

**The Economic Costs of Violence Against Women:
An Evaluation of the Literature**

**Expert brief compiled in preparation for the Secretary-General's in-
depth study on all forms of violence against women by:**

Tanis Day, PhD
Katherine McKenna, PhD
Audra Bowlus, PhD*
The University of Western Ontario,
London, Ontario, Canada

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** The views expressed in this paper are those of the author and do not necessarily represent those of the United Nations.*

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1. Introduction

a. International recognition of violence against women as a human rights issue and the need for research

Violence against women has been recognized internationally as a major violation of a woman's human rights. This was formalized in 1993 with the United Nations Declaration on the Elimination of Violence Against Women, which, building upon themes developed at the World Conference on women held in Nairobi, stated that violence against women is both a result of and an obstacle to the achievement of women's equality, affecting all women world-wide.¹ Echoing this, the 1995 Beijing Platform for Action of the Fourth World Conference on Women not only called for the elimination of all forms of violence against women, but more specifically recommended that work be done to:

*Promote research, collect data and compile statistics, especially concerning domestic violence relating to the prevalence of different forms of violence against women, and encourage research into the causes, nature, seriousness and consequences of violence against women and the effectiveness of measures implemented to prevent and redress violence against women.*²

Additionally, it called for the wide dissemination of these results.

Five years later, the Inter-American Commission of Women, in partnership with the International Centre for Criminal Law Reform and Criminal Justice Policy (ICCLR) and the United Nations Latin American Institute for the Prevention of Crime and the Treatment of Offenders (ILANUD) conducted a review in the Americas of progress made toward the goals set out in the Beijing Declaration and Platform for Action and found that the level of knowledge about violence against women was frustratingly inadequate. It concluded that:

*The absence of data is being felt and deplored in most countries of the region. In particular, victimization surveys and standardized data on the experience of women who personally face incidents of violence are lacking. The planning and monitoring of social and institutional change and the evaluation of its impact is not possible without such information.*³

In 2003, in an effort to take some decisive steps toward addressing these issues, the United Nations (UN) called for an in-depth study on all forms of violence against women. This was intended to be, "A statistical overview on all forms of violence against women, in order to better evaluate the scale of such violence, while identifying gaps in

¹ Declaration on the Elimination of Violence against Women, UN Doc A/RES/48/104, 20 December 1993

² Fourth World Conference on Women Platform for Action, Strategic Objective D.2, No. 129(a), 1995.

³ Violence in the Americas - A Regional Analysis Including a Review of the Implementation of the Inter-American Convention on the Prevention, Punishment and Eradication of Violence Against Women: Executive Summary, 2000.

data collection and formulating proposals for assessing the extent of the problem.”⁴ One of the specific areas to be examined is the economic costs of violence against women.

This brief is written within the context of this larger UN study, and its purpose is to provide an overview of the work that has been undertaken world-wide on the economic costs of this gender-based violence. The focus of the analysis is to examine estimates of the costs of violence, to compare methodologies used, and to understand the scope of what has been accomplished to date. The paper analyzes existing studies, shows their geographic coverage, indicates the types of costs addressed, and discusses the strengths and weaknesses of the methodologies used.

b. Definition and prevalence of violence against women

For the purposes of this study, the definition of violence against women developed by the United Nations in the *Declaration on the Elimination of Violence against Women* is used. It is a comprehensive description, outlining that:

*the term "violence against women" means any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life.*⁵

Furthermore, it can be said to include but not be limited to:

(a) Physical, sexual and psychological violence occurring in the family, including battering, sexual abuse of female children in the household, dowry-related violence, marital rape, female genital mutilation and other traditional practices harmful to women, non-spousal violence and violence related to exploitation;

(b) Physical, sexual and psychological violence occurring within the general community, including rape, sexual abuse, sexual harassment and intimidation at work, in educational institutions and elsewhere, trafficking in women and forced prostitution;

*(c) Physical, sexual and psychological violence perpetrated or condoned by the State, wherever it occurs.*⁶

The scope of this definition reveals the complexity of the issue. The multiple ways in which violence can be experienced by women, and the many contexts in which it occurs, means that its costs and consequences are pervasive.

To begin with, it is necessary to determine the prevalence of violence against women. There have been a number of studies undertaken world-wide, all of which

⁴ *In-depth study on all forms of violence against women*, UN Doc A/RES/58/185, 22 December 2003.

⁵ *Declaration on the Elimination of Violence against Women*, UN Doc A/RES/48/104, Article 1, 20 December 1993

⁶ *Declaration on the Elimination of Violence against Women*, UN Doc A/RES/48/104, Article 2, 20 December 1993.

decisively document its pervasiveness but vary in their results. Figures published by the Inter-American Development Bank indicate that 10 to 40 percent of women in the region have experienced physical violence from their partners; 10 to 20 percent have been sexually violated, and 30 to 75 percent have been psychologically abused (Buvinic et al, 1999). Looking only at physical violence from a partner, UNICEF and the World Health Organization have compiled a number of studies which show that between 20% and 29% of women have been assaulted by their partners in industrialized countries including Canada, New Zealand, Switzerland, the UK and the USA. In Japan the rate is 59%. In Cambodia, India, Korea and Thailand, the rates range from 16% to 45%. In Egypt and Israel the rates are 35% and 32%, while in Kenya, Uganda and Zimbabwe the rates are between 32% and 42%. In Estonia, and Tajikistan the rates of intimate partner physical violence range from 23% to 29% and the rate in Poland is 60% among divorced women (United Nations Children's Fund, 2000). Adding sexual violence and violence perpetrated by a stranger increases all these figures, such as in Canada, where the 1993 survey on all forms of violence against women revealed that one half of all women had experienced at least one incident of violence since the age of sixteen.⁷

While these figures demonstrate that violence against women is a significant problem world-wide, they are not directly comparable. Cross-country comparisons of the prevalence of violence against women are difficult because of the many differences in the measurement of violence against women. These can include but are not limited to differences in (1) the scope of violence, (2) the definition of violence, (3) the means by which violence is measured, (4) the survey instrument, (5) the scope of the population studied, (6) the representativeness of the sample selected, and (7) country-specific considerations.

Two more recent initiatives have attempted to arrive at more comparable results by using the same survey in more than one country. Their conception of violence against women is broad, in keeping with the UN definition. The goal is to formulate a common set of questions that are used by all countries, while allowing countries to add questions that are specific to their context. The first initiative was undertaken by The World Health Organization (WHO). This study focuses on domestic violence with particular attention paid to its health consequences. The results from Ethiopia, Peru, Tanzania, Bangladesh, Samoa, Thailand, Brazil, Japan and Namibia have recently been published, with the incidence of male sexual and physical partner abuse ranging from 15% to 71%.⁸ The second initiative is the International Violence Against Women Survey (IVAWS), which is coordinated by The European Institute for Crime Prevention and Control (HEUNI) with inputs from the United Nations Office on Drug and Crime (UNODC), the United Nations Interregional Crime Research Institute (UNICRI) and Statistics Canada. It differs from the WHO study in having a broader focus on all types of physical and sexual violence against women by partners, other known men and strangers, with a stronger focus on criminal justice responses. The countries participating in the project include

⁷ Statistics Canada, *The Daily*, November 16, 1993.

⁸ Claudia Garcia-Romano, Henrica A.F. M. Jansen, Mary Ellsberg, Lori Heise and Charlotte Watts, *The WHO Multi-Country Study on Women's Health and Domestic Violence Against Women: Initial results on prevalence, health outcomes and women's responses*, Geneva: World Health Organization, 2005.

http://www.who.int/gender/violence/who_multicountry_study/summary_report/en/index.html

Australia, China (Hong Kong), Costa Rica, the Czech Republic, Denmark, Greece, Italy, Mozambique, Poland, Philippines and Switzerland. Other interested countries such as Argentina, Canada, Estonia, Kazakhstan, Indonesia, Spain (Basque region), Serbia, and Ukraine are still waiting to secure funding for the survey. Results are expected to be released in 2005. Early results suggest that findings are remarkably consistent internationally, and are in line with the 1993 Statistics Canada results.⁹

Reliable prevalence figures are important for any national study of the economic costs of violence against women. Having figures that are comparable across countries, but also address country specific issues, is important to the understanding of the breadth and nature of the problem. As data from these international initiatives become available, the economic costing literature will benefit.

c. The economic costs of violence against women: Types

Costs of violence against women are widespread throughout society. Every recognizable effect of violence has a cost whether it is direct or indirect. Direct costs come from the use of goods and services for which a monetary exchange is made. Direct costs exist for capital, labour and material inputs. Indirect costs stem from effects of violence against women that have an imputed monetary value even though they do not involve an actual monetary exchange, such as lost income or reduced profits. Effects of violence against women also include intangible costs such as premature death, and pain and suffering for which there is no imputed monetary value in the economy. Costs can also be borne in the short-run or the long-run.

To simplify understanding of these different costs, the types of costs can be combined into four categories: direct and tangible, indirect and tangible, direct and intangible and indirect and intangible.

- ***Direct tangible costs*** are actual expenses paid, representing real money spent. Examples are taxi fare to a hospital and salaries for staff in a shelter. These costs can be estimated through measuring the goods and services consumed and multiplying by their unit cost.
- ***Indirect tangible costs*** have monetary value in the economy, but are measured as a loss of potential. Examples are lower earnings and profits resulting from reduced productivity. These indirect costs are also measurable, although they involve estimating opportunity costs rather than actual expenditures. Lost personal income, for example, can be estimated by measuring lost time at work and multiplying by an appropriate wage rate.
- ***Direct intangible costs*** result directly from the violent act but have no monetary value. Examples are pain and suffering, and the emotional loss of a loved one through a violent death. These costs may be approximated by quality or value of life measures, although there is some debate as to whether or not it is appropriate

⁹ *The International Violence Against Women Survey*, <http://www.heuni.fi/12859.htm>

to include these costs when measuring the economic costs of violence against women. This debate is explored in part 3.

- ***Indirect intangible costs*** result indirectly from the violence, and have no monetary value. Examples are the negative psychological effects on children who witness violence which cannot be estimated numerically.

While all tangible costs should be measurable, many are not due to a lack of data. All published estimates of the costs of violence against women include examples of direct tangible costs, and most include some indirect tangible costs, such as lost earnings from time away from paid work. Attempts to measure the direct intangible costs are less frequent and no studies attempt to put a dollar value on the indirect intangibles.

The above types of costs can be borne by individuals, including victims, perpetrators, or other individuals affected by violence; businesses; governments at all levels; and by society in general. With regard to societal costs there are two forms that costs can take: the first reflects aggregate economic changes while the second demonstrates social consequences. The economic form indicates that some costs of violence impact not only individuals or businesses but also the larger economy. Violence against women prevents an economy from attaining its full economic potential. Aggregate demand is skewed towards goods and services related to the effects of violence thereby diverting resources from their optimal use. This results in lower economic growth and a reduced standard of living. Meanwhile, aggregate supply is also reduced through lower productivity, reduced output and exports, and reduced savings and investments. Additionally, the reduction in output is even larger because of the economic multiplier whereby a dollar lost represents more than just a dollar. Rather it represents the lost tax revenue and the benefits thereof, as well as the lost savings and spending that is passed on to others to save and spend many times over. Violence, therefore, has a significant negative influence on GNP and national economic well-being. In general, billions of dollars of resources are spent annually in treating violence against women that could be used to further develop a non-violent economy.

Economic studies of violence against women have yet to measure these economic multiplier effects in any comprehensive way. The first partial estimates come from Greaves et al (1995) who measured the one-year loss of tax revenues due to death, lost time at work and incarceration in Canada at approximately \$CDN 106 million, and Henderson (2000) who measured the tax-share paid by businesses for public services provided by the Australian government at \$AUST 400 million per year.

The second form of societal costs recognizes that some of the effects of violence have larger ranging social costs that cannot be measured. These include the fear all women may face as a result of knowing that other women suffer from domestic violence, the undermining of societal values, and the guilt non-violent men feel for the actions of the perpetrators.

d. The economic costs of violence against women: Categories

Studies of the prevalence of violence against women world-wide indicate that violence is an issue that permeates every corner of society, is widespread and costly. A common way to organize the economic costs of violence is to place them in categories based on the consequences of violence and the services utilized as a result of violence. Costs can be found in seven major categories: Justice, Health, Social Services, Education, Business Costs, Personal or Household Costs and Intangibles. Table 1 provides a listing of costs found within each of these categories. Separating the costs into manageable categories facilitates an understanding of the extent of the costs and consequences of violent acts. For researchers working to measure economic costs, the categories also point the way to finding different sources of usable data.

Justice

Justice costs include policing, court trials, penal costs and related costs such as victim compensation, administering community sentences, and organizations that support the incarcerated. They can include labour, capital and material inputs. Capital costs cover such things as buildings for police, courts and penal institutions. Labour costs are related to employees who work for the justice system, while material inputs include such things as gasoline for police vehicles or food provided to prisoners. Most of these costs are usually borne by the public sector, although there may be volunteer hours and legal costs incurred by individuals. In addition to the direct costs, the indirect costs include the lost earnings of those incarcerated for violence, as well as those attending court proceedings.

Health

Health is another area that is expensive for the state, and also for individuals depending on the extent to which health care is publicly or privately funded. Health costs result from both direct and indirect health concerns caused by violence. They can also be both short and long-term. Direct health costs in the community include short run and long run health care in doctor's offices, clinics of all types and hospitals. As in the case of justice costs, health costs include capital, labour and material inputs. Capital costs are such things as land, buildings, infrastructure, laboratory equipment, machinery, and vehicles. Labour costs cover services provided by physicians, nurses, other professionals such as dentists and pharmacists, technicians and support staff. Material inputs can include such things as hospital food, drugs, technical materials such as x-ray films and developing fluids, gasoline and electricity. Direct health costs are also paid by the victim through out-of-pocket costs for such things as health care services, medications, prosthetics, elective surgeries, and alternative health services. Indirect health costs are mostly borne by the individuals. They include such things as reduced longevity, the effects of poor health on lifestyle choices, and reduced mobility affecting the ability to participate in public life. These are also included in the personal cost category. Health costs can be multiplied throughout society, such as the spread of HIV/AIDS among women who are compelled by the threat of violence to have sex with infected partners or to participate in prostitution.

Social Services

Social costs stem from the provision of public services to both victims and perpetrators of violence against women. They can be privately or publicly funded. Social services include social welfare agencies helping abused women, abusive men and their children. Any time an individual accesses any public service as a result of violence against women, a cost is incurred. The service may be provided through a church, community center, social worker, religious leader, or private agency. The list of services accessed by victims of violence is vast. Each agency incurs the direct costs of capital, labour and material inputs. Additionally, many of these agencies use volunteer labour in their operations. To the extent that women victims of violence are also volunteer workers, violence lowers the volunteer hours supplied by them. Those agencies that are supported through volunteer donations also suffer reduced revenue as a result of the reduced discretionary incomes of victims and their families.

There is also a cost to government agencies of administering social welfare payments to women who leave abusive situations. The actual welfare payment itself is not measured as a cost since it is a direct transfer payment, although the opportunity cost of alternative uses of the tax revenue could be included. Finally, governments directly bear many costs related to violence against women such as time in creating laws, administration of ministries responsible, policy analysis, research initiatives and public information programs.

Education

Education costs can include the added demand for special education services related to behavioural problems and learning disabilities in children who witness abuse at home, as well as school programs with the aim of reducing violence against girls. Training programs for women to re-enter the workforce after leaving abusive partners are also included. An indirect cost is the reduced earning capacity of women and girls who have reduced educational attainment as a consequence of violence.

Business and Employment Costs

When violence happens at home, the woman's paid work environment is affected as well. These effects have a serious impact on the business sector. Business costs include her lost time at work and reduced attention, the time her co-workers spend covering for her, the time she may spend in the restroom or on the phone with friends or family, actual time she may need to take off work, administrative time spent processing her time off, administrative costs for the search and training of a replacement employee if she leaves the job, administration costs for programs or policies designed to help support her, lost profits from her decrease in output, and the increase in overtime payments to other workers who cover for her. Some of these costs are accounted for in the woman's personal loss of income, and must not be counted again. However, there are additional costs to the business sector beyond the lost productivity reflected in her earnings. Costs to

the firm can also include the administrative costs of processing harassment suits or union grievance procedures for violence occurring in the workplace.

On a broader scale, violence against women lowers their earning potential which results in lost tax revenue from reduced output and income and consequently lower GNP.

Household and Personal

Many personal and household costs result from violence against women. Victims spend a great deal in direct out-of-pocket costs for such things as transportation, childcare, alternative therapies, replacing destroyed belongings, relocation, and medications. These expenditures greatly affect household consumption, skewing it away from the goods and services that would be chosen in the absence of violence.

Additionally, individuals and their households pay indirectly through attaining lower income. Reduced income stems from time off work, lower productivity while at work, quitting or lost promotions, and generally having a more marginal labour force attachment. Another indirect cost borne by victims and their families is the loss of unpaid household production. When a woman is injured or emotionally upset, she performs less of her household responsibilities.

Finally, the household faces costs if the victim leaves the abusive household and loses the economies of scale derived from sharing one domicile. That is, more work is required to produce the same level of output in two households than in one. For example, one person can cook a meal for two or more people with only a marginal increase in time and materials compared to two people cooking two meals. The additional resources used to produce the same level of output are a longer term cost of the violence that caused the separation.

With the combination of less money coming into the household, money being spent on goods and services required to cope with the violence, and lower levels of household output, it is easy to see that households resources, purchases, time and effort are distorted away from the lifestyle and happiness that could be achieved in the absence of violence.

Intangibles

Many consequences of violence are not tangible. Intangibles are very difficult to cost, and many studies do not attempt to do so. Nevertheless they represent very important and significant costs. A few examples include the fear that women harbour as a result of abuse; pain and suffering or the loss of life; and second generation effects of violence. It is impossible to measure the costs associated with fear and, while attempts have been made at developing measures of pain and suffering or loss of life, they are imprecise at best. Finally, second generation effects are well-documented but also not easy to measure.

The costs of violence against women are borne by individuals, families, communities and societies as a whole. Individuals pay out of pocket expenses, and their families experience a change in their consumption choices as a result. Individuals and their families also bear the burden of reduced income, reduced savings and loss of household output. Communities cover the costs of private services provided by the local agencies such as churches or volunteer workers in crisis centres. Municipal, state or provincial, and national governments bear the costs of public services offered within their jurisdictions, as well as supporting private initiatives through granting programs. The exact services provided by each level of government depend on the country, its history and its political culture. Overall, the entire economy and the whole national society are affected by the monetary losses resulting from violence against women.

Table 1: Categories and examples of costs resulting from violence against women

Justice

Police: vehicle use, dispatch center use, emergency response teams, interrogations, training, administrative time, criminal investigations, forensic services, in-court time, restraining orders, coroner.

Legal: prosecuting and defending lawyers' time in office, preparation and in court, legal aid, judge time, court time, jury costs, witness time, Courts of Appeal, Supreme Courts hearings and decisions.

Penal: jail time both prior to and after sentencing, probation, parole, therapies.

Related: prisoner support organizations, victim compensation payouts.

Health

Direct costs include short run and long run health care in doctor's offices, clinics of all types and hospitals including:

Capital in buildings, infrastructure, laboratory equipment, machinery and vehicles.

Labour for ambulance, emergency ward services, hospital admissions, outpatient clinics, physicians offices support staff, mental health services and clinics, physicians, nurses, paramedics, physiotherapists, other specialists, psychiatrists, psychologists, alternative healers, dentists, etc.

Materials for: diagnostic procedures, treatments, medications, food, etc.

Health insurance premiums and payouts.

Indirect health costs borne by individuals include reduced longevity, the effects of poor health on lifestyle choices, reduced mobility for participating in public life, HIV/AIDS from coerced sex and health consequences of practices such as female genital mutilation (FGM).

Social Services

May apply to victim, perpetrator or children

Publicly funded services such as shelters, crisis lines and services, social workers, counselling, home visits, children's services, emergency response teams, fire fighters, therapeutic support groups, retraining, networked support services.

Government time addressing laws on violence against women, administration of ministries responsible, government research and policy analysis.

Research grants, conferences, publications, policy papers, advocacy groups, public awareness campaigns.

Privately funded services such as hot lines and help lines, Red Cross and Red Crescent societies, community support groups, church-run support, perpetrator therapeutic support groups, volunteer hours, volunteer agencies.

Education

Special education for children who witness violence.

Job-readiness, training in the local language, re-training for victims and their children.

School programs aimed at reducing violence against girls.

Indirect cost of reduced educational attainment for women and their children.

Table 1: Categories and examples of costs resulting from violence against women

Business and Employment Costs

Reduced productivity, reduced output, reduced profits.
Administrative time and costs of search, hiring and training replacements.
Programs for creating safe workplaces, training staff, on-site medical services, Employee Assistance Plans.
Overtime paid to co-workers who cover for victim.
Relocation, separation pay, benefits, insurance premiums.
Grievances for incidents at work, supervisory time, processing complaints, litigation, court time, compensation expenses.
Lost tax revenue from reduced output and income, lower GNP.

Personal or Household Costs

Lost earnings from time off work, lower productivity, less attachment to the labour force, expenses of a new job search.
Medical fees, therapies, counselling, transportation for doctors or legal appointments, childcare for same, medications, prescriptions, treatment programs, alternative healing, self-help materials.
Lower savings and investments.
Lost household productivity in unpaid work, loss of economies of scale if separating.
Legal fees for assault, custody, separation or divorce cases.
On-going child custody disputes, custody arrangements or visitation problems requiring time, attention and resources to solve.
Interest on loans, car rentals, lost deductibles on insurance claims, bad debts of ex-spouse, loss of shared pensions or transfer payments.
Expenses incurred from relocation, replacing destroyed articles, repairing damage to home or possessions, temporary accommodation.
Funerals and burials.
Other out-of-pocket expenses such as interpreters, drugs, alcohol, protection services, self-defence courses, rehabilitation and recovery programs, special diets, unlisted phone numbers.

Intangibles

Pain and suffering of the victim and her children.
Death of the victim or perpetrator, including suicides.
Second generation effects on children who witness violence.
Loss of freedom for incarcerated perpetrators.
Fear of violence among women in society.

e. Why measure the economic costs of violence against women?

Since violence against women is widely recognized as a serious human rights violation for women, many international bodies, including the UN are calling for further research on this issue. There are many different ways to approach and understand social problems. Measuring the economic costs of violence against women is but one possible technique to employ in assisting us to understand this issue better.

Measuring the costs of violence against women demonstrates how violence drains resources from many sectors including private businesses and agencies, the government, community groups and individuals. This is particularly true in the developing world where it is especially important not to remove scarce resources from the promotion of healthy and viable communities. Violence against women impedes economic and social development. To make development funding go farther, reducing rates of violence is an important component of social policy. Demonstrating the waste of resources resulting from violence against women through estimating the economic costs of violence is therefore a useful exercise.

Measuring the costs of violence against women also gives the human story an easily understandable magnitude. It frames the social discourse of public service provision in economic terms. Although one can argue that violence against women should be ended because it is morally wrong, it can also be demonstrated to be economically pernicious. This removes the subject from the realm of debate over the correctness of social roles and responsibilities and locates it in the realm of concrete fact. In the end, it promotes social policy designed to decrease rates of violence.

Measuring the costs of violence against women also reduces its social acceptability. Knowledge of the costs of violence creates an awareness that the effects of violence are widespread throughout all society. It informs the public about the lack of gender equality in the private and public sphere. This helps to draw attention to the implicit assumption that controlling women's behaviour through the threat of violence is acceptable, and questions the private nature of acts of violence. It raises men's awareness of how they pay for both their own and each other's violent behaviour. Overall, measuring the costs of violence against women helps to reduce the social acceptability of violence.

Economics is the study of the allocation of scarce resources among competing ends. In order to make rational decisions about how public resources should be allocated, policy makers need to have scientific information about end results. By measuring the economic costs and consequences of violence, policy makers can observe how changing funding priorities affects outcomes. Every study of the costs of violence indicates that early prevention and intervention costs vastly less than does later-stage crisis care and other societal consequences. It can be seen that investments in detecting and ending violence against women at an early stage, and in good treatment programs will result in huge social savings in the future. It is not prudent to cut social programs as a result of short-run budgetary concerns if the longer run financial burden to society will be vastly

increased. Measuring the costs of violence proves with accountability that preventing violence against women is not only the right thing to do but is also the financially prudent thing to do.

Because businesses are also affected by the consequences of domestic violence through lost time and productivity, demonstrating these costs helps to influence businesses to respond to issues of abuse in their workplace. They might choose to support their victimized employees through support services, or through educating managers about violence against women and its effects at work. When violence affects the profit margin, there is incentive for businesses to lobby governments to work toward effective prevention strategies. A result of this can be seen in the US health insurance companies who lobby to reduce violence since they end up paying directly for its health-related costs (Morrison, 2001). Measuring the costs to businesses helps engage them in the policy process.

Knowing the costs of violence allows policy makers to measure the effectiveness of programs aimed at reducing violence and its devastating consequences. Much modern policy making is evidence-based, and studies on the costs of violence provide such evidence. Once the costs have been determined, analysts are then able to perform cost-benefit or cost-effectiveness studies of different programs. This produces an opportunity to explore effective programs for early detection, intervention, treatment, and public education. Using results-based measurements can demonstrate the need for budgetary changes, for legislation and for effective programs to help prevent violence against women and thus its costs and consequences.

The act of engaging in an economic costing study can in itself have positive benefits. A great deal of data must be collected for such studies. For example, the act of collecting information on how many women victims might use a specific service or agency may work to raise awareness in that agency of the extent of violence against women, and help them to be better able to track such use and respond to it more effectively. It can also provide agencies with information that will assist them in their own budget allocation for this issue, and provide a rationale for seeking public or private funding to target services for abused women.

Awareness of the costs of violence against women to society also strengthens arguments for the intervention of government, social institutions and businesses into private acts. Since the costs affect everyone, even though the abuse may be private, it brings violence against women into the open as a societal issue. Akin to the use of seat-belts, road safety, health risk-management, or vaccinations, violence is an issue for which it is appropriate for society to intervene in a private affair. Measuring the costs of violence against women demonstrates clearly to governments that it is a social problem that falls into this category.

In examining the literature on the costs of violence against women it is crucial to remember that the numbers indicate only what can be measured. The estimates discussed in this report are not comprehensive estimates of the actual costs of violence against

women, but very conservative estimates of those costs that can be measured. Even though the estimates are conservative, results from various countries indicate that the measurable national costs of violence against women are in the billions of dollars annually. For New Zealand Snively (1994) estimated the costs at \$NZ 5.3 billion, Greaves et al (1995) found costs of \$CDN 4.2 billion for Canada, the Women's Advocates (2002) estimated costs for the US at \$12.6 billion, and for Britain Walby (2004) totalled costs at 23 billion British pounds. The current status of violence against women is not a neutral situation. Economies currently pay a very significant toll for the violence that exists. Thus, violence affects everyone through undermining national well-being. Bringing attention to this high cost of violence is intended to encourage anti-violence initiatives. When the rates of violence are reduced, these resources are freed up to be used in productive economic growth.

2. Review of the Literature

Since the first study was done on the economic costs of violence against women in 1988, there have been many studies undertaken on this issue globally. Most of the literature in this field does not estimate original cost figures, but is rather educational in nature, raising public awareness about the enormous costs of not stopping violence. Most authors refer to a relatively small number of papers that actually estimate the costs. Some of these papers are comprehensive attempts to measure national costs, while others are partial exercises measuring only one or a few of the costs. The comprehensive estimates and some of the partial ones are from Australia, New Zealand, Canada, USA, United Kingdom (covering England and Scotland), Finland, Switzerland, Spain and the Netherlands. These countries have some of the highest per capita Gross Domestic Products in the world.¹⁰ This translates into a strong tax base that provides the funds to finance sophisticated national statistics agencies and good record-keeping by government departments. This provides the data that is crucial to effective costing studies. Some work has also been done in developing countries in costing partial aspects of violence against women. These limited studies come from Jamaica, Chile, Nicaragua and the Philippines.¹¹ New research to measure the costs of violence has been initiated in Fiji, South Africa, Bulgaria and Uganda, although results have not yet been released.¹²

The literature measuring the costs of violence against women has had three distinct phases. In the first phase there were no national surveys of violence, and researchers based their findings on small sample surveys or case studies of victims. Prevalence rates of violence were based on proxy measures, measures that could stand in for the actual prevalence rate but that were known to have problems. The importance of good data became obvious, and pressure was put on social and statistical agencies to provide better data. In the second phase, researchers were able to access representative national survey data on prevalence rates of violence to begin a rough mapping out of national costs. A number of papers were also written that made use of high quality, small data sets to measure specific costs. In the current era of computer record keeping and heightened awareness of the importance of violence against women as a social issue, it has become easier to find data sources to use in costing estimates. In the most recent phase, studies have been able to make use of significant data sets to produce sophisticated and comprehensive studies at national levels.

¹⁰ Out of 177 listed countries, their ranking is: 3. Switzerland, 6. United States, 10. Netherlands, 12. Finland, 13. United Kingdom, 17. Canada, 18. Australia, 22. Spain, 23. New Zealand. United Nations Development Programme, *World Development Report, 2005*, <http://hdr.undp.org/statistics/data/indicators.cfm?x=133&y=1&z=1>.

¹¹ Gina Mission, *The Economic Cost of Violence Against Filipino Women*, [refers to a study *The Economic Costs of Violence Against Women* by Yap, Ermi Amor Figueroa, The National Commission on the Role of Filipino Women.] http://gina.ph/CyberDyaryo/features/cd1999_0520_014.htm

¹² Fiji Women's Crisis Centre, "The Health and Development Consequences of Violence Against Women", <http://www.fijiwomen.com/index.php?id=1316>; Lillian Artz, Gaironesa Saban and Lisa Johns, "Gender and Crime", *Institute of Criminology Annual Report 1999*, (Capetown: University of Capetown, 1999), web.uct.ac.za/depts/criminology/annrpts/anrep99.htm; "Will the enlarged Europe protect women's rights? Strategies for preventing women's rights in the age of globalization", *Social Rights Bulgaria*, (Tuesday 25th November 2003), <http://www.socialrights.org/spip/article304.html>; Women of Uganda Network, *What is the financial cost of Violence Against Women?*, <http://www.nodo50.org/mujeresred/uganda.htm>

Viewing the literature on estimating costs of violence as a whole, it becomes obvious that the exercise is driven by the availability of data. The idea of violence against women having widespread costs, although complex, is easy to conceptualize. However, the possibility of measuring all of its multiple repercussions in any sort of systematic and reliable way is daunting. Data are needed that provide a profile of the victims and the effects of violence in their lives. For example, whether they were injured, sought medical attention, or took time off work must be known in order to begin estimating the related costs. Second, the responses of all the social agencies must be known. For example, how much time the police spend with victims, what the protocols in hospitals are, or how the clergy respond to troubled families are all relevant questions. The more attention that has been paid to the actual effects of violence in women's lives, the better understanding there is of its consequences and the more comprehensive and complex costing exercises can become. Consequently, the more data agencies are able to provide, the more accurate the final estimates of costs can be. The most significant factor, therefore, in reviewing the economic costing literature is the quality and quantity of the data available to the researchers.

a. Early Papers, predating national violence statistics

Most of the early studies on the economic costs of violence against women were from Australia. The first to measure the economic costs of violence against women was Roberts (1988). This study employed a case study methodology based on interviews with 20 individual victims from Queensland about the history of violence in their lives. Roberts measured the direct costs of services used by the women and their children as well as the indirect loss of income over the women's lifetime. The sample was not representative of the whole population however, as it was very small and contained only women suffering severe domestic violence. The average direct cost per victim was estimated at \$AUST 51,000. The total direct and indirect costs for the sample of 20 were over \$AUST 1 million. This figure was extrapolated to the whole population of Queensland using a proxy for the prevalence rate of 3% for severe domestic violence, which was based on research done in the United States and Canada on battered wives. The total estimate arrived at was over \$AUST 108 million for 1988.

Blumel et al (1993) built upon the Roberts model of a retrospective case study of a small number of victims in Queensland. They expanded their study beyond the domestic sphere, including sexual assault and rape victims in their sample. Interviews were conducted with 50 women victims of violence. Based on the service usage reported by the women and the agencies they used, direct and indirect lifetime costs were estimated for the women, their children, their family and friends, the perpetrators and the public. Lifetime costs were calculated on a case by case basis. Costs incurred by the government included welfare, police, legal services, social work, health costs and child services. Personal costs were included but not broken down by category of expenditure. Total costs for each case were divided by the number of years the woman lived with violence to calculate the costs of a case year. Aggregate costs were weighted by the number of case years per woman. Although the sample was not representative, the total cost for the 50 women was extrapolated to the whole Queensland population by again

using the 3% prevalence figure. The total was \$AUST 408 million in 1993. It appeared that the lifetime costs were not indexed to a specific year.

Another study which also used the Roberts case study methodology was undertaken by KPMG Management Consulting (1994) in Tasmania. A retrospective case study of a sample of 40 women victims of domestic violence was compiled. It improved upon the Roberts model by making the sample more representative of the range of severity of domestic violence, and including more categories of costs. Costs included both the direct and indirect costs for women and their children. Direct costs included crisis and emergency services, referrals, police, accommodation, health, welfare, legal and judicial costs. Indirect costs included time away from work for the women and changing schools for the children. The direct costs were extrapolated to the whole Tasmanian population using a 1.8% prevalence figure for domestic violence. The total annual cost was estimated at \$AUST 17 million for 1993. Again, it appeared that cost figures were not indexed to a common year.

Distaff Associates, Leonard and Cox (1991) were the first to attempt a comprehensive measure of annual costs of violence against women. In their study of New South Wales, they made the first estimate of the costs of violence against women by using a “top-down” approach. That is, they worked from aggregate figures rather than individual cases in order to measure the total cost to the state. They were frustrated by the lack of useful data observing that “This project has presented severe problems as the quantum and quality of data available is poor.” This required some creativity on their part. “The approach we have therefore taken has been to use data sets, perceptions and informed estimates from a range of sources. Where possible we have used official statistics to provide a framework.” (Distaff 1991, p.11)

Leonard and Cox of Distaff Associates examined government agency files searching for numbers that could be used to estimate costs. To create usable data on an individual scale, they also asked service practitioners and experts to provide them with typical patterns of services used by victims of domestic violence. These profiles included the path of services, the frequency with which services were used, and the percentage of all clients who fit the pattern. To create a prevalence rate, they turned to police statistics while acknowledging that women who never reported violent acts to the police were excluded from their study. They based their study on the observation that there were three distinct stages of response to domestic violence. In the first stage, women do not disclose the problem to anyone, possibly feeling that it is a shameful or private family matter. They might suffer costs associated with time off work and medical bills, but they do not access agencies providing services to victims of violence such as police or shelters. In the second stage they reach the point where they are prepared to disclose the violence and make use of victim services. In the third stage they have left the violent situation and are building an alternative life. Costs for each of these three stages were calculated separately, on an average annual basis, with many estimates based on informed assumptions or “best-guesses.” Costs included direct personal costs for the individual women such as accommodation, medication and legal fees as well as indirect costs for lost income. Direct costs for the government were health care, welfare, child services,

emergency accommodation, policing and court costs. Indirect costs for lost productivity and work-related costs were also included. The final annual cost to New South Wales was calculated to be over \$AUST 1.5 billion for 1990.

Leonard and Cox pioneered the idea of estimating costs in three stages, as well as surveying experts for information on which to build usage rates. Their work was limited by the lack of data, especially the lack of nationally representative figures on rates of violence and its effects.

Snively (1994) adapted the Leonard and Cox approach to the New Zealand context. She used police call-outs as a proxy for the prevalence of family violence, which included assaults on children. Data were collected from agencies on costs and levels of service provided. Snively developed a base scenario in which costs were estimated only for cases reported to police. She then conducted sensitivity analysis to determine the extent to which the estimates depended on the assumptions made. In particular, she examined alternative scenarios in which different assumptions were made about the ratio of reported cases to unreported cases. The study made use of a spreadsheet into which all the data was meticulously recorded. As new assumptions were considered, or new data became available, units in the spreadsheet could be updated and changes in the final estimate observed. This methodology demonstrated explicitly how sensitive final estimates are to changes in assumptions and data. The list of detailed costs was comprehensive, including medical services, accommodation, legal services, lost income, social welfare services and court costs. The final estimate for the total annual cost was over \$NZ 1.2 billion for 1993.

The final study that attempted a comprehensive study despite the lack of availability of good data was Young's (1995) work on the economic costs of violence against women in Scotland. She argued that "a more accurate costing of the problem will not be possible unless routine statistics are collected on the extent of domestic violence."¹³ Working without national violence statistics, Young measured the medical costs of violence for Glasgow, Scotland. Direct health care costs included mental health and indirect costs included lost productivity in both paid and unpaid work. The total estimate for the city of Glasgow was over 17 million pounds. The results were extrapolated to the whole of Scotland using a 10% prevalence rate to generate a total cost to the country in 1994 of between 84 and 147 million pounds, depending on the assumptions of rates of use of medical services by women.

These early studies were good indicators of the huge magnitude of the costs of domestic violence. However, due to the paucity of good data, they lacked statistical rigour, as the authors themselves acknowledged. Most of them used a bottom-up model, based on case studies of small, non-random sample groups of victims. There was no information from the non-victim population about the use of the same services to

¹³ Denise Young, *The Economic Implications of Domestic Violence in Greater Glasgow*, Unpublished MSC Thesis, (University of York, 1995), 47.

determine the difference in usage rates between victims and non-victims. While these papers were a very important first step in measuring the costs of violence against women, their reliability was questionable. First, lifetime retrospective surveys of victims rely on individuals remembering past events and actions. Controls were not used to cross-check whether or not the women had actually accessed the type and number of social services they remembered using. Second, without good prevalence data, the total number of women affected in the population was unknown. This meant that all extrapolations were based on proxy measures. Overall, these early papers are significant because of the great amount of detailed work they provide on the economic effects of violence in women's lives as well as the costs of agency services. Their accuracy in extrapolating to total national costs, however, is more questionable.

b. Early top-down studies using nationally representative data

The first studies that benefited from using reliable national prevalence figures came from in Canada. In 1993, Statistics Canada conducted a survey on violence against women using a large, nationally representative sample of women over the age of 18 including victims and non-victims alike. Day (1995) was the first to use statistics from this national sample as a basis for estimating the health-related costs of violence. She used a top-down approach, starting with aggregate figures and the wide literature on the effects of violence. Direct costs included short run and long run health care including mental health and dentistry, and social costs associated with transition homes, crisis lines and prevention initiatives. Indirect costs included the value of short run and long run time lost at paid and unpaid work as well as the value of volunteer hours in the front line agencies. Many additional costs were pointed to but not measured, including the extra costs borne by women from disadvantaged groups. The total value for the annual measurable costs reached \$CDN 1.5 billion for 1993.

Greaves et al (1995) used Day's framework to estimate additional costs of violence against women throughout Canadian society at the national level. The study also included sexual assaults against children. They added costs relating to tax loss from lower incomes, police, penal incarceration, legal costs, victim compensation and relocation and self-defence costs for women. They estimated the total costs at \$CDN 4.2 billion for 1994.

Kerr and MacLean (1996) also built upon the Day study by making a comprehensive estimate of costs for the province of British Columbia. They compared their results to those of Day and Greaves et al to indicate similarities and differences in estimates. Direct costs included police, penal, victim compensation, counselling, Aboriginal programs, health, transition homes, crisis lines and treatment programs. Indirect costs included lost time in paid and unpaid work. The total estimated cost was \$CDN 385 million for 1994/95.

These three papers from Canada moved the study of the costs of violence forward by using statistically reliable data at the national level. The data made available by the national survey allowed researchers to work from the top down in each category of costs,

and to estimate a more comprehensive measure of the costs of the effects of violence against women to Canadian society. In contrast, the earlier Australian papers were based on surveys of individual victims and on the expert experience of field workers. While these were very valuable as a starting point for pointing to the enormous costs, they were less representative of the whole economy. A national survey of both victims and non-victims also allowed for the added opportunity of conducting differential analysis, where the behaviour of victims can be compared to that of non-victims. Such comparisons allow for a more accurate picture of the effects of violence on women's lives. As more countries performed national random sample surveys of the effects of violence against women, the ability to measure the costs of violence improved.

c. Supporting papers and estimates of specific costs

One aspect of the costing literature is the frequency with which researchers rely on previous research results. Since there are few studies anywhere measuring such things as rates of violence, victim behaviour, or costs of violence, when a study is published, its results tend to be used by other researchers as numerical input to their own estimates. If the original work is robust and accurate, or if there are a variety of papers all of which demonstrate the same results, then it is reasonable to use the original results as inputs to further work. But if the work is based on a small or non-representative sample, if it is somewhat lacking in rigour, or if the numerical work is not shown in the document so the rigour cannot be validated, then the weaknesses of the original work can be passed on to the secondary piece as well. This in turn creates weaknesses in the overall costing literature, regardless of how well-intentioned the authors are.

A good example of work making use of the results from an earlier study is Stanko et al (1998). The authors used a bottom-up methodology for estimating prevalence rates of service use and costs of violence against women in a borough of the city of London, England. Although national crime statistics existed that measured rates of domestic violence and the effects of the violence in victim's lives, the authors chose explicitly not to use the national statistics as they felt that aggregate figures might not accurately reflect the, "diverse nature of life in an Inner City London Borough." (53) Instead, they surveyed 129 women and 107 service providing agencies in the borough of Hackney. Using the results of an earlier study of a London area by McGibbon et al¹⁴ in which 281 women victims were surveyed on their use of service providing agencies, Stanko et al calculated prevalence rates of service use. This was based on a combination of the results of their own surveys and the results of the McGibbon et al study. Since the details of the earlier study are not shown, the robustness of the final estimates is uncertain. Stanko et al estimated costs for social services provided to women victims in Hackney at 7.5 million pound. When extrapolated to the whole City of London, the total was 278 million pounds in 1996. In addition, they created a variety of profiles of typical cases of violence against women, based on the details they found in agency files. In the end, they determined that the prevalence rates they calculated in this detailed way were the same as the aggregate national statistics from the crime surveys. This result supports subsequent researchers in

¹⁴ Alison McGibbon, Libby Cooper and Liz Kelly, *What Support? Hammersmith and Fulham Council Community Police Committee Domestic Violence Project*, (London: Hammersmith and Fulham Community Safety Unit, 1989).

the choice to use aggregate statistics when they are available. It also reflects well on the accuracy of the smaller sample surveys conducted by Stanko et al and McGibbon et al.

There are a large number of papers that feed into the study of violence against women but are not explicitly focused on estimating costs. Results from these papers and others like them are used to support assumptions made in the costing estimates. For example, Straus and Gelles (1987) first discussed the idea that there were medical and social costs resulting from violence against women. Shepard and Pence (1988) demonstrated a strong relationship between violence in women's lives and labour force activity. Their results showed that women suffering from domestic violence had significantly lower propensities to enter the labour force, to stay at a job, to turn up for work on time, to work productively while at work and to stay in the job without quitting. Hyman (2000) examined the economic consequences of childhood sexual abuse among adult lesbian women, and found reduced rates of education and labour force attainment related to mental and physical health consequences. Morrison and Orlando (1999) examined the effect of domestic violence on women's economic status in Nicaragua and Chile, and found that violence was related to lower income and children's education and to higher use of medical services. Teifenthaler and Farmer (2000) used game-theory analysis to examine the interactive effects of women's labour force activities and violence in their lives. They showed clearly that the more economic independence a woman has, the less violence she is likely to suffer since she has a viable threat of leaving the relationship. The Vic Health group from the state government of Victoria, Australia (2003) measured the disease burden stemming from violence in women's lives and found it accounted for 9 percent of the total burden of disease in woman aged 15 to 44. It ranked higher than smoking, obesity or high blood pressure as a contributor to death, disability and illness. While papers such as these do inform the literature on costing, they do not in themselves contain measures of costs.

There are a number of other papers that measure a single category, or specific cost of violence rather than a comprehensive measure of total costs. The results of these papers are often used as inputs to other costing exercises. For example, Walker et al (1999) looked at the costs of health care by adult women survivors of childhood abuse in one Health Maintenance Organization (HMO) in the United States. To study the differences in medical costs between women survivors of child abuse and the rest of the population, the authors created their own data set from a random sample of 1225 adult women patients in the HMO. The women filled out a 22 page questionnaire relating to their childhood experiences. Data on the use of services by these patients and the costs of those services were collected from the HMO automated system. Using regression analysis the authors compared the costs of medical treatments between adult survivors of childhood abuse with the rest of the sample. They found that, "Women with sexual abuse histories had significantly higher primary care and outpatient costs and more frequent emergency department visits than women without these histories." (p.609) The annual median health care costs of the survivors exceeded the rest by \$US 245. Women reporting all forms of abuse or neglect showed increased median annual costs of \$US 97 in 1996/97. While these may seem like small numbers, when summed across all survivors in the population, they become substantial.

Another example of a more focused study is the National Centre for Injury Prevention and Control's (2003) measurement of the direct and indirect costs of injuries sustained from intimate partner violence. The authors used US national survey data on intimate partner violence to estimate costs incurred from injuries and deaths. Direct costs included medical and mental health care, while indirect costs included lost productivity as well as lost lifetime earnings for victims who died. The total annual estimate was \$US 5.8 billion in 1995.

Faley et al (1999) measured the cost to the American Armed Forces of sexual harassment within the organization during 1988. Surveys were mailed to a large representative sample of both men and women enquiring about their actual experiences of sexual harassment while in the Armed Forces. The usable sample size included over 20,000 active-duty personnel. Costs were determined relating to recruiting, training, transfers, grievances, counselling, quitting and other administrative costs. Based on the actual behaviours reported by the survey respondents, Faley et al estimated the annual total costs in 1994 dollars for the whole Army to be over \$250 million. Because the authors collected their own data from a large, representative sample, they were able to create accurate, reliable results including accurate comparisons between victims and non-victims.

A final example of a paper focused on a specific sector is Henderson's (2000) study of the costs of domestic violence to businesses in Australia. The prevalence rates of violence against women that are used are drawn from national surveys, and all data and assumptions are substantiated and supported by reference to other literature. Measured costs include health care, legal costs, costs for children's services, perpetrator's services, and social services. Only the corporate sector share of the tax burden of these expenditures is included in the final estimate, although comprehensive costing estimates are made for all the services considered. Many costs that cannot be estimated are also pointed to and described accurately. Indirect costs include lost income and lost taxation revenue as a result of lower productivity. Calculations are made for victims, perpetrators and friends and family. The total estimate is over \$AUST 1.5 billion in 1999.

d. Later top-down studies using nationally representative data

In recent years it has become more common for agencies and governments to collect large-scale, national data relating to violence against women. As discussed previously, there have been some major international initiatives undertaken with the goal of conducting national surveys in many countries of the world. This has allowed researchers to make more comprehensive estimates of the costs of violence. The following papers reflect the value of good data sources and careful numerical analysis. Most of the papers also include estimates of pain and suffering, with final figures being presented both with and without these intangibles.

Heiskanen and Piispa (1998) conducted a national random survey of 7000 Finnish women on rates and consequences of violence in their lives.¹⁵ Heiskanen and Piispa (2001) used this earlier work to study the economic costs of violence against women in Finland. The authors also employed national victimization surveys and collected statistical material from service providing agencies, previously published reports, and interviews with experts. They measured the direct costs of health care, social services, police, courts and incarceration. Heiskanen and Piispa also included the indirect costs of the value of lost lives, time lost from paid work and volunteer labour. While they do include lost income from deaths, they do not include pain and suffering. The authors caution that the numbers are still partial due to the continuing lack of good data and women's reluctance to reveal violence in their lives. The total estimated annual cost of violence against women amounted to the equivalent of \$US 136 million to \$US 198 million in 1998.

Using a national survey of inter-personal crimes, Walby (2004) estimated direct and indirect costs of violence against women in England and Wales. Cost categories included justice, health care, social services, housing, legal, lost output, as well as pain and suffering. Walby built on the model used by the English Department of Transport in costing health care and lost productivity from injuries resulting from car accidents. She also drew heavily on the literature on costing crime. The study is very comprehensive, although it does not include business costs or personal out-of-pocket costs. The measured costs excluding intangibles amounted to almost 5.8 billion pounds in 2001. When intangibles of emotional suffering were included, the total rose dramatically to 22.9 billion pounds.

Bowlus et al (2003) produced a comprehensive measure of the annual costs of child abuse in Canada, including children as well as adult survivors. The prevalence rate for child abuse was taken from a study of child abuse cases handled by the child protection services, while the adult survivor rate came from a representative survey on health of a large provincial population that included questions on childhood abuse. The estimate included direct costs for police, court and other legal costs, penal, social and child protection services, special education, health, and personal needs. When possible the authors used differential analysis so the usage rates resulting from violence would not be overstated. Indirect costs of lost income were analyzed in a regression analysis comparing adult survivors with the rest of the population. The authors also conducted a small-scale non-random survey of 19 adult survivors to elicit information on personal out-of-pocket costs borne by victims. The total estimate amounted to over \$CDN 15.7 billion for 1998. This total did not include a measure for pain and suffering.

The Institute for Women of Andalusia, Spain (2003) used the results of a national survey on violence against women as well as a survey of 300 women victims designed to elicit information about their service usage over the lifetime of their suffering. Over 100 indicators of the effects of violence on women and their children were compiled. Costs

¹⁵ M. Heiskanen, and M. Piispa, *Faith, Hope, Battering. A Survey of Men's Violence against Women in Finland*, (Helsinki: Statistics Finland & Council for Equality, Ministry of Social Affairs and Health, 1998).

were estimated for health, judicial, social, educational, employment, and psychological components. Including pain and suffering, the total cost amounted to approximately US\$ 2.9 billion in 2002.

A final example of a comprehensive study building upon national survey data is Access Economics (2004). This report produced an accurate and comprehensive estimate of the costs of domestic violence to the Australian economy. Large-scale, representative data sets were used. The categories of costs were reorganized in comparison to other reports and separated into more economic categories than social ones. The categories are health, production-related, consumption-related, second generation, transfer payments, administrative and other costs, and pain, suffering and premature death. These economic categories are less recognizable as the outcome of social organization. For example, instead of looking at personal costs as a category, such costs are found throughout the report. Replacement of property is in consumption-related costs, childcare and counselling are in second-generation costs, and funerals and housekeepers are found in administrative costs. Spread throughout all the categories, direct costs include health, child services, legal, some social services, business, police, legal and penal costs. Direct costs for the long-term consequences of children who witness violence are also included, although the numerical estimates mistakenly measure current children and their future cost in the same year. Indirect costs include lost income and lost household output. The authors create an index of pain and suffering which they convert to a monetary figure using the standard “value of a life” method. The total annual cost is estimated at \$AUST 4.6 billion without intangibles and \$AUST 8 billion with intangibles. While the reorganization into economic categories is an interesting idea in theory, it is less suited to measuring the economic costs of violence against women as many costs are overlooked this way. The true costs of violence are based in victim’s behavioural responses. Separating their responses into theoretical economic categories seems somewhat unnecessary and confusing.

The studies discussed above have created a numerical foundation that demonstrates the enormous costs of violence against women in different countries of the world. There are many other papers that survey the literature and report the results of these studies, but do not themselves create new estimates. These studies play an important role in bringing information about the economic costs of violence against women to the attention of policy-makers and the wider public, however. They include Hartman et al (1997), Buvinic et al (1999), Godenzi and Ydanis (1999), Shushma (2000), Tiefenthaler (2000), Yodanis et al (2000), Shrader (2001), Buvinic and Morrison (2001) Crisp and Stanko (2002), Laing (2002), and, most recently, Duvvury et al (2004), Farmer and Tiefenthaler (2004) and Waters (2004).

3. Methodological Discussion

a. The Accounting Model

While economic costing studies differ in the exact costs measured, the methods of data collection, and the calculations used to estimate quantities, a common component is their use of a basic accounting model to aggregate costs. This accounting model sums the costs of all the different effects of violence on women. It can be thought of as a large matrix of effects across many aspects of society. Each entry in the matrix represents a potential cost to an individual or organization in society, and is measured in a unique way. Summing all the entries, the total cost is made up of the wide variety of specific costs. Within each cost category the basic approach to calculating the cost is the same. Each consequence of violence translates into goods or services used by the victims, their family, friends or co-workers, or the perpetrator. The quantity of the service used is multiplied by the cost of the service for each consequence, in every category of costs. After calculating all the separate costs, they are added together to produce a total cost.

As an example, consider the case of women who access the police or emergency rooms following an act of violence. Calling the police translates into officer hours and administrative overhead, while visiting the emergency ward translates into staff time, technical services such as x-rays and medications, and possibly admission to the hospital. Either police and hospital data, or survey data of victims are needed to measure the number of victims who use the goods and services, and how much they use. Different sources of data from the police and hospitals are also needed to show how much each good or service costs. For example, how many women call the police, and how many women visit emergency wards as a result of violence? What is the average time spent with a victim in service provision? What materials are used in serving her needs? Then, what is the hourly rate of police services including officers and administration, and what are the in-hospital costs of x-rays, staff salaries, or overnight stays? As this example shows, even simple cost measures require a lot of information to calculate.

The accounting model may be used to estimate the total costs of violence against women in an economy, or only some costs in a particular category or sub-category. For example, some studies estimate only health related costs, and within those, some measure only specific medical costs. Whether the scope of the project is broad or narrow, the accounting model is used as the basic framework.

The organization of costs in the accounting model is presented in different forms throughout the costing literature including lists, tables and diagrams. Diagrams show the pathways of service use that victims might take through the system in dealing with violence (e.g. Day and McKenna (2002), Bowlus et al (2003), NCIPC (2003) and Duvvury et al (2004)). In all papers, mathematical manipulations are used to calculate the costs within the presented categories. However, only a few papers actually provide a general mathematical formula as the basis for the calculations, as shown here and in Hartmann (1997) and Duvvury et al (2004). Including a mathematical formula or schema

improves the exposition of the model making it easier to understand the costs that are being measured and how they are being measured.

This accounting model has been widely used in the studies of developed countries. It has also been expanded for use in developing economies by Duvvury et al (2004). The authors schematically demonstrate the potential paths of services women might follow in each of criminal justice, health care, housing and refuge, legal and social services. They also provide specific mathematical formulas that allow for the pathways to be measured. The modelling framework is designed to help in the collection of data in communities, regardless of the quantity or quality of services available to victims. The formulas are comprehensive although complicated. They are designed to enable researchers to calculate costs of any potential service use pathway. Hence, the same formula could be used in different locales with different levels of service provision. As with all theoretical offerings relating to the costs of violence, the final estimates will still depend on what data have been collected within the communities.

The basic mathematical framework on which calculations within the accounting model are based can be expressed as follows:

$$TCV = \sum_{i=1}^I (p_i^V - p_i^{NV}) V_i C_i$$

where TCV is the total costs of violence against women to be measured of which there are I categories of costs; p_i^V is the percent of violence victims using service i , p_i^{NV} is the percent of the population not affected by violence who use service i , V_i is the total number of violence victims eligible to use service i , and C_i is the per person cost of service i . Thus, the level of service i is measured by taking the differential usage rate by victims of violence and multiplying it by the number of violence victims to get the number of victims using the service as a result of violence. Costs resulting from violence are then found by multiplying that figure by the per person cost of providing the service.

It is important to recognize that if the usage rate of non-victims, that is, the rate at which victims would use a service in the absence of violence, is not subtracted, the calculated costs will overstate the true costs of violence. Utilizing these different usage rates is called differential analysis or the “attributable fraction method” (Access, 2004, part 1, p.8). For example, a victim of violence might seek several sessions of counselling therapy as part of her healing process. When asked about the effects of violence she would correctly report that she spent money on these therapy sessions. Unfortunately, there is no way to know how many sessions she might have used had she not suffered the violence. She might still have chosen to attend therapy, but perhaps fewer sessions. If the costing exercise included all the reported sessions, it would over-estimate the effects of the violence.

Because the counterfactual is not known, the usage rate for the non-victim population is used as a proxy for the usage rate of the victim in the absence of violence. The assumption is made that the only thing that differs between the two populations in terms of their propensities to use the service is exposure to violence. It is possible to use

regression techniques to control for observable characteristics that may differ across the populations. However, a similar assumption must be made that, conditional on the observable characteristics, unobservable characteristics do not vary across victims and non-victims in a way that is related to the usage of the service. By subtracting the non-victim rate of service use from the victim rate, it is then possible to measure only the costs of the differential use that results from violence.

b. Data requirements for the Accounting Model

The ability to use the above formula requires many different sources of information. Prevalence rates of violence are required in order to calculate accurate values for the different V_i . Measures of costs of services are required to calculate C_i . The calculation of the differential usage rates requires information on the usage rates of both victim and non-victim populations. The best source for these rates is a single comprehensive data set showing the use of a service by both groups, although the data need not have been collected with the intent of studying the costs of violence against women. For example, the source may be a survey about health issues and health care usage. As long as victims of violence are identifiable in the data from the rest of the population, an analysis of the differences can be made.

If a single data set is not available, multiple data sets may also be used to calculate differential rates. What is needed in this case are independent measures of either the victim or non-victim usage rate; the usage rate in the total population; and the prevalence rate of violence in the same population. Using these three measures it is then possible to back out the usage rate of the missing group and calculate the resulting differential rate. For example, assume that a survey of victims is available that includes questions on health care use. This survey provides the usage rate for victims. Assume, in addition, that a different survey of the general population is available on the same health care use, but does not differentiate between victims and non-victims of violence. If there is a third survey that provides the prevalence rate of violence in the same population, these three statistics can be combined to calculate the implied usage rate of non-victims.

In some cases it is not necessary to calculate the usage rate of the non-victim population. This is true when the service is only offered to or accessed by violence victims such as the case with women's shelters. If the entire budget of the service agency can be allocated as a victim service, then the usage rate for non-victims can be set to zero. In this case, the entire budget of the organization can be used as an entry in the matrix of total costs.

It is often the case that many of the necessary inputs for the above formula are not available. In this case an alternative method of calculating the cost can be used. This method uses the total rather than per person costs of providing a service, along with an estimate of the fraction of the service used by victims of violence. The total cost is multiplied by the fraction used by victims to estimate the cost of the service resulting from violence. This is a reformulation of the above equation at a more aggregate level. For example, if details on such things as the time police spend with a victim are not recorded anywhere, then the figure could be estimated by looking at all police calls and

measuring the proportion resulting from acts of violence against women. This proportion could then be applied to the total police budget to ascertain the costs of all police services provided to women victims of violence.

The difficulty with this method is in determining the fraction of services provided as a result of violence. If the agency provides statistics on the total number of services provided as well as a break down by the reasons for the service, then it is possible to determine the fraction of services provided due to violence. Often, though, such data are not available and assumptions must be made or proxies found in order to calculate the usage rates of the service. For example, if data existed for one police jurisdiction showing the fraction of police services related to women victims of violence, then, providing the prevalence rates of violence and police usage rates were the same in the different districts, it could be assumed that the same fraction applied to all police districts. In combining data from the different data sets it is important that lower bounds be chosen to ensure conservative estimates of the costs.

While estimating the various costs of violence is a straightforward exercise in theory, it is extremely difficult in practice because of the need for vast quantities of different types of data. Each consequence needs to be estimated numerically and more often than not, specific data do not exist. For this reason, data used in costing estimates are often recombined from data collected for other purposes. To create usable data for the whole costing exercise, many assumptions must be made. Assumptions allow data from differing sources to be combined and recombined. However, all assumptions must be based in fact, stated explicitly and supported by evidence. In the end, however, there may not be any relevant data collected by any agency, and even though it is clear the costs exist, it may not be possible to estimate them numerically.

Finding usable sources of data and supporting evidence requires a meticulous investigative process that can itself be costly and time-consuming. Data sources can include small scale surveys conducted independently by researchers for the purpose of the study, as well as large scale surveys done by national statistical agencies or institutions. The surveys of victims or of agencies may be random or non-random and therefore representative of the whole population or not. Government documents are another rich source for data. Service providing agencies also publish annual reports and a wide variety of documents that provide relevant numbers. Finally, previously published results of earlier research studies provide numbers that can be incorporated into new studies.

Combining all these fragments of data from a wide variety of sources is a painstaking exercise. Units of analysis must be matched carefully such that the figures can be multiplied or added together. Many re-combinations of data require assumptions that must be substantiated from published sources. Overall, it is the existence of data that determines the eventual outcome of costing exercises rather than the approach or organization of the costs. The more data that exist, the more components of the matrix can be filled in, and the higher the final estimate of costs will become.

c. Intangibles: Pain and Suffering

Not all consequences of violence involve the use of goods or services. Some effects are intangible in nature. These include pain and suffering and loss of life. Miller et al (1996) argued that it is important to include a measure for pain and suffering in cost estimates to correctly identify which social problems are most important for policy-makers to address. When they examined the costs of all personal crime in the US, Miller et al found the direct and indirect costs amounted to \$105 billion annually. But when they added the intangible costs of pain and suffering, the total estimate more than quadrupled to \$450 billion. This argument is persuasive, and has led to some subsequent estimates of the costs of violence that have included measures for these intangibles in the sum of the accounting model.

In order to estimate intangibles, reasonable proxy measures must be found. Proxies of the value of a life using economic concepts were originally created to estimate the value of a lost life for court cases seeking to compensate victims and their families. The sociological crime literature was the first to utilize these concepts in measuring economic costs. Using economic techniques to address the value of a life, the crime literature was able to measure the economic costs of violent crimes including murder. Studies examining the economic costs of violence against women have drawn upon this literature in order to measure the intangible costs of pain and suffering, and the loss of life.

The two main ways of measuring the value of a life are the human capital method and the willingness-to-pay method. These two methods each measure a proxy variable and interpret it as representing the value of a human life. In the human capital approach, the proxy is income earned. In the willingness-to-pay approach, the proxy is consumer spending on risk-reducing goods such as seatbelts or bicycle helmets (Cohen 2000). A third method, the Disability Adjusted Life Years or DALY approach, is also used to examine pain and suffering in a non-economic context (Access, 2004). In the DALY approach, an index is made of all factors that weight a person-year towards poor health or death. Statistics on the various health consequences of violence are combined to produce a profile of the pain and suffering the victim endured. However, there is no unit of measure outside the index. In order to convert the DALY index to a monetary value, the human capital or willingness-to-pay method must be used. Since the DALY method is a derivative of the two standard methods to valuing human life, only those two methods are discussed here.

The Human Capital Method

Under the human capital method, income or earnings is used as the proxy for human value. The present value of the future earnings of the victim is estimated, based on age, education and socio-economic variables that affect wage rates. The value of lost productivity in household work can also be measured in this way, by valuing time spent in housework at a given wage rate. The method utilizes data on wages and demographic

characteristics and conducts a regression analysis of the determinants of wages. Future earning levels are then predicted for the remainder of an individual's working life, conditional on the year of death or the timing of the violence, and assuming that the individual's earnings would have followed the path observed in the data for individuals of all ages in the current period. The present value of these earnings is then calculated by discounting the predicted future earnings stream using an average or long-run interest rate. Depending on the sophistication of the study, the human capital approach can accommodate time out of the labour force and time spent unemployed by factoring in employment and labour force participation rates over the life cycle.

There are advantages and disadvantages to the human capital approach. The advantages include the fact that it is a fairly straightforward calculation and one that is done repeatedly in the field of Labour Economics and thus is supported by a wide ranging literature. Second, the data required for the calculation are widely accessible and available for most countries. Third, it is possible to include controls for various demographic groups to elicit measures for younger as well as older victims of violence.

There are also disadvantages to this approach. First, labour market earnings do not measure the full value of a life. Labour market activity is an important aspect of life, but money earned cannot approximate love, caring or creativity. Second, since individual values depend entirely on measures of earnings, it is difficult to put a value on the time spent past retirement, so that value is often set to zero. This difficulty also exists for people not in the paid labour force such as children or homemakers. Third, the model necessarily makes assumptions about the future in order to calculate the present value. As stated above, an assumption is made that the victim's future labour force participation and earnings will be the same as that of individuals observed today since the counterfactual of the actual earnings stream, had the individual lived, is not observed and thus must be estimated. This is also true of the discount rate used in the analysis. Calculating a discount rate itself is a subject of debate in economic literature. Issues of financial risk, inflation, positive time preference, labour force status and expected productivity gains all influence the appropriate discount rate.

The Willingness-to-Pay Method

The second approach to measuring the value of a human life is the willingness-to-pay method. It looks to the marketplace to find instances where individuals pay a cost in order to increase their safety and thereby reduce their chances of injury or death. When these expenditures are summed over the whole population willing to pay extra, the total is a proxy for the value society assigns to a life. An example from the willingness-to-pay literature comes from studies of traffic safety. The amount people are willing to pay for seatbelts, when summed across the population, is used as a proxy for the value of the life saved by a seatbelt. For instance, suppose a seatbelt costs \$30, and reduces the risk of dying from 1/100,000 per person down to zero. Before seatbelts come on the market, one person in 100,000 will die. After seatbelts are available, say 100,000 people buy them, each paying \$30. The total amount society has paid is \$3 million, and one person's life has been saved. The imputed value of the life is taken to be \$3 million, since this is the

exact amount the population was willing to pay to prevent that one life lost. This is called the value of a statistical life. The value of a human life calculated in different studies ranges from \$0.6 million to \$19.1 million per year in 2003 US dollars (Access, Part 1, 21).

As with the human capital method there are advantages and disadvantages to the willingness-to-pay method. One major advantage is that this method infers the value of life from behaviour and thus may capture more of the value than the human capital method which relies solely on earnings. The disadvantages include the lack of data sources on individuals' willingness-to-pay for safety, especially common measures across countries; and the wide range of estimates makes it difficult to know which value is correct. Overall there is no one best way for measuring the value of life or lost potential due to violence.

When estimating the value of a person's life, both methods pose comparative problems. With the human capital approach, in order not to measure wealthier people as having a higher life value, average income levels for the whole economy need to be used. However, this creates a new problem in international work since average income levels between countries vary significantly. It is not true that a higher income earner's life is worth more, nor that a life in a developed economy is worth more. However, basing human value on earnings embeds this comparison in final estimates of costs of violence. This would be an especially active problem if comparing the costs of violence internationally.

Nor is the problem erased by using the willingness-to-pay method. A similar argument holds that goods cost different amounts in different nations, and that levels of disposable income vary greatly. A consumer good that saves lives might sell well in North America, but rarely be purchased in India only because North Americans have more disposable income to spend on such items. Willingness-to-pay calculations are therefore very culture-dependent. As such, the value of a statistical life cannot be used in an international context unless a new measure is made for each country.

Should pain and suffering be included in the economic costs of violence against women?

There are sound arguments both against and for including pain and suffering in costing measures. First, not all victims want purely human factors to be expressed in a dollar value. It may be demeaning to put a price on a victim's suffering. Fear or depression may have economic consequences that can be measured, but many feel the suffering itself is outside the purview of economic analysis. Second, the only way to measure pain and suffering is with a proxy measure which in fact has nothing to do with pain or suffering. Since the proxies measure the value of a life in economic terms, the question of whether or not they actually indicate the value of pain and suffering is a guess at best. Third, including pain and suffering escalates the estimates of the costs of violence to much higher numbers. For instance, Miller et al (1996) measured the costs of rape to the US economy at \$US 7.5 billion in direct and indirect costs, and \$US 127 billion when

pain and suffering were included. For advocates arguing for anti-violence policies, numbers like these can over-sensationalize the issue. It may be more prudent to offer a more conservative and substantiated number than one that can lead to the results being dismissed out of hand as excessive or ill-founded.

While these are valid arguments against including estimates of pain and suffering, a strong case can also be made for the opposing viewpoint. For policy-makers, seeing the total costs of violence including pain and suffering gives a more accurate measure of the magnitude of the impact of violence on a victim's life and thus society as a whole. For example, Miller's study that showed the economic costs of rape at \$US 7.5 billion per year also showed the costs of larceny (theft of personal property) were higher, at \$US 9 billion. But when the pain and suffering of rape were included in the analysis, the measure jumped to US \$127 billion. (No costs of pain or suffering were added to the costs of larceny.) In this way, when comparing the costs of different types of crime, adding pain and suffering indicates which crimes should have priority in legislation and spending programs.

The second reason to include such intangibles in costing estimates is that it validates victims' experiences. It shows that their suffering does count for something in society, and demonstrates that researchers are working to include pain and suffering as part of the analysis. Third, measuring intangible costs is commonly used in the court system and therefore has credibility. Given these arguments for estimating pain and suffering as part of economic costing exercises, researchers have begun to do so. However, since the difficulties of actually measuring pain and suffering are substantial, any estimate of intangibles is always presented separately and with caveats.

d. Importance of data collection and manipulation

Nowhere is it more obvious that violence against women touches all aspects of society than in the search for data for use in costing exercises. Because the consequences are multi-sectoral, the costs are spread throughout the entire economy. Therefore, no single data set can provide information on all costs. Data must be gathered from many different sources. For example, to measure the costs of government social services accessed by victims, data are needed on the use of government services and the costs of providing those services. However, comprehensive budgets showing the costs of all government services do not exist. Different services are run from different agencies and branches of governments, and are funded by different levels of government. The necessary data must be found for each different level and service provider. To find all the required data is an exercise in searching out both the data sets and the information from the data itself. One data set may provide information on more than one required variable, but often not, and rarely has the data been collected for a purpose relating specifically to violence against women. More often, the data have been collected for some other purpose. This can lead to difficulties because of missing variables, missing units, or combinations of data that would be more useful if not combined.

These difficulties can result from the fact that each agency or service has its own means of measuring and presenting information. Where a unit of service may exist in data collected in one agency, it may not reappear in any other agency report. It may also vary from jurisdiction to jurisdiction. For instance, one district may report court cases by the crime charged, a second may report cases by types of victims, and a third may not give any breakdown by type of case at all. In addition some agencies may highlight one aspect of their work, while another may highlight something else. Such factors make it difficult to combine the figures or make comparisons.

Different agencies and groups collect data for different reasons, and the reasons may be reflected in the numbers. For example, a homeless shelter may collect data that highlight how they are forced to operate deficit budgets as a way of encouraging fundraisers to contribute. However, businesses that collect internal information to show their shareholders how well they are doing may disguise a deficit problem in one of their departments. Hidden in these data sets is information regarding the costs of violence borne by both agencies, but filtering it out of the total requires different tactics for each case.

Units of measurement may also differ. For instance, health data may report the total number of patients by age and sex, the total level of services that were provided, the total number of patient-days in the hospital, or the number of patients admitted to different departments. Trying to match these data to create a profile of the effects of violence requires creativity and meticulous attention to the units of measurement.

Overall, the existence and collection of good data is the pivotal issue in costing the effects of violence against women. The ability to estimate the consequences of violence and their costs depends on what variables exist in the data sets available. The more variables and the more closely they map the consequences of violence, the better the end results will be. The best-case scenario is when the original data directly address the issue of violence. If the original data were not related to violence but the effects of violence can still be extracted from the data, then the results may still be valid, but caution should be exercised and caveats given.

e. Evaluating estimates of the costs of violence against women

The body of literature addressing the costs of violence against women can be categorized into three groups. First are papers estimating a limited number of costs. Second are comprehensive papers estimating large numbers of costs, and working toward filling in the whole matrix of costs of violence against women. Third are survey papers that discuss the existence of costs but do not make new estimates. There are many factors to take into consideration in evaluating the literature of the first two types of costing studies. These factors include bottom-up versus top-down styles of analysis, the scope of the papers, the accuracy of estimates, the question of who bears the costs of violence, and gaps left in the literature.

Bottom-up versus Top-down Styles of Analysis

Both the limited and comprehensive estimates of costs of violence can be either bottom-up case studies or top-down aggregate studies. Bottom-up studies focus on a case study of a small number of individuals while top-down studies begin with aggregate data. In comparing and contrasting the results of bottom-up and top-down approaches, there are benefits to each approach. Case studies are able to elicit a great deal of information about the effects of violence in women's lives (e.g. Blumel (1993) and KPMG (1994)). Extensive surveys of small groups of women enable researchers to delve deeply into the effects of violence in women's lives. For example, with careful attention to the exact questions asked, it would be possible to use a bottom-up methodology to accurately measure personal costs to individuals. To date a few studies have collected information on personal costs including Blumel et al (1993) and Bowlus et al (2003). However no study has performed a careful numerical study measuring the actual out-of-pocket costs to victims.

It would also be possible to construct case studies of the costs borne by companies or by service providing agencies in their response to violence. No such studies are referenced in the standard costing literature to date. Snively (1994), Stanko et al (1998) and Heiskanen and Piispa (2001) each interviewed agency officials to substantiate information about victims, but not to study the effects in the agencies themselves. Snively created a template to include services offered to victims, patterns of their usage, and costs of the services provided. Stanko et al studied 107 service providing agencies, although they were not able to elicit information on either services provided or costs since the agencies did not keep statistics on these variables. Heiskanen and Piispa interviewed a large number of officials from service providing agencies to elicit information about services offered, although no standardized survey was administered. However, there have been no case-studies addressing the costs of violence to social service agencies specifically.

Another benefit of the case study approach is that it can be performed in a local environment with lower research costs. The small scale of the research also allows for specific topics of interest to be designed into the project. When researchers collect their own data, they have the opportunity to go deeply in a specific direction they are interested in elucidating. Top-down studies are more limited in having to work with data that has been collected for other reasons. For all these reasons, there is an important place for the case study approach in the costing literature.

However, the obvious problem with case-studies is that they are not representative of the whole population of their jurisdiction. Therefore, it is not possible to hypothesize national costs of violence against women from small-scale studies of this type. Since estimates of the costs of violence are used to enlighten discussions of government policy and spending priorities, nationally accurate estimates are needed. Case studies can be best used to point out the effects of violence so that top-down studies can aim to measure the

true economic effects of violence against women. The benefit of top-down studies is that they begin with representative national data and can make use of aggregate statistics from governments, institutions and agencies. It is possible to search widely for data to use in estimating additional entries in the total matrix of all costs. With every new data source discovered and integrated, there is a continued improvement in the final estimate of total costs. As long as researchers continue to inform their work with the detailed analyses from smaller scale studies, their aggregate work will reflect an accurate picture of violence against women. The more costs in the matrix that can be filled in, the higher the resulting total will become.

As a tool for informing policy decisions, aggregate studies clearly have a stronger voice than small scale studies. The ultimate costing exercise would be one in which a survey of the type administered in case studies was administered in a large, randomly selected, national survey. Then all costs could be measured carefully at the national level and a realistic estimate of the costs of violence against women could be established. Heiskanen and Piispa (2001) approach this goal as they performed a large-scale survey of violence against women and used their own results to estimate costs. However, their survey of women victims did not collect much information on costs as they found women were more likely to talk about costs in personal terms, and they did not have a structured questionnaire relating to costs.

Scope of Estimates

The scope of any estimation of costs depends on how many goods and services are included in the matrix for summation. There are two factors to consider in the scope: the number of goods and services in the list of consequences to be considered, and the number of goods and services that can actually be measured. These factors may or may not be the same. If only a single data set is examined, the choice of what is included in the matrix is constrained by the parameters of the data. An example of a single data set is found in Rudman and Davey (2000) who examine one specific data set, the 1994 Health Care Cost Utilization Project-3, to estimate hospital costs for patient victims of domestic violence. An example of a paper that provides a comprehensive listing of costs and then shows those that were not able to be estimated is Henderson (2000).

The scope of the estimates is also determined by the categories chosen for estimation. This may include only a few categories such as health, social services and lost income. These categories are often chosen because of access to government data on social and health services, as well as labour force surveys that provide measures of average wages. Examples of such papers are National Center for Injury Prevention and Control (2003) which estimates the medical costs of injuries and lost productivity from injuries and from death, and Day (1995) which measures health costs, lost income and a few social services. Alternatively many categories may be included in an attempt to calculate a comprehensive estimate of the total costs of violence against women, or a comprehensive listing of all costs may be formed with the objective of finding as many available data sources as possible, and computing as many components of the matrix as possible. This comprehensive view is seen in Bowlus et al (2003), Access Economics

(2004) and Walby (2004). However, it is nearly impossible to include measures of all categories and all costs. Two common categories that are often left out of estimates due to lack of data are business and personal costs.

The papers with the most comprehensive scope to date are also the most recent. Walby (2004) and Hiskanen and Piispa (2001) each measure a wide scope of legal, social and health costs, but do not include business or personal costs. They both include an estimate of the intangible costs of pain and suffering. Bowlus et al (2003) include all categories of costs except business costs and pain and suffering. They include a unique survey of personal costs as well as a regression analysis of income and education differentials. Access (2004) is comprehensive in scope, although their categories of costs differ from the rest of the literature. They include second generation effects as well as intangibles, but include only a few personal costs.

Accuracy of Estimates

There are many factors that affect the accuracy of the numerical estimates of costs of violence. However, it is not easy to compare published works on the basis of accuracy unless the numerical work is explicitly shown. Many papers present only the results without demonstrating the way they were generated. The best practice for ensuring accuracy is to expose the numerical work explicitly in technical appendices, as is shown in Day (1995), Henderson (2000) and Bowlus et al (2003). The accuracy of costing estimates depends on a variety of factors including sample size and quality of survey data, use of differential analysis, use and appropriateness of proxy variables, support for assumptions, the care taken in recombining data accurately, the use of full, average and marginal cost measures, incidence versus prevalence, and underestimation. Each of these factors will be considered independently below.

i) Quality of survey data

All estimates of costs of violence require data on prevalence and incidence of violence against women, as well as data measuring the levels of consequences in women's lives. The best source for such information is a survey that explicitly addresses violence against women and is administered to a nationally representative, random sample. The next best is a representative criminal victimization survey that includes questions related to being the victim of a violent act. Countries that have produced such surveys can then use them to estimate the costs of violence against women. In order to guarantee statistical accuracy it is important that the survey be conducted on a large sample. Finally, the more the questions are geared to the effects of violence in women's lives, the more the survey will facilitate the estimation of the economic costs.

Small scale surveys are appropriate for a case study style of analysis. Small scale surveys of victims and service providing agencies have been very instrumental in mapping out the pathways women follow through services. Good examples of this style of work are the early papers from Australia including Roberts (1988), KPMG Management Consulting (1994) and Blumel (1993), as well as Snively (1994) in New

Zealand. Another good example is the later work by Stanko et al (1997) from London. However, to estimate the total costs of violence to a country, national data on both victims and non-victims are preferred.

ii) Differential Analysis

To accurately estimate the costs of violence against women, the rate at which the victimized women would have accessed the same services for other reasons needs to be calculated to compute a differential usage rate. Without doing so, total costs overestimate the effects of violence. For example, when measuring the penal costs for imprisoned perpetrators, Bowlus et al (2003) subtracted a percentage representing those men who would have ended up in jail during that time for some other charge. The rate of imprisonment in the non-victim population gave the probability of such an alternative event. Most reports estimating the costs of violence against women do not consider this requirement. To date, the only papers to have adjusted rates of service down in this way are Access (2004) and Bowlus et al (2003).

iii) Use and appropriateness of proxy variables

When explicit data are not available for a variable, there may be an appropriate close substitute that can be measured instead. The alternative measure will approximate the level of the missing variable, hence 'proxy.' In the early years of costing exercises there were no prevalence data. For example, Leonard and Cox (1991) and Snively et al (1993) used police records to determine the number of police call-outs for domestic violence in a year. From the call-out rate they calculated the proportion of women in the community who asked for protection from violence while accounting for women who might have called more than once during the time period. These figures were then used as a proxy for the percentage of all women in the community who were victims of violence. They acknowledged that this number would be an underestimate since many women never called the police, so they created different scenarios with arbitrarily chosen multiples of the call-out rates. This is a good example of a proxy measure. The number of women calling the police is not the same as the number of women suffering violence, yet given the available data it was the best measure available.

The need for proxy measures stems directly from the lack of good data. It is important to be careful in choosing proxy measures as appropriately as possible. To select a good proxy, the conditions of violence must be understood, as the accuracy of the final totals depends critically on how close the proxy measures are to the actual figure they stand in for. Usually a conservative proxy is chosen in order to under-estimate total costs.

iv) Support for assumptions

Estimating the costs of violence often requires the use of informed assumptions on a wide variety of topics. In order to take advantage of expertise in the relevant area, these assumptions are based on published literature on the topic. The more papers that exist indicating the same result, the more reliable the assumption is. For example, Day

(1995) used many references from the mental health literature to support the assumption that at least 50% of women patients in psychiatric wards were victims of violence. There is no specific number of papers that guarantees valid support for an assumption, but the more that exist, the better the accuracy.

Alternatively an assumption may be based on the expert testimony of front-line workers. For example, Stanko et al (1998) met with service providers to ensure accuracy of their assumptions about the typical situations of victims in their study. Again, taking the opinion of a small number of experts is problematic, but if a variety of experts all agreed on the same result, then using their testimony as supporting evidence is justifiable.

v) Taking care in recombining data

One of the most challenging aspects of estimating costs of violence against women is the care required to accurately combine data from differing sources. There are many pitfalls that can be encountered that reduce the accuracy of the final results. First, all data must be adjusted to the same base year. When summing costs, all estimates must have the same currency value and all values must be discounted to a base year using inflation indices. Additionally, if research results are imported from a different country and a different year, care must be taken to match the currency units with the year of analysis in their own study. These are simple exercises, but ones that are often overlooked. It is possible that the necessary adjustments may have been made without stating so in the text. However, it appears that many studies have combined data from different years without accounting for inflation. In addition, the mistake of measuring lifetime costs in current year currencies without adjustments is also made.

Similarly, data showing the rates of use of services should reflect the same year. If the years differ significantly, an assumption needs to be made that there is no trend suggesting the rate would have changed. For example, suppose a survey on violence against women was done in 1995, but the new research is undertaken in 2005. Are the rates still valid, or has a decade of anti-violence work and public awareness campaigns made a significant difference? Supporting evidence would be required to show either a trend toward a different rate or no change in the rates. Without supporting evidence, an assumption must be made that the rates have not changed and a discussion of the reasons why this may not be accurate should be included.

The units of analysis of differing data sets also must match. For example, businesses might show time off work as days per year while women might indicate time off work in days per incident of violence. Again, care must be taken to notice exactly what the units of analysis are and to ensure they match what is required in the costing formula.

Additionally, care must be taken not to infer behaviour based on data. For example, suppose a document shows that violence victims are diagnosed with more health problems than the rest of the population. This does not mean that they receive more medical attention. They may just suffer worse health. To draw a conclusion that diagnosis

leads to health services would require supporting evidence. The figure for diagnoses cannot be used to represent the amount of service acquired unless there is a way of tying the two units together.

Finally, there may be an overlap between components in differing data sets so care must be taken not to double-count entries. Suppose one data set examines women victims of domestic violence including sexual assaults by conjugal partners, while another data set includes all forms of sexual assault. If the two data sets are combined, then the sexual assaults by partners from one of the data sets must be subtracted in order not to count those victims twice.

Creating usable data is the most challenging aspect of estimating the costs of violence. Because data are collected from a wide variety of surveys, documents, reports and experts, care must be taken in how the information is combined. If the data are combined in a haphazard way, the results will not be accurate. An example of such a study is Fromm (2001) in which figures from differing years and jurisdictions appear to be summed and a variety of costs appear to be double-counted.

vi) Full Cost, Average cost and Marginal cost

There are some costs for which it is appropriate to use the full cost of an agency as the cost estimate. For example, all people who access women's shelters are there as a direct result of violence. Therefore, the entire cost of running shelters can be included as a cost of violence. However, in all other cases, what is being measured is the marginal increase in the use of the service that occurs because of violence. Suppose victims of violence also access homeless shelters. In this case the number of women who use homeless shelters as a result of violence is needed. This is actually a marginal addition to the normal use of homeless shelters. As such, the cost should be measured as a marginal increment with a marginal cost. That is, the cost of providing one additional bed, not the average costs of providing the entire shelter. However, calculating marginal costs is not easy, so average costs tend to be used instead. Since average costs are usually higher than marginal costs, this limitation creates an upward bias in the final cost estimates.

vii) Total Burden on the System: Incidence versus Prevalence

Prevalence rates indicate what percent of all women have been affected by violence in the past year. Incidence rates give the total number of times women were violated. If prevalence rates are used as a basis for costing, they can severely underestimate the number of times women have accessed services. If a survey asks only if a woman has been violated in the past year, it will not capture the full impact of violence in her life as she may have been violated more than once during the year. To measure the full costs of violence in society, incidence rates of violence are necessary, and a report of what actions the woman took and what services she accessed for each incident would be required. Unfortunately, most research uses prevalence rates without adjusting for the possibility of underestimating this incurs.

viii) The Conservative Underestimate

Even though researchers use logic, reason and the data available to them to the best of their ability, cost measures are always estimates, and always underestimates. Because there are many costs that are impossible to measure, such as reduced life satisfaction, and because many direct costs are just too difficult to measure accurately, such as true out-of-pocket costs to victims themselves, it will never be the case that an estimate of the costs of violence against women is totally accurate. However, there is another way in which costing estimates may not reflect the true costs of violence against women. In observing the literature, it is important to note that all studies make conservative estimates. For example, when working with data, if there is a range of numbers, a number above a mid-point is never used, but often one is used from below. Similarly, if there are two assumptions that could be made, the one that results in a smaller cost is usually adopted. This desire to be cautious in measuring costs comes from wanting to avoid public backlash to very high cost figures. Ultimately however, this conservative approach underestimates the scope of the problem by providing only a lower bound of costs.

Who Bears the Costs of Violence

One problem associated with drawing conclusions based on estimated total costs of violence against women comes when asking who bears how much of the financial burden of the costs. While conclusions are often drawn based on the costs calculated within a study, these conclusions are not robust. The percentage of costs incurred by different social agents reflects only the data and modelling techniques of the study rather than being a clear indication of the actual distribution of costs in the economy. For example, if the data are heavily skewed to personal surveys of women's lives, the costs taken from the survey will overestimate the proportion of costs borne personally by women. If instead the data have all been collected from government agencies, then the percentage of costs borne by the government will appear to be very large. If a study has no personal or business costs, but draws conclusions about who bears the costs, the results will obviously not be accurate. Yet most studies do not measure business costs, and few measure much in the way of personal costs. Thus, it can be seen that the percentages depend totally on the data used. Until a fully comprehensive analysis of the costs borne throughout an entire economy is estimated, it will not be possible to ascertain which social agents pay what percent of the costs.

Gaps in the Literature

There are a variety of gaps in the economic costing literature. The most obvious of these is geographic. Although there are many new initiatives planned around the world, large scale national surveys have only been completed in some countries with the economic means to do so. Further, what can be costed in any location or country depends on the available data. In any given jurisdiction, it may be possible to estimate certain costs but not others, depending on the reliability and accuracy of record-keeping practices

and what data are given priority. International bodies such as the UN can lead the way in encouraging nations to make the collection of evidence on violence against women a priority.

Without such economy-wide comprehensive data, the best that can be obtained is careful analysis combining data from agencies that have documented the effects of violence. In recent years governments and agencies have become more sensitive to the effects of violence and have collected more relevant information. Recent papers in the field make use of this data and demonstrate higher levels of sophistication and care in both methodology and scope.

6. Conclusions

All studies on the costs of violence against women have the same goal and use the same accounting model. Differences arise in the details of how the research is carried out and the jurisdiction to which it applies, rather than the questions asked or approach taken. Although each research project has attempted to reach the same challenging goal, the data resources available to them vary widely. This, more than anything, determines the differences in how researchers have approached the techniques of the common goal of estimating a nation's costs of violence against women.

The major strength of the model is that it works, and the major weakness is how complicated it is to apply well. The strengths of the approach are manifest in its results. Researchers from around the globe have used this model to conservatively measure national costs of violence against women in the billions of dollars annually. These range from the low end of estimated annual costs in Snively (1994), Day (1995) or Henderson's (2000) one to two billion dollars, through Greaves et al (1993), and Walby's (2004) of around 5 billion to Access (2004) of over 8 billion. Clearly, the model works to measure the impact violence has on the society in which it is situated. Additionally, the basic concept of the model is easy to understand. It sums the goods and services used by victims and how much they cost. The model can be applied to any community, in any location, for any type of violence against women.

Another strength of the model is its usefulness. The costs can be used as inputs into studies seeking to understand and prevent violence against women. The costs of violence in an area can be estimated before and after an anti-violence initiative is implemented to discover the social savings resulting from any reduction in violence. Policy analysts can observe the effects of different types of initiatives and choose those that maximize savings relative to the cost of implementation. Because the costs of violence against women are so widespread throughout a whole society, it is always the case that a small amount of money spent on effective programs will lead to a much larger saving in total costs in the future. Using this model of estimating the costs of violence allows that result to be recognized.

The major weakness of the model is in how complicated it is to accurately measure costs. This is not the fault of the model itself, but a natural consequence of the widespread nature of the effects of violence against women in society. The model does a good job of capturing that complexity. However, it means the data requirements and the care with which numerical analysis must be carried out are extremely challenging. The first difficulty is in finding data. Too often researchers are left using a collection of data sets, each of which was collected for a different purpose, and few of which are oriented explicitly to violence against women. This creates the difficult task of combining and re-combining the data into units that can be summed in the model. Many reports lack the numerical precision required for perfect accuracy and are weakened by simple oversights in the arithmetic. However, in the end, the overall results are not affected a great deal by these minor errors. Because such large costs are found, there is much leeway for marginal

changes in the individual costs. Perfectly calculated estimates would still measure in the billions of dollars annually.

A counter-argument to any concern about numerical inaccuracies arises from realizing that all measures of the costs of violence against women are extreme underestimates in any case because so many costs are not included. No paper even comes close to filling in all the blanks in the matrix of total costs. This habitual underestimation of costs provides a margin of error that can absorb small errors or inconsistencies in numerical calculations.

A final weakness of the costing model is that it is expensive to administer at a national level. There is a great deal of labour involved in surveying, collecting data and calculating costs. While bottom-up case studies may be affordable, large scale national studies are costly. This may deter those in developing economies from undertaking such studies, even though application of the results would greatly help the long-run growth potential of the nation.

The costs of violence against women are enormous. Economic development is limited as long as violence against women exists. All of the economic costing literature indicates that the whole of society pays for the costs of not addressing this pressing social concern. The sooner that countries bring in effective policies and programs to end violence against women, the sooner they will begin to reduce the economic cost of that violence to their society and benefit in the long run.

7. Annotated Bibliography

Access Economics, Ltd., *The Cost of Domestic Violence to the Australian Economy, Parts I and II*, Office of the Status of Women, Government of Australia, 2004.

This is an extensive economic reporting on the costs of domestic violence in Australia. It uses economic concepts and analyses. It includes pain and suffering and death. It combines costs in economic categories rather than social ones. The total cost to the Australian economy for 2002-03 is estimated at \$AUST 8.1 billion.

Bagley, Christopher and Colin Prichard. "The Billion Dollar Costs of Troubled Youth: Prospects for Cost-Effective Prevention and Treatment." *International Journal of Adolescence and Youth*. 7 (1988): 211-225.

This is a study that follows 227 youths who were expelled from school, measuring the costs of their subsequent criminal behaviours. At \$US 45,472 each, the national grossed-up figure is \$682 million per year for England and Wales in 1997. Costs are taken from the Audit Commission and Department of Health reports. Unmeasured costs are discussed as well.

Beckett, Megan, Julie Da Vanzo, Narayan Sastry, Constantijn Panis and Christine Peterson, "The Quality of Retrospective Data: An Examination of Long-Term Recall in a Developing Country", *The Journal of Human Resources*, 36 (2001): 593 – 625.

This paper is from the literature on the accuracy of retrospective surveys. It is a good discussion of the issues involved and indicates what factors make a survey respondent more or less likely to be accurate in their long-term recall of an event.

Blumel, Debra, G.L. Gibb, B. N. Innis, D.L. Justo and D.W. Wilson, *Who Pays? The Economic Costs of Violence Against Women*. Sunshine Coast: Sunshine Coast Interagency Research Group. Queensland: Women's Policy Unit, Office of the Cabinet, 1993.

A retrospective case study of lifetime costs for fifty women victims of domestic violence in Queensland, Australia in 1993. When extrapolated to the whole population, the annual cost measures \$AUST 620 million. The costs of physical violence, sexual assault and rape are estimated separately, then summed.

Bowlus, Audra, Katherine McKenna, Tanis Day, and David Wright, *The Economic Costs and Consequences of Child Abuse*, Ottawa: The Law Commission of Canada, 2003.

A comprehensive analysis of the costs of child abuse to child victims and adult survivors in Canada for 1998. Total costs measure over \$CDN15 billion, with over \$11 billion representing lost wages alone. Data are drawn from many sources including the national statistical agency and a provincial health survey. An accounting model is used to add all measurable costs of police, legal, penal, health, education and social services accessed by victims. A regression analysis is performed of the health data to test for differences in the abused and non-abused population. A small-scale survey is also conducted of adult survivors to examine for use of services and personal out-of-pocket costs incurred.

Buvinic, Mayra and Andrew Morrison, "Violence as an Obstacle to Development", Inter-American Development Bank, Technical Note 4, 2004.

<http://enet.iadb.org/idbdocswebservices/idbdocsInternet/IADBPUBLICDOC.aspx?docnum=362887>

An overview of issues relating to economic and social costs of violence in developing economies, especially Latin American countries. The authors argue for including a pain and suffering element, using a willingness-to-pay, contingent valuation, or hedonic housing model.

Buvinic, Mayra, Andrew Morrison and Michael Shifter, "Violence in Latin America and the Caribbean: A Framework for Action." Inter-American Development Bank, March, 1999.

An overview paper addressing the high levels of violence and domestic violence in Latin American Countries, it looks at research in areas of causes, costs, risk factors, and policy responses.

Caldwell, R.A. *The Costs of Child Abuse Versus Prevention: Michigan's Experience*. East Lansing: Michigan Children's Trust Fund, 1992.

Combining together the results of a variety of research studies, the authors come up with an annual cost to Michigan of child abuse and neglect of \$US 823 million. They also make use of published evaluations of prevention and treatment programs to show that a parent education program for first-time parents and a home visitation program would result in a 19 to 1 cost advantage for implementing the programs.

Clark, K.A., A.K. Biddle, and S.L. Martin, "A Cost-Benefit Analysis of the Violence Against Women Act of 1994", *Violence Against Women*, 8 (2003): 417-428.

Estimates the savings to the US society from reductions in the prevalence of violence against women resulting from 1994 legislation, VAWA-I. Costs are taken directly from Miller et al. including costs of pain and suffering. A sensitivity analysis is done with assumptions of prevalence reductions ranging from 10% to 100% of the actual reduction observed. The results suggested that the legislation saved \$US 14.8 billion in averted social costs.

Cohen, Mark A. "The Monetary Value of Saving a High-Risk Youth." *Journal of Quantitative Criminology* 14 (1998): 5-33.

Estimates the economic costs resulting from career criminals, typical heavy drug-users and high-school dropouts for 1997 in the US. Uses prevalence rates and cost information from other published research papers, including Miller et al for the value of a life. Finds the cost of saving one high-risk youth is \$US 1.7 to \$2.3 million, with 30% reflecting pain and suffering of potential victims. The range depends on assumptions regarding such things as prevalence rates, duration of conditions, and the social discount rate.

Cohen, Mark A. "Pain, Suffering, and Jury Awards: A Study of the Cost of Crime to Victims." *Law and Society Review* 22 (1988): 537-555.

Estimates the cost of violent personal and household crime in the US for 1985 at \$92.6 billion. Estimates of pain and suffering are included, based on jury awards for specific injuries from consumer products. Costs include lost wages, medical costs and an award for pain and suffering and risk of death.

Cohen, Mark A., "Measuring the Cost and Benefits of Crime and Justice", Chapter in Volume 4 (pp. 263-316): *Measurement and Analysis of Crime and Justice*, Criminal Justice 2000. National Institute of Justice, July 2000, NCJ 182411; available at http://www.ncjrs.org/criminal_justice2000/vol_4/04f.pdf.

A comprehensive overview of cost-benefit analysis and cost-effectiveness analysis in application to the costs of crime and the efficacy of prevention programs. Includes conceptual issues relating to costs; a critique of whether or not to monetize crime; methodologies for measuring the costs of crime and of programs, including measurements of pain and suffering; a review of the literature on measures of the costs of crime and of responses; and a review of the literature on the costs and benefits of criminal justice initiatives.

Crisp, D., and B. Stanko, *Reducing Domestic Violence: What Works? Monitoring Costs and Evaluating Needs*, Policing and Reducing Crime Unit, 2002.
<http://www.homeoffice.gov.uk/domesticviolence/brief.htm>

An overview of studies from the UK arguing there is a need for baseline data, especially to be able to perform cost-effectiveness studies of interventions.

Day, Tanis and Katherine McKenna, "The Health Related Costs of Violence Against Women: The Tip of the Iceberg" in Katherine McKenna and June Larkin, eds, *Violence Against Women: New Canadian Perspectives*, Toronto: Inanna Publications, 2002, 313-350. This is a revised and updated version of Day (1995). There are no new estimates made of costs. However, the model is demonstrated with more clarity, and more discussion is made of the widespread costs of violence.

Day, Tanis, *The Health Related Costs of Violence Against Women: The Tip of the Iceberg*, first commissioned by the Canadian Advisory Council on the Status of Women, published by The Centre for Research on Violence Against Women and Children, University of Western Ontario, 1995.

This is a comprehensive estimate of some costs of domestic violence including medical, dental, lost output from work, volunteer hours, and some social services for Canada for 1993. Some data are drawn from the first national representative-sample survey of violence against women. The total cost is estimated at \$CDN1.5 billion for 1993.

Dinys, Luciano, Simel Esim and Nata Duvvury, *How to make the Law Work? Budgetary Implications of Domestic Violence in Latin America, Central America and the Caribbean*, International Centre for Research on Women, 2003.

http://web.idrc.ca/uploads/userS/10999554481DV_and_Budgets_in_LAC_Synthesis_Final_July_2003_1.doc

This paper looks at budgetary issues relating to legislation combating gender-based violence in Latin American countries. Even with legislation and approved national plans

of action, funds are still not being allocated in government budgets. Good recommendations are given to ensure stability in funding of programs.

Duvvury, Nata, Caren Grown and Jennifer Redner, *Costs of Intimate Partner Violence at the Household and Community Levels: An Operational Framework for Developing Countries*, Washington, DC: International Center for Research on Women, 2004.

This paper develops an analytical framework for estimating costs of violence. It is particularly oriented to estimating costs in developing countries. A schema is provided to map out different potential paths of service use in criminal justice, health, housing, legal and social services. The scheme is written out mathematically as well as presented in a flow-chart style.

Faley, Robert H., Deborah Erdos Knapp, Gary A. Kustis and Cathy L. Z. Dubois, "Estimating the Organizational Costs of Sexual Harassment: The Case of the U.S. Army." *Journal of Business and Psychology* 13 (1999): 461- 484.

A very thorough and comprehensive measure of the costs of sexual harassment in the workplace for the US Army. Precise measures of sexual harassment are made through surveying 20,249 personnel in 1988, of whom a total of 4294 experienced harassment in the previous 12 months. Costing data come from an Army costing database. In 1994 dollars, the costs were \$US 250 million accrued from productivity, administrative, absenteeism, separation and replacement costs.

Farmer, Amy, and Jill Tiefenthaler, *Domestic Violence and its Impact on Women's Economic Status, Employers, and the Workplace*, Blue Shield of California Foundation, 2004.

[http://www.caepv.org/membercenter/files/Blue%20Shield%20Literature%20Review%20\(revised%2010-24\).doc](http://www.caepv.org/membercenter/files/Blue%20Shield%20Literature%20Review%20(revised%2010-24).doc)

A review of literature looking for the effects of domestic violence on workplace productivity and employment patterns. Also included is an overview of existing research on business intervention programs set up to help victims of domestic violence.

Farmer, Amy and Jill Tiefenthaler, "An Economic Analysis of Domestic Violence", *Review of Social Economy*, 55 (1997): 337-358.

Using bargaining theory, a non-cooperative model of domestic violence is presented. Results predict that women's financial status will affect the likelihood of violence in the home since a woman having her own income would increase her ability to leave the marriage and hence her threat point. Empirical evidence is shown to support the conclusions that higher income earning women suffer less violence overall since they have the means to leave the violent relationship.

Finlayson, Teresa, J., Linda E. Saltzman, Daniel J. Sheridan and Wendy K. Taylor, "Estimating Hospital Charges Associated With Intimate Violence", *Violence Against Women*, 5 (1999): 313-335.

This paper examines methods of estimating hospital costs associated with intimate partner violence. Specific recommendations are given for improving current methods of data collection.

Friedman, L. and Susan B. Tucker, *The Costs of Domestic Violence*, Victim Services Research, New York, 1997.

This is an overview paper looking at issues and costs of violence against women in the US, with special reference to New York City. It provides a summary of many services and associated costs. It refers to the comprehensive research project undertaken by the same publishing agency in 1996, in this bibliography under Hartmann, Heidi.

Fromm, Suzette, "Total Estimated Cost of Child Abuse and Neglect in the United States: Statistical Evidence." Chicago: Prevent Child Abuse America, 2001.

http://www.preventchildabuse.org/research_ctr/cost_analysis.pdf

This paper measures a variety of specific costs resulting from child maltreatment in the US. Statistics are taken from a wide variety of reports and combined together.

Assumptions are arbitrary and measures are not rigorous, but the total cost still comes to \$US 94 billion annually.

Godenzi, Alberto and Carrie Yodanis, *Male Violence: the Economic Costs. A Methodological Review*, European Council of Europe, Human Rights Section Equality between Women and Men, 1999.

http://www.europrofem.org/02.info/22contri/2.04.en/4en.viol/71en_vio.htm

This paper argues for the importance of studies to measure the costs of male violence. The authors point out methodological problems such as the difference between concept and operation and the need for informed assumptions in costing studies. This is a good discussion of the issues involved in estimating costs and the need to lay down a solid foundation of accurate estimating techniques.

Gould, M.S. and T. O'Brien. *Child Maltreatment in Colorado: The Value of Prevention and the Cost of Failure to Prevent*. Denver: Center for Human Investment Policy, University of Colorado, 1995.

A cost-of-failure analysis of the costs incurred in Colorado in 1994 from failing to prevent child abuse and neglect. It compares program costs with the savings that would accrue from an investment in a home visitation program targeted at high-risk families. All costs are measured from lines in the State budget allocation bill. There are no non-governmental costs included. Direct costs are \$US190 million. Indirect costs are measured as an arbitrary 20% of all state services for problems known to be consequences of abuse in childhood such as teen pregnancy, incarceration, drug abuse, etc. Indirect costs are \$212 million. The cost of new programs would be \$24 million and if they reduced child maltreatment related expenditures by only 6%, the cost would be offset.

Greaves, L., Olena Hankivsky and Joanne Kingston-Reichers, *Selected Estimates of the Costs of Violence Against Women*. London, Ontario: Centre for Research on Violence Against Women and Children Publication Series, The University of Western Ontario, 1995.

This paper measures costs associated with violence against women at the national level in Canada using an accounting model. Some costs of child sexual abuse are also included.

Costs include some aspects of health, social services, criminal justice, and lost productivity. The authors warn that the estimates are partial and preliminary. The total amount is \$CDN 4.7 billion for 1993.

Hartmann, Heidi L., Louise Laurence, Roberta Spalter-Roth and Diana M Zuckerman, *Measuring the Costs of Domestic Violence Against Women and the Cost-Effectiveness of Intervention: An Initial Assessment and Proposals for Further Research*. Washington, D.C.: Institute for Women's Policy Research, 1997.

A good overview of economic issues surrounding measuring the costs of violence against women in the US. An argument is made to develop a standard accounting model to use in measuring direct and indirect costs to society and to use in assessing the cost-effectiveness of interventions. Loss in quality of life is considered rather than pain and suffering, although no measurement is made.

Heise, L. "Violence Against Women: The Hidden Health Burden", *World Health Statistics Quarterly*, 46 (1993): 78-85.

This early paper summarizes international research on gender-based abuse, identifies data gaps and priority areas for research, and discusses methodological issues related to the health consequences of gender violence.

Heiskanen, Markku and Minna Piispa, *The Price of Violence: The Costs of Men's Violence Against Women in Finland*, Statistics Finland and the Council for Equality, 2001.

Making use of their own earlier survey of violence against women in Finland, the authors discuss many issues of violence against women as well as estimating the national costs of violence for 1998. They measured direct costs of health care, social services, police, courts and incarceration. They also included the indirect costs of the value of lost lives, time lost from paid work and volunteer labour and lost income from deaths. The authors caution that lack of good data is a significant problem for estimating costs. The difficulties stem partly from women's reluctance to reveal violence in their lives. The total estimated annual cost of violence against women amounted to the equivalent of \$US 136 million to \$198 million.

Henderson, Monika, *Impacts and Costs of Domestic Violence on the Australian Business/Corporate Sector*, Brisbane: Lord Mayor's Women's Advisory Committee, Brisbane City Council, 2000.

This paper examines the costs of domestic violence to the business/corporate sector in Australia. Data are taken from other studies on the costs of violence and applied to the Australian context. When data reflect severe violence, the authors take half the rate for their estimates of the impact in the business sector. A comprehensive listing is made of all the types of costs borne by the sector, including all direct expenditures, lost productivity, tax share of government provided victim services, and lost profits from reduced income flowing through the economy as a whole. Many of these cost items are not measurable. The total of measurable costs comes to over \$AUST 1.5 billion annually. The authors argue that the cost per victim amounts to \$10,000, so any programs

implemented to reduce violence that cost less than \$10,000 per victim will be cost effective.

“How is Violence Measured?” Inter-American Development Bank, Technical Note 2, 2004.

<http://enet.iadb.org/idbdocswebservices/idbdocsInternet/IADBPUBLICDOC.aspx?docnum=362875>

This report looks at measures of different types of violence in Latin American countries. Recommendations are made to develop ways of measuring violence, to disaggregate data by geographical location, and to conduct periodic violence victimization surveys.

Hyman, Batya, “The Economic Consequences of Child Sexual Abuse for Adult Lesbian Women.” *Journal of Marriage and the Family* 62 (2000): 199-211.

A robust regression analysis looking at US adult lesbian women’s earnings as a function of variables including childhood sexual abuse. The sample was representative across all socio-economic characteristics except sexual preference. Sample size was 1,889 and results showed negative impacts of abuse on health, mental health, educational attainment, and earnings.

Institute for Women of Andalusia, *The Economic and Social Costs of Domestic Violence in Andalusia*, Spain, 2003.

Deloitte and Touche worked in collaboration with Almenara, Estudios Economicos Y Sociales for the Andalusian Institute for Women in measuring the costs of domestic violence for Andalusia, Spain. They employ an itinerary or critical path approach to victims’ use of services. Categories measured include labour market, social services, second generation effects, physical and mental health, and judicial costs. The total is 2.356,8 million Euro, or approximately \$US 2.9 billion in 2003.

Irazuzta, J.E., James E. McJunkin, Kapriel Danadian, Forest Arnold and Jianliang Zhang “Outcome and Cost of Child Abuse.” *Child Abuse and Neglect* 21 (1997): 751-757.

Admissions to a pediatric intensive care unit in the US over 1991 to 1994 are compared to examine the effects of child abuse and the differential costs of treating abuse. While abuse cases only accounted for 1.7% of the total, they showed much higher severity of illness, risk of death, and required significantly more expensive treatment programs.

Johnson, Holly, *Dangerous Domains: Violence Against Women in Canada*, Scarborough, Ontario: Nelson Canada, 1996.

This book provides a comprehensive overview of the literature on all kinds of violence against women, including women’s fear of violence, with a particular emphasis on the results of the 1993 Statistics Canada national survey.

Kerr, Richard and Janice McLean. *Paying for Violence: Some Costs of Violence Against Women in B.C.* Victoria: Ministry of Women’s Equality, Government of British Columbia, 1996.

A comprehensive estimate of the costs associated with violence against women, based on a variety of government databases for 1994/94 in British Columbia, Canada. The study

includes many categories of costs, and compares its results with those of other studies. The total of identified costs are \$CDN 385 million.

KPMG Management Consulting. *Tasmanian Domestic Violence Advisory Committee: Economic Costs of Domestic Violence in Tasmania*. Melbourne: KPMG Management Consulting, 1994.

This study interviews 40 women retrospectively about violence in their lives, their use of local services, and the indirect costs associated with the violence. A spreadsheet for each participant details service usage, as well as who bears the cost: the individual, others or the community. Cost data were collected from the agencies, or a proxy agency was used. All services addressing victims' needs were included. The study considers the impact on children's physical and emotional well-being and services accessed for them. Total costs when extrapolated to all of Tasmania measure \$AUST 17.7 million.

Laing, Lesley, *Australian Studies of the Economic Costs of Domestic Violence*, Australian Domestic and Family Violence Clearinghouse, 2001.

This is a short overview paper that briefly compares six earlier Australian papers measuring the costs of violence. Recommendations are made for future research.

Laing, Lesley and Natasha Bobic, *Economic Costs of Domestic Violence: Literature Review*, Australian Domestic and Family Violence Clearing House, University of New South Wales, 2002.

A comprehensive literature review of Australian and selected international studies measuring the costs of violence against women. It compares methodologies, highlights strengths and limitations of different approaches, and makes recommendations for future research.

Leonard, Helen and Eva Cox (Distaff Associates). *Costs of Domestic Violence*. Haymarket, New South Wales: New South Wales Women's Co-ordination Unit, 1991. This paper reports on a study made for 1990 in New South Wales, Australia. Data came from government sources. Agencies and experts were also canvassed to elicit typical patterns of service usage. Prevalence rates are based on police call-outs. Costs include legal, medical, housing, and lost income. The three-stage model of the effects and costs of violence is pioneered. The total cost is over \$AUST 1.5 billion.

Mackay, Fiona and Chrisma Bould, eds., "The Economic Costs of Domestic Violence", Engender, *Gender Audit 1997*, 1997.

On line: <http://www.wave-network.org/articles/537.htm>

A brief overview of research showing that the health costs and lost productivity costs of women victims of violence in Glasgow is between 12 and 21 million pound.

Extrapolating to the whole of Scotland, the measure would be 84 to 147 million pound.

Miller, Ted. R., Mark A. Cohen and Brian Wiersma. "Victim Costs and Consequences: A New Look." Washington: National Institute of Justice, 1996.

This paper looks at the costs of all crime in the US, not only domestic violence. It estimates tangible costs including criminal process, health care, lost productivity and

income, and other services as well as pain and suffering and homicides. Tangible costs amount to \$US 105 billion, while adding in pain and suffering raises the total to \$450 billion in 1993.

Morrison, Andrew R. and María Beatriz Orlando. "Social and Economic Costs of Domestic Violence: Chile and Nicaragua." In *Too Close to Home: Domestic Violence in the Americas*. Eds. Morrison and Orlando. New York: Inter-American Development Bank, 1999.

This paper examines the effects domestic violence has on women's labour force participation and earnings, use of health services and children's educational attainment in both Chile and Nicaragua. Surveys of 310 and 378 women respectively are compared through regression analysis to examine for the effects of violence in the two countries. Results show abused women earn lower income, use more health services and their children do less well in school to varying degrees in the two countries.

Morrison, Ellen J., *Insurance Discrimination against Battered Women: Proposed Legislative Protection*, 2001, <http://www.law.indiana.edu/ij/v72/no1/morrison.html>
An examination of discrimination by health insurance companies in the US against women victims of domestic violence, and an argument for proposed legislation at the federal level to prevent discriminatory insurance practices.

Mugford, Jane, "Domestic Violence", *Australian Institute of Criminology Violence Today*, 2, (1989). <http://www.aic.gov.au/publications/vt/vt2-text.html>
This is an early overview paper examining the extent of domestic violence in Australia including information on causes and consequences. No measurements are made.

National Centre for Injury Prevention and Control, *Costs of Intimate Partner Violence Against Women in the United States*, Atlanta, Georgia: Centers for Disease Control and Prevention, 2003.

Using the Violence Against Women survey of the US as well as crime statistics on homicides compiled by the FBI, this report measures the costs of injured victims' use of medical care services, lost productivity in the workplace and the home, and homicides. The total cost of the medical services and loss of productive output totals \$US 5.8 billion

Plichta, Stacey, "The Effects of Women Abuse on Health Care Utilisation and Health Status: A Literature Review." *Women's Health Issues* 2 (1992): 154-161.

This is an overview article addressing issues relating to intimate abuse in the US including effects, health care utilization, and detecting of victims in the health care system.

"Prevention Pays: The Costs of Not Preventing Child Abuse and Neglect, April 2001." National Clearinghouse on Child Abuse and Neglect Information, 2001.

<http://www.calib.com/nccanch/pubs/prevenres/pays.cfm>

To promote a greater understanding of the financial costs of child maltreatment compared to the costs of preventative services, this paper reviews four other studies that examine

savings that could accrue from home-visitation programs in four locations in the US in the mid 1990s. All four studies indicate that prevention programs can be cost-effective.

Roberts, G., "Domestic Violence: Costing of Service Provision for Female Victims- 20 Case Histories", in Queensland Domestic task Force, ed., *Beyond These Walls: report of the Queensland Domestic Violence Task Force to the Honourable Peter McKechnie, M.L.A., Minister for Family Services and Welfare Housing*, Brisbane, 1988. The first published work estimating the costs of violence against women in any comprehensive sense, Roberts work is based on surveys of 20 urban women victims of violence in Queensland, Australia. The estimate includes direct services used by the women and their children as well as the loss of income over the lifetime. The average direct cost per victim was \$51,000. The total direct and indirect costs for the sample of 20 were over \$1 million. This figure was extrapolated to the whole population of Queensland, with a total estimate arrived at of \$AUST 108 million for 1988.

Rudman, W.J., and D. Davey, "Identifying Domestic Violence With Inpatient Hospital Admissions Using Medical Records", *Women and Health*, 30 (2000): 1-13. Designed to help health-care professionals in the identification of patients at risk of domestic violence, this paper uses US medical records from 1994 to identify the types and costs of domestic violence, and the demographic characteristics of women at risk. It argues for more attention being paid to identifying victims in coding patient stays.

Shepard, M and Pence, E. 1988, "The Effects of Battering on the Employment Status of Women", *Affilia*, 13 (1998): 55-61. Using regression analysis, the authors compared the employment status of a sample of 71 women victims of domestic violence in the US. They found the women were prohibited from working, lost their jobs, quit their jobs, were absent from work, were late for work, or were unable to attend school as a result of the violence.

Shrader, Elizabeth. "Methodologies to Measure the Gender Dimensions of Crime and Violence." Gender Unit, Poverty Reduction and Economic Management, Latin America and Caribbean Region, The World Bank, July 2001. Focused on Latin American countries, this paper examines many factors contributing to violence of all kinds. It addresses issues of measurement and victim's identification of issues, priorities and solutions. It argues for the use of a crime and violence monitoring index.

Snively, S., The New Zealand Economic Costs of Family Violence. Auckland: Coopers and Lybrand, 1994. This is a comprehensive study of the costs of violence against women in New Zealand for 1993. The total of costs measures at least \$NZ 1.2 billion. The authors use a three-stage model of the cycle of domestic violence: before, during and after seeking help from outside services. Most of the costs are estimated for the second stage. Data are collected from service providing agencies. A spreadsheet model is created to examine the effects of changes in assumptions or new data, and to highlight specific areas of costs for service agencies. Prevalence rates are based on police call-outs and multiples of the same.

Stanko, E.A., Crisp, D., Hale, C. and Lucraft, H., *Counting the Costs: Estimating the Impact of Domestic Violence in the London Borough of Hackney*. Middlesex, UK: Brunel University, 1997.

A thorough study examining selected costs of violence in a London authority. Data were collected from surveys of 107 service providing agencies and 129 women. Prevalence estimates came from the files of key agencies to get a percent of their services provided to victims of domestic violence. Composite cases were compiled based on the survey results and the costs for these 'cases' were estimated. The cases are shown in the report. The total costs to the borough were 7.5 million pounds, and grossed up to the greater London area, the annual costs were 278 million for 1996.

Straus, M. and R.J. Gelles. "The Costs of Family Violence" *Public Health Reports*, 102 (1987): 638-641.

An early paper estimating incidence rates for physical abuse of children and spouses, and drawing attention to the existence of costs of violence.

Straus, Murray, "Medical Care Costs of Intra-family Assault and Homicide", *Bulletin of the New York Academy of Medicine*, 62 (1986): 556-561.

An early paper arguing for the importance of gathering prevalence rates and costs of health care services for adult and children victims of domestic violence.

Sushma, Kapoor, "Domestic Violence Against Women and Girls" United Nations Children's Fund *Innocenti Digest*, No. 6, June 2000.

This report is an international overview of the scope and magnitude of violence against women including types, causes and consequences. Attention is paid to obligations of the state to reduce violence including an integrated approach to strategies and interventions.

Tennessee Economic Council on Women, *Cost of Domestic Violence*, http://www.state.tn.us/sos/ecw/initiatives/domestic_violence.htm

This paper takes a brief look at research on the costs of lost productivity and medical costs for the state of Tennessee. Mention is made of an upcoming research project designed to collect and analyze data beginning in 2004.

Tiefenthaler, Jill, "The Economics of Domestic Violence", in Yoon Jung Park, Joanne Fedler and Zubeda Dangor, (eds.) *Reclaiming Women's Spaces: New Perspectives on Violence Against Women and Sheltering in South Africa*, Johannesburg: Nisaa Institute for Women's Development, 2000.

An overview paper examining the economic literature on violence against women. Economic theory predicts that as a woman's income rises, and as services such as shelters or job readiness training become available, the woman becomes more able to leave her abuser. This increases her threat-of-leaving power, whether she uses the services or not. If the abuser wants her to stay, the threat of her independence makes him more likely to control his violence. Consequently, increased economic independence is seen as a major factor in reducing violence against women. Empirical evidence from a number of studies supports this conclusion.

VicHealth, *The Health Costs of Violence: Measuring the Burden of Disease Caused by Intimate Partner Violence: A Summary of Findings*, Victoria, Australia: Victorian Health Promotion Foundation, 2004. <http://www.vichealth.vic.gov.au/assets/contentFiles/ipv.pdf>

This paper estimates the burden of violence as a health issue in Victoria, Australia. Using data from the Australian Women's Safety Survey and a longitudinal study of women's health, the authors ask how much less disease would there have been in the whole population if there was no intimate partner violence. Findings show even with only major health consequences included, the measure indicated that 9% of all disease in women aged 15 to 44 could be attributed to violence, and 3% for women of all ages. Violence was also found to be the leading cause of death, disability and illness, surpassing obesity, smoking and high blood pressure as contributing factors.

Walby, Sylvia, *The Cost of Domestic Violence*, London: Women And Equality Unit, 2004.

A comprehensive report estimating the costs of domestic violence in Britain. Data come from the British Crime Survey, Criminal Statistics, and reports from agencies. Costs include criminal justice, health, mental health, services for children, housing, civil legal actions, lost output and human and emotional costs. The value of a human life is taken from a report by the Department of Transport studying traffic accidents with a willingness-to-pay method. The total estimate of domestic violence in England and Wales for 2001 was 23 billion pounds of which over 17 billion represents human and emotional costs.

Walker, Edward, et al. "Costs of Health Care Use by Women HMO Members with a History of Childhood Abuse and Neglect." *Arch Gen Psychiatry* 56 (1999): 609-613. A random sample of 1225 women members of an HMO were surveyed about child maltreatment experiences. Their health-care costs were obtained from the HMO automated cost-accounting system. Comparing mean and median results, it was shown that women who were maltreated as children had increased adult medical care costs.

Waters, Hugh, et al., *The Economic Dimensions of Interpersonal Violence*, Geneva: Department of Injuries and Violence Prevention, World Health Organization, 2004. A comprehensive overview paper that provides research results on costs of violence from the international literature. The authors argue for systematic research into the costs of violence that is methodologically rigorous, includes both direct and indirect costs, and is comparable across countries and settings.

Wisner, Catherine, et al. "Intimate Partner Violence Against Women: Do Victims Cost Health Plans More?" *The Journal of Family Practice* 48 (1999): 439-443. A comparison of the total cost of health care services for a group of 126 victims of intimate partner violence compared to 1007 general female enrollees in the health plan for 1994 in Minneapolis and St. Paul, Minnesota. Regression analysis is used to show an annual difference of \$US 1775 more for victims. This represented a 92% higher cost to the plan than non-victimized women.

Yodanis, C.L., Godenzi, A., and Stanko, E.A., “The Benefits of Studying Costs: A Review and Agenda for Studies on the Economic Costs of Violence Against Women.” *Policy Studies* 21(3) (2000): 263-276.

This paper is a review of international research measuring the costs of violence against women. It argues for the usefulness of an economic perspective in tracking changes from interventions, for informing policy discussions, and for increasing data collection and therefore focusing service provision. The authors point out that in a benefit-cost approach to violence, the benefit to males is to control women’s behaviour and remain dominant while the cost to males is small because of the low level of true sanctions.

Appendix 1
Table 2 – Costs of Violence Studies
Chronological listing of papers generating a monetary estimate of costs

Author	Date research refers to	Country	Cost \$AUST	Data used (including sample sizes)	Costs covered	Strengths	Weaknesses
Leonard and Cox, Distaff Assoc	1991 Publication <u>1991</u>	New South Wales, Australia	1.5 billion	-Prevalence based on police call-outs -Records of service providing agencies -Survey of service providing agencies to create case study templates to be used when no data exists. Not clear where per unit costs originate.	Deaths Business: absenteeism, loss of productivity Personal: accommodation, legal, medical, lost income, lost work time Government: healthcare, welfare delivery, accommodation, income, police, courts, victim compensation, interpreters	Uses three-stage adaptation to the model Attempts to show who bears the costs Attempts comprehensive coverage	No prevalence rate Many arbitrary assumptions and guesses about rates and costs Draws conclusions about who bears costs without comprehensive data sets. No differential analysis
Blumel	1992 Publication <u>1993</u>	Australia	\$AUST 620 million	-Original survey of 50 women – 10 victims of physical violence and 40 victims of rape or sexual assault.	Personal: legal, accommodation, courts, emergency services, police, health, counselling, referral, vehicle and personal effects, lost earnings	Surveys 50 women about personal costs, taken as an average over all the years they lived with the violence (case years) Extensive survey and analysis Separates victims by type of violence Includes some costs for perpetrator	No control group Includes transfer payments Grosses up to national figure without representative sample
KPMG	research refers to	Tasmania	\$AUST 4 million	(including sample sizes)	Personal: loss of property, sick leave,	Original survey of victims: oriented to costs	Small scale sample, not representative

	1993 Publication date <u>1994</u>		for 40 women (\$17.67 million for state of Tasmania but not a representative sample)	-Original survey, 40 respondents -Survey of community agencies to provide unit costs	bad debts, change of schools, security measures, legal costs re custody and access Government: crisis lines, police, shelter, ambulance, crisis support services, referral services, housing services.	so asks about services used, when and how often. Careful, rigorous and detailed Solicited service costs per unit directly from agencies.	Retrospective over a long timeframe Prevalence rates are based on previous research Draws conclusions about who bears the costs but without full data Includes transfer payments as costs Grosses up to a state figure without having a representative sample No differential analysis
Author Snively	Date research refers to 1993 - 94 Date of publication <u>1994</u>	Country New Zealand	Cost \$NZ 1.2 to \$1.4 billion	Data used (including sample sizes) -Survey of service providing agencies Typical template of services created Base scenario – prevalence equal to police call-outs Five-times base scenario – multiplies base case by 5 Income foregone scenario – adds lost earnings Includes family violence with child victims	Costs covered Personal: medical care, drugs, refuge, relocation, legal costs, dental care Lost earnings, Deaths Government: justice, social welfare, shelters and crisis agencies, income support, police, courts	Strengths Very comprehensive 3-stage model Sensitivity analysis in spreadsheet form allows testing of assumptions and changing data Held seminars with experts to test assumptions and develop model	Weaknesses No representative sample. Bases prevalence on arbitrary assumption. No differential analysis Includes transfer payments

				-Government documents -prior research			
Author Day	Date research refers to 1993 Date of publication <u>1995</u>	Country Canada	Cost \$CDN 1.5 billion	Data used (including sample sizes) -Violence Against Women Survey VAWS -National statistical agency publications -Government budgets -Provincial health survey -Crime victimization survey -Other research results	Costs covered Short run and long run: Medical, dental, lost time at paid and unpaid work, psychiatry, drug and alcohol abuse, shelters, crisis lines, volunteer time, government support services.	Strengths Clear indication of all assumptions, calculations and data used. Data from all sources is adjusted to the base year Thorough and comprehensive coverage of the areas it covers. Lists many costs including ones that cannot be measured.	Weaknesses Does not cover all costs to society No differential analysis
Author Greaves et al	Date research refers to 1993 Date of publication <u>1995</u>	Country Canada	Cost \$CDN 4.2 billion	Data used (including sample sizes) -VAWS – 12,300 sample -Government statistics -Prior research results -Expert opinion	Costs covered Personal: lost earnings and unpaid work, accommodation, relocation, self-defense Deaths Government: lost tax revenues, courts, incarceration, police, legal aid, victim compensation, medical, shelters, counselling, public awareness, research, volunteer	Strengths Many small estimates Good data sources Good attempt at comprehensive coverage	Weaknesses Partial estimates only, not comprehensive Preliminary research, rough-and-ready numerical analysis Arbitrary assumptions that are not supported No differential analysis

					hours		
Author Kerr and McLean	Date research refers to 1994 - 95 Date of publication <u>1996</u>	Country British Columbia, Canada	Cost \$CDN 385 million	Data used (including sample sizes) -VAWS -Provincial government ministry budgets -National crime survey	Costs covered Policing, corrections, compensation, social programs for victims and perpetrators, mental health, alcohol and drug treatment, shelters, loss of paid and unpaid worktime.	Strengths Clear indication of calculations, assumptions and data used. Comprehensive analysis of costs it covers. Compares own results with other Canadian studies	Weaknesses No personal or business costs. Covers government sector only No differential analysis
Author Miller et al	Date research refers to 1990 Date of publication <u>1996</u>	Country USA	Cost for all crime - \$US 105 billion tangible, \$450 billion including intangibles	Data used (including sample sizes) -FBI Uniform Crime Reports (UCR) -National Crime Victimization Survey (NCVS) -Other nationally representative sample surveys -Prior research	Costs covered – All crime, not limited to violence or women victims Property damage and loss, medical care for injuries, insurance, victim services, lost earnings and housework Pain and suffering, and death	Strengths Provides a comprehensive listing of potential costs Good data, careful analysis Includes pain and suffering, and deaths	Weaknesses Is not able to estimate many costs in its comprehensive list. Details of assumptions and estimates are not shown in the text Some weak assumptions and rough estimates No differential analysis
Author Stanko et al.	Date research refers to 1996 Date of publication <u>1998</u>	Country England, borough of Hackney, Greater London area	Cost 7.5 million pound for Hackney 278 million for Greater London	Data used (including sample sizes) -Original survey of 107 service providers 26 case studies, composites Prevalence found from trawling key agency files to find	Costs covered From service providers: police, courts, legal costs, divorce, public- sector housing, shelter, social workers, physicians, emergency ward, health office	Strengths Good sociological research Good detail in surveys and analysis Assumptions are all shown and supported. All numbers used are well integrated with the literature. Test prevalence rates they	Weaknesses No representative sample Prevalence based on one paper, McGibbons, itself a London borough research project that sampled 281 people. No differential analysis

				<p>the % of caseload resulting from violence</p> <p>-Original survey of 129 women in a Doctor's office waiting room.</p> <p>-Results from other research, specifically McGibbons</p>		<p>generate to accept them and to support the use of the source of their figures.</p>	
Author Faley et al.	Date research refers to 1988 Date of publication <u>1999</u>	Country USA – US Army – Business sector	Cost \$US 250 million – least cost, 1994 dollars	Data used -Original survey, 2079 respondents including males and females US Army budgetary documents	Costs covered Productivity loss, absenteeism, separation, replacement, transfer and other	Strengths Original survey oriented to costs, excellent questions Robust findings Little need for assumptions taken from other research papers	Weaknesses Not a representative sample, so cannot extrapolate
Author Henderson & Assoc	Date research refers to: unclear Date of publication <u>2000</u>	Country Australia	Cost \$AUST 1.5 billion	Data used (including sample sizes) -Extrapolations from relevant Australian and international research findings -Consultations with relevant organizations and individuals -Prior research findings	Costs covered – Business sector Direct: absenteeism, turnover, lost productivity Indirect: tax share of relevant government services, foregone profits from lost income and changes in expenditure patterns of victims, perpetrators and others.	Strengths Addresses business sector	Weaknesses

Authors Heiskanen and Piipisa	Date research refers to: 1998 Date of publication <u>2001</u>	Country Finland	Cost Direct costs 296FIM Indirect costs 360 – 660 FIM 5.9 FIM = 1 Euro	Data used (including sample sizes) -Refers to survey of 7000 women undertaken for earlier study “Faith, Hope and Battering” by same authors. -Prior research findings of other authors -Statistics from government databases and agency budgets, activity reports, etc. -Interviews with experts to obtain percentage of service use attributable to violence against women -Includes 2 case studies	Costs covered Direct: Health including physician visits, hospital care and medication. Shelters, crisis services, social work, therapy Police, trial, prison Other Indirect: deaths, using human capital approach	Strengths Discusses the hidden nature of male dominance in private places. Includes specific information about many cost categories that do not have enough data to estimate and include in the total Assumptions and calculations are shown clearly Includes services provided by churches Includes information gathered from experts in the field Comprehensive analysis of the areas it covers, including the costs of volunteer time in agencies Good discussion of the difficulties in costing exercises	Weaknesses Does not outline data used so no sample size given. Not clear if sample is representative of the Finnish population or not. Not a statistically reliable way of estimating percentages of attributable service use (relying on the testimony of one expert) Takes an average if they have widely differing values for data on a category without examining to see why the values differ so dramatically. Different values may reflect differences in units measured. Measures service costs as time only without adding anything for administrative costs
Author Deloitte and Touche, Almenara	Date research refers to 2001	Country Andalusa, Spain	Cost 2.356 million Euros	Data used (including sample sizes) -300 women who	Costs Covered Six areas – social, health, judicial, psychological,	Strengths Each area has been estimated by a specialist from that area	Weaknesses Only includes low-income women who leave the abusive

Estudios Economicos Y Sociales	Date of publication <u>2002</u>		Includes intangibles and effects on children	left their partners and stayed in state provided shelters	economic independence or employment, and educational	Uses itinerary or critical path for service use, similar to three-stage model adaptation.	situation. Sample of 300 not statistically representative. Looks at partner and ex-partner violence only Draws conclusions about the percent of costs born by different groups
Author National Center for Injury Prevention and Control (NCIPC)	Date research refers to 1995-6 Date of publication <u>2003</u>	Country USA	Cost \$US 5.8 billion	Data used (including sample sizes) -NVAWS sample size 8000 – looking only at women who were injured. -Medical Expenditure Panel -Survey -Medicare file	Costs covered Medical costs from injuries only Lost time at paid and unpaid work deaths	Strengths Good data sets Rigorous results	Weaknesses Title suggests it includes more than medical injuries and lost time only Not very comprehensive
Author Bowlus et al	Date research refers to 1998 Date of publication <u>2003</u>	Country Canada	Cost \$CDN 15.7 billion Measuring the costs of child abuse in children and adult survivors	Data used (including sample sizes) Data used: - Provincial health survey - Government statistics – agency reports –previous research	Costs covered Very comprehensive listing of police, legal, penal, probation, victim compensation, special education, health, social services, lost earnings, and personal costs	Strengths Very robust and careful, demonstration of calculations in appendix, special survey of personal costs of 19 victims, uses attributable fractions method	Weaknesses No measure of business sector costs
Author Access Economics	Date research refers to 2002 – 03 Date of	Country Australia	Cost \$AUST 8.1 billion Includes all domestic	Data used (including sample sizes) -Women’s Safety Survey	Costs covered Includes pain and suffering, and death Government: Health, justice, education,	Strengths Very comprehensive discussion and analysis Good data Addresses efficiency costs	Weaknesses Based on economic concepts rather than social divisions. Not clear how some

	publication <u>2004</u>		violence regardless of the sex of the victim or perpetrator. Includes the costs of children witnessing adult violence	-Australian longitudinal study on Women's Health – created a profile of conditions associated with domestic violence since data didn't have victims separated out -Results from prior research	community services, accommodation, Personal: property replacement and bad debts, lost time at paid and unpaid work Business costs of lost productivity, search and hiring, etc. Includes lost economies of scale in households	of Transfer costs appropriately Good application of economic theory Provides recommendations on wording of questions for future survey design	numbers are generated. Analysis not always shown.
Author Walby	Date research refers to 2001 Date of publication <u>2004</u>	Country UK	Cost 5.8 billion pound direct and indirect costs, 23 billion including pain and suffering	Data used (including sample sizes) -National Crime Survey including Intimate Partner violence (BCS IPV) – 40,000 sample -Department of Transport reports on accidents and injuries -Service providing agency reports -Prior research findings	Costs covered Very comprehensive listing of criminal justice, health, social services, housing , and civil legal costs Loss of productivity and earnings to employers and employees Pain and suffering	Strengths Very comprehensive and careful Very robust findings Combines cost of violence literature with crime literature Uses methodologies tied to prior research papers and shows it very clearly	Weaknesses No attributable fractions