

# *A Cost-Benefit Analysis of the Violence Against Women Act of 1994*

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*In response to public concern about violence against women in the United States, Congress passed the Violence Against Women Act of 1994 (VAWA-I), which provided \$1.6 billion for programs over 5 years. The purpose of this research is to estimate the net benefit, using a societal perspective, of VAWA-I in reducing violent criminal victimization of women. Costs included direct property losses, medical and mental health care, police response, victim services, lost productivity, reduced quality of life, and death. Benefits were calculated as averted costs. This analysis found that VAWA-I saved \$14.8 billion in net averted social costs, suggesting that VAWA-I is an affordable and beneficial social program.*

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*The high rate of violence against women is cause for concern in the United States. According to the Department of Justice National Crime Victimization Survey, approximately 4.6 million American women ages 12 years and older were raped, robbed, or assaulted, or were the victim of a threatened or attempted violent crime annually in 1992 and 1993 (U.S. Department of Justice, Bureau of Justice Statistics, 1996).<sup>1</sup> Almost three quarters of these attacks were committed by someone the victim knew. In addition, women are increasingly likely to be victims of violence when compared to men. Women were about two thirds as likely as men to be victims of violence in the early 1990s, whereas they were half as likely as men to be victims of violence 20 years ago (Bachman & Saltzman, 1995). Similar patterns emerge when considering fatal violent*

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assaults. In 1994, women represented 23% of all known homicides (U.S. Department of Justice, Bureau of Justice Statistics, 1997). Furthermore, 90% of female victims were murdered by males.

Data such as these motivated the Clinton administration and Congress to develop bipartisan legislation aimed at protecting the rights and lives of American women. The Violence Against Women Act of 1994 (VAWA-I) was designed to create a safe environment for women—in their homes, on the streets, and within the court system. It provided \$1.6 billion over 5 years to increase penalties for perpetrators and improve resources for police, prosecutors, and victim service providers. In addition, this legislation aims to implement national stalker and domestic violence reduction programs and to improve legal protections for battered immigrant women and children (Campbell, 1996). Since 1994, a number of specific actions to combat violence against women have been taken as a result of VAWA-I, including legislative protection of battered women who move across state lines, a ban on firearm possession for domestic abusers, establishment of a federal cause of action for gender-motivated violence, and strengthened restitution orders and extension of the rape shield law (Violence Against Women Office, 1996).

The primary hypothesis of this study is that VAWA-I has reduced the societal costs associated with violent criminal victimization of women. As such, this cost-benefit analysis focuses on the following question: What is the net social benefit of the Violence Against Women Act of 1994?

## METHOD

Cost-benefit analysis is an evaluation in which both the cost of the intervention and its outcomes are converted to dollars, and the result of the analysis is the net economic effect (net costs or net savings) of the program (Schwalberg & Gavin, 1998). To take into account the broad impact of violent criminal victimization on the legal system, law enforcement agencies, health care system, social programs, and victims, this cost-benefit analysis is conducted from a societal perspective (Manning, 1999). This perspective includes all costs and all effects of VAWA-I, regardless of who experiences the costs and the effects (Gold, Siegel, Russell, & Weinstein, 1996; Miller & Levy, 1997). In addition, VAWA-I is

treated for the purpose of analysis as a single broad policy rather than analyzing the cost-benefit of individual programs funded through VAWA-I. Estimates of both annual costs and outcomes are compared for the yearly average of the 2-year period before VAWA-I (1992 to 1993) and a 1-year period after the disbursement of VAWA-I funds (1996). To reflect the varied experiences between victims, the more generalizable gross-costing approach will be used (Manning, 1999; Murray, Evans, Acharya, & Baltussen, 2000). Gross-cost estimation uses cost estimates in the aggregate (such as the cost of hospitalization) rather than individually costing each procedure and service performed during a hospitalization (micro-costing). The advantages of gross-costing are that it is simple, practical, and robust to variation, although its primary disadvantage is that little attention is given to the smaller details that contribute to cost (Gold et al., 1996).

### **PROBABILITY OF CRIMINAL VICTIMIZATION**

Annual rates of criminal victimization have been taken from the 1997 National Institute of Justice (NIJ) report examining trends in criminal victimization among women during the 1990s (U.S. Department of Justice, Bureau of Justice Statistics, 1997). Table 1 shows the annual rates of criminal victimization of women for fatal assault, nonfatal rape or sexual assault, and nonfatal assault for the period before VAWA-I (1992 to 1993) and after the implementation of VAWA-I programming (1996). For the NIJ report, nonfatal rape or sexual assault includes completed rape, attempted rape, and sexual assault; nonfatal assault includes aggravated assault with injury or threatened with a weapon plus simple assault without injury or with minor injury but excludes rape/sexual assault.

### **MEASURING COSTS AND BENEFITS**

For the purpose of this analysis, the cost components of crime as determined by Miller and colleagues at the NIJ have been used (Miller, Cohen, & Wiersema, 1996). These estimates have been adapted from an earlier model by Cohen, Miller, and Rossman (1994) that described the costs and consequences of violent behavior. The cost components describe the averted costs of crime,

**TABLE 1**  
**Annual Rates of Criminal Victimization in Women**  
**Ages 12 and Older (per 100,000 Women)**

<i>Description</i>	<i>1992 to 1993</i>	<i>1996</i>
Fatal assault (any type)	2.5	2.0
Nonfatal rape or sexual assault	460	400
Nonfatal assault	980	750

SOURCE: U.S. Department of Justice, Bureau of Justice Statistics, 1997.

including direct property losses, medical care, ambulance services, mental health care, initial police response and follow-up investigation, victim services and other social services, lost productivity (workdays or school days, housework), and quality of life (pain and suffering, loss of affection/enjoyment, and death). The Miller et al. (1996) study estimated direct costs from a variety of sources, and the full methodology is available in their report. Direct costs are the cost of all goods, services, and other resources that go into production of a good or service and can be directly measured (Gold et al., 1996; Petitti, 1994). Overall, most data used by Miller et al. (1996) were available through the National Criminal Victimization Survey (NCVS). Adjustments to these estimates were made by Miller et al. (1996) when the NCVS estimates were known to significantly overestimate or underestimate actual costs, as was the case for costs of mental health care and victim services. Instead, mental health care costs were estimated through findings of a small pilot study (Miller et al., 1996) because little data on mental health care costs due to crime are available in the literature. In addition, victim services cost estimates were largely based on the dollar value of federal government grants to victim service agencies and undercounts private organizations as well as the value of volunteer time in such agencies.

A major component of this analysis is use of an appropriate measure of cost for nontangible losses such as loss of life, pain, suffering, and reduced quality of life, which are not bought and sold. Often, the time or money people spend to reduce their risk of death is used to calculate a monetary estimate of lost quality of life due to fatalities (Viscusi, 1993). Such estimates of the monetary value of a fatality, including lost wages and other tangible losses, range from \$500,000 to \$7 million (Miller et al., 1996). For this

analysis, Miller et al.'s estimate for the cost of a life lost was used after inflation to 1998 dollars. For nonfatal injuries, Miller et al. estimated values of pain, suffering, fear, and lost quality of life through the compensation portion of jury awards to crime and burn victims. Because cases brought to trial are not necessarily representative of all crime cases, a functional relationship between out-of-pocket costs of crime, victim characteristics, injury severity, and jury award was applied to the actual distribution of victimization in their data set to determine the average jury award for the typical crime (Miller et al., 1996).

Table 2 shows the costs of criminal victimization by type of cost and victimization. For the purpose of this analysis, all costs have been adjusted to 1998 dollars using either the medical care component of the Consumer Price Index (CPI) or the CPI to account for differences in the year the various costs were estimated. Adjusting from 1993 to 1998 dollars, the inflation factor for medical care costs is 1.20, and for all other costs the inflation factor is 1.13 (U.S. Department of Labor, Bureau of Labor Statistics, 1998). These costs are averages and include attempted assaults that result in minimal consequences as well as extremely violent crimes that result in long hospital stays and devastate the lives of the victims.

It is important to note that, for lack of reliable data, the Miller et al. (1996) study omitted some victimization costs. Most important, they excluded (a) the cost of operating the criminal justice system (e.g., prosecution of offenders), (b) the cost of actions taken by women to reduce their likelihood of victimization, (c) the cost of processing public and private disability insurance payments and welfare payments to permanently disabled victims, and (d) the cost of long-term effects on victim earnings.

## SENSITIVITY ANALYSIS

### Assumptions

Sensitivity analysis is designed to measure the uncertainty of the probability distribution of study assumptions and indicates the influence each factor has on the outcome of the entire analysis (Gold et al., 1996). In this study, the sensitivity analysis was designed to test the robustness of the analysis against variations

**TABLE 2**  
**Tangible and Nontangible Costs by Type/Category of Criminal Victimization**

<i>Description</i>	<i>Fatal Crime</i>	<i>Rape and Sexual Assault</i>	<i>Nonfatal Assault</i>
Tangible costs per U.S. woman (in 1998 \$) <sup>a</sup>			
Productivity	1,128,809	2,483	3,499
Medical care	19,615	602	1,769
Mental health care	5,776	2,647	117
Police/fire services	1,467	42	95
Social/victim services	0	30	52
Property loss/damage	135	113	44
Nontangible costs per U.S. woman (in 1998 \$)			
Quality of life	2,156,025	91,885	21,786
Total costs per U.S. woman (in 1998 \$)	4,474,501	103,560	32,780

SOURCE: Miller, Cohen, and Wiersema, 1996.

a. Costs inflate to 1998 values using the medical care component of the Consumer Price Index (CPI) and the general CPI.

in the assumptions made when determining the cost-benefit of VAWA-I. One-way and selected two-way sensitivity analyses (which consider two assumptions at a time), as well as threshold analyses (which vary the parameter over a range to determine the values that would lead to changes in the conclusion), were conducted (Gold et al., 1996). In the overall analysis, three assumptions were made, namely,

1. Only costs accrued in the year after victimization were included;
2. All reduction in violent criminal victimization of women after the implementation of VAWA-I was attributed to the VAWA-I program;
3. Both tangible and nontangible costs were included, meaning that estimates for the value of nonmarket goods were imputed.

#### Range of Estimates

The first assumption yields a conservative estimate of the costs that would be averted by avoiding victimization. In other words, adding information for additional years would not change the program costs, which are paid out at the beginning and would only increase the costs of victimization (and likely increase the net benefits of the program). As a result, sensitivity analysis will not be done on this assumption, and the conservative estimate will be used.

The second assumption is the most problematic. Although rates of crime have decreased somewhat in certain populations, such as juvenile males between the ages of 15 and 19, this change is thought to be mainly attributable to the aging of this group into their 20s and the high rates of incarceration among them. Ideally, this analysis would be able to take into account victim and perpetrator characteristics that might account for changes in rates of criminal victimization. However, this is not possible with the currently available data. In addition, the rates of victimization are what drive the results of the cost-benefit analysis because the cost of response to a homicide, nonfatal rape, or nonfatal assault is identical with or without VAWA-I. As a result, sensitivity analysis considers the effect of varying the reduction in criminal victimization rates for women attributable to VAWA-I from 10% to 100% of the actual reduction observed. Rates for fatal assaults, nonfatal rape or sexual assault, and nonfatal assaults will be tested individually.

The third assumption deals with the cost of criminal victimization. Because any higher estimates of cost would only serve to amplify the estimated averted costs due to VAWA-I, only smaller cost estimates were considered. For the purpose of this sensitivity analysis, costs as low as 70% of the tangible, market-based costs were considered.

In addition to one-way sensitivity analysis, two-way sensitivity analysis of each rate and cost combination and the combined results of holding all estimates at their minimum values are presented. Finally, threshold analysis for each rate and cost was conducted and the findings described here. All analyses were conducted using Data 3.0.18 software from TreeAge (DATA 3.0 User's Manual, 1997).

## RESULTS

The net benefit of VAWA-I is estimated to be \$16.4 billion. Because the cost of VAWA-I is only \$1.6 billion, \$14.8 billion in averted victimization costs would be saved after implementation of VAWA-I. On the individual level, VAWA-I is estimated to cost \$15.50 per U.S. woman and would be expected to save \$159 per U.S. woman in averted costs of criminal victimization. This suggests that VAWA-I is a fiscally efficient social program.

Overall, sensitivity analysis suggests that varying the attributable decrease in violent criminal victimization and the criminal victimization costs did not change the efficiency of VAWA-I. Table 3 shows the results of one-way sensitivity analysis employing the six variables described in the assumptions. Maximum values are those used in the overall analysis (reference case); minimum values for victimization rates represent 10% of the actual decrease observed between the two time periods, and minimum values for costs represent 70% of tangible costs alone. In each case, VAWA-I was cost-beneficial. Threshold analysis for each of the six parameters individually suggests that VAWA-I should be implemented from a cost perspective regardless of the parameter value. In other words, when holding the rest of the parameters at their designated value, costs as low as \$0 and rates as high as the 1992 to 1993 value still indicate VAWA-I is cost-beneficial.

Furthermore, two-way sensitivity analysis of each rate and cost combination also suggested that VAWA-I is an efficient program. Finally, holding all variables at their minimum designated value (10% of actual reduction for rates and 70% of direct costs for costs), VAWA-I costs \$15.50 per woman but results in \$47 in averted costs. This would suggest national savings of \$4.8 billion (as compared to the \$14.8 billion under the study assumptions).

## DISCUSSION

This analysis suggests that the Violence Against Women Act of 1994 is an efficient social program, with averted costs of criminal victimization outweighing the costs of implementation. However, there are a number of ways in which this study could be enhanced with further research. These approaches include improving the estimates of incidence of violent victimization of women, improving the estimates of cost of victimization, adjusting for individual factors affecting rates of victimization, and determining the mechanism by which VAWA-I affects violent victimization of women.

Violent victimization is a secret for many women, particularly those who have experienced rape or domestic violence. Although some women are willing to disclose their experiences, there are still questions of definition at issue. For example, an individual woman may not consider herself a crime victim, even though her

**TABLE 3**  
**One-Way Sensitivity Analyses and Threshold**  
**Analysis of Selected Model Parameters**

<i>Parameter</i>	<i>Minimum</i>	<i>Maximum</i>	<i>Decision<sup>a</sup></i>
Rate of fatal victimization (per 100,000)	2	2.45	Implement VAWA-I
Rate of rape or sexual assault (per 100,000)	400	454	Implement VAWA-I
Rate of nonfatal assault (per 100,000)	750	957	Implement VAWA-I
Cost of fatal victimization	\$813,871	\$2,940,000	Implement VAWA-I
Cost of rape or sexual assault	\$4,030	\$87,000	Implement VAWA-I
Cost of nonfatal assault	\$3,793	\$32,780	Implement VAWA-I

a. Threshold analysis.

partner has assaulted her physically. How questions are asked can have a great impact on resulting rates of victimization. The National Crime Victimization Survey attempts to include all occurrences whether or not women self-define as crime victims. However, if these findings do underestimate the true rates of violent victimization of women, the cost-benefit results may be affected. If the true rate is higher than the estimate and VAWA-I does not impact the victimization of such women, the cost-benefit of the act may not be as great.

The actual cost of implementing VAWA-I exceeds the \$1.6 billion appropriated legislatively. In particular, administrative costs have not been included. These specific numbers were not available. If they had been included, the overall benefit of VAWA would likely be reduced. However, the administrative costs are relatively small when compared to the entire budget and the general findings of this study would still apply.

Cost estimates for violent victimization of women are incomplete. In addition to the components intentionally left out of the Miller et al. (1996) report, additional methodology quantifying the intangible costs of crime would be useful. Repeated victimization can greatly impact women's lives, affecting their physical or psychological health (Campbell & Lewandowski, 1997; Coker, Smith, Bethea, King, & McKeown, 2000; Russo, Denious, Keita, & Koss, 1997) and thereby reducing the capacity of victims to pursue income-enhancing educational and vocational opportunities they might have in the absence of the abuse (Raphael & Tolman, 1997).

Accounting for excluded costs and repeated victimization would likely increase costs in a number of categories, which would further increase the estimated cost-efficiency of VAWA-I. Progress in this area is being made. For example, the Institute of Women's Policy Research recently published a report suggesting a framework for determining the long-term impact on earnings potential for victims of domestic violence (Laurence & Spalter-Roth, 1996). Finally, limiting estimates to the costs incurred in a single year provides a conservative estimate of the true cost of violent victimization of women. Including costs incurred over time, particularly medical and mental health care costs and intangible costs, would again increase the potential savings by averting crime through VAWA-I.

This study would benefit greatly from the ability to control for contextual information, including more information about the type of crime and the specific impact on the victims, as well as demographic data about the victims and their perpetrators. In this way, an improved effort could be made to determine what proportions of the observed decrease in rates of victimization over this period are attributable to enactment of VAWA-I. This improvement would make the model more precise and generalizable, but it is not clear what effect it would have on the overall study findings. Determining the mechanism of reduction in rates of victimization is especially important in light of the recent Supreme Court ruling that portions of VAWA-I are unconstitutional. If all or part of the observed decrease in rates of victimization is due to the same portions of VAWA-I that are no longer constitutionally enforceable, the future cost-benefit of VAWA may not follow this study's findings.

Despite these limitations, this analysis suggests that using a cost-benefit criterion, VAWA is a beneficial social program. Further research should focus on which parts of the VAWA legislation have the greatest impact on reducing violent victimization of women in the United States.

## NOTE

1. Statistics from the 1992 to 1993 period are used in this article to set the stage for legislation enacted in 1994.

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