estimated in 1996 dollars separately for medical and other direct costs, and quality-of-life loss (Gold and Siegel, 1996). These methods are detailed elsewhere (Lawrence et al., 2000).

Injury severity was calculated using ICD–MAP (Tri-Analytics Inc., Bel Air, Mississippi), a computerized injury coder that assigns injury severity scores (ISS) based on ICD–9–CM injury diagnoses. ISS is a widely used severity score derived from an anatomically based threat-to-life scale that ranges from 1 (minor) to 75 (unsurvivable) (MacKenzie, 1984). Drug and alcohol involvement were determined by searching for coexisting drug- or alcohol-related diagnoses.

Pregnancy association was defined by examining diagnosis fields for ICD–9–CM diagnostic codes, including 630–669.9 (complications of pregnancy and childbirth) and 760–779.9 (certain conditions originating in perinatal period), and “V” codes, including V22 (normal pregnancy), V23 (supervision of high-risk pregnancy), V24 (postpartum care immediately after delivery), V27 (outcome of delivery), and V28 (antenatal screening).

The above steps were applied to all age- and gender-injury discharges (n = 1,220,506). The cases were progressively limited to females ages 15 to 49 (n = 176,267) with acute care visits (n = 156,713) who had a valid E-code assigned (n = 144,260), who were residents of the State (n = 137,887), and who had an assault-related hospitalization (n = 7,402).

Analyses

Incidence rates were calculated per 100,000 person-years. For the pregnant population, denominators were derived from State-specific birth data and adjusted downward to account for the 9-month period of gestation and the assumption that during the first 2 months of pregnancy the pregnancies would not be detectable in the hospital discharge data. For example, if there were 100,000 live births per year, multiplying 100,000 by 7/12 represents the actual person-years of exposure, i.e., the person-years for which women could have had their pregnancies identified.

Rate ratios were constructed between pregnant women and all women for different comparison groups. This comparison, rather than a pregnant versus "nonpregnant" group contrast, was done for several reasons. After subtracting known pregnant cases, the referent group still contains some pregnant women in the first 2 months of their pregnancy and other pregnant women not detected by the diagnosis algorithm. Thus, it would be a misnomer to label it a nonpregnant group. Second, because the desire is to compare pregnant women to nonpregnant women, the comparison takes into account the 5-month period of every pregnancy year in which pregnant women are not detectably pregnant (i.e., pregnant women contribute person-years to both groups because they are not pregnant over an entire year). In most instances, the issue of comparing the pregnancy-associated injuries to the entire group or the entire group minus the person-years of the pregnancy-associated injuries is academic: The rates for all reproductive age women are similar to nonpregnant women of the same age because, for most comparisons, 80 to 90 percent of women ages 15 to 49 are not pregnant at any given time (Dannenberg et al., 1995).

Rate ratios were calculated by dividing the group-specific (age, race, mechanism, intent, etc.) rate for pregnancy-associated injury discharges by the group-specific injury rate. In accordance with previous methods (Greenblatt, Dannenberg, and Johnson, 1997), consequences of multiple births and spontaneous and induced abortions in the person-year calculations were ignored because of their small impact and the difficulty of obtaining accurate enumerations of these conditions in the study population. Point and 95 percent *CI* estimates of the rate ratio, comparing the pregnant and all injured women ages 15 to 49, were computed according to standard methods (Rosner, 1994).

Two subsets were reported. First, assaults were analyzed to present prevalence rates and rate ratios for specific subgroups. Second, to adjust for the increased propensity of pregnant women to be hospitalized because they are pregnant, assaults were reanalyzed for cases with an injury severity score of four or greater.

Results

E-coding was 92 percent complete among women ages 15 to 49 with an injury-related diagnosis. This left 137,887 resident women ages 15 to 49 discharged from nonrehabilitation hospitals with an acute injury diagnosis and a valid E-code mechanism/intent. There were 7,402 assault-related discharges for a rate of 21/100,000 person-years. Pregnancy-associated cases made up 10 percent of all assaults to women ages 15 to 49.

Among injured females ages 15 to 49 with a pregnancy-associated diagnosis, 14 percent of injuries (745/5,498) were assault related (rate = 65/100,000 person-years); for all injured women, it was 5 percent (7,402/137,887, rate = 21/100,000 person-years). The rate ratio was 3.14 (95 percent *CI* = 2.04 to 3.39).

Among nonwhite injured females with a pregnancy-associated diagnosis, 21 percent of injuries (427/2,082) were assault related; among whites, 9 percent (235/2,635) were assault related. The rate of pregnancy-associated assaults was almost seven times higher in nonwhites (178/100,000 person-years) than whites (26/100,000 person-years). However, the rate ratio was elevated similarly among both whites (2.65, 95 percent *CI* = 1.41, 3.03) and nonwhites (3.34, 95 percent *CI* = 2.55, 3.69). Among nonwhites ages 15 to 19, the rate of pregnancy-associated assaults per 100,000 person-years was 341 (rate ratio = 5.54 (95 percent *CI* = 4.32, 6.73).

Those experiencing pregnancy-associated assaults were on average younger compared with all women ages 15 to 49 (mean age = 24.2 versus 30.8 years). The proportion of pregnancy-associated assaults within each age group climbed sharply after age 16, peaked at age 19, and declined slowly thereafter (see exhibit 1). The pregnancy-associated rates and rate ratios were highest in the youngest age group and declined with age (see exhibit 2).

Exhibit 1. Pregnancy-associated hospitalized assaults as a proportion of all assaults by single year of age, ages 15 to 45, 19 States, 1997 (*n* = 745 pregnancy-related cases).

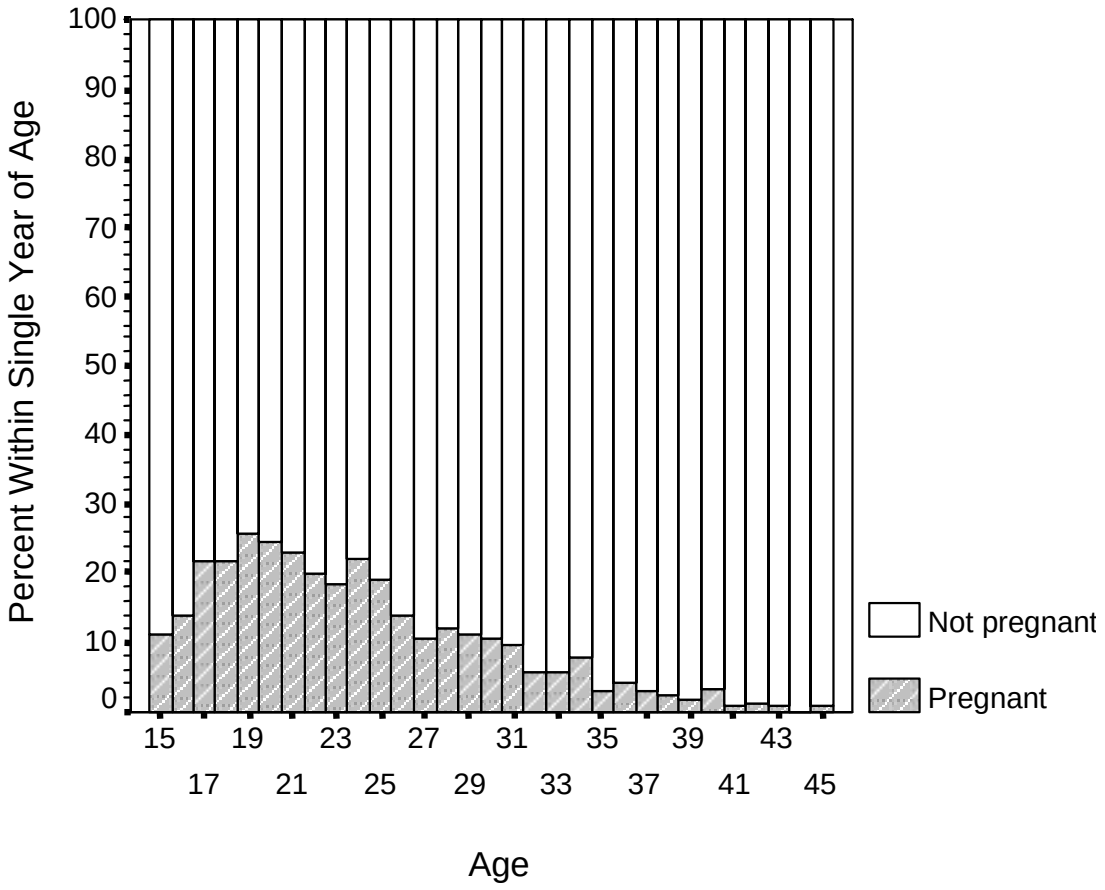
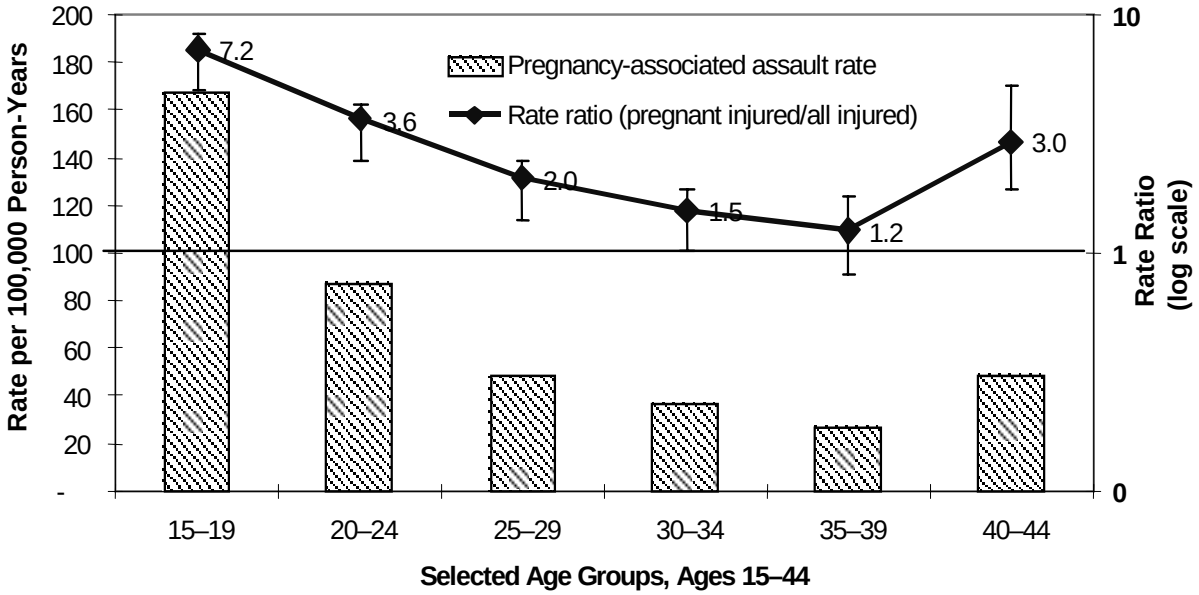


Exhibit 2. Rate of assault-related hospitalized pregnancy-associated injuries per 100,000 person-years and rate ratio (pregnant injured women/all injured women) for ages 15 to 44, 19 States, 1997 (*n* = 745 pregnancy-related cases, 95 percent *CI* shown).



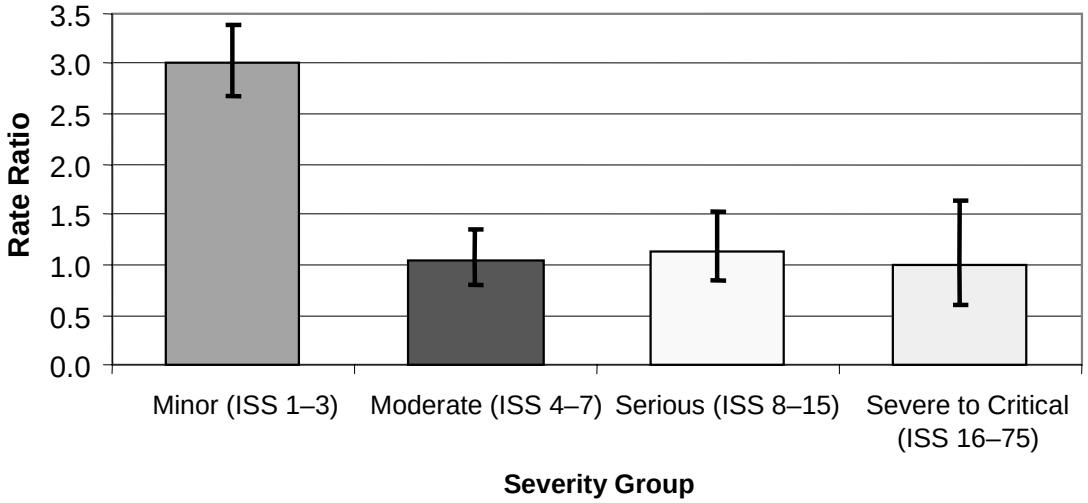
The leading mechanism of assaultive injury was "struck by or against" (46.7 percent, 348/746) with a rate ratio of 3.58 (95 percent *CI* = 3.20, 4.00). Pregnancy-associated assaults were more likely to be nonfatal (rate ratio 3.13, 95 percent *CI* = 2.93, 3.41) and to involve a short length of stay (rate ratio for 1-day length of stay = 5.02, 95 percent *CI* = 4.50, 5.60). The average length of stay was shorter for the pregnancy-associated assaulted women: 2.6 days compared with 4.0 for all women ages 15 to 49.

Pregnancy-associated cases were more likely to be paid for by Medicaid (rate ratio = 4.49, 95 percent *CI* = 4.06, 4.98). The median charge per visit was $3,351 for pregnancy-associated women and $6,775 for all women. Respective total charges for lifetime medical loss sum and lifetime monetized QALY (rounded) were $4,926,000, $6,296,162, and $71,620,000 for pregnancy-associated cases and $89,245,000, $111,545,000, and $1,689,194,000 for all assaults. Among the top three body parts targeted for assault were (pregnancy-associated rates per 100,000 person-years and rate ratios): trunk, 14.7 (rate ratio 19.6, 95 percent *CI* = 16.2, 23.7); face, 8.9 (rate ratio 2.0, 95 percent *CI* = 1.6, 2.4); and abdomen and pelvic organs, 8.2 (rate ratio 3.8, 95 percent *CI* = 3.1, 4.7).

Perpetrator coding was incomplete for both pregnancy-associated and all assaults. Among pregnancy-associated assaults, 22.6 percent were accompanied by a perpetrator-related E-code; for all assaulted women, 8.8 percent were accompanied by a perpetrator-related E-code. Among the cases that were perpetrator coded, 88 percent and 83.7 percent were spouse or partner related among pregnancy-associated and all assaults, respectively.

The mean ISS among the pregnancy-associated assaulted women was 2.5, while the mean ISS among all women was 4.9. Exhibit 3 shows the rate ratio of assault-related hospital discharges by severity group.

Exhibit 3. Rate ratio of assault-related hospitalized pregnancy-associated injuries per 100,000 person-years (pregnant injured women/all injured women) by severity group for ages 15 to 49, 19 States, 1997 (*n* = 422, with 95 percent *CI* shown).



There was a significantly increased rate ratio for minor injuries (ISS < 4) but not for the moderate, serious, and severe injuries. This finding was the basis for the severity adjustment, used below, which eliminated all assault-related cases with minor injuries from rate comparisons.

Assaults With ISS ≥ 4

Exhibit 4 details the frequency, rates, and rate ratios of selected characteristics for hospitalized assaults in the subgroup of seriously injured cases.

By proportionally eliminating the less severe pregnancy-associated cases, most rate ratios were reduced and were not significantly different from 1. The overall rate ratio fell to a nonsignificant 1.07 (95 percent *CI* = 0.57, 1.28). However, rate ratios were significantly elevated for a few subgroups, including the youngest age group (rate ratio = 2.49, 95 percent *CI* = 1.31, 3.63) and firearm-related assaults (rate ratio = 1.55, 95 percent *CI* = 1.07, 2.23).

Among the top four body parts targeted for assault (by frequency), pregnancy-associated rates per 100,000 person-years and rate ratios were as follows: abdomen and pelvic organs, 2.1 (rate ratio 1.6, 95 percent *CI* = 1.1, 2.4); skull and brain, 2.0 (rate ratio 1.0, 95 percent *CI* = 0.7, 1.5); face, 1.4 (rate ratio 0.9, 95 percent *CI* = 0.5, 1.5); and upper extremity, 1.4 (rate ratio 1.1, 95 percent *CI* = 0.7, 1.9).

Exhibit 4. Rates of pregnancy-associated hospitalized assaults and rates for all women of reproductive age (15 to 49) with ISS ≥ 4 by selected characteristics, 19 States, 1997

Variable	Value	Pregnant Women No.	Rate	All Women No.	Rate	Rate Ratio	95% *CI*
Race	White	33	4	1,341	5	0.78	(0.31, 1.10)
	Nonwhite (excludes unknown)	75	31	1,747	25	1.27	(0.85, 1.60)
	Total	108		3,088			
Hispanic	Yes	25	10	407	8	1.20	(0.61, 1.80)
	No	76	8	2,388	8	1.09	(0.54, 1.37)
	Total	101		2,795			
Age	15–19	29	23	431	9	2.49	(1.31, 3.63)
	20–24	30	12	451	10	1.12	(0.61, 1.62)
	25–29	27	8	550	11	0.76	(0.42, 1.13)
	30–34	22	8	625	11	0.68	(0.38, 1.04)
	35–39	7	5	670	11	0.45	(0.25, 0.96)
	40–44	3	*	458	8		
	45–49	–	–	272	6		
	Total	118	10	3,457	10	1.07	(0.57, 1.28)
Age/Race—White	15–19	7	8	138	4	2.08	(0.76, 4.45)
	20–24	10	5	153	4	1.13	(0.45, 2.14)
	25–29	8	3	211	5	0.58	(0.25, 1.17)
	30–34	6	3	223	5	0.51	(0.21, 1.14)
	35–39	1	*	255	5		
	40–44	1	*	230	5		
	45–49	–	–	131	3		
	Total	33	4	1,341	5	0.78	(0.31, 1.10)
Age/Race—Nonwhite	15–19	19	53	239	24	2.17	(1.46, 3.46)
	20–24	17	29	244	26	1.09	(0.75, 1.79)
	25–29	18	29	288	27	1.07	(0.73, 1.72)
	30–34	13	25	326	29	0.87	(0.60, 1.52)
	35–39	6	24	346	30	0.77	(0.54, 1.74)
	40–44	2	*	185	18		
	45–49	–	–	119	14		
	Total	75	31	1,747	25	1.27	(0.86, 1.61)
Severity	Minor (ISS 1–3)	–	–	–	–	–	
	Moderate (ISS 4–7)	59	5	1,767	5	1.04	(0.80, 1.35)
	Serious (ISS 8–15)	43	4	1,188	3	1.13	(0.83, 1.53)
	Severe to Critical (ISS 16–75)	16	1	502	1	0.99	(0.60, 1.63)
Length of stay	1 Day	31	3	1,081	3	0.89	(0.62, 1.28)
	2–3 Days	38	3	1,032	3	1.15	(0.83, 1.58)
	4–7 Days	14	1	351	1	1.24	(0.73, 2.12)
	8–14 Days	7	1	164	0	1.33	(0.62, 2.83)
	2 Weeks +	1	*	88	0	*	
Payer source	Medicare	1	*	88	0	*	
	Medicaid	65	6	1,298	4	1.56	(1.22, 2.00)
	Worker's Comp	–	–	37	0	–	
	Other Gov't	6	1	217	1	0.86	(0.38, 1.94)
	BC/Commerc/PPO	9	1	482	1	0.58	(0.30, 1.12)
	HMO	8	1	455	1	0.55	(0.27, 1.10)
	Self-Pay	22	2	687	2	1.00	(0.65, 1.52)
	Charity, NoChg	2	*	80	0	*	
	Other	2	*	38	0	*	
	Unknown	–	–	7	0	–	

*Rates and ratios not computed for cells with 5 or fewer observations.
[a]Rates are presented as discharges per 100,000 person-years.
Cells with no observations indicated by –

Discussion

Implications for Future Research

While hospital discharge data have significant advantages, they also have disadvantages. Waller and colleagues described these as they relate to violence against women (Waller, Martin, and Ornstein, 2000). They include concerns about quality and completeness of intent and perpetrator coding, difficulty detecting conditions that are not injury related (stress, depression, and other diseases), and possible duplicate counts. Although the data suggested that most hospitalized assaults were spouse or partner related, the low percentage of perpetrator-coded cases dictates interpreting this data cautiously. Regarding duplicate counts, individuals would have needed multiple admissions with both a pregnancy and an assault code, rendering multiple admissions in the study population less likely.

Other limitations stem from the etiologic nature of the study design. Individual women were not followed up, thus the study did not elucidate violence patterns before, during, or after pregnancy. The study also failed to describe the relationship of violence to pregnancy intendedness, sexual assault, gestational age, previous births, parity, prenatal care, pregnancy outcome, marital status, or relationship of the fetus to the assailant. Understanding these patterns is important, but it remains for future longitudinal research to characterize.

The assumption that population rates computed for all reproductive-age women are similar to nonpregnant women of the same age slightly lowers the power to show differences in risk between the pregnant and nonpregnant groups and has a potential for introducing bias by age, race, and other factors associated with the probability of being pregnant. Pregnancy-associated cases made up as much as 25 percent of assault cases for some age groups (10.1 percent overall). This was corrected, however, in the severely injured group, where pregnancy-associated cases did not make up such a large proportion (3.4 percent overall).

Hospital discharge data are affected by the quality of coding among contributing hospitals (Smith, Langlois, and Buechner, 1991; Sniezek, Finklea, and Graitcer, 1989; Marganitt et al., 1990). For intentional injuries, methods for screening and documentation are not always specified and may vary among locales. As long as these vagaries are consistently applied within and among hospitals, the results contrasting pregnant women may be more valid from a comparative standpoint but less so from a vantage that seeks accurate prevalence rates. Miscoding and undercounting will occur, but it is difficult to conjecture how systematic inclusions of pregnancy-associated codes among nonpregnant women—the type of error that could most affect the results—would happen. However, it is acknowledged that interhospital coding differences, combined with variation in hospital-specific rates, could lead to some confounding and clustering effects.

Another limitation is that women in early pregnancy are not likely or, at best, are much less likely than women in later pregnancy to have the pregnancy identified and coded during a hospital stay. These cases will be misclassified into the nonpregnant group. Therefore, a diagnosis-based pregnancy definition, such as that used in the current study, is biased toward detection of later gestation pregnancies and does not measure risks in early pregnancy. Future

studies in this area would greatly benefit from routine pregnancy screening among young women and documentation of the results in the summary discharge record and data systems.

Implications for Practitioners

This is the first study to address the prevalence and risk of pregnancy-associated hospitalized assaults in a multi-State population. It describes a significant increase in the rate ratio for pregnancy-associated assaults but demonstrates that age-specific rate ratios are markedly reduced once adjusted for injury severity. Overall, after severity adjustment, there was no significantly elevated rate ratio, but moderate increases remained among the youngest women ages 15 to 19 and for firearm-related assaults.

Most other studies of assault and pregnancy have focused on populations from small clinics or mostly urban populations, which are often overrepresented by socially disadvantaged minorities. Because most severe injuries will be seen in a hospital, regardless of race, social, and economic class, the present findings represent demographic comparisons that cut across all ages, urban and rural areas, socioeconomic groups, insurance coverage, race, and time. Thus, a clearer picture emerges of which population groups are likely to be victims of serious assault.

In conclusion, pregnant women suffer high rates of assault, not because they are pregnant, but because they are likely to be members of a demographic group (young women) that is more vulnerable to violence in general. Pregnancy also lowers the hospital admission threshold for most traumatic injuries, including assaults. It may be helpful for practitioners to think of pregnant women as a "sensitive" population, rather than an "at-risk" population. As a sensitive population, whose extra care means substantially increased health care costs, pregnant women make up a group worth addressing for preventive efforts in conjunction with broader efforts aimed at reducing the differential of the rate of assault during pregnancy by socioeconomic status and race. Although the poor use of perpetrator codes in the data clouds the issue of separating intimate partner violence from stranger assaults, it can also challenge practitioners to improve medical record documentation and screening. Overall, these findings can be used to better prioritize and target effective injury prevention efforts (McFarlane et al., 1998) aimed toward young women for the benefit of both the mother and the fetus.

Note

[1] Reprinted from *Obstetrics and Gynecology*, 100(4) (2002): 773–780, with permission from the American College of Obstetricians and Gynecologists. Portions of this study were presented at the National Institute of Justice Violence Against Women Conference, Washington, D.C., October 2000, and the National Association of Injury Control Research Centers, National Research Symposium, Pittsburgh, Pennsylvania, May 25, 2001.

References

Ballard, T., Saltzman, L.E., Gazmararian, J., Spitz, A.M., Lazorick S., and Marks, J.S. (1998). "Violence During Pregnancy: Measurement Issues." *American Journal of Public Health,* 88(2), 274–276.

Berenson, A., Wiemann, C., Wilkinson, G., Jones, W., and Anderson, G. (1994). "Perinatal Morbidity Associated With Violence Experienced by Pregnant Women." *American Journal of Obstetrics and Gynecology,* 170(6), 1760–1769.

Berrios, D.C., and Grady, D. (1991). "Domestic Violence: Risk Factors and Outcomes." *Western Journal of Medicine,* 155(2), 133–135.

Bullock, L., and McFarlane, J. (1989). "The Birth-Weight/Battering Connection." *American Journal of Nursing,* 1153–1155.

Campbell, J., Torres, S., Ryan, J., King, C., Campbell, D.W., Stallings, R.Y., and Fuchs, S.C. (1999). "Physical and Nonphysical Partner Abuse and Other Risk Factors for Low Birth Weight Among Full Term and Preterm Babies: A Multiethnic Case-Control Study." *American Journal of Epidemiology,* 150(7), 714–726.

Campbell, J.C. (2001). "Abuse During Pregnancy: A Quintessential Threat to Maternal and Child Health—So When Do We Start To Act?" *Canadian Medical Association Journal,* 164(11), 1578–1579.

Campbell, J.C., Moracco, K.E., and Saltzman, L.E. (2000). "Future Directions for Violence Against Women and Reproductive Health: Science, Prevention, and Action." *Maternal and Child Health Journal,* 4(2), 149–154.

Campbell, J. (1998). "Abuse During Pregnancy: Progress, Policy, and Potential." *American Journal of Public Health,* 88(2), 185–187.

Campbell, J., Pugh, L., Campbell, M., and Visscher, M. (1995). "The Influence of Abuse on Pregnancy Intention." *Women's Health Issues,* 5(4), 214–223.

Cokkinides, V.E., Coker, A.L., Sanderson, M., Addy, C., and Bethea, L. (1999). "Physical Violence During Pregnancy: Maternal Complications and Birth Outcomes." *Obstetrics and Gynecology,* 93(5 Pt 1), 661–666.

Dannenberg, A., Carter, D., Lawson, H., Ashton, D., Dorfman, S., and Graham, E. (1995). "Homicide and Other Injuries as Causes of Maternal Death in New York City, 1987 Through 1991." *American Journal of Obstetrics and Gynecology,* 172(5), 1557–1564.

Dye, T., Tolivert, N., Lee, R., and Kenney, C. (1995). "Violence, Pregnancy and Birth Outcome in Appalachia." *Paediatric and Perinatal Epidemiology,* 9, 35–47.

Eisenberg, S., and Micklow, P. (1997). "The Assaulted Wife: 'Catch 22 Revisited.'" *Women's Rights Law Reporter,* 3, 138–161.

Gazmararian, J.A., Petersen, R., Spitz, A.M., Goodwin, M.M., Saltzman, L.E., and Marks, J.S. (2000). "Violence and Reproductive Health: Current Knowledge and Future Research Directions." *Maternal and Child Health Journal,* 4(2), 79–84.

Gazmararian, J., Adams, M., Saltzman, L., Johnson, C., Bruce, F., Marks, J., Zahniser, S., and Prams Working Group. (1995). "The Relationship Between Pregnancy Intendedness and Physical Violence in Mothers of Newborns." *Obstetrics and Gynecology,* 85(6), 1031–1038.

Gazmararian, J., Lazorick, S., Spitz, A., Ballard, T., Saltzman, L., and Marks, J. (1996). "Prevalence of Violence Against Pregnant Women." *JAMA,* 275 (24), 1915–1920.

Gelles, R. (1974). *The Violent Home: A Study of Physical Aggression Between Husbands and Wives.* Beverly Hills, CA: Sage Publications.

Gelles, R. (1988). "Violence and Pregnancy: Are Pregnant Women at Greater Risk of Abuse?" *Journal of Marriage and Family,* 50, 841–847.

Gold M., and Siegel, J. (1996). *Cost-Effectiveness in Health and Medicine.* New York: Oxford University Press.

Greenblatt, J.F., Dannenberg, A.L., and Johnson, C.J. (1997). "Incidence of Hospitalized Injuries Among Pregnant Women in Maryland, 1979–1990." *American Journal of Preventive Medicine,* 13(5), 374–379.

Lawrence, B.A., Miller, T.R., Jensen, A.F., Fisher, D.A., and Zamula, W. (2000). "Estimating the Costs of Non-Fatal Consumer Product Injuries in the United States." *Injury Control and Safety Promotion,* 7(2), 97–113.

MacKenzie, E. (1984). "Injury Severity Scales: Overview and Directions for Future Research." *American Journal of Emergency Medicine,* 2, 537–549.

Marganitt, B., MacKenzie, E., Smith, G., and Damiano, A.M. (1990). "Coding External Causes of Injury "E-codes" in Maryland Hospital Discharges 1979–88: A Statewide Study to Explore the Uncoded Population." *American Journal of Public Health,* 80, 1463–1466.

McFarlane, J., Parker, B., and Soeken, K. (1996). "Abuse During Pregnancy: Associations With Maternal Health and Infant Birth Weight." *Nurse Researcher,* 45(1), 37–42.

McFarlane, J., Parker, B., Soeken, K., Silva, C., and Reel, S. (1998). "Safety Behaviors of Abused Women After an Intervention During Pregnancy." *Journal of Obstetrics, Gynecology, and Neonatal Nursing,* 27(1), 64–69.

Murphy, C.C., Schei, B., Myhr, T.L., and Du Mont, J. (2001). "Abuse: A Risk Factor for Low Birth Weight? A Systematic Review and Meta-Analysis." *Canadian Medical Association Journal*, 164(11), 1567–1572.

National Center for Health Statistics, Centers for Disease Control and Prevention, U.S. Department of Health and Human Services. (1999). 1997 Natality data set. Series No. 21 (9) compact disc.

Parker, B., McFarlane, J., and Soeken, K. (1994). "Abuse During Pregnancy: Effects on Maternal Complications and Birth Weight in Adult and Teenage Women." *Obstetrics and Gynecology,* 84(3), 323–328.

Poole, G., Martin, J., Perry, K., Griswold, J., Lambert , C., and Rhodes, R. (1996). "Trauma in Pregnancy: The Role of Interpersonal Violence." *American Journal of Obstetrics and Gynecology,* 174(6), 1873–1878.

Rosner, B. (1994). *Fundamentals of Biostatistics.* 4th ed. Belmont, CA: Duxbury Press.

Smith, G., Langlois, J., and Buechner, J. (1991). "Methodological Issues in Using Hospital Discharge Data to Determine the Incidence of Hospitalized Injuries." *American Journal of Epidemiology,* 134, 1146–1158.

Sniezek, J., Finklea, J., and Graitcer, P.L. (1989). "Injury Coding and Hospital Discharge Data." *JAMA,* 262, 2270–2272.

Waller, A.E., Martin, S.L., and Ornstein, M.L. (2000). "Health Related Surveillance Data on Violence Against Women." *Violence Against Women,* 6(7), 868–903.

Weiss, H. (1999). "Pregnancy-Associated Injury Hospitalizations in Pennsylvania, 1995." *Annals of Emergency Medicine,* 34(5), 626–636.