

ECONOMIC EFFECTS OF INTERVENTIONS TO REDUCE INTERPERSONAL VIOLENCE

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Abstract:

Violence is defined as: "The intentional use of physical force or power, threatened or actual, against oneself, another person, or against a group or community that either results in or has a high likelihood of resulting in injury, death, psychological harm, maldevelopment or deprivation"¹¹

This definition explicitly includes psychological harm and deprivation among the effects of violence, with corresponding implications for calculation of the economic effects of violence. While there is general agreement that psychological distress is an important component of the economic burden of violence, most studies have not quantified it in calculating the economic effects of violence. Among those that have, there is little agreement in the methodologies used.

This document defines interpersonal violence to include violence between family members and intimates, and violence between acquaintances and strangers that is not intended to further the aims of any formally defined group or cause. Within the broad category of interpersonal violence, family and partner violence includes child abuse, intimate partner violence and elder abuse. Acquaintance and stranger violence includes stranger rape or sexual assault, youth violence, violence occurring during property crimes and violence in institutional settings such as schools, workplaces and nursing homes. Self directed violence, war, state-sponsored violence and other collective violence are specifically excluded from these definitions.

To assess the economic dimensions of interpersonal violence, it is necessary to understand the causes and identify the factors that increase the likelihood of people becoming victims and perpetrators of such violence. No single factor can explain why one individual, community or society is more or less likely to experience interpersonal violence. Instead, the Report showed that interpersonal violence is a complex phenomenon rooted in the interaction of many factors ranging from the biological to the political. To capture this complexity, there was adopted an ecological model that organizes the risk factors for interpersonal violence into four interacting levels: the individual level, relationships, community contexts and societal factors.

¹¹ Ola W. Barnett, Cindy Miller-Perrin, *Violence in Family*, Harvey Publishing House, London 2002, p.34-36

Key words: economical violence, maldevelopment, society, economical dimensions, intrapersonal violence.

This document classifies subcategories of interpersonal violence, with corresponding definitions, as follows:

- × Child abuse and neglect: "All forms of physical and/or emotional ill-treatment, sexual abuse, neglect or negligent treatment or commercial or other exploitation, resulting in actual or potential harm to the child's health, survival, development or dignity in the context of a relationship of responsibility, trust or power"¹
- × Intimate partner violence: Behavior within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse and controlling behaviors. The term covers violence by both current and former spouses and partners. Though women can be violent toward men in relationships, and violence exists in same-sex partnerships, the largest burden of intimate partner violence is inflicted by men against their female partners.
- × Abuse of the elderly: "A single or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust which causes harm or distress to an older person, including physical, psychological or sexual abuse, and neglect."
- × Sexual violence: "Any sexual act, attempt to obtain a sexual act, unwanted sexual comments or advances, or acts to traffic, or otherwise directed, against a person's sexuality using coercion, by any person regardless of their relationship to the victim." This definition includes rape, defined as physically forced or otherwise coerced penetration of the vulva or anus, using a penis, other body parts or an object.
- × Workplace violence: Violence committed in a place of employment.
- × Youth violence: Violence committed by or against individuals between the ages of 10 and 29.
- × Other violent crime.

1. An ecological framework for assessing the economic dimensions of interpersonal violence

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¹ Donileen R. Loseke, Richard J. Gelles, Mary M. Cavanaugh, *Child Abuse and Drugs*, Paperback Publishing, New York, 2003, p.58

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1.1. Ecological model for understanding interpersonal violence

Individual-level risks include demographic factors such as age, income and education; psychological and personality disorders; alcohol and substance abuse; and a history of engaging in violent behavior or experiencing abuse. At the relationship level, factors such as poor parenting practices and family dysfunction, marital conflict around gender roles and resources, and associating with friends who engage in violent or delinquent behavior increase the risk for most types of interpersonal violence.

The community level refers to the contexts in which social relationships occur such as neighborhoods, schools, workplaces and other institutions. Poverty, high residential mobility and unemployment, social isolation, the existence of a local drug trade, and weak policies and programs within institutions increase the risk of interpersonal violence.

Societal-level risks are broad factors that create a climate in which interpersonal violence is encouraged, including economic, social, health and education policies that maintain or increase economic and social inequalities; social and cultural norms that support the use of violence; the availability of means (such as firearms) and weak criminal justice systems that leave perpetrators immune to prosecution.

1.2. Societal Community Relationship Individual

Interventions to prevent interpersonal violence are likewise usefully categorized

by the ecological model. Based on findings, interventions shown through scientific evaluation to be of proven or promising effectiveness in preventing interpersonal violence include the following: Approaches for changing individual behavior include pre-school enrichment and social development programs, as well as vocational training and incentives to complete secondary schooling. These are designed to ensure academic success, manage anger and build skills, and are effective in preventing youth violence. Similar life-skills and educational approaches around issues of gender, relationships and power have been used to address physical and sexual violence against women. Effective treatment and counseling can reduce the potential for further physical and psychosocial harm after interpersonal violence has been experienced. Relationship-level interventions include those delivered in early childhood, such as parenting programs, the provision of support and advice through home visitation in the first 3 years of a child's life, and family therapy for dysfunctional families. These types of approaches, for instance, have been associated with reductions in child abuse and with long-term reductions in violent and delinquent behavior among young people. Strong mentoring is another approach.

Community-level interventions include reducing the availability of alcohol; changing institutional settings - e.g. schools, workplaces, hospitals and long-term care institutions for the elderly - by means of appropriate policies, guidelines and protocols; providing training to better identify and refer people at-risk for interpersonal violence; and improving emergency care and access to health services.

At the societal level, promising interventions include providing accurate public information about the causes of interpersonal violence, its risks and its preventability; strengthening law enforcement and judicial systems; implementing policies and programs to reduce poverty and inequalities of all kinds; improving support for families; and reducing access to firearms and other means of violence. Experiences demonstrating the economic effects of interventions directly intended to reduce interpersonal violence. The effects on interpersonal violence of economic factors at the community and societal levels, and of government policies to address them.

Economic theory predicts that criminal behavior will respond to incentives, including the threat of punishment. Becker (1993) initiated a line of research using a general cost-benefit framework to model criminal's responses to economic incentives.¹

2. Types of costs

Studies documenting the economic effects of interpersonal violence have used a broad range of categories of costs. Much of the difference in terms of the overall estimates made by the studies reviewed in this report was due to the inclusion or exclusion of different categories of costs, rather than to different methodologies in tracking costs.

2.1 Costs and benefits of interpersonal violence

As shown in Figure 2, cost categories can be broadly grouped into direct costs and benefits - those resulting directly from acts of violence or attempts to prevent them - and indirect costs and benefits. The most commonly cited direct costs were medical care and the costs of the judicial and penal systems – policing and incarceration. Indirect costs included the long-term effects of acts of violence on perpetrators and victims, such as lost wages and psychological costs, also referred to as pain and suffering (Hornick, Paetsch & Bertrand, 2002)². The calculation of psychological costs was a common practice in legal cases seeking to assess the monetary value of reimbursement to victims of violence. Psychological costs were generally significantly greater than the direct economic losses incurred by victims (Miller, Cohen & Rossman, 1993)³. Some studies attempted to place a value on the negative affect of violence on housing values - a cost to society. For

¹ Javad H. Kashani, *A Framework on Economic incentives level*, Becker Publishing House, New York, 1998, p.114

² Nicholas Bala, Joseph P. Hornick, Howard N. Snyder and Joanne J. Paetsch, *The International Journal of Children's Rights*, Miller and Miller Publishing House, New York, 2003, p.67

³ M. Cohen, T. Miller, and S. Rossman, *Victim costs of violent crime and resulting injuries*, Miller and Miller Publishing House, New York, 2000, p. 87-89

example, in the USA, a doubling in homicide rates was associated with a 12.5% decline in property values. Other indirect cost categories quantified the effects of violence beyond the immediate perpetrators and victims - for example, a negative impact on investment in countries with high rates of violence and higher insurance rates for all of society.

- × **Interpersonal violence**
 - Child abuse and neglect
 - Intimate partner violence
 - Elder abuse
 - Sexual violence
 - Workplace violence
 - Youth violence
 - Other violent crime
- × **Direct costs and benefits**
 - Costs of legal services
 - Direct medical costs
 - Direct perpetrator control costs
 - Costs of policing
 - Costs of incarceration
 - Costs of foster care
 - Private security contracts
 - Economic benefits to perpetrators
- × **Indirect costs and benefits**
 - Lost earnings and lost time
 - Lost investments in human capital
 - Indirect protection costs
 - Life insurance costs
 - Benefits to law enforcement
 - Productivity
 - Domestic investment
 - External investment and tourism
 - Psychological costs
 - Other non-monetary costs

2.2 Economic evaluation of interventions

The economic evaluation of interventions is undertaken to guide decision making so that scarce resources can be allocated in the most effective way. Accordingly, one of the main principles of economic evaluation is that it should involve a comparison of the costs and benefits of multiple options (Gold, Siegel & Weinstein, 2001)¹. An economic evaluation can be conducted from a variety of perspectives, such as societal, sectorial or organizational. Each perspective differs in the costs that are selected for evaluation. The selection of a perspective will

¹ Milton C. **Weinstein**, PhD, *Evaluation and costs*, Miller and Miller Publishing House, New York, 2004, p. 115

largely depend on the primary stakeholder; but when multiple major stakeholders are present, as often is the case, it is not uncommon to conduct an economic evaluation from multiple perspectives.

A range of economic analyses have commonly been used for comparing violence interventions, including cost-utility analysis, cost-benefit analysis and cost effectiveness analysis.

The type of evaluation conducted will depend on the outcome indicator used – for example, quality-adjusted life years, monetary units or cases averted. While intervention-specific indicators allow for more accurate assessments of particular interventions, they also limit the ability of making cross-intervention comparisons. For example, if intervention A has a ratio of \$0.01 per rehabilitation session attended, and intervention B has a ratio of \$10 per crime averted, it is difficult to determine which intervention is a better use of resources. Therefore, when choosing an outcome indicator, it is essential to consider all of the plausible comparisons so that the evaluation can be effectively used as a decision-making tool (Drummond & McGuire, 2001).

2.3 Intervention Costs

Programs costs arise from the development and implementation of interventions aimed at reducing the burden of interpersonal violence. This will include the costs of all inputs - both fixed capital investments and recurrent programs costs - necessary to provide the intervention. Common examples of such costs include operating costs, labor costs and capital costs. Programs costs are especially important when conducting economic evaluations to compare interventions, since these costs will likely vary between interventions and can greatly influence their relative cost-effectiveness.

Therefore, when reading the later sections in this report regarding the benefits of individual interventions, particular scrutiny should be given to their associated programs costs. From an economic perspective, the reduction of direct and indirect costs resulting from an intervention can be referred to as the benefits of that intervention. Programs costs, however, can be thought of as the investment necessary to achieve those benefits. Therefore, programs costs will most often be found in the numerator of a cost-effectiveness analysis (as costs), whereas the reduction of direct or indirect costs will be found in the denominator (as benefits).

2.4 Intervention Benefits

A wide variety of indicators can be used to measure the benefits of an intervention, and their selection will largely depend on the goals of that intervention. For example, a violence prevention intervention could be measured in terms of saved lives or violent acts averted, while an intervention targeting prior offenders could be measured by recidivism rates. Less straightforward, however, is the measurement of the benefits gained by interventions aimed at the victims of violent acts. An indicator for this type of intervention not only would have to take into account its impact on the quality of life of the victim, but should also be a metric that allows for comparison between interventions.

The basic concept is straightforward. Utility scores for particular health states are first elicited from members of the targeted population. Health utility scores can range between 0 and 1, where 0 is the equivalent of being dead and 1 represents perfect health, although some health states are regarded as being worse than death and have negative valuations. These scores can be elicited in a number of ways, but the most commonly used are the time-tradeoff, standard gamble, and visual analogue methods. The amount of time spent in a particular health state is then weighted by the utility score attributed to that health state. A perfect health (utility score 1) of 1 year would equal 1, but 1 year in a health state with half of that utility (utility score .5) would equal 5. Thus, an intervention that generates 4 additional years in a health state valued at 0.75 will generate 1 more than an intervention that generates 4 additional years in a health state valued at 0.5. The use of it as an outcome indicator for interventions aimed at victims of violence has so far been limited. Therefore, further research needs to be conducted to determine the feasibility as well as the appropriate methodology for collecting health utility scores from victims of violence. In addition, standardized utility scores - similar to the "EuroQol" survey for health states - for the different types and degrees of violence should also be developed. Evaluations expressed in other units, such as cost per case averted, could then be modeled to derive a cost per QALY ratio. The overall benefit of this research would be the establishment of a common metric to compare the effectiveness of a wide range of interventions, including violence prevention, offender rehabilitation and victim counseling.

2.5 Key methodological issues

In addition to differences in terms of the categories of costs and benefits included, there were several other methodological issues where there were significant disparities among the studies reviewed. There were important differences in how rates of interpersonal violence were estimated. Sources for estimates included crime reports, hospital records and household surveys. Substantial numbers of violent acts - particularly intimate partner violence - go unreported and untreated. As a result, all of these sources were likely to result in of the true incidence of violence. As with any attempt to quantify the costs of morbidity and mortality, a principal methodological difference was in the dollar values assigned to a human life lost productive time and psychological distress. Another important difference among the studies was the varied perspective from which costs were calculated.

The majority of the studies of the costs of violence used a societal perspective - in other words, in principle all costs were included whether they accrued to the victim, the perpetrator, a third party payer or society at large. Several studies, however, included only costs to the victims, without counting the social costs of prevention, law enforcement, incarceration and lost productivity.

A further key methodological difference among studies was the time frame used to calculate costs. Most of the cost estimates of the aggregate economic losses caused by violence were for a 1-year time period. But the time frame varied, making direct comparisons difficult. Studies undertaken from the individual

perspective often calculated direct and indirect costs for the lifetime of the individual.

Nearly all studies that calculated costs and benefits beyond a 1-year time frame used some kind of discount rate to estimate future costs and benefits - based on the principle that humans value consumption and quality of life in the present more than they do an equivalent amount of consumption in the future. This concept is rooted in uncertainty about the future - making it more desirable to consume or benefit from life in the short-run than to wait for the equivalent amount of consumption in the future. For economists, the concept of consumption is most often considered equivalent to and measurable by the level of expenditures for an individual or a household. However, the concept of quality of life itself was not consistently defined in the economic literature; generally it was equated with individuals' willingness to pay for improvements in their lives, whether such improvements were material or intangible.

3. The value of a human life

Among studies that quantify the value of lost human life, there is considerable variation in the monetary value assigned to one life. The value of life is most commonly calculated using estimates of the quality of life, wage premiums for risky jobs, willingness to pay for safety measures and individual behavior related to safety measures such as using seatbelts.

The values used among studies reviewed in this document ranged from \$3.1 million to \$6.8 million. These estimates are in line with those generally used in the literature. Miller (1989) reviewed 29 cost-benefit studies and found that the mean value given to a human life in these studies was \$4.2 million. Fisher, Chestnut & Violette (1989) reviewed 21 studies and found a range of \$2.6 million to \$13.7 million. Walker (1997) used a figure of \$602 000, but this did not include the costs of the judicial system or psychological costs.

Finally, Viscusi (1993) examined 24 studies using wage-risk trade-offs to estimate the value of life. Most of these studies placed the value of life between \$4.0 million and \$9.4 million. Viscusi also pointed out that risk was a less robust predictor of wage levels than other factors, particularly education.

The discount rates used in the studies reviewed here ranged from 2.0% to 10%. It should be noted, however, that only a small proportion of the studies reviewed actually gave the discount rates they used, further complicating comparison of the findings between them. The United States Panel on Cost-Effectiveness in Health and Medicine has recommended using a real rate of 3.0% for cost evaluations in health care. This rate reflects a wide range of studies documenting individuals' preferences for present consumption compared to future consumption and interest rates for private investment. In theory, both of these factors influence the discount rate for future costs and benefits in the context of financial and health-related gains and losses.

As stated above, monetary values in this document have been converted to 2001 US dollars to enable comparisons and to adjust for inflation and varying exchange rates. Values expressed in other currencies in original documents, and US

dollar values from previous years, have been converted to 2001 US dollars using the US consumer price index and applicable international exchange rates from the year of the original estimates. Costs expressed as a percentage of the gross domestic product were calculated using the gross domestic product from the year the costs were reported.

4. Violent behavior and related factors Economic variables

- × Violence: interpersonal violence, family Costs: cost-effectiveness, cost-benefit
- × Violence, partner violence, domestic violence
- × Abuse: child abuse, domestic abuse, Economics: economic policy partner abuse, girl abuse
- × Assault Benefits
- × Homicide Investments
- × Injury and intentional injury Human capital
- × Firearms Expenses

After the review, a total of 119 studies were retained, of which 54 are from the peer reviewed literature and 65 are not peer reviewed. Of these studies, 79 pertain to the first theme of the review - i.e. the economic effects of interpersonal violence. There are 27 studies relevant to the second theme – the economic effects of interventions intended to reduce interpersonal violence - and 13 pertain to the third theme - the effects of economic conditions and policies on interpersonal violence. The contents of these studies were systematically abstracted using the information categories listed in Appendix 3.

5. Characteristics of included and excluded literature

While 119 studies were retained for analysis in this review, a total of 248 were considered based on the keywords described in the search strategy. As a relatively large proportion of all studies examined was excluded, it is important to describe in further detail the exclusion criteria and the characteristics of excluded studies so that, ideally, future research into the economic effects of interpersonal violence might follow more consistently the characteristics of the included studies.

A clearly measurable costing component was a key prerequisite for inclusion in the review. Whereas searches of the social science and policy literature yielded a bounty of research examining various aspects of violence - including strategies for prevention, social environments that foster violence, roles of various stakeholders in violence prevention, and the relationship between violence and social capital - these studies did not generally determine direct or indirect costs related to interpersonal violence. The strength of much of this social science literature is a testament to the importance of considering sociopolitical variables and their relationships with violence and violence prevention. However, the relative lack of economic data on actual monetary costs - direct or indirect - highlights an essential area for increased attention, given the importance of costing data in any accurate reflection of the burden of violence. A number of studies based on theoretical models predicting violence were likewise excluded if they did not have an empirical component. It is clear from the review that data on economic

dimensions of interpersonal violence from low- and middle-income countries are scarce. Much of the raw data from high-income countries have been extracted from central government sources, such as the United States Department of Justice and the Australian Institute of Criminology. A partial explanation for the lack of costing data from low- and middle-income countries is the absence of reliable data collection mechanisms from government sources, leaving little from which researchers can examine trends and draw conclusions. Furthermore, a significant portion of the costing data has been extracted from hospital-based accounting and recordkeeping systems - areas in which lower income countries are at a significant disadvantage.

We have presented here a range of costing data to accurately reflect the available literature and have pointed out where there are possible variations in the quality and rigor of the included studies. The discussion of the economic correlates of violence briefly reviews key sociological literature relevant to this field and only provides a glimpse into the extensive literature on the relationship between interpersonal violence and factors such as economic inequality, employment rates and welfare expenditure.

A total of 119 studies and documents discussing the costs of violence were retained for this review: 54 are from the peer reviewed literature and 65 are from other sources, including governments and international organizations.

Because no systematically documented studies of the economic effects of abuse of the elderly were found, this category has been dropped from the review.

Bibliography:

1. Donileen R. Loseke, Richard J. Gelles, Mary M. Cavanaugh, *Child Abuse and Drugs*, Paperback Publishing, New York, 2003
2. Javad H. Kashani, *A Framework on Economic incentives level*, Becker Publishing House, New York, 1998
3. M. Cohen, T. Miller, and S. Rossman, *Victim costs of violent crime and resulting injuries*, Miller and Miller Publishing House, New York, 2000
4. Milton C. Weinstein, PhD, *Evaluation and costs*, Miller and Miller Publishing House, New York, 2004
5. Nicholas Bala, Joseph P. Hornick, Howard N. Snyder and Joanne J. Paetsch, *The International Journal of Children's Rights*, Miller and Miller Publishing House, New York, 2003
6. Ola W. Barnett, Cindy Miller-Perrin, *Violence in Family*, Harvey Publishing House, London 2002