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Estimating the Financial Costs of Crime Victimization

Final Report

**Prepared for
The National Institute of Justice**

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Abstract

Despite reductions in U.S. crime rates in recent decades, crime victimization continues to be a pressing problem with enormous societal costs. Currently available national estimates of victimization costs are in the hundreds of billions of dollars each year – equivalent to between 2 percent and 6 percent of the nation’s gross domestic product. Understanding the costs of victimization and the components that comprise them can help policymakers and practitioners use resources more efficiently.

This project, conducted by the Justice Research and Statistics Association (JRSA) in partnership with the Urban Institute (Urban) and the National Center for Victims of Crime (NCVC), is an assessment of the field of cost of victimization research. The product is a menu of recommendations for future research studies and practitioner tools to advance the field. One objective of the project was to keep the focus squarely on the victims, and consider what information is most needed by those who serve them. Relatedly, another objective was to recognize that even if the proximate victim is a business, the government, or non-profit organization, individuals still suffer.

Given the victim-centered focus, the project team conducted several primary data collections designed to obtain input from practitioners and victims about their experiences and needs. Focus groups were conducted with three practitioner groups: Victims of Crime Act (VOCA) compensation and assistance administrators, State Administering Agency (SAA) and state Statistical Analysis Center (SAC) directors, and civil attorneys who pursue tort claims for damages for crime victims. As well, the project team conducted a nationwide survey of victim service providers and a smaller survey of victimization survivors. The project team also re-framed the taxonomy of victimization costs pioneered and revised by Cohen over the years (Cohen, 2005, e.g.) from the perspective of various practitioner users – based on who covers different costs – and adds factors that may increase or decrease costs they may be estimating. The project team also conducted a literature review that consists of two major sections: one focused on how costs of victimization are estimated and the other on estimation methods and data sources concerning the incidence, prevalence, and concentration of victimization.

The data collection activities and literature reviews, combined with extensive input from an advisory board of experts throughout the project, inform the menu of recommendations proposed in Volume III. These focus on topical areas where more information is needed; methodological recommendations to improve estimates; and practitioner resources and tools to help disseminate research developments, assist in calculating local estimates, and better equip practitioners to communicate and use victimization cost estimates effectively in the field.



Acknowledgements

This project was a team effort that would not have been possible without the input and dedication of numerous individuals. The Justice Research and Statistics Association (JRSA) and our partners on this project, Urban Institute (Urban) and National Center for Victims of Crime (NCVC), would first like to thank the National Institute of Justice for the opportunity and the funding to do this work, and Amy Leffler specifically for her guidance throughout the project from launch to completion. Similarly, we thank Heather Warnken of the Office for Victims of Crime for her shepherding of this initiative and her provision of feedback, especially for always steering our focus back to the human side of what can quickly turn into abstract calculation exercises.

We next want to thank our Advisory Board: Mark Cohen of Vanderbilt University, Ted Miller of the Pacific Institute for Research and Evaluation (PIRE), Jonathan Caulkins of Carnegie Mellon University, Michelle Garcia of the DC Office of Victim Services and Justice Grants, Sarah MacLellan of the United States Attorneys Office in Washington, DC, Brian Yates of American University, Dean Kilpatrick of the Medical University of South Carolina, Lynn Langton of the Bureau of Justice Statistics, Jeffrey McLeod of the National Governor's Association, and Kermit Crawford of the Boston University School of Medicine. This team of experts generously gave us considerable input, feedback, thoughtful consideration, and guidance on the project's data-gathering activities, literature reviews, all aspects of the final recommendations, and on this report. Without the input from this team of the leading experts in the fields of victimization and cost estimation from beginning to end, this project would not have been possible.

The project team would also like to thank several individuals that provided assistance at various points throughout the project, including Rachel Ferris, Catherine Godwin, Bailey Maryfield, Brad Brick, the service providers that agreed to help us distribute our survey of crime survivors, and our focus group participants for their eagerness to contribute to this work.



Executive Summary:

Estimating the Financial Costs of Crime Victimization

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Executive Summary

Overview

Despite reductions in U.S. crime rates in recent decades, crime victimization continues to be a pressing problem with enormous societal costs. Currently available national estimates of victimization costs are in the hundreds of billions of dollars each year – equivalent to between 2 percent and 6 percent of the nation’s gross domestic product (Chalfin, 2014). Understanding the costs of victimization and the components that comprise them can help policymakers and practitioners use resources more efficiently (Wilson & Krsulich, 2011).

This project, conducted by the Justice Research and Statistics Association (JRSA) in partnership with the Urban Institute (Urban) and the National Center for Victims of Crime (NCVC), is an assessment of the field of cost of victimization research and a menu of recommendations for future research to advance the field. One objective of the project was to keep the focus squarely on the victims, and consider what information is most needed by those who serve them. Relatedly, another objective was to recognize that even if the proximate victim is a business, the government, or non-profit organization, individuals still suffer as when insurance fraud drives up insurance rates or when taxpayers foot the bill when contractors defraud the government.

Given the victim-centered focus, the project team conducted some primary data collections, which are described in Volume I. These data collections were designed to obtain input from practitioners and victims about their experiences. Focus groups were conducted with three practitioner groups: Victims of Crime Act (VOCA) compensation and assistance administrators, State Administering Agency (SAA) and state Statistical Analysis Center (SAC) directors, and civil attorneys who pursue tort claims for damages for crime victims. As well, the project team conducted a nationwide survey of victim service providers and a smaller survey of victimization survivors. The insights gained from these primary data collection efforts are presented as part of Volume I of this report.

Volume I also contains a presentation of the taxonomy of victimization costs pioneered and revised by Cohen over the years (Cohen, 2005, e.g.). The presentation of the taxonomy is reframed from the perspective of various practitioner users – based on who covers which proportions of different costs – and adds factors that may increase or decrease costs they may be estimating. It is presented as a reference for use with the remainder of the report.

The project team also conducted a literature review, which is provided in Volume II. The literature review consists of two major sections. The first surveys the state of the literature on how costs of victimization are estimated. The second focuses on estimation methods and data sources concerning the amount of victimization, including the incidence, prevalence, and concentration of victimization, both generally and in relation to different victimization and subpopulation types. Volumes I and II then inform a set of research recommendations, which are provided in Volume III.

Initially, the aim of the project was to produce a recommendation for the design of one large new study of victim costs. However, it soon became clear that the existing literature has multiple gaps that cannot be filled through a single study. Moreover, cost-of-victimization estimates are used for multiple policy purposes, such as gauging the severity of victimization relative to other social problems, informing funding decisions about victim compensation and assistance, and informing government spending on crime prevention efforts.

Because different limitations of existing estimates are more consequential for some policy uses than for others, addressing gaps in the literature may be prioritized differently by different consumers with different policy interests. Therefore, with the National Institute of Justice's input and approval, rather than producing a single, large research design, Volume III contains a set of research recommendations that would each fill different gaps in the existing literature thereby enhancing our understanding of the costs of victimization and the utility of cost estimates for a broad range of users and decision-making contexts. These recommendations essentially provide NIJ and the field with a menu of possible research projects that would advance the field in various, complementary ways.

Finally, the team wishes to thank the Advisory Board of practitioner and academic experts, who generously shared advice from a variety of perspectives throughout the project. Many of their insights are incorporated throughout the report. A list of members is found in Volume I. Key highlights from each of the three volumes are summarized in the following sections.

Volume I

Field Perspectives: Focus groups

The objective of the three focus groups, fielded by JRSA, Urban, and NCVC, was to gain the perspectives of specialized practitioner groups on how they currently use or would use data on the costs of victimization. Overall, the three focus groups provided valuable insight on several topics. The key takeaways from each group are presented below.

VOCA Administrators

VOCA administrators distribute VOCA funds to victim service programs in their states and administer state victim compensation programs that reimburse eligible crime victims for certain expenses. Their input is thus framed in terms of what expenses or services federal VOCA regulations, state statutes, and other directives allow them to cover. VOCA administrators use cost estimates to report on spending to state and federal bodies, to inform policy makers regarding state caps on allowable costs, or for coverage of new categories.

Expenses that state VOCA compensation programs cover vary widely. For example, some state administrators reported that their statutes cover transportation to and from services, respite care, and relocation assistance, while others do not. Many also stressed that there are significant costs that they cannot compensate for, such as lost quality of life, loss of a parent or spouse, or

loss of long-term childcare; it may also be that many lifelong costs exceed statutory limits on what VOCA compensation programs can cover. VOCA administrators expressed additional concern about particular victimization types, such as co-victims of homicide and identity theft, as well as populations with unique needs, such as individuals with disabilities or limited English proficiency. Finally, it should be noted that differences among states in their compensation caps and in their allowable cost categories make it difficult to compare costs between them.

Civil Attorneys

The objective of the civil attorneys focus group was to learn how victims' damages are quantified in tort claims. Costs identified by participants included tangible costs (expenses that can easily assigned a dollar value, such as medical and mental health expenses or lost wages), and non-economic damages, or intangible costs (such as pain and suffering) that are more difficult to quantify. They also expressed that awards for non-economic damages are highly dependent on jury sympathy for the victim. Several barriers to victims receiving an award were identified by the group, including the absence of a viable defendant with assets to draw on, state or jurisdictional caps on awards for some damage types, institutional biases based on socioeconomic status (people with lower incomes may have lower calculations of future earnings than higher-income victims), and expenses like caregiver costs requiring more proof or expert witnesses to justify. Civil attorneys said that they would find access to more research-based cost estimation methods useful for reducing some institutional bias in jury awards.

SAAs/SAC Directors

SAAs, who administer several federal funding allocations within their respective states, and SAC directors, who head up certain criminal justice research initiatives within their state, described using victimization cost data for several purposes. Those purposes included explaining the benefits of victimization programs and support the expansion/funding of services for victims of emerging crimes; responding to requests from state legislatures; showing the value of policies and programs to the community; and encouraging state legislatures to consider the consequences of new policies and programs. Current challenges expressed by the group included not having up-to-date and accurate dollar figures for different victimization costs, explaining the difference between tangible and intangible costs to policy makers, and ensuring that cost estimates are correctly understood and properly used. SAC directors also felt that the ability to better quantify the impact of new bills on victim costs would be useful in working with the legislature, as would the ability to give more concrete estimates of the return on investment for different programs.

Field Perspectives: Surveys

Service Provider Survey

In June and July 2018, Urban conducted a national survey of victim service providers. The 36-question survey was distributed electronically, with additional outreach via hard-copy letters, emails, postcards, and phone calls. The survey inquired about service providers' characteristics, perspectives on direct and indirect victimization consequences, factors that mitigate or exacerbate harms, and their knowledge of cost estimates of harms and services.

A total of 550 agencies were randomly selected from NCVC's VictimConnect database and the Office for Victims of Crime (OVC's) online directory to receive the survey. Of these, 179 agencies responded to the survey and comprise the sample. The respondents were geographically diverse and included traditional and non-traditional provider types. They were proportionately representative of victim types served by agencies as recorded in the full database, though it is possible that the distribution of agency types in the database may not fully represent the distribution of victim types in the United States. Most were small nonprofits, and respondents were primarily directors or mid-level managers with long tenures. Nearly all served victims of violent crimes, while nearly half served property and financial crime victims. Cumulatively, the sample reflected a variety of foci.

Results showed that service providers were interested in research and tools that better capture the full scope of victimization costs, including a broader consideration of harms, multiple victimization experiences, varied time frames over which harms occur, and broadened understanding of all individuals indirectly affected by crime experiences. Although respondents reported a wide range of harms experienced by their clients, the most frequently reported were intangible and included emotional suffering, fear of crime or revictimization, and social problems. Other important harms identified by provider respondents included economic impacts, trauma, and long-term, health-related harms. Victimization with the most misunderstood harms, in providers' opinions, were polyvictimization experiences and gender-based violence. A majority of respondents reported that victims' family members, especially children, were also negatively affected by victimization.

Service provider respondents agreed that a diversity of services, especially mental healthcare, housing, and crisis intervention, may reduce harms, but many suggested that broader economic-related support and comprehensive case management are also important. Most respondents also believed that a range of factors *increased* experiences of harm, including fear of retaliation, limited social support, and harm from participating in the justice system – a repeatedly submitted comment.

More respondents indicated that their agencies had calculated the costs of victim services rather than the costs of victimization harms, although a large percentage did not know if their organization had calculated victimization costs. The primary purpose for which agencies reported calculating the costs of harms was to support victim financial assistance, mostly using restitution request forms and receipts on the individual victim level, or by institutional reports and payouts on the community level. Service providers who had measured victim service costs reported doing so primarily for funding or program evaluation purposes, and they operationalized them as labor costs divided by the number of victims served.

Suggestions for other ways to measure costs included capturing both immediate and long-term outcomes, as well as concrete expenses and intangible benefits. Respondents' biggest concerns about calculating victimization costs were 1) the ability to generate accurate numbers, and 2) the unintended consequences of emphasizing cost data, such as increasing victim-blaming – blaming victims of certain crimes, those who experience certain harms, or those who have

certain vulnerabilities for costing too much. As a result, researchers need to consider how they present these data and what context they provide with the numbers.

Survivor Survey

A nine-question survey of a convenience sample of victimization survivors was also fielded by Urban and NCVC from April to June 2018. A link to the brief survey was distributed to survivors by a sample of service providers who agreed to assist the project team, and 52 survivors responded. No demographic information was collected, and respondents did not have to answer all questions. The purpose was simply to gather input from a convenience sample of victimization survivors, not to make generalizable claims about survivor experiences as a whole.

The survey responses received reflected beliefs also found in the literature: that emotional suffering, such as anxiety or stress, is the most frequently experienced harm associated with crime victimization, and that the burden of victimization also extends to friends, family, and extended family members. The harms experienced that were reported also included problems with friends or family, mental health costs, fear of crime, and physical injuries that did not require medical attention. Respondents also indicated that their immediate family members, friends, and extended family members experienced harms including emotional difficulties, sexual difficulties with a partner, and financial harms.

Volume II: Literature Review

Cost Estimation Methods

Urban's researchers conducted a literature review of tangible and intangible cost estimation. When researchers estimate the "costs" of crime or victimization, whether for crime in general or for specific types of crimes, they are describing magnitudes of the harm caused in dollar terms. This is generally done to allow comparisons along a common metric, such as comparing the amount of harm caused by different crimes, comparing the crime problem to other social problems, or comparing the costs imposed by a crime to the costs of efforts to prevent it. Although researchers have made enormous strides in increasing the breadth and depth of this literature over the past few decades, given that the nature of victimizations experiences are intensely personal it is still difficult to quantify the costs and harms of crime to victims, as well as the social costs that extend to society at large.

In addition to estimating the total aggregate cost of victimization across crime types, scholars have focused on estimating the costs of specific types of violent victimization, including sexual violence, intimate partner or domestic violence, child abuse, and gun violence. We describe next some of the common types of harm included in victimization cost estimates.

Tangible Costs

Tangible costs are those that can be measured directly in dollar terms. The primary tangible costs that have been examined are victims' medical costs (physical and mental health), lost property, lost wages, and services sought. Medical expenditures figure prominently, and research in the field of victimization cost estimation relies heavily on methods developed in health

economics to estimate the cost of illness. Lost wages and productivity can be estimated by looking at time lost from work or the size of workers compensation claims for similar injuries suffered on the job. The costs of missing work due to injury and emotional distress comprise a large part of the economic burden of victimization, and these findings have ramifications for victims, families of victims, businesses, and the economy at large.

The costs of victim services, such as services to aid emotional or physical recovery or to receive restitution, are less commonly explored. Victim services represent a variety of supports including legal aid, counseling, case management, support groups, and housing. Studies so far have found low levels of victim services usage when compared to victimization incidence. Victim service data has not generally been used in cost estimation due to a lack of data collected from providers. In addition, this data is often not broken down by victim or offense type.

Intangible Costs

Intangible costs are those such as pain and suffering that cannot be measured directly in dollar terms. Placing a dollar amount on pain and suffering is a daunting task, and this difficulty is demonstrated by the wide variation of estimates in the literature. Despite these challenges, measuring intangible costs is an important part of generating a complete picture of the costs of crime victimization.

Several methods for quantifying intangible costs have been utilized, each with its own set of strengths and limitations. Three primary methods include 1) analyzing jury awards to crime victims in civil court cases, including the separate awards for pain and suffering, to understand the value that juries place on harms incurred for various crimes, 2) surveys asking people how much they would be willing to pay (WTP) to avoid victimization (*stated* preferences), and 3) analyzing the relationship between crime and market prices for goods or services, such as the relationship between housing prices and neighborhood crime rates (*revealed* preferences). The latter two methods generate holistic cost estimates that include both tangible and intangible costs. The jury compensation and revealed preference methods have largely been used to examine the costs of assault and fatalities.

Given the difficult nature of the task, there are a number of critiques of each of these main methods. Nonetheless, one major conclusion from the research on tangible and intangible costs of victimization is that estimates of intangible costs are generally much larger than those of tangible costs. For example, in 1996 the average robbery resulting in injury was estimated to result in \$9,000 in tangible costs and \$24,000 in intangible costs (Miller et al., 1996).

Gaps in the Existing Costs Research

Several elements of victimization costs have not been explored extensively, and some involve significant measurement difficulties.

Crime Types. There has been much more research on the tangible and intangible costs of some crimes, such as murder or intimate partner violence, than others. This is partially because these crimes are some of the costliest or have the largest impact on public fear. One important area that is often missing in cost estimation research is white-collar crime, which encompasses

many types of fraudulent activity. White-collar crimes are difficult to track because it is often not immediately obvious to a person that they have been a victim (Cohen, 2016).

Further, there are several crime types in which the victim may not be an individual, but a business or government. The costs associated with those may be passed down to consumers or taxpayers. These may again include white-collar crime, but also environmental crime, cybercrime, financial crimes including tax evasion, Medicare and insurance fraud, and other frauds known to be very costly but about which more information is needed. Mass violence is another crime type known to be very costly both for those who are directly victimized and those who are indirectly impacted by the event, but about which more information is also needed.

Sub-population variation. There are reasons to believe that costs of victimization may differ between different subpopulations, such as victims in different geographic areas, victims from different demographic groups, or those who differ economically. To date there has not been significant research in this area. This is a substantial limitation for policymakers concerned with costs for constituencies who may be impacted by specific policies or programs. The typical estimates of average victimization costs may not suffice. It is important to note that there are several challenges in capturing meaningful information here, given the complexity of intersections between victimization, poverty, and forms of marginalization which may face certain populations of interest to policymakers and advocates.

Additional Costs. Some cost types have not been covered extensively in the literature in part because they impact an unknown percentage of all victimizations. For example, substantial but less researched costs might include increased risk of suicide, increased vulnerability to future victimization, long-term health impacts such as obesity or chronic pain, or substance abuse.

In addition, the costs to friend and family and the societal cost of crime also includes substantial primary and secondary avoidance costs (Kleiman, Caulkins, & Gehred, 2014). Second-order costs are costs borne by people who have not been directly victimized and do not know the victim. These may include fear, social hostility, and reduced job opportunities when a business moves due to crime. These costs are not captured frequently in the literature. Some methods discussed above move past these questions by instead generating holistic estimates that implicitly include all possible costs. For example, WTP surveys implicitly ask about willingness to pay for all of a particular crimes' costs. However, when people estimate the lump sum amount whether as survey respondents, home purchasers, or jurors, they may fail to factor in all possible costs.

Policy Implications

Finally, it is important to step back and consider how any estimates of the financial cost of victimization will be used. Different methods may be better suited for different purposes, and the limitations of existing research may be more consequential for different purposes. How important it is to address different gaps in the research may depend on the policy purposes in which one is interested, and how the direction of any current bias impacts policy decisions.

Victimization Prevalence, Incidence, and Concentration

This second major section of the literature review, conducted by JRSA, looks at measurement issues in estimating the prevalence, incidence, and concentration of victimization. This is the other major category of data used to create total estimates of victimization costs. Three major topical areas are covered: data sources, initiatives to reach underrepresented or difficult-to-reach subpopulations, and technical issues with prevalence estimates.

Data sources

The NCVS and national Uniform Crime Reports (UCR) statistics, including both summary and incident-based data collections, are the primary and most widely used data sources for crime prevalence data. Within the UCR, the National Incident Based Reporting System (NIBRS) is a great improvement over the Summary Reporting System (SRS), which for decades has been the primary source of national and state data on crimes reported to law enforcement. The federal government is working hard to help more jurisdictions move to the incident-based system that provides much more detail and collects information using behavioral classifications that allow for comparisons of incidents, even while state and local criminal codes vary. The NCVS, which has been redesigned and refined a number of times, now collects detailed information on victimizations experienced by a large and largely representative sample in all 50 states. It collects not only incident-level data about victimization experiences, which importantly captures experiences not reported to law enforcement, but also some information about losses suffered and services sought. Current work by the Bureau of Justice Statistics on the NCVS is also focused on improving the ability to generate subnational and local estimates using NCVS data, and on more meaningfully capturing repeat and series victimizations.

Many states conduct their own victimization surveys, and states highly desire the ability to perform these more regularly, according to the SAA and SAC director focus group. A number of public health data sources are covered in Volume II: emergency department data, the National Survey of Children's Exposure to Violence (NatSCEV), mental health system data such as from the Substance Abuse and Mental Health Services Administration (SAMHSA), violent death data such as from the National Violent Death Reporting System (NVDRS), and many others. Public health data are a particularly rich source of information on victimization incidence, treatments, outcomes, and more that can be fruitfully used alongside criminal justice data to assess not only the prevalence of different victimizations, but several impacts on victims, their families, and communities.

Additional under-utilized data sources include several for emerging crime types, such as white-collar crime (the National White Collar Crime Center), financial crime (Federal Trade Commission and the Financial Crimes Enforcement Network, or FinCEN), environmental crime (Environmental Protection Agency), cybercrime (the Federal Bureau of Investigation's Internet Crime Complaint Center, or IC3), and many more also covered in Volume II. Note that many of these sources provide data only about cases discovered, investigated, and made, not about true incidence. And, while NIBRS and the NCVS are beginning to collect some data on some of these crime types, they are not yet included in a robust way.

Initiatives to reach difficult-to-capture subpopulations

Sampling and survey methods have been developed to reach marginalized or difficult-to-reach populations not always fully captured in major surveys, such as public housing residents, victims of sexual offenses, mentally ill individuals, and others. These methods generally include ways to build trust with gatekeepers, refining and testing instruments to be comprehensible by target populations, ethical concerns, and triangulation with other administrative data. Other potentially marginalized groups that may be difficult to reach through the NCVS or other methods include individuals in congregate living arrangements such as nursing homes or prisons, the homeless, individuals who identify as Lesbian, Gay, Bisexual, Transgender or Queer (LGBTQ), individuals with undocumented immigrant status or limited English proficiency, individuals with dementia or disabilities, individuals living on American Indian reservations, and victims of more hidden victimization types like human trafficking or child pornography. Reaching these groups in prevalence studies is critical to assess the magnitudes of the victimization problems faced and ensure that sampling in larger studies or in the body of smaller studies is representative.

Technical issues affecting estimates

A few issues can distort estimates if not addressed or built into the research design. These include accounting for different units of analysis, such as whether a victimization type occurs as a discrete event or an ongoing process (repeat or polyvictimization), or whether certain victimization costs are incurred at the individual or community level. Further, there are concerns about unequal or inequitable distributions both in victimization incidence, prevalence, and concentration and in services delivered. Measurements of overdispersion and other statistical techniques can help uncover some of these patterns in victimization data. The ability to do this can enable policy makers and service providers to better target services and funding to the areas with the most concentrated need, as well as to groups that may have been traditionally more neglected.

Volume III, The Roadmap: A Menu of Recommendations for Future Work

Flowing from the work in Volumes I and II, and from discussions with the advisory board, Volume III contains recommendations for a series of possible research studies and practitioner-friendly tools that would advance the field of victimization cost estimation – both the generation of estimates and their appropriate use by practitioners and researchers. The intent is to propose recommendations that would be useful for providing the information and data most needed by policy makers and service providers on the ground to improve recovery and resilience outcomes for crime victims in the United States.

Each of the recommendations below would fill an identified gap in the field, either independently or overlapping with other proposed ideas. Some of these recommendations may be of higher priority for some uses of cost estimates than for others, and therefore priorities may differ for different consumers of this research.

This “roadmap” proceeds in three main categories. First are topical studies on identified areas where more information is needed about victimization types, experiences, and populations. Second are studies to develop or refine the methods needed to address some of the most important issues identified, and to make estimates more precise and translatable for different policy and practice purposes. Third, we propose a series of practitioner friendly translational, technical assistance and calculator tools to assist with the use or generation of cost estimates in the field for policy and practice.

Note that the recommendations proposed for future research are not mutually exclusive; some studies that might flow from this project can include both topical and methodological elements. The project team presents a menu of recommended work below; full detail on each of these items is found in Volume III of this report.

Topical Studies

Repeat/Series and Polyvictimization

Gap identified: Developing cost estimates for repeat and series victimization experiences depends on a comprehensive understanding of the frequency at which events occur and the cumulative harms associated with multiple victimization experiences over time (i.e., polyvictimization). Research on the frequency of events and harms associated with repeat/series and polyvictimization experiences is still in its infancy, though studies have shown that those who have been victimized in the past are more likely to be victimized again, such as in child maltreatment and intimate partner violence situations.

Why important:

- Series victimizations may occur at a frequency that makes it difficult to differentiate between discrete events. As a result, it is challenging to estimate incidence and prevalence accurately, though strides are being made to improve measurement in these areas.
- Difficulty in disaggregating the physical, psychological, financial, and behavioral harms from repeat and series victimizations impacts the ability to attribute harms experienced by victims to specific victimizations, especially in the case of polyvictimization. Further, estimates of the cumulative trauma of multiple victimization experiences and exacerbation of harms in subsequent victimizations are also needed.

Short-term recommendation: Summarize existing research and data sources

- Recognizing that work has been done in recent years on these topics, develop a comprehensive summary—including an annotated bibliography or literature database—that reviews information on repeat/series victimizations from multiple fields, including criminal justice, public health, social work, and education.

- Create a conceptual model for disaggregating harms from repeat/series victimizations and/or polyvictimization for use in longer-term studies. The model should include a framework for exploring how harms from continued victimization experiences compound each other.

Long-term recommendation: Conduct specific longitudinal studies that examine experiences of repeat and series victimizations over the life course and that:

- Focus on differences in frequencies and experiences of harm between:
 - a. Diverse populations of survivors and potential victims
 - b. Individuals from varying urban/rural/tribal backgrounds
- Apply conceptual framework disaggregating harms to specific research questions, for example:
 - a. What are the lifetime costs of domestic violence for a victim, disaggregated by length and frequency of abuse and by types of abuse experienced?
 - b. What are the impacts of sexual and/or intimate partner victimization experiences in childhood, adulthood, and as an older adult?

Underrepresented and Hard-to-Reach Subpopulations

Gap identified: Hard-to-reach subpopulations of individuals may be both disproportionately victimized and underrepresented in cost estimates based on traditional surveys. Some examples of these subpopulations include:

- | | |
|--------------------------------|---|
| • Public housing residents | • People with disabilities or dementia |
| • Homeless individuals | • Tribal communities |
| • LGBTQ communities | • Institutionalized populations (incarcerated, nursing homes) |
| • People with immigrant status | |

Why important: Failure to proportionately include these populations in the body of victimization cost and prevalence work may lead to skewed cost estimates and artificially low prevalence and concentration estimates. Further, cost estimates may present a skewed understanding of how different populations experience various victimizations and harms. In turn, this may result in misallocations of resources to reach and serve these subpopulations of victims.

Short-term recommendation: Synthesize existing information on costs specific to these subpopulations.

Capitalize on existing studies of specialized subpopulations by synthesizing key findings from them to develop a more comprehensive understanding of hard-to-reach subpopulations'

victimization costs and experiences, and to identify specific research and policy questions for longer-term work.

Long term recommendations:

- **Modify sampling procedures, wherever possible, in future data collection efforts** to include representation from hard-to-reach subpopulations. Although general population surveys may still be limited in the ability to capture meaningful detail on the experiences of very small subpopulations, purposively ensuring their inclusion may still improve count and cost estimates, particularly when combined with the following studies.
- **Conduct new, specifically targeted studies** in the form of comprehensive surveys and interviews with hard-to-reach subpopulations to accurately capture the prevalence, incidence, harms, costs, and services associated with their victimization experiences. Research efforts might involve:
 - a. Conducting experiments with question wording and order that can lead to the development of more useful questions, that can then be incorporated into community-based surveys. There will be cultural differences between groups that will impact how well the same question elicits valid responses from each group.
 - b. Comparing data sources that attempt to capture this information on victimization in different subpopulations, and the ability of those data sources to provide information that sufficiently answers questions about their victimization costs
 - c. Strengthening future studies by consulting experts experienced in researching vulnerable populations to develop ethical and transparent practices
- **Compare victimization impacts across different groups of hard-to-reach subpopulations**
 - a. Develop an understanding of differences in the experiences and needs arising from victimization for hard-to-reach subpopulations and compare this understanding with that for traditionally researched individuals.
- **Examine service data on hard-to-reach subpopulations from victim service providers nationwide**
 - a. Compare expenditures on different subpopulations vs. information about each population's needs and incidence of victimization

Underrepresented, Hard to Classify & Emerging Crime Types

Gap identified: Certain types of victimizations may be handled outside the judicial system, victims may not know where they should report the crime, or the victim may not recognize that a crime occurred or identify themselves as a victim. Other victimization types are

challenging for the criminal justice system to handle due to their complexity. Examples include:

- Environmental crime
- Mass violence
- Terrorism
- White-collar crime
- Financial crime, fraud
- Cybercrime
- Hidden victimizations such as child porn and human trafficking

Why important: As with hard-to-reach subpopulations, failure to include these victimization types and find methods of accurately counting and costing them can lead to skewed cost estimates and low prevalence and concentration estimates, and further to skewed understanding of who is affected by these victimizations and the nature and costs of their harms. A recent National Academies of Sciences report (Lauritsen & Cork, 2016) also stressed the importance of these crimes and the need to broaden victimization cost work to address them.

Short-term recommendation: Inventory of costs unique to specialized victimizations

- Create crime-specific taxonomies of costs for each understudied crime type
- Conduct conceptual work on how to think about non-traditional crimes. This is important for operationalization of concepts before trying to collect data.
- Identify data needed to capture these operationalized costs

Why important: This information is requested by federal and state policy makers and administrators, such as victim compensation administrators, and is important background work before undertaking long-term studies recommended below.

Long term recommendations:

- **Make creative use of existing datasets from other fields that capture parts of this information.** This may entail new surveys, the addition of questions to existing surveys in other fields, and creative use of standard and non-standard (for victimization research) datasets to create valid estimates of the scopes of these problems. Examples of data sources that might be tapped include:
 - a. EPA data (environmental crimes)
 - b. FINCEN, FTC, consumer complaint reports (fraud, financial crime)
- **Undertake new data collections,** designed to answer understudied cost and prevalence-related questions, their associated costs, and their differential effects on various groups and locales in the United States.

Why important: These would inform design for potential programs or policies to better serve victims who may now often fall through the cracks.

- **Conduct new *qualitative* research** by victimization type on the *nature* of direct/indirect and short term/long term costs and their *impacts* on victims.

Why important: Victimization is a highly personal experience that resists quantification. In-depth qualitative work on how various victimizations are experienced and the nature of their resulting costs can help identify potential missing data and research considerations in the design of new quantitative data collections, as well as putting numerical estimates in context with victim's lived experiences. Also, improving the effectiveness of service delivery can save costs measurable in cost-benefit analyses (CBA) and cost of victimization (CoV) studies. Information about long-term effects in particular is needed to continually improve responses to primary victims, secondary and tertiary victims, and communities in high-profile events.

Methodological Studies

These recommendations aim to improve the accurate generation and interpretation of victimization cost estimates.

Why important: These are quite technical, but their purpose is to enable practitioners in the field to 1) have more confidence in victimization cost estimates, 2) be better able to translate and use victimization cost estimates to answer their policy and practice questions, and 3) better be able to describe victimization cost estimates to others.

There are two categories of methodological recommendations, both concerned with different sources of uncertainty in estimates.

Sampling Error and Confidence Intervals

Gaps Identified

1. CoV and CBA results are often presented as point estimates, without associated standard errors and confidence intervals. Some researchers have recommended presenting a high-low range that particular victimization costs may fall in, rather than a single point-estimate for greater clarity and accuracy.
2. There are no conventions in common use for reporting confidence intervals around the cost-of-victimization part of the benefit calculations. When estimates are produced via different methods, it is not obvious how to compare them. The complexity of this challenge increases as victim cost research incorporates new methods and blends datasets from more diverse sources.
3. It is difficult for consumers to understand whether estimates from different studies are consistently derived and therefore comparable.

Why important: Improvements in consistency and reporting and translating the meanings of estimates are important for practitioners to use estimates accurately and appropriately.

Recommendation: Develop *conventions* for quantifying, describing, and reporting uncertainty in victimization cost estimates and CBAs of crime prevention programs.

The immediate users of this work are in the research community, but the ultimate audiences are the practitioner users of CoV and CBA results. In addition to incorporating uncertainty in CoV estimates, describing uncertainty in cost-benefit estimates also requires incorporating sources of uncertainty around:

- Costs of interventions
- Estimates of effectiveness for interventions

Developing conventions may involve activities such as commissioning a volume of technical recommendations (cf. Gold, Siegel, Russell, and Weinstein 1996, in health economics), or the use of expert panels such as through the National Academies of Science (cf. Steuerle and Jackson, 2016).

Recommendation: Develop *improved methods* for assessing and describing uncertainty.

Estimates are often produced via different methods, including estimates which incorporate multiple kinds of data. It is technically challenging to produce common measures of uncertainty across different types of data and methods. Conduct methodological research and innovation to describe uncertainty on a common basis, perhaps by more widely incorporating simulations and probability-based Monte Carlo methods that can be used across methodologies to calculate standard errors.

Understanding Non-Sampling Error or Variability, and Sensitivity

Gap Identified: There has been relatively little empirical study of the sources of *bias or nonsampling error* in victim cost estimates, and the sensitivity of estimates to different assumptions and methods. Some reviewers believe intangible costs may be overestimated by the major methods (e.g., Domingo & Rafael, 2015). For example, survey respondents may report willingness to pay more for crime prevention than taxpayers are actually willing to pay.

Why important: Estimates must be assessable for validity and reliability for use in the field and must be able to be compared to one another.

Recommendation: Research on sensitivity of estimates to assumptions and minor methodological choices. Conduct research, potentially including experiments, to understand how sensitive CoV estimates are to changes in:

- Methods used
- Assumptions (implicit and explicit)
- Sampling procedures
- Definitions used, question wording, etc.

This would help improve estimates and give the field more confidence in using estimates generated using one method over another.¹ It would also identify specific methodological improvements needed as the field evolves. Below are a few examples of research questions that might be tested:

- Do respondents to WTP surveys use different assumptions about *time horizons* of costs and *present value of future costs* than economists use in bottom-up studies?
- What costs are *implicitly* captured in holistic estimates, such as WTP or hedonic (revealed preference) studies, that may be missing from bottom-up estimates?
- Does expressed WTP vary by the likelihood that those surveyed would actually have to pay if the prevention effort were implemented?

Practitioner Tools/Technical Assistance

Gaps Identified: Non-researchers sometimes have difficulty understanding the technicalities of victimization cost estimates and how to use them accurately. While some concerns are addressed in academic literature, these resources have not been disseminated well to practitioners. SAA/SAC focus group respondents noted a strong need for updated costs numbers and calculator tools, and ways to package data for stakeholders' needs.

Why important: Practitioners need victimization cost data and tools that are easy to use, help them meet stakeholders' needs accurately and easily, help them adequately and accurately support funding requests, help them allocate resources, and enable them to provide appropriate, useful, and timely answers to policy and practice questions.

Recommendations for practitioner tools and technical assistance initiatives:

- **Compile standard definitions for costs for use across studies and estimation methods and disseminate them to the field in a practitioner-friendly guide.**
 - a. For example, what expenses are included in lost productivity, pain and suffering, lost caregiver resources, and other costs?
 - b. Focus group participants stated that standardization would instill more confidence in estimates.
- **Set conventions for time frames to use in producing cost estimates. Provide guidance on questions that practitioners should consider when interpreting estimates, i.e.:**
 - a. In what time frame do the bulk of victim costs usually incur?
 - b. In what time frame does the greatest benefit accrue from services?
 - c. How far out does one need to look to see if a program pays for itself?²

¹ Note: Sensitivity of *estimates* across different types of samples is different from variation in *actual costs* that are experienced by different types of victims.

² This will vary depending on program.

- d. What long-term expenses might be prevented with more timely delivery of services?
- e. Ending services to a victim too early may cause increased costs in the future if needs remain unmet. How many years should a program be funded for a community, or services provided to a victim, in order to prevent or mitigate such future costs?

Create calculator tools for field use in estimating victimization costs. Practitioners need updated costs data and tools to create localized estimates, package data to meet needs/requests of stakeholders, and support funding requests. Some ideas:

- ***Bottom-up approach tools:*** Create tools that allow input of tangible costs for local or population-specific estimates, e.g., local labor, medical, criminal justice costs.
- ***Tools or sub-tools*** for specific purposes, including guidance on which options to use for different policy/practice purposes; how to account for differences between crime types, victim groups, and service delivery versus just presenting averages; and anticipating potential misuse or misunderstanding of data, offering cautions and advice to mitigate against such problems.
- ***Whenever possible, tools that can incorporate presentation of uncertainty*** of estimates, i.e., ranges instead of point estimates. Include guidance on translation.
- ***Meta-analysis tool or other resource*** that can summarize existing studies for practitioners for certain uses.

It is important to note that some of the proposed topical and methodological work should probably be completed first, in order to feed more updated and reliable base information into these calculator tools for practitioners. Reliable calculator tools, once created, could be used by practitioners for legislative prioritization, program planning, calculating aspects of service impacts, break-even analysis, and program evaluation.

Conclusion

The goal of this project was to make recommendations for future research and translation activities that would help move the field of crime victimization cost measurement and documentation forward, with a focus on improvements in the field that are most useful for directly improving responses to victims. The recommendations presented here, including topical studies, methodological research, and practitioner tools, comprise a menu of options for advancing the field to produce victimization cost estimates that can be used for a variety of policy purposes aimed at improving service to crime victims and more effective crime prevention in the United States.

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Estimating the Financial Costs of Crime Victimization

Volume I: Introduction, Methods, Primary Data Collections, and Taxonomy of Costs

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Introduction

Despite reductions in crime rates in the United States in recent decades, crime victimization remains a pressing problem with enormous societal costs. The most credible national estimates of victimization costs postulate that they total between 2% and 6% of the nation's gross domestic product, which equates to hundreds of billions of dollars spent each year responding to the effects of crime on victims (Chalfin, 2014), with incarceration adding more billions of dollars to the annual cost (Hudson, 2015; Henrichson & Delaney, 2012).

Understanding the financial and economic costs of crime victimization enables policymakers and practitioners to use limited resources more efficiently (Wilson & Krsulich, 2011). For that purpose, policy analysts rely heavily on cost-benefit analyses to compare the outcomes of potential programs and services, and their implementation costs, along a common metric: costs (Downey & Roman, 2014; Kleiman, Caulkins, & Gehred, 2014; Roman, 2013; Wilson & Krsulich, 2011). Such analyses are powerful tools, because they help policymakers gauge whether the benefits of particular crime and victimization programs and services (e.g., reductions in crime, improvements in victim well-being) warrant the costs associated with their implementation. Results from cost-benefit models can determine whether programs are adopted, scaled, or retained (Wilson & CBKB, 2011; Yates, 2009). Invariably, such analyses rely heavily on monetized estimates of the harms associated with victimization. In fact, one prominent portfolio of cost-benefit analyses found the majority of benefits from reduced crime accrue to would-be victims (Washington State Institute of Public Policy, 2015).

Unfortunately, it is inexorably difficult to quantify the costs of crime to victims, although researchers have made enormous strides in increasing the breadth and depth of the literature over the past few decades. Cost estimation of victimization has focused on both tangible losses (such as the value of household goods stolen during a burglary) and intangible costs, including pain, suffering, and trauma (Miller, Cohen & Rossman, 1993).

This project, conducted by the Justice Research and Statistics Association (JRSA) in partnership with the Urban Institute and the National Center for Victims of Crime (NCVC), is an assessment of the field of cost of victimization research, resulting in a menu of recommendations for future research and other endeavors to advance the field. One objective of the project was to keep the focus squarely on the victims, and consider what information is most needed by those who serve them. Relatedly, another objective was to recognize that even if the proximate victim is a business, the government, or non-profit organization, individuals still suffer as when insurance fraud drives up insurance rates or when taxpayers foot the bill when contractors defraud the government.

The project, which originated as background work for a single proposed study to estimate these costs, evolved over time as the project team delved deeply into all the components of these costs and their impacts on victims and a variety of stakeholders. As such, it has resulted not in a

design for a single study, but in a roadmap of possible research studies – each of which could help fill a different and important gap (or gaps) in our understanding of the costs of crime victimization. Furthermore, different kinds of estimates are called for depending on their usage. Legislators choosing how much to invest in addressing victimization, relative to other policy problems, may require a different specificity in information than a victim service provider or state agency making more granular decisions about how to allocate funding and services directly to victims in the field.

Project Activities

To conduct this assessment work, JRSA, the Urban Institute, and NCVC undertook several activities over the two-year project period including literature reviews, primary data collections, and extensive consultation with an advisory board of experts. This section summarizes those activities, their rationale, and the methodology undertaken for each.

Advisory Board Convening and Activities

The first activity was to establish an advisory board who guided and provided feedback at all stages of the project via email, phone calls, webinars, and two in-person collaborative meetings at the beginning and end of the project. The advisory board consisted of practitioner, academic, and government agency members with expertise in the following areas: crime victimization, victim services and service delivery, cost estimation/cost-benefit analysis, economics, criminal justice/victimization data sources, and cost of victimization/crime data sources. Members were selected by the project team in consultation with the science analyst, Amy Leffler of the National Institute of Justice (NIJ), as well as staff and Visiting Fellow Heather Warnken from the Office for Victims of Crime (OVC). These individuals provided a balanced variety of perspectives on issues related to the costs of victimization and the study of victimization for research and practice.

Table 1: Cost of Victimization Advisory Board Members

Advisory board Member	Areas of Expertise
Dr. Jonathan Caulkins, Professor of Operations Research, Carnegie Mellon University	Researcher: costs of crime, measurement of crime, mathematical modeling of social problems. Served on the National Academies of Science Panel for the Modernization of Crime Statistics.
Dr. Mark Cohen, Professor of American Competitive Enterprise & Professor of Law, Vanderbilt University	Researcher: economics, costs of crime, cost-benefit analysis. Author, alone and with colleagues, of a body of work concerning the costs of crime for over 30 years.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Dr. Dean Kilpatrick, Distinguished University Professor, Psychiatry and Behavioral Sciences, Medical University of South Carolina	Researcher: impacts of victimization and trauma, with emphasis on mental health and sexual assault. Served on two Institute of Medicine Committees and on a Standing Committee of the National Academy of Sciences. Received honors for his professional contributions from several organizations including the U.S. Congressional Victim's Rights Caucus.
Dr. Brian Yates, Professor, Department of Psychology, American University	Researcher: cost-effectiveness and cost-benefit analysis of human services, including victimization-related programs, specializing in substance abuse and mental and behavioral health.
Sarah McLellan, Assistant U.S. Attorney and Chief of the Victim Witness Unit at the United States Attorneys Office (USAO) in Washington, DC	Practitioner: Immediate victim needs, coordination of the criminal justice system with victim services, practitioner expert on the Federal level.
Jeffrey McLeod, Division Director, Homeland Security & Public Safety Division, National Governor's Association	Practitioner: Expert in data needed by legislatures and policy makers in cybersecurity, prescription drug abuse, public safety, sentencing and corrections, homeland security, justice information-sharing and public health preparedness.
Michelle Garcia, Director, DC Office of Victim Services and Justice Grants, Washington, D.C.	Practitioner: Data collected and available from local governments on crime, victimization, and victim services, and needs of state administrators for data on the costs of victimization.
Dr. Kermit Crawford, Director of the Center for Multicultural Training in Psychology (CTMP) at Boston Medical Center and the Boston University School of Medicine	Practitioner: Psychologist, expert in behavioral treatment and services to victims of crime and major disasters, as well as violence prevention. Has trained SAMHSA and other Federal and local providers after the Boston marathon bombing, hurricanes Katrina and Rita, the Haiti earthquake and more. Experience in multicultural mental health, trauma-informed care, substance abuse.
Dr. Ted Miller, Senior Research Scientist II, Pacific Institute for Research and Evaluation (PIRE), Calverton, MD.	Researcher: Led the practitioner side of Mark Cohen's work and is one of the most-cited researchers on the cost of crime and victimization.
Dr. Amy Leffler, Social Science Analyst, U.S. Department of Justice (National Institute of Justice)	Researcher: Victimization research, social work, child and family policy, juvenile delinquency, resilience, and mixed methods research.
Heather Warnken, J.D., LL.M., Visiting Fellow at the U.S. Department of Justice (Office for Victims of Crime/Bureau of Justice Statistics)	Researcher/Practitioner: Law and policy expertise in criminal justice, including victim services policy, programming, funding and assessment of unmet victim needs. Serving in first-ever DOJ role focused on improving the translation and dissemination of statistical data and social science research for the victim assistance field.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Dr. Lynn Langton, former Chief of Victimization of Statistics, Bureau of Justice Statistics	Researcher: Victimization, harms and consequences of victimization, victim help-seeking, and victim services. As Chief of Victimization Statistics, oversaw the National Crime Victimization Survey (NCVS).
Dr. Megan Kearns, Behavioral Scientist, Research and Evaluation Branch, Division of Violence Prevention, Centers for Disease Control and Prevention	Researcher: Public health effects of violent victimization, intimate partner violence, public health victimization data sources

In addition to serving on the Advisory board, Office of Justice Programs Visiting Fellow Heather Warnken (OVC and BJS) worked collaboratively with Amy Leffler (NIJ), to serve as a liaison between the project and OVC.

Project staff sent regular updates to board members via email to keep them apprised of project-related activities. The group convened for two in-person meetings during which members examined the literature reviews and final product drafts, providing extensive collaborative input to the project team. The first in-person board meeting in November 2017 included draft literature reviews, brainstorming activities on important issues to be covered in the final project deliverables, and recommendations for the project's next steps. During the second in-person meeting in September 2018, the Advisory board provided input and feedback on the research portfolio opportunities that later became Volume III of this report. A third round of feedback on final products was solicited from the Advisory board before final drafts were submitted to NIJ and OVC. Input from Advisory board members offered both during and outside of these meetings is woven throughout all volumes of this report.

In order to most effectively utilize the first in-person Advisory board meeting, advance webinars with board members were used to introduce the substantive material for the meeting. Given the volume of material covered in the literature reviews (see Volume II), information was sent in advance to minimize the meeting's presentation time and maximize discussion of the issues among Board members and with the project team. The project team had used the webinar approach successfully on a recently completed study on bridging the gap between research and practice for victim services funded by OVC.³ Advisory board members asked questions during the webinars, and each presentation was followed by a discussion among Board members. JRSA coordinated the webinars using its Unified Learning System software, iCohere®. Webinars lasted about one hour each, and they were recorded so that Board members unable to attend were still able to review material prior to the in-person Board meeting.

A webinar was not used prior to the second Advisory board meeting, but the draft recommendations for the field were compiled into a summary document and sent to the Advisory board in advance. Recommendations were also presented during the in-person meeting, prior to the collaborative discussions. Expert input was critical to finalizing the recommendations and conclusions offered in Volume III.

³ *Bridging the Gap: Integrating Crime Victim Services Research and Practice*. Award No. 2013-VF-GX-K010, Office for Victims of Crime.

Literature Reviews

Next, the project team conducted two surveys of existing literature, findings, and information from the field to address the following questions: (1) What (a) prior efforts have been made to estimate the financial costs of victimization, (b) approaches have been pursued, and (c) what have we learned (or are we learning) from those efforts? (2) What sources of data have been used to estimate the financial costs of victimization, and what are the strengths and weaknesses of each of these sources? (3) What (a) methods and (b) sources of data have been used to estimate the number of victimizations (prevalence, incidence, and concentration), and what are the strengths and weaknesses of each?

These were split into two literature reviews: one on measuring costs and one on measuring victimization prevalence, incidence, and concentration. Each assessed available data sources and methods along with their strengths, weaknesses and gaps, and the utility of various methods in answering important academic, policy, and practice-related questions about the costs of crime victimization.

To address these questions, the project team reviewed peer-reviewed research articles from peer-reviewed journals, academic books, working papers, government-published reports and literature, and news articles. The team delved into published literature archives, scans of social science abstracting services, and Internet searches for gray literature from victim-focused organizations and research institutes. Specific database searches and other searches are detailed in the literature reviews. Additionally, the project team consulted with NIJ, OVC and the Advisory board to ensure key relevant and timely information was included. Articles focused on research outside the United States were also reviewed to identify promising cost or prevalence estimation efforts that might be considered, although the focus was on victimization costs in the United States. Finally, the project team solicited input from state Statistical Analysis Centers (SACs) regarding unpublished research they or others in their states have conducted in this area.

Data Collections

In addition to the literature reviews and Advisory board consultations, the project team undertook several primary data collections to solicit the input of a variety of practitioners that serve victims and use victimization cost estimates. Three focus groups and two surveys were conducted. The three focus groups included state Victims of Crime Act (VOCA) program administrators, civil attorneys that seek damage awards for crime victims, and State Administering Agency (SAA) and state Statistical Analysis Center (SAC) directors. SAAs administer all federal funding for criminal justice in their states and SACs conduct criminal justice research at the state level, including victimization research. The two surveys solicited input from a sample of victim service providers across the United States, and from a smaller sample of crime victims/survivors about their direct experiences with harms from victimization. The methods for these data collections, and further description about each of the groups included in each focus group or survey, are presented alongside the results of each data collection below.

Prior to convening the focus groups, JRSA obtained approval for all research protocols, which included informed consent procedures and semi-structured focus group question instruments, from its Internal Review Board (IRB) on January 29, 2017. Multiple notetakers rendered detailed notes of all focus group discussions. These were later developed into reports that are synthesized under the Primary Data Collection section in this volume.

Prior to implementation of the surveys, project staff obtained approval from Urban's IRB on February 20, 2018. For the service provider survey, IRB review ensured that procedures were in place to fully brief practitioners of their rights as study participants: that their participation was voluntary, they were required to answer every survey question, and that individuals would not be identified in data summaries. For the survivor survey, IRB review ensured that procedures were in place, again, to fully inform study participants of their rights: that participation was voluntary, that they were not required to answer any question they did not want to answer, and that individuals would not be identified in data summaries. IRB review also verified that procedures were in place to ensure participants understood the limits of the scope of questions – that they would not be asked about victimization experiences, but rather about the costs incurred, mitigated or unmitigated, and their views on which were the most serious.

Project Management

In order to keep NIJ and OVC staff apprised of the status of project activities under the cooperative agreement, the project team held regular meetings with them regarding project stages and developments. Both sets of partners also used these meetings to address issues and work through project-deliverable adjustments in response to needs identified during the exploratory research and field assessment process. For example, it became clear during the literature review and the Advisory board meeting processes that the design of a single study could not address all the questions that arise related to the cost of victimization for every stakeholder group. Different research questions on the topic will require different approaches. Therefore, the final product shifted from a single, comprehensive proposed research design to several proposed short-term and long-term projects that NIJ may consider for advancing methods and understanding in the field. Project staff from JRSA, Urban and NCVC also held weekly phone meetings to discuss project activities and upcoming deadlines, as well as in-person meetings to collaborate on important issues and project deliverables as needed.

Data Analysis

The project involved both qualitative and quantitative data analyses related to the focus groups and surveys. Raw notes from each notetaker were combined and then coded by theme to synthesize the main discussion points and main issues raised by each group. These components served as the themes that allowed the project team to address specific issues raised in each focus group, as well as common issues raised across groups.

The quantitative survey analyses consist of descriptive statistics and frequencies for the purpose of document the full range and diversity of responses. The quantitative data analyses include a series of cross tabulations and histograms to illustrate the variety of responses to

questions about victims served, uses of victimization data, victim experiences, and other topics as detailed below.

Primary Data Collections

As described above, this section presents the results of these data collections, emphasizing the important points these groups raised for consideration in developing our final proposed suite of research studies for advancing the field.

Focus groups

Key findings

Overall, focus group discussion participants had much useful information to contribute to inform the project team's work on measuring the costs of criminal victimization. Members across focus groups generally agreed: the question of what costs to include is a matter of who is asking the questions. How will the information be used? Who is requesting it? What data are available? What data are needed? In the case of VOCA administrators and civil attorneys, what do state statutes and other regulations allow? What victim needs are left unmet? Are the questions being asked related to marginal costs versus absolute costs? A balanced approach to victimization cost estimates, and uses of those estimates, is needed that addresses these considerations and more.

The most startling realization is the amount of data and information that these individuals do *not* have access to on victimization in their own states, and how reliant they are on federal data sources and now-dated research for the estimates they generate. SAAs and SAC directors had several suggestions about costs and considerations to address, though more work is needed to answer questions such as what time period most victimization costs incur for victims. Scope questions, such as what crimes and costs to include, are open questions. Considerations around restitution and return on criminal justice system investment are important issues to weigh. SAAs and SAC directors also largely seemed to want guidance on how to help legislators and governors use this data to help shape policies in their states, especially with those who "don't know what they don't know," as well as how they might cultivate some valid and reliable data sources of their own. All were willing to continue the conversation.

Methods

State VOCA Administrators. In August 2017, NCVC staff convened a focus group of administrators of VOCA victim compensation and victim assistance programs to address the impact of crime and the ability of compensation and victim assistance programs to meet victim needs for expense reimbursement (compensation) and direct provision of services (assistance). Most of the discussion centered on victim compensation programs. The focus group solicited information on the following issues: (1) To what extent do the dollar amounts of categories of

loss exceed the amount payable by crime victim compensation? (2) What additional losses do victims have that are not currently compensable through victim compensation programs? (3) What other forms of assistance are typically sought by victims and their families? (4) Are any trends in victim loss or impact being observed by group members? This 90-minute focus group was convened in conjunction with the 2017 annual VOCA Training Conference, an event held jointly by the National Association of VOCA Assistance Administrators and the National Association of Crime Victim Compensation Boards.

Trial Attorneys. NCVC staff also convened a focus group in December 2017 comprised of trial attorneys with a history of securing civil judgments for victims of crime and abuse. Participants were drawn from the National Crime Victim Bar Association, a membership program of the National Center for Victims of Crime comprised of attorneys who represent victims in civil tort actions. Recruitment of participants was targeted to ensure a range of victim representation, including child victims with lifelong damages, non-offending family members who have also sustained damages, survivors of homicide victims, victims of traumatic violent crime, victims of significant financial crime, and victims who sustained permanent disability as a result of crime. The trial attorney focus group solicited information on the following issues and questions: (1) What are the categories of direct loss included when seeking civil damages for crime victims? (2) What are the categories of indirect loss that are pursued for recovery? (3) What methods are used to calculate those losses?

SAA Directors and SAC Directors. JRSA conducted a focus group with SAA and SAC directors in August 2017. SAAs, in addition to administering VOCA programs in many states, are also entities that administer funds from the Edward Byrne Memorial Justice Assistance Grant (JAG) Program among other sources of federal funds. The JAG program is the primary source of federal criminal justice funding to state and local jurisdictions. Funding from the JAG Program supports a range of program areas, including crime victim and witness programs and initiatives. SAA administrators provide the state policymakers' perspective on the issue of calculating costs of victimization. SAC directors lead state entities designated by each governor's offices or state legislature to collect and report data on the criminal and juvenile justice systems in their states, as well as conduct research, evaluation and policy analyses. SACs are located in a variety of state settings, including SAAs, universities, and state police agencies. Some SACs also serve as the state agency that collects and reports crime data, or as the repositories for state criminal history records. Some SACs have been involved with national efforts to collect crime and cost-related data in their states, such as the Justice Reinvestment and Results First initiatives.

The SAA administrator and SAC director focus group was conducted at the National Criminal Justice Association (NCJA) annual National Forum meeting in Long Beach, California. Both SAC directors and SAA administrators attended this conference, given their complementary roles in state government, so a sample of SAA administrators and SAC directors was selected to participate in this focus group together given the convenience of being co-located for the conference. JRSA was a co-sponsor of the National Forum and conducted the 90-minute focus group. Focus group questions solicited information on the following issues and questions: (1) Are policymakers in your state concerned about the costs of victimization? (2) Have efforts

been undertaken in your state to quantify the costs of victimization? (3) How much interest would there be in your state in measuring the costs of victimization? (4) What costs of victimization do you think should be included in such an effort?

Each focus group began with an introduction to the project. The project team explained NIJ's effort to update the victimization cost methodologies developed and estimates calculated in the well-known Victim Costs and Consequences study (Miller et al., 1996). The team then described the purpose of the focus groups: to gather information about each stakeholder group's current experiences estimating costs of victimization or using data on the costs of victimization. All attendees signed an informed consent form. The project team then led participants through a series of questions regarding the purposes for which they have estimated or used victimization costs, the data sources used, the challenges encountered, ideal data sources and products, and the "customers" for this data in their states, among any federal partners, or among any other constituent groups with whom they work.

Findings

The three focus groups covered a number of overlapping topics and questions. The substance of the three discussions is summarized below by topic area, though no responses are attributed to specific individuals. Lists of all focus group participants are available in **Appendix 2** of this volume.

How data on costs of victimization are currently used

SAAs and SAC directors reported using data on the costs of victimization to explain the benefits of programs they fund or oversee, to support expansion of services for victims of emerging crimes like human trafficking and white collar crime, to explain their work to new gubernatorial administrations, and to support their use of funds from VOCA, especially after the recent large infusion of funding to all states. For example, one state received \$60 million in a recent funding round and was asked by the governor's office why the allocation was so large and to justify their expenditures. SAAs and SAC directors also use these data to respond to requests from their state legislatures about how particular policies or programs might free up money to use elsewhere, and thus stretch tax dollars and show value to their constituents. Lastly, SAAs and SAC directors reported using these data to encourage their state legislatures to consider the costs of new policies or programs that may impact victims of crime.

VOCA administrators and civil attorneys reported using these data for more narrow purposes, as did some SAAs. VOCA administrators collect and collate data on victim expenses paid and on victim services provided by VOCA-funded service providers. These data are provided to state governments and as part of performance measurement compliance with OVC for the purpose of understanding the number of individuals served by VOCA compensation and assistance programs, as well as patterns of victimization. As such, these data are limited to services covered or reimbursed by VOCA funds. VOCA administrators may also use data on expenses they could not cover to inform policy makers regarding state caps on allowable expense amounts or potential new expense categories, such as victim relocation or crime scene clean-up.

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Civil attorneys reported using cost of victimization data to substantiate jury award requests to compensate victims for their losses. Scholarly research on victimization costs may be used to substantiate these requests, or they may call expert witnesses that can testify about these issues.

Data sources currently used to calculate the cost of victimization

Most SAAs and SAC directors reported calculating costs on an ad-hoc basis using estimates in Miller, Cohen and Wiersema's (1996) previous research, coupled with subnational incidence estimates calculated from federal data sources. Those usually used are the National Crime Victimization Survey (NCVS) and either the FBI's National Incident-Based Reporting System (NIBRS) or Uniform Crime Report (UCR) data. SAAs and SAC directors mentioned that they often report a range of costs based on extrapolation of the least- and most-underreported victimizations, but they admit that some of their estimates are based on these old calculations. Two attendees reported using more recent cost numbers from Steve Aos and his team at the Washington State Institute for Public Policy (WSIPP) (Lee et al., 2012) to calculate their estimates, though their methodology is derived from Miller's earlier work.

Regarding other existing data sources or data types they might tap, participants suggested that they might be able to work with victim service providers to get incidence and cost data. Other SAC director participants mentioned wanting to do their own victimization surveys, as some states already do, though funding to conduct those surveys is not always available on a regular basis. As far as what costs should be included in any estimates in addition to those specifically mentioned below, participants suggested asking local victim service providers, which was done in the victim service provider survey.

Current challenges with estimating costs of victimization

SAAs and SAC directors mentioned several challenges regarding their ability to accurately estimate or communicate victimization costs, including not having current and accurate dollar figures associated with different costs, explaining to policymakers what "tangible" and "non-tangible" costs are, and making sure their cost estimates are understood correctly and used appropriately. One participant mentioned that every bill change in their state legislature requires a statement of "impact on the community"; they thought it would be helpful to also include "impact on victimization costs." However, another participant voiced that it was important to be careful that these data are not misused to justify increasing incarceration, because increased incarceration could increase overall victimization costs to the state if one considers incarceration to be one of the costs of victimization. Overall, participants identified a need for guidance on instructing states how to use these costs estimates appropriately.

Other challenges identified by SAAs and SAC directors were methodological. For example, care must be taken not to count the same victimization cost multiple times. Also, a high incidence of underreporting victimization occurs because most victims do not seek help, which can lead to underestimates of victimization incidence and costs.

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Identifying who the victims are in cases of emerging crimes like financial crime, oil spills, and other non-street crime was another noted challenge. SAAs and SAC directors wished they had more hard data in these areas. They noted that costs can be much larger for some of these emerging crimes than with street crime, but the validity of currently available numbers can be weak. Even if better numbers can be found, the use of such information also depends on the willingness of government to deal with these other crime types in addition to street crime. SAAs are more often asked by their governors or legislatures about crimes that result in higher populations in the department of corrections rather than about white collar or other emerging crimes. However, one participant noted that they could use new information generated on these topics to inform their state governments about these issues. This person defined the SAA/SAC director role as making people aware of things they are not thinking about and changing the conversation on important issues, such as occurred in the last decade with human trafficking.

What costs were focus group participants concerned about?

In addition to the most common costs of victimization (i.e. medical/mental health, lost wages) SAAs and SAC directors were concerned about impacts on employment and future employment, relocation costs, and impacts on a child's schooling if a family moves to another school district in response to victimization. They noted that, to their knowledge, these latter data do not exist related to victimization on the state level. Also mentioned were costs related to fear of crime, such as costs of avoidance and lifestyle changes. Regarding costs to the criminal justice system, it was mentioned that most of the work they knew about in this area is rough, although Washington State's "Results First" work (Dueffert, 2012) was admired as having been well done.

States also need to know the return on investment (ROI) on money spent on responding to crime versus the costs of victimization itself, according to SAAs and SAC directors. However, they noted that victim groups may object to that line of inquiry because they worry that focusing on the costs of responding to crime could result in diversion of funding from victim costs to criminal justice costs if criminal justice costs are reported to be very high. Victimization cost data being used to justify longer sentences and/or more incarcerations was also identified as problematic by SAAs and SAC directors.

In addition to the above challenges, civil attorneys spoke of the challenge in quantifying non-economic costs when trying to secure jury awards for victims. These include costs that may have been paid by insurance rather than the victim. As well, there is often not enough information available to calculate damages for juries and to calculate recommended awards for pain and suffering. Pain and suffering awards can depend as much on jury sympathy as on an actuarial valuation of suffering. Civil attorneys also mentioned issues including lost wages and expenses taken on when a family member becomes a caregiver to a victim rather than hiring a nurse. In some states, damages to cover the family member's losses and costs are not always allowable or considered, whereas a nurse's wages might be. They reported that it is hard to secure damages for harms without easily calculated values that juries can understand, and they

reported institutional biases that make it harder to get comparable awards for both non-minority and minority victims.

VOCA Administrators noted that most states can at least partially cover expenses related to funeral, medical, mental health, and lost wages under VOCA compensation. However, due to differing state regulations, there is significant variation in compensation for additional expenses, such as transportation to and from services (mental health, medical appointments, etc.), childcare, respite care, and relocation expenses (security deposits and first month's rent), crime scene cleanup, and vehicle impoundment. One participant noted that his state now covers security system installations, including door locks and window security, for victims of sexual assault and domestic violence, but not security maintenance. This service provides an added level of comfort to victims. Regardless of whether their programs were currently allowed to cover these expenses, most participants agreed there should be different levels of services allowable for different forms of victimization.

VOCA participants agreed that many of the actual costs in the categories above exceed state statutory limits on compensation. For example, in many states compensable funeral expenses are capped at \$7,500, even though funerals can cost upwards of \$25,000. Given that compensation programs are the payer of last resort, state statutes often require insurance to pay for the funeral first, with VOCA compensation then covering remaining costs up to the cap. Other states will cover up to a certain amount up front. Participants also discussed similar costs, such as the loss of support or wages to dependents, which are covered in some states but only up to \$25,000.

Many participants stressed that because compensation programs reimburse for direct, out-of-pocket costs, there are significant—even lifelong—costs associated with victimization they are unable at all to cover at all. These included loss of companionship, loss of enjoyment of life, loss of a father or mother, loss of protection, and costs associated with keeping a companion nearby while receiving services.

Additionally, VOCA administrators also mentioned unrecognized costs incurred following specific kinds of victimization, especially homicide, within specific victim populations, or those for which costs often exceeded allowable caps. Other important costs identified during the discussion included additional tangible and intangible costs associated with homicide: loss of support; loss of partnership or consortium; expenses incurred for the care of surviving children in the case of a homicide event; crime scene cleanup; the cost of maintaining the victim's confidentiality when the insurance policyholder is the perpetrator; transition and relocation costs such as moving vans, security deposits, groceries, and clothing; caretaker services; costs to employers including lost productivity and increased security measures in the workplace; lost earning potential due to foreshortened or lack of education; transportation issues, especially in rural areas; case management; intergenerational costs, or the idea that crime and victimization can become cyclical without proper care and support; and the cost of having a bad experience with a service provider. Other examples included unique costs associated with victims who are disabled, do not speak English, or are victims of white-collar crimes. There were very few

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substantive comments about approaches to *measuring* costs other than tracking cumulative amounts for various, tangible items.

VOCA administrators stressed that different victim types have unique needs and expenses. For example, disabled victims often need batteries, a generator, or an additional apparatus to survive, expenses that will continue until the end of their lives. Victims who do not speak English need translation and interpretation services in addition to services generally needed by other victims of similar crimes. Victims of property crime often do not even attempt to access services because they are not looking for counseling or medical services. Instead, they simply want their property returned or replaced. Victims of identity theft also seldom seek services. Their costs can be substantial and have long-term effects – such as lowered credit scores and the inability to take out a loan – harms which are not currently covered by VOCA compensation and assistance programs.

VOCA Administrators mentioned numerous other costs as well, including costs to employers following an employee disappearance from work, and heightened security in the workplace if the victimization occurred there; costs to secondary victims such as family members, including emotional harm, lost wages, and time away from family and friends; and community impacts such as decreased morale, productivity, and risk-avoidance measures. Some participants also discussed costs associated with possible future incarceration, substance abuse and subsequent treatment, as well as poly-utilization of services and costs related to the ability to re-access services at any point in their lives.

Similarly, civil attorneys identified several barriers to getting resources to victims in need. In many instances, and for a variety of reasons, a victim will receive a partial jury award to mitigate their losses or no award at all. Another common obstacle is the absence of a viable defendant: many direct perpetrators of crime do not have the money or other assets to pay damages in a civil suit. As a consequence, many victimization-related civil suits are brought against third parties who bear some responsibility.

Civil damages awarded may also depend on the state of jurisdiction. Many states have different limits and restrictions on pain and suffering, and when asked if/how states vary, seven participants mentioned that their state has a cap on non-economic costs including pain and suffering. In some states, such as Oklahoma, the cap is dependent on the cost of living. In other states, cost of living is not considered, but restrictions still exist. State caps range from \$125,000 to \$2 million. In some states, caps are set based on the level of blame assigned to the defendant. For example, if a victim identifies a perpetrator in a lawsuit alongside a corporate third party, the fault of the individual perpetrator will often be used to diminish the fault of the corporation. This means that damages awarded will be much lower if the individual perpetrator is 90 percent to blame.

Civil attorneys also identified significant institutional or individual bias based on the socioeconomic status of both the defendant and the victim as an obstacle to getting the desired award. For example, when calculating lost wages or future earning capacity, the damages awarded are often dependent on the sex and race of the victim. In such cases, attorneys

mentioned that a minority victim with a high level of education will receive a lesser award compared to a white male with the same education and experience. They stated that this is because of national standards used to show maximum income earning potential, which still indicate that white men have more earning potential than other racial, ethnic, and gender groups.

Some cases may also involve one or more liens placed on an award, which prevent a victim from receiving some or all of their award in cash. Participants mentioned that some liens can be written off or reduced, such as in the case of victim compensation or Medicare and Medicaid, but that writing off or reducing liens is highly dependent on those in political power. In cases where liens cannot be written off or reduced, victims may not have any settlement funds left after the debts are paid. Participants relayed that most often victims do not receive all or part of their award because some company or public entity is entitled to a portion or the entirety of the award. Participants also commented that attorneys may choose not to represent a victim if there is a risk of several liens, as it is unlikely they will be able to recover any damages once the debts are paid.

Secondary costs are additional costs that may not be awarded. Civil attorneys mentioned that secondary costs must often be proven. For example, they might secure jury award money for secondary costs to pay for a fulltime nurse, but the jury may not award anything if a family member takes on that role. This is the case for many secondary costs that a family member or friend may take on, and in many of these cases secondary wage loss is also not considered. In some states, in cases where the victim is even a child, costs to parents or family members from time taken off from work to care for that child are also not allowable secondary costs. Depending on the state of jurisdiction there are some exceptions to this, but overall, secondary costs are more difficult to prove, especially if they are incurred by a family member.

Other cases in which a victim may not receive an award include cases involving undocumented victims or victims of sexual abuse. Many attorneys cannot take cases of undocumented persons, and many undocumented crime victims do not come forward in the first place for fear of deportation. In cases of sexual abuse, especially marital sexual abuse, there are often marital protections in place that prevent victims from receiving an award.

All the above barriers to receiving a civil jury award, as well as sources of potential bias used in award calculations, can influence whether civil attorneys bring those claims to court and how much those awards are. That, in turn, can affect representativeness of jury award data available for those used jury award methods to estimate victimization costs. This is one of the cost estimation methods described in Volume II.

Finally, SAAs and SAC directors mentioned some last costs they were concerned about. They believe collateral costs, the financial impacts on the offender and the offender's family, should also be included in cost of victimization studies. This idea is not without controversy. Other focus group participants⁴ felt that expense belonged in larger cost-of-crime studies versus those with a narrower focus on victimization costs. Nevertheless, at the state level, participants felt it important to know the impact of making someone difficult to employ or house due to

⁴ And some advisory board members.

criminal conviction and incarceration. Additionally, when the victim and offender have a relationship, it can be even harder to disentangle the collateral consequences for each. It was stated that while these are more akin to the costs of crime than the costs of victimization, they are seen as related. One state would like to know how much restitution is actually collected and provided to victims, and SAAs and SAC directors also specified a need to consider costs of poly-victimization, repeat victimization, and multiple victimization.

Other issues to be considered when measuring costs of victimization

While most remarks centered on the costs associated with victimization, there was some discussion of specific measurement issues. SAA/SAC participants mentioned sources like the NCVS, which captures data on property loss incidence and categorizes most losses according to their value. SAA/SAC participants from Utah mentioned that they had published a report which measured the cost of sexual assault (Cowan, 2015). Their findings indicated that Utah spent \$4.8 billion on services for victims of sexual violence in 2011 (ibid). Another study, conducted by the Public Safety & Emergency Preparedness Committee in Washington, investigated the cost to victims if their vehicles were impounded following a theft (Washington State House of Representatives, 2010). That committee determined that these costs were typically about \$100; however, that cost was highly variable depending on the outcome. Following that study, victims of motor vehicle theft were authorized to apply for compensation to cover towing and impound fees. SAC/SAA focus group participants outlined several other issues to bear in mind regarding state-level needs for data on the costs of victimization, by category:

Tangible vs. intangible costs. SAAs and SAC directors stated that tangible/direct costs are easier to describe and justify. There is concern that claims for intangible costs can very easily become never-ending and fraudulent. Tangible costs are readily shown on paper. Intangible costs could even extend to intergenerational costs of victimization – not just those affecting a victim’s lifetime, but her/his offspring.

Time horizon. For practical purposes, SAAs/SAC directors stated that a time limit should be identified for use in calculations. For example, if 80 percent of costs are usually incurred in the first two years after victimization, perhaps that is what should be used. This will vary by severity and type of crime, but SAAs and SAC directors felt strongly that identification of a time limit is needed for cost estimation methods, though some costs can go on for years. VOCA administrators echoed this concern. Group members did not have a definitive answer as to what that time limit should be, however, and said that specifying this term could be a major contribution of this work. Specifying a time horizon would also be meaningful to legislators who often think in four-year and eight-year terms about programs, when the full benefit of victim service investments might not be seen until ten to 15 years later. Legislators want results faster, especially with prevention programs. Therefore, it could be very useful to be able to say, “This is the timeframe in which 80 percent of all costs are incurred.” But how would this period be determined? The suggestion was made to consider research such as that on the decline in effects of Post-Traumatic Stress Disorder (PTSD) over time. Perhaps an analogy can be drawn to costs of victimization and what time frame is most relevant.

Potential Data Sources

SAAs and SAC directors named several data sources they would like to have available in order to better estimate costs in their states. These included state-level victimization surveys conducted at regular intervals. (Attendees of our focus group did not belong to the states that do these regularly, if at all). According to SAAs/SAC directors, issues that should be addressed in development of state victimization surveys include the scope of the survey, how many crime types are included, at what level crimes are measured (individual, society), and what costs are associated with each and available to measure.

SAC directors would also like data from local service providers that are not limited to VOCA or other funding-stream-specific reporting data, to help them understand more of the collateral/indirect costs of victimization. Presently, no data on past VOCA-related costs are available at the state level. One participant mentioned that states struggle even with criminal justice cost measurement, and that those are the easiest costs for states to measure. They stated that people use average costs that are wholly inaccurate. Additionally, few states calculate marginal costs in the criminal justice system.

Data is also desired by SAAs, SAC directors, and their stakeholders, on the costs of responding to victimizations. Miller's work, which they were familiar with, only included police and fire (emergency responder) costs. SAAs and SAC directors expressed a desire that criminal justice costs associated with victimization response be included in estimates, including prosecution and incarceration costs. The WSIPP work included only a crude measure of criminal justice costs. A picture of the full cadre of costs could help legislators understand the full return on investment for new legislation addressing the criminal justice system's response to victimization. However, it is important to identify the direct costs of victimization separately.

SAAs and SAC directors also desired a greater understanding of who the victim is for different types of crimes. Although street crimes are the primary focus of most criminal justice data, financial crimes can have a much larger and more costly impact, including costs to the public of paying for company or bank bailouts, for example. They noted that there is a greater willingness for the government to take care of costs of victimization for certain types of crimes (e.g., oil spills) than for financial crimes, and that the overemphasis on street crimes can detract from these other crime types.

Discussion

Implications for research

The above sections present a wide variety of information provided by all three focus groups on a number of important issues and topics related to estimating costs of victimization and uses of those estimates. As mentioned earlier, the most startling realization is the amount of data and information that these individuals do *not* have access to on victimization in their own states, and how reliant they are on federal data sources and now-dated research for the estimates they generate.

The input provided by all three groups fed into a lot of the recommendations presented in Volume III of this report. These include topical studies on understudied subpopulations and victim types that provide more cost estimates, victimization prevalence estimates, and qualitative information about the experiences of these groups. A number of practitioner tools are recommended, including practitioner friendly guidance resources on interpretation of cost estimates, standard definitions of costs, time frames to use in cost estimates, and calculator tools that can be updated regularly. Some of the requests that came from these groups are dealt with in academic literature, but the information has not been well translated and disseminated to practitioners, while others require new research that is also proposed in the final recommendations.

Limitations

While these focus groups were intended to solicit input from a variety of practitioner stakeholders on the costs of victimization, all data sources have their limitations. Within each group, it is likely that participants were not representative of the full nationwide populations of SAAs and SAC directors, civil attorneys, and VOCA administrators, and there are other groups that serve victims with whom focus groups would also have been beneficial. For example, speaking to a variety of service providers in a focus group setting could have yielded a number of important insights, but due to time and resource constraints, project staff solicited their input through the survey only and by including a couple of service provider representatives on our advisory board. As such, no conclusions should be drawn from these focus group discussions, but they were very informative in helping the project team identify needs and concerns in the field.

There are other approaches that, in hindsight, might also have been beneficial, such as sending certain questions in advance so that participants could ask others in their offices for input prior to participating in the focus group meetings themselves. This might have been particularly useful regarding questions about data sources and uses of victimization cost estimates. Nevertheless, the groups provided valuable information that was instrumental in this exploratory assessment of the field and that significantly informed our recommendations in Volume III.

Surveys

Two surveys were conducted in 2018 as part of this research: one with victim service providers across the United States, and a smaller survey of crime victims/survivors. The results of each survey are presented below.

Service Provider Survey

Building upon findings from the Costs of Victimization literature reviews (Volume II) and focus groups with various experts (above), researchers at the Urban Institute conducted a national survey of victim service providers to assess their awareness of, capacities for, attitudes toward, and behaviors related to the costs of crime victimization. The overarching goal was to

inform the portfolio of recommendations for future research on the cost of victimization and how to make that research more relevant and useful to service providers. The survey questionnaire specifically assessed and described the following areas:

- Work experience and organizational characteristics
- The types of harms observed in victims (e.g., most common harms, how harms differ by crime type)
- Indirect victimization effects (e.g., how often are other individuals negatively affected)
- Services that reduce or mitigate harms
- Factors that increase harms
- Cost of victimization harms (e.g., has it been calculated, how useful would it be, concerns)
- Cost of victim services (e.g., has it been calculated, how useful would it be, concerns)

This section summarizes the methods, sampling, and analytic strategy employed to conduct this nationwide survey and the results obtained from that effort. Prior to that, the key descriptive findings to emerge from the survey are described.

Key Findings

Harms of Victimization

1. Most service providers understood that victims experience a wide range of harms at least sometimes or often, and other important harms that should be considered, including economic impacts, trauma, and long-term health related harms, as well as harms by the system.
2. The respondents reported that harms differed by crime type, with gender-based violent crimes featuring especially misunderstood harms. Harms experienced by victims due to violent crimes varied more than harms from property crimes.
3. Most respondents reported that the family members of victims are most negatively affected after victims themselves, but that researchers should take a broader view of who is affected, extending out to the community level.

Effects on Victimization Harms

4. Most respondents believed that each of the services asked about reduces harms, with the top selections being mental health care, housing, and crisis intervention, but suggested that broader economic-related support and comprehensive case management are also important to mitigate harm from victimization.
5. Most respondents believed that each of a range of factors asked about increases harm for the victim, including intangible factors like fear of retaliation and limited social support, as well as the commonly written-in suggestion of harm from the justice system.

Calculations of Costs

6. More respondents reported calculating the cost of victim services than calculating the cost of victimization harms, although a large percentage did not know whether their organization provides such an accounting.
7. The primary reported purpose for measuring the cost of victimization harms was for victim financial assistance. This was most often calculated for restitution request forms, using receipts on the individual victim level, or by institutional reports and payouts on the community level. Suggestions for other harms that should be measured included intangible costs, long-term harm, harm to secondary victims, and costs tailored to specific crimes and populations.
8. Service providers who had measured the cost of victim services most often calculated them for funding purposes or to evaluate their programs, but they did not calculate them on a per-victim basis. Labor costs were calculated by dividing total cost by the number of victims served. Suggestions for other cost-related items that should be measured included both immediate and long-term outcomes, and both concrete expenses and intangible benefits.

Uses and Concerns about Cost Estimates

9. Most service providers thought it would be moderately or very useful to know the cost of harms and services, with primary uses being to advocate for increased resources and to reference in grant applications. Their secondary uses depended on whether the cost of harms or the cost of services was being monetized.
10. Respondents' biggest concerns about calculating the costs related to victimization were the ability to come up with accurate numbers, and unintended consequences of emphasizing cost data that can include increased victim blaming and decreased funding for services.

Methods

To capture a national perspective from victim service providers on the tangible and intangible costs of victimization, and how these costs vary across differing types of victimization and subpopulations, the Urban Institute led efforts to develop and implement a web-based survey of 500 victim services practitioners across the United States. The survey employed a stratified random sampling method, which is described below. Urban Institute project staff stratified the sample to ensure adequate representation across the types of victims served (e.g., domestic violence, human trafficking, sexual assault, elder abuse, and homicide victimization), underserved victim groups including tribal victims, and types of agencies (e.g., prosecutor-based, community-based, hospital-based, and community- or jurisdiction-based coalitions).

Sample Identification. A total of 550 victim service provider agencies from across the United States were identified for inclusion in the service provider survey sample. Fifty of these

agencies were randomly selected from NCVC's VictimConnect database of service providers. The remainder (n=500) were randomly drawn from a combined database of U.S. victim services agencies in the online directories of the OVC and NCVC, as of February 2014.

OVC's directory included 10,551 agencies representing its 4,000 sub-grantees and additional agencies that requested to be added. NCVC's directory included 14,317 agencies identified by NCVC and those that had requested to be added. The combined database included 24,868 agencies. Among these agencies, there were an unidentifiable number of duplicate entries (but not exact duplicates, which were removed), along with outdated information and multiple locations/offices of the same overarching agency. Urban's researchers drew the sample from the entire combined database and subsequently corrected inaccuracies and replaced duplicates as needed in the sample, rather than in the population.

Originally, a random sample of 800 was selected in proportion to the type of victimizations addressed by agencies in the larger database. For example, 37 percent of the final sample represented child-abuse-focused agencies which approximates the proportion of victim services organizations in the OVC/NCVC databases population that report serving child abuse victims (34 percent). Thus, the final sample is proportionately representative of the overall database population of victim services agencies. Once the sample of 800 service providers was identified, Urban researchers went through those names one by one to identify whether the service provider was still in existence and to gather a current email address and the name of the program's current director. Once 500 names were identified, Urban researchers reviewed the distribution of organizational type and victims served and decided to purposively increase the number of non-traditional service providers, such as hospitals and tribal-based organizations. To fill this need, Urban researchers randomly selected 50 such organizations from the VictimConnect service provider database to reach a total sample of 550 victim service providers.

Extensive efforts were made to verify and, where necessary, correct the contact information available for each of the 550 agencies identified for surveying. These efforts involved Internet searches, phone calls, and emails, and continued until the most accurate information available was obtained prior to survey launch. Contact information included the name of each agency's executive director and victim services advocates, if available, and address, phone, and email data.

The goal of this methodologically rigorous sampling approach was to obtain input from a wide range of providers, including those that may have extensive and/or recent experience assessing victimization harms and associated costs. Results informed subsequent discussions of the Advisory board and the portfolio of research recommendations proposed in Volume III of this report.

Survey Distribution and Response Rate. The project team capitalized on their collective experience working with victim services providers, survey design expertise, and knowledge of victim services literature to create a relevant, comprehensive, and efficiently structured instrument. The content of survey questions was informed by results of the comprehensive literature review and feedback from the first meeting of the Advisory board. The final survey

instrument can be found in **Appendix 3** of this volume. The 36-question survey was distributed using the secure online software program Qualtrics (see www.qualtrics.com). Qualtrics provides each respondent with an individualized link to complete the survey, which included a guarantee of confidentiality and other participant rights for all respondents. Consent was assumed by the person's willingness to complete the survey.

To solicit participation in July 2018, Urban Institute staff first conducted outreach by mail using an initial, hard-copy invitation letter customized to each respondent using Mail Merge. This letter described the project's purpose, gave a summary of the information to be collected, and provided a survey link and unique username to each respondent. The invitation letter also specified the estimated time to complete the survey and that participation was voluntary. Respondents were told they may delegate portions of the survey to others in their organization as appropriate. A follow-up email invitation, using Mail Merge via Outlook, contained much of the same information and was sent to respondents one week after the hard-copy letter to ensure receipt of the invitation. The email facilitated easy access by including a clickable link to the online survey, along with the respondent's unique username for logging in. Email reminders to non-responders began one week following the email invitation and were sent weekly until the survey was completed or the respondent actively declined participation by notifying the project team. Each email included a clickable link to the online survey, along with the respondent's unique username for logging in. A postcard reminder was mailed to non-responders three weeks following the email invitation.

Two weeks after the email invitation was sent, four researchers at Urban also began making phone calls to non-responders. Researchers used a provided script that directed them in how to proceed if respondents had not received a letter or e-mail with survey information, if they wanted to complete the survey over the phone, if they declined to participate because of time, or if they did not know enough information about the topic to answer the survey. In the case that respondents did not know about victimization costs, researchers explained that they were also interested in harms. In the course of these telephone calls, project staff assisted with the survey instrument as needed and requested. For example, some respondents wanted to receive a PDF copy of the instrument for reference as they completed the online survey. At the request of the respondent, project staff also administered the survey by telephone and recorded responses in Qualtrics. Two weeks after the survey was sent, Urban researchers made available an anonymous survey link given to a single provider to send to its victim services network outside of the original sample. This resulted in 21 additional responses. The survey closed on Aug. 21, 2018, with a response rate of 33% (n=179 agencies).

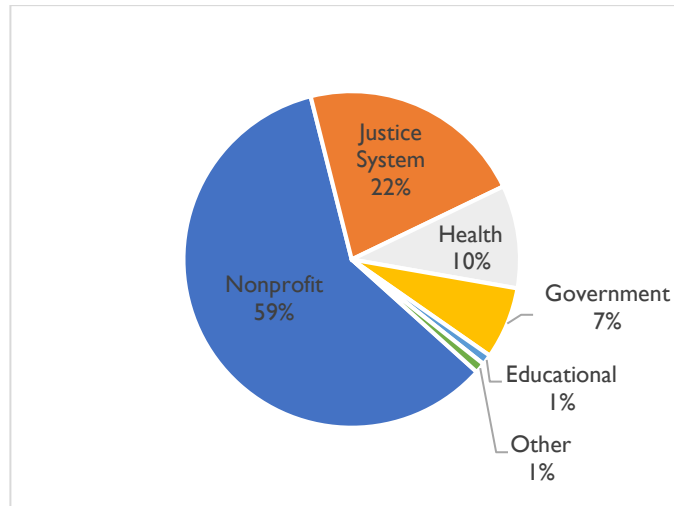
Sample Characteristics

Because completion of each question was not required, response numbers to individual questions ranged from 50 to 169, with an approximate total N of 155. Most respondents were executive directors (35%) or midlevel managers (27%). Of the 18 percent who selected "other," an additional 20 respondents were management/senior staff. Most respondents also had long tenures of working with victims (62% over 10 years). Survey respondents represented multiple

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organization types, including nonprofits, hospitals or emergency departments; physical or mental health service providers; justice-system based, government agencies; and educational institutions. As shown in **Figure 1**, most of the respondents' agencies were nonprofits (59%) and

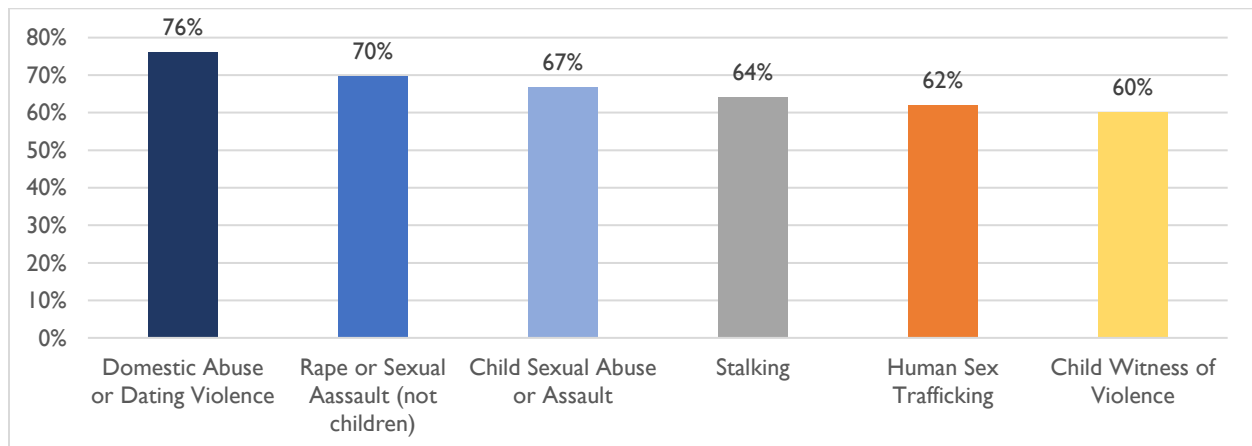
Figure 1. Respondent Organization Type



about one-quarter (22%) were justice-system based. A majority (78%) were small organizations with fewer than 50 paid staff and were aligned with a state-level or national-level victim services organization or association (84%).

Nearly all respondents serve victims of violent crimes while nearly half serve victims of property or financial crime. Respondents' agencies reflected a variety of victimization foci. As shown in **Figure 2**, most respondents' agencies serve victims of domestic abuse or dating violence (76%), rape or sexual assault (70%), child sexual abuse or assault (67%), stalking (64%), sex trafficking (62%), and child witness of violence (60%). Other crime victims that a majority of respondents reported serving include: adults molested as children (56%), child physical abuse or neglect (55%), assault (54%), and elder abuse (53%).

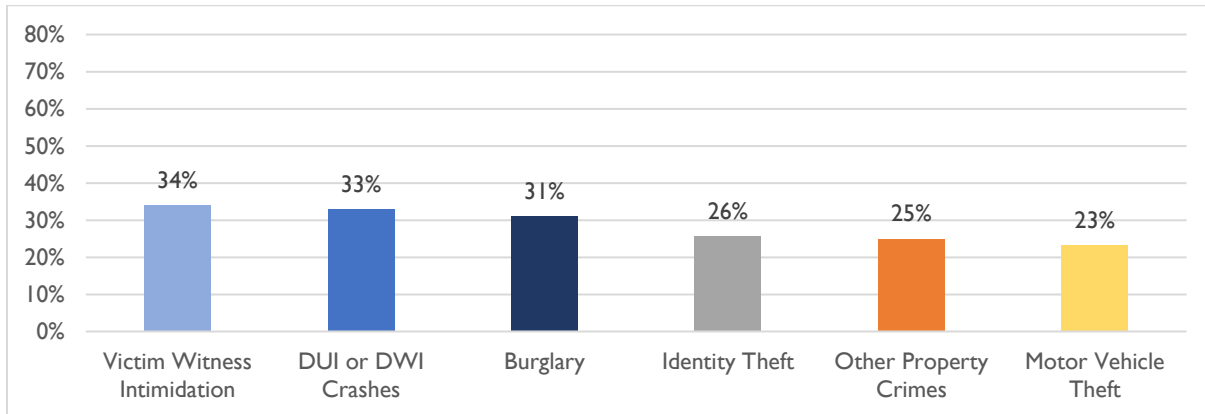
Figure 2. Top Six Crimes Served by Respondents



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As shown in **Figure 3**, some of the lesser-served crime types based on responses include: victim witness intimidation (34%), DUI or DWI crashes (33%), burglary (31%), identity theft (26%), other property crimes (25%), and motor vehicle theft (23%). Gun violence and other forms of community violence may be captured by the assault, other violence crimes, and other categories. Several respondents indicated they serve all victims, and two reported working on a systems or funding level rather than directly serving victims.

Figure 3. Bottom Six Crimes Served by Respondents



Results

Harms of Victimization

Most service providers who responded to the survey at least sometimes saw each of the harms asked about when serving victims. As shown in **Table 2**, emotional suffering was the most common frequently seen harm (59% always), followed by fear of crime and/or revictimization (34% always, 50% often) and problems with family or friends (17% always, 60% often). “Legal costs” and “lost job or withdrew from educational program” were the most rarely seen harms, and legal costs also had the variety in frequency among respondents, including the highest rates of “never” and “don’t know” responses.

Although the sample size was small, differences can still be seen in the respondents’ frequency of seeing victimization harms by organization type for some harms but not others: physical injuries requiring medical attention, emotional suffering, problem with family/friends, fear of crime/victimization ($p < 0.05$). In one clear and logical example, all respondents in health-related organizations reported that the victims they served *always* or *often* had physical injuries that required medical attention, as compared to two-thirds of justice system respondents, one-half of nonprofit respondents, and one-third of government and campus-based respondents who reported that victims *sometimes* required medical care.

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Table 2. Survey Question: For each of the harms listed below, please indicate how frequently victims you serve appear to have suffered each harm.

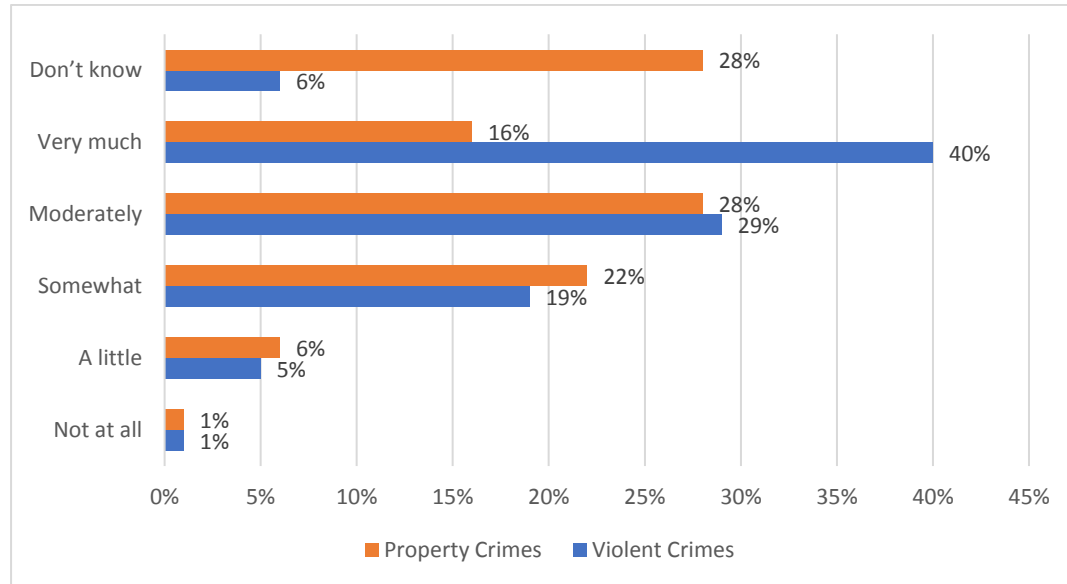
	Never	Rarely	Sometimes	Often	Always	Don't Know
Physical injuries (medical care)	1%	4%	40%	42%	10%	3%
Physical injuries (no medical care)	1%	6%	27%	58%	5%	3%
Emotional suffering (stress/anxiety)	0%	0%	4%	34%	59%	2%
Mental health care costs	1%	6%	27%	50%	11%	4%
Lost or damaged property	1%	10%	36%	43%	4%	6%
Legal costs, including lawyers' fees	4%	14%	44%	24%	6%	8%
Lost days at school or work	1%	4%	29%	52%	11%	3%
Lost job or withdrew from school	3%	14%	39%	36%	3%	5%
Problems with family or friends	0%	1%	19%	60%	17%	3%
Fear of crime or revictimization	1%	2%	11%	50%	34%	2%

Respondents were asked to specify any additional harms not listed that they often see among victims, as well as any harms they rarely see but consider important. Most of the additional harms often seen were financial, specifically housing-related. Of 66 written comments, 28 respondents mentioned economic-related harms, including economic abuse, housing issues and homelessness, relocation needs, childcare and transportation costs, loss of other income, and loss of credit. In addition, 11 respondents cited trauma-related harms, such as post-traumatic stress disorder (PTSD), and 10 cited harm by the system, such as revictimization and victim blaming by the criminal justice system. Rare but important harms were mentioned in 32 free-text responses, including:

- Harm by the system (revictimization, wrongful incarceration, manipulation)
- Long-term brain injuries, PTSD, disability, or developmental delay
- Involuntary pregnancy
- Loss of property or pets
- Threats of losing their children

- Religious exclusion

Figure 4. Survey Question: How Much Do the Levels of Harm That Victims Experience Differ or Vary Across Victims?



Respondents were also asked how much they think the levels of harm victims experience differ or vary between victims of violent crimes and victims of property crimes, as shown in **Figure 4**. Respondents thought the levels of harm varied much more among violent crimes (40%) than among property crimes (16%). However, respondents were also more uncertain about variance in harms due to property crimes, with 28 percent indicating that they “don’t know” about the variation compared to 6 percent for violent crimes.

Harms to Others. To assess the impact of victimization beyond the immediate victim, respondents were asked about the negative effects on others in the victims’ lives. **Table 3** demonstrates that family members are perceived to be most often negatively affected, specifically children (92% always or often), spouses or partners (79% always or often), and other family members (76% always or often). When asked to write in other individuals often affected by a victim’s experience, the 18 responses referenced the community four times, people such as service providers working with victims three times, and clergy twice. Other notable submissions included witnesses, the perpetrator’s family, and those to whom the victim is obligated or owes financially. When asked to write in other individuals who are *rarely* affected by victims’ experiences, but are very important, the 12 responses noted classmates, teachers or mentors, employers, caregivers, the faith community, case managers, elderly dependents, and the victim’s abuser.

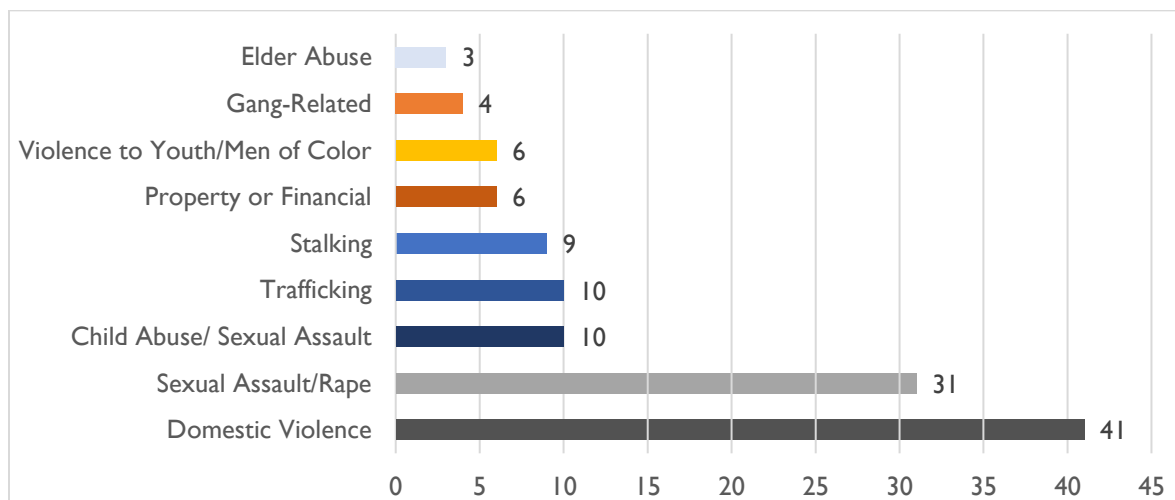
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Table 3. How Often Are Other Individuals in Their Lives Negatively Affected by Victims' Own Experiences?

	Never	Rarely	Sometimes	Often	Always	Don't Know
Victims' spouses or partners	1%	1%	14%	53%	26%	5%
Victims' children	0%	1%	6%	46%	46%	2%
Victims' other family/relatives	0%	0%	22%	64%	12%	2%
Victims' friends	0%	5%	45%	38%	8%	3%
Victims' neighbors	0%	14%	56%	19%	3%	8%
Victims' co-workers/classmates	0%	13%	53%	26%	3%	6%

Misunderstood Harms. When asked if there is a type of crime whose harms are particularly misunderstood, 69 percent of respondents said yes, 12 percent said no, and 19 percent said they don't know. Respondents were then offered the opportunity to write in which crimes they think have the most misunderstood harms, the results of which are tabulated in **Figure 5**. With 103 submissions, this question generated the most write-ins. A clear majority indicated gender-based violence crimes—domestic, dating, or intimate partner violence, and sexual assault or rape—had the most misunderstood harms, followed by physical and sexual child abuse, human trafficking, and stalking. However, a range of other crimes, from population-specific crimes to financial crimes, were also suggested. Single-response suggestions included hate crimes, bullying, witness intimidation, and survivors of homicide or death of a child.

Figure 5. Crimes Whose Harms Are Particularly Misunderstood



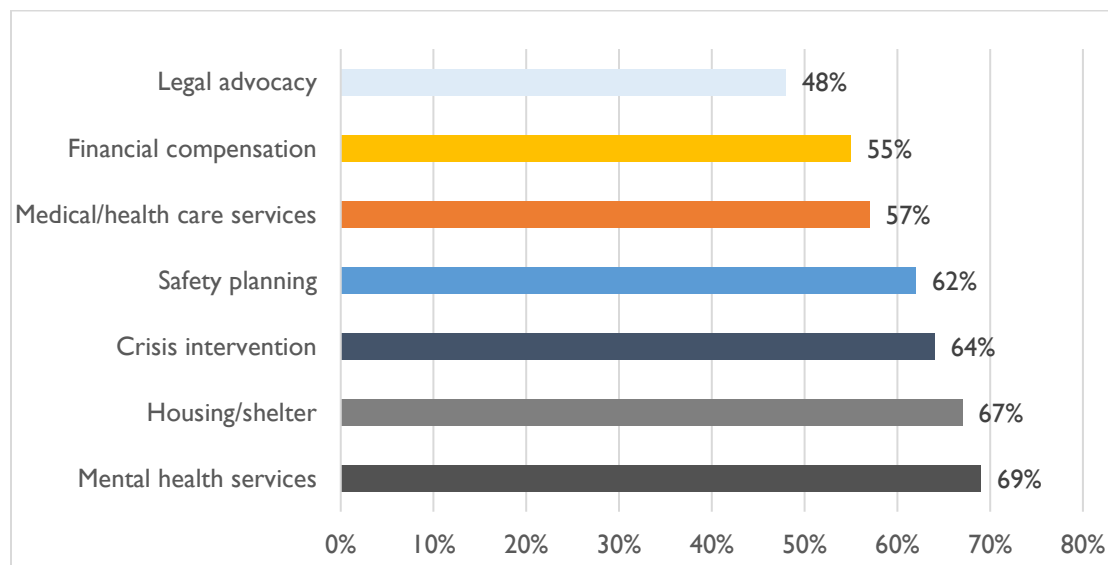
Factors that Reduce or Increase Victimization Harms

Services That Reduce Harms. Based on their experience with crime victims, the participating service providers were asked how much they agreed with a series of statements about services that may reduce or mitigate the harms of victimization. More than 85 percent of respondents agreed or strongly agreed that each type of service would reduce or mitigate victimization harms. However, as seen in **Figure 6**, the services that respondents most strongly agreed would reduce or mitigate victimization harms were access to counseling and mental health care (69%), access to housing and shelter (67%), and access to crisis intervention (64%). Although a substantial 48 percent still strongly agreed that it helps victims, access to legal advocacy received the fewest responses.

Respondent support for the range of services did not vary based on organizational type or current position. Likewise, responses did not vary based on whether the respondent had calculated the cost of victim services. However, respondents' answers did vary by how useful they think it would be to know the cost of services for some but not all services that reduce harm: safety planning, crisis intervention, and medical/health care services ($p < 0.05$).

Service providers were also asked to write in additional services not listed that they believe reduce or mitigate the harms of victimization. Of the 44 responses, the most common write-in service was case management (8), particularly to help victims navigate and understand available services. Five respondents suggested cross-system collaboration or improved justice system response, and three suggested support for child victims and child secondary victims. However, most-often suggested were services to support victims' economic security, such as transportation (6), child care (5), financial assistance (4), employment/training (4), housing (4), and substance abuse (3).

Figure 6. Percentage Who “Strongly Agree” that Access to the Following Services Reduces Harms

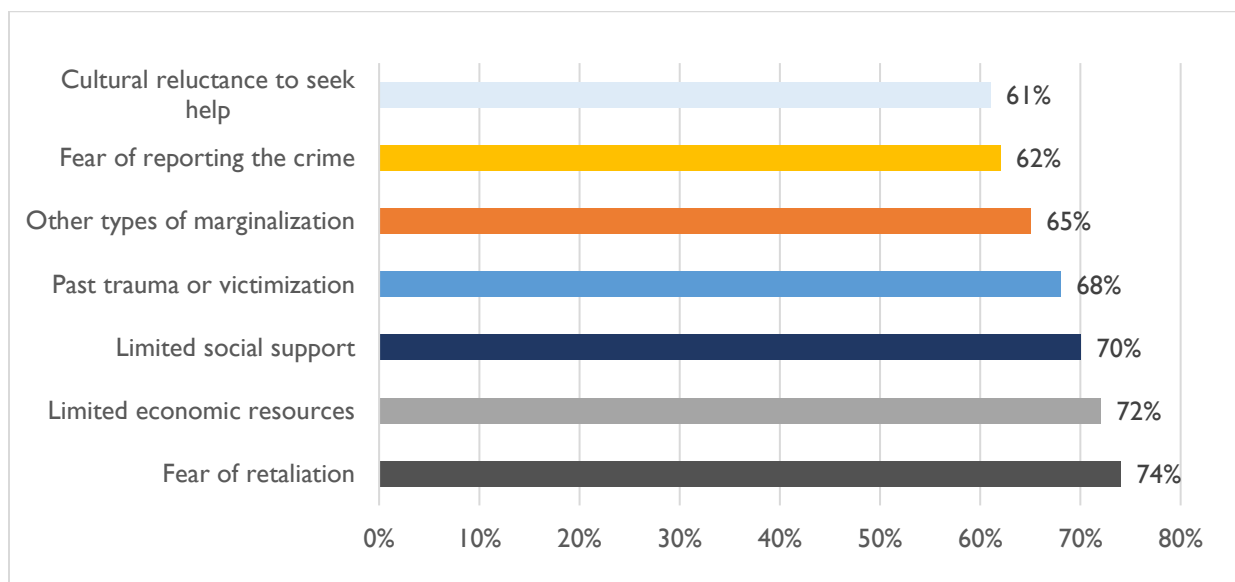


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Factors That Increase Harms. Based on their experiences with crime victims, participating service providers were asked how much they agreed with a series of statements about factors that may increase or exacerbate the harms of victimization. More than 90 percent of the participants agreed or strongly agreed that each listed factor would increase or exacerbate the harms of victimization. However, as seen in **Figure 7**, the factors that respondents strongly agreed with the most were fear of retaliation from the perpetrator (74%), limited economic resources (72%), and limited social support (70%). Although a majority (61%) still strongly agreed that it increases harm, cultural reluctance to seek formal help received the fewest responses.

Respondents' belief in the harmful impact of these factors did not vary by current position and was mostly equal across organizational type, except for "victims' experiences with other types of marginalization (e.g., discrimination due to their race or sexual orientation) increase or compound the harms of victimization." Those representing nonprofits more strongly agree than average (77%) and those in the justice system strongly agree less than average (41%) ($p=0.06$). Responses to questions about the cost of victimization showed respondents' agreement varied by some factors but not others. Responses to how much limited economic resources, cultural reluctance, and other types of marginalization increased harm varied significantly based on whether the respondent's organization had calculated the costs of victimization ($p<0.05$). Similarly, responses to all factors, except for fear of retaliation and cultural reluctance to seek help, differed significantly by how much respondents think it would be useful to know the cost of victimization ($p<0.05$).

Figure 7. Percentage Who "Strongly Agree" That the Following Factors Increase Harm



Service providers were also asked to write in additional factors not listed that they believe increase or exacerbate the harms of victimization. The most common theme among the 25 written submissions was the justice system (12). For example, respondents cited victims being retraumatized by the system; lack of training, empathy, or understanding from law enforcement

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or attorneys; systemic barriers; and difficulty understanding or being able to live up to expectations of the process. Other common responses were stigma by service providers, the media, and the public (4), immigration status (3), economic needs (2), and mental health/substance abuse (2).

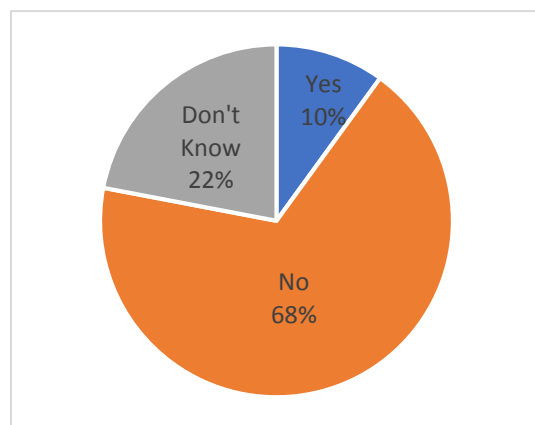
Estimating Costs of Victimization Harms

Experience Calculating Costs. Service provider respondents were asked if, to the best of their knowledge, their organizations had ever calculated the financial costs of the harms that victims experience. As seen in **Figure 8**, 10 percent had calculated victimization costs, 68 percent had not, and 22 percent did not know whether their organization had done so. Whether costs had been calculated did not differ by organizational type, but it did by current position of the responder ($p < 0.05$). Senior level staff, comprised of executive directors, program directors, and managers, were much more likely to report calculating costs than frontline staff.

Of the service providers whose organizations had calculated these costs, the most common reason, as indicated in six of 13 free-text responses, was to support application for some form of victim financial assistance such as restitution or VOCA victim compensation applications. Other reported uses included “education and awareness promotion to general public,” “to justify cost/benefit of providing services to victims,” and for funding or grant writing purposes.

The methods of calculating costs varied based on whether they were being calculated per victim or collectively. Per-victim costs were mostly calculated by restitution request forms or other similar forms with receipts from the victim. Collective victimization costs were calculated by a variety of means, including data from police or doctor reports, victim compensation payouts, and using cost estimate numbers found in academic literature.

Figure 8. Has Your Organization Calculated Costs of Harms?



Respondents were also asked about other ways people might measure victimization harms, in addition to quantifying harms to victims in dollars. Their 43 written suggestions of harms that should be considered generally followed several themes: intangible costs, long-term costs,

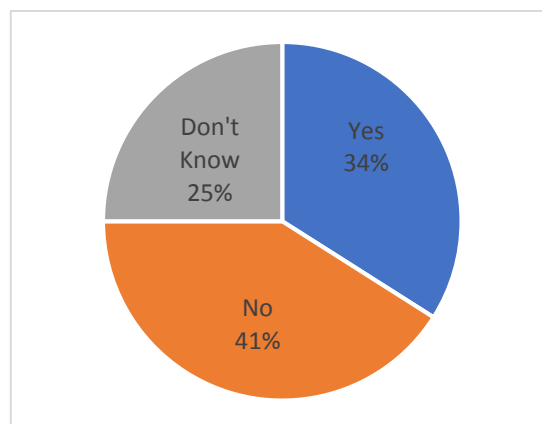
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secondary victims, and tailoring measurements to a specific crime or population. Service providers surveyed wanted ways to measure harms in terms of:

- Loss of opportunity (8)
- Health needs or costs (7)
- Mental health (6)
- Longitudinal and intergenerational tracking (6)
- Quality of life post-trauma (4)
- Social functioning (4)
- Community impact or cost (3)
- Adverse Childhood Experiences (ACEs) and impacts on child development (2)
- Time spent recovering from victimization (2)
- Costs tailored to crime and marginalized population (2)

Respondents were then asked if, to the best of their knowledge, their organization had ever calculated the financial cost of victim services they provide. Compared to the 10 percent who had calculated the cost of victimization *harms*, many more organizations had calculated the cost of *services* even while the number of respondents to that question remained relatively the same. As seen in **Figure 9**, 34 percent of respondent organizations had calculated the cost of services, 41 percent had not, and 25 percent did not know whether their organization had done so. As before, whether respondents stated that their organization calculated cost of services did not differ by their organizational type, but it did by the respondents' position ($p < 0.05$). As with cost of harms, senior-level staff were much more likely to report calculating costs than frontline staff.

Figure 9. Has Your Organization Calculated Costs of Victim Services?



The most commonly-reported reason for computing the cost of victim services was related to funding: 33 of 47 written responses cited grant applications, fundraising endeavors, or budgeting. Other answers included evaluating their programs and their impacts, guiding resource allocation, and educating the public and funders. Of the respondents whose organizations had calculated services costs, it was more often a total rather than per-victim cost: 48 percent calculated total cost versus 38 percent that calculated per-victim cost, and 14 percent did not

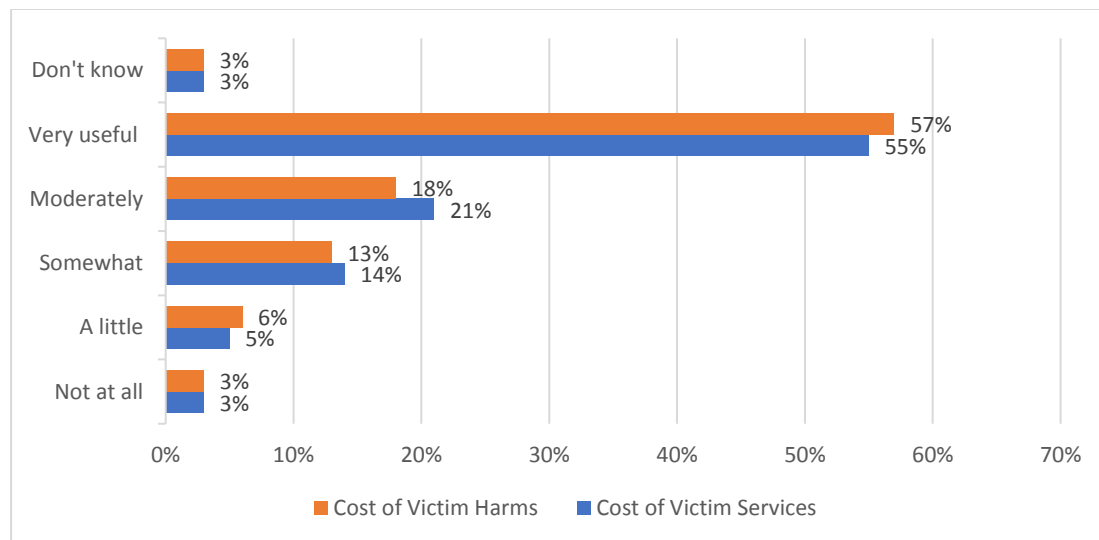
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know which level of cost their organizations calculated. Participating service providers were also asked what methods were used to calculate these costs. Nearly all 34 responses described variations of using labor costs divided by the number of victims served.

As with the cost of victimization, respondents were asked how else they think people might measure victim services' costs in addition to quantifying those costs in dollars. Suggestions ranged from using immediate to long-term time frames and from very concrete and specific to more qualitative measures. For example, one comment referenced tracking "the number of visits to medical facilities for injuries to compare the outcome of those numbers after intervention has been implemented." Another respondent offered a more qualitative "client perspectives and change in thinking and how they see their future. We had clients say they were more hopeful about their future as a result of services. BIG MOTIVATOR!" Additional examples of suggested measures included:

- Volunteer/advocate hours
- Rates of successful program completion
- Measures of victim well-being or lack of improvement
- Costs for services stemming from unmet needs
- Saved lives
- Community crime rates
- Health insurance costs and cost savings

Figure 10. How Useful Would It Be to Know the Costs?



Uses of Cost Estimates. The survey also asked participating service providers how useful it would be to their work to know both the financial costs of victimization harms and of victim services. For both questions, most respondents indicated that it would be useful. As seen in **Figure 10**, 18 percent think it would be moderately useful and 57 percent think it would be very useful to know the cost of victims' harms. Similarly, 21 percent think it would be moderately useful and 55 percent think it would be very useful to know the cost of providing services. Only

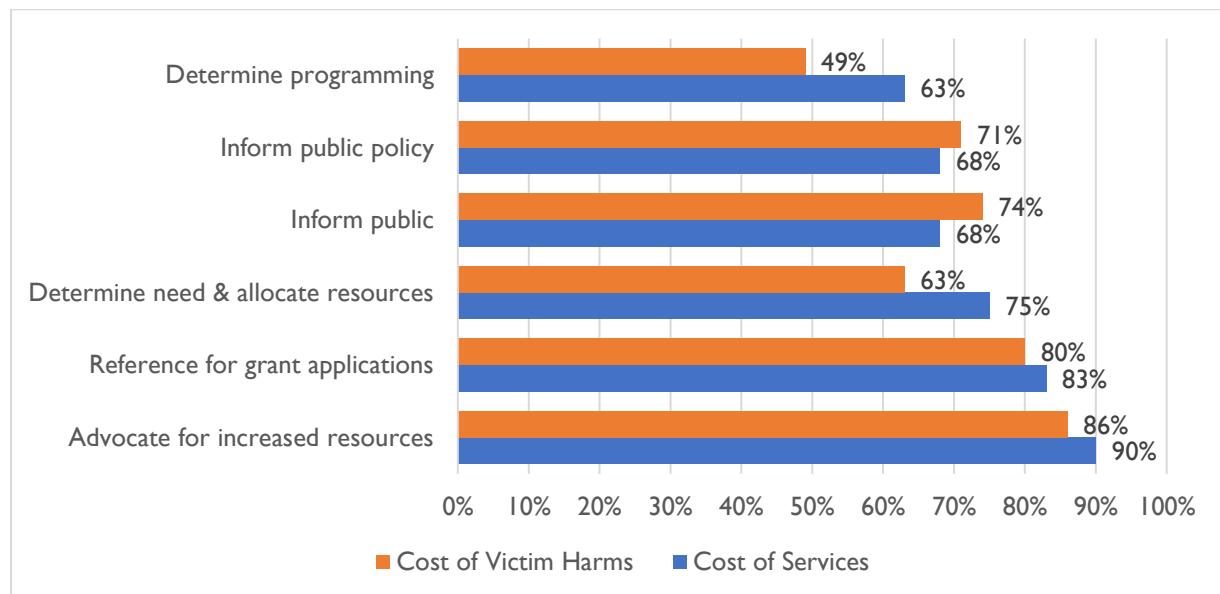
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3 percent thought it would not be useful at all or did not know how they would use it for both questions. The usefulness of knowing the cost of victimization harms did not differ by respondents' organizational type or current positions. The usefulness of knowing the cost of victim services did not differ by respondents' organizational type, but it did by their current position ($p < 0.05$), with senior level staff reporting greater use of this data.

Respondents who indicated that knowing costs was at least a little useful were then asked to select which of the different ways they would use the financial costs of harms and services in their work. In general, at least half of respondents selected every listed use for both types of costs. However, respondents selected more of the uses for the cost of services than for the cost of harms. Of the 148 and 145 service providers who responded to the questions for harms and services, respectively, all but seven chose multiple uses. The most notable differences were that respondents were more likely to use costs of services to determine need and programing and to use costs of harms to inform the public.

As seen in **Figure 11**, the top three ways service providers thought the cost of victimization harms would be useful were to advocate for increased resources (86%), to reference for grant applications (80%), and to inform the public (74%). For the cost of victim services, the top three reported uses were to advocate for increased resources (90%), to reference for grant applications (83%), and to determine need and allocate resources (75%). The reported uses for the cost of victimization harms and victim services did not differ by respondents' organizational type or current positions.

Figure 11. In What Ways Would the Financial Costs Be Useful to Your Work?



Concerns About Cost Estimates. Lastly, respondents were asked in open-ended questions to share any concerns or comments they had about quantifying the harms and services to victims in dollars. There were 24 comments on calculating the cost of harms and 17 comments on

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calculating the cost of services. Responses to both inquiries about concerns generally fell into two categories: accuracy and unintended consequences. In terms of accuracy, six respondents were skeptical about the possibility of measuring trauma, emotional harm, or risk for the victim and service providers in dollars. Examples included:

- “This could minimize the attention paid to the emotional damage that makes people's lives worse, even if they have plenty of financial resources.”
- “This must include the hazards and personal toll it takes to engage and care for this population.”

Six respondents also stated that the scope and variation in costs, victims’ situations, and services makes it impossible to arrive at an accurate and inclusive cost. Examples included:

- “Because of so many varying factors, it seems incredibly difficult to come up with a number that could be applied broadly to individual situations.”
- “The cost of providing victim services will vary significantly across organizations.”

Service providers’ concerns about unintended consequences covered the following themes. Seven respondents cited fear that calculating and emphasizing cost data would result in increased and new forms of victim blaming and in dehumanizing or commodifying victims. Examples included:

- “I just don't want to see victims of domestic violence blamed for ‘costing more’ because they ‘stayed too long.’”
- “It potentially commodifies potential victims of trafficking, which is similar to what controllers do. While it’s not inherently harmful, it could have re-traumatizing effects to put a dollar amount to the individual harmed. As long as it’s a dollar effect to the ‘harm’ (i.e., how a court would calculate the cost of restitution) and not to the victim, it could be appropriate.”

Five respondents feared that it would increase misunderstandings or misconceptions held by the public and shift focus from the real issues. Examples included:

- “I think that the community will have a misconception (about) what is included in the cost. They will only see a number.”
- “Could exacerbate the myth that certain types of violence (are) only an issue for people with lower incomes.”

Finally, four respondents stated concerns that cost data would affect funding for services, particularly those from organizations that provide programs addressing intangible harms or offering intangible benefits. Examples included:

- “We have seen figures like this used to justify REDIRECTING funds (for example, to housing and away from advocacy programs). It is important to communicate a holistic approach to services.”

- “The dollar terms often neglect qualitative aspects of service delivery that may be a great service to victims and their families, but not show up in dollar terms.”

Discussion

Implications for Research. The results of the service provider survey provided numerous insights that can inform the understanding of the cost of victimization and identify gaps and priorities for research. First, the responses indicate a need to account for polyvictimization, including victims who experience multiple different types of victimizations either simultaneously or across their lifespan, and victims whose victimizations are of a repeat, ongoing nature. For example, most respondents served victims of gender-based violence, and when asked what crimes have harms that are particularly misunderstood, they overwhelmingly cited domestic and sexual violence, child abuse, trafficking, and stalking. These crimes are frequently comprised of multiple events as well as compounding harms that make research on their costs challenging.

Second, respondents repeatedly emphasized the need to broaden the time frame and scope used to assess costs. Respondents stated that the harms often seen, and harms rarely seen but important, were often long-term in nature and therefore difficult to fit into common research time frames as well as to establish attribution to particular events. Examples of harms often seen included “chronic PTSD requiring long-term therapy” and “financial difficulties – i.e. problems paying bills, ruined credit, foreclosure, threats to employment due to stalking there, etc.” Similarly, important but rarely seen harms included “long-term financial impacts,” “involuntary pregnancies,” and “youth developmental disturbance and delay.” Participating service providers also frequently brought up the need to account for multigenerational harms, particularly to children experiencing and witnessing violence, and harms extending beyond a victim’s immediate family up to and including whole communities. These comments appeared primarily following questions about other individuals negatively affected by the victim’s experience and how else people might measure victimization harms and the costs of services.

The results also made clear that survey instruments and other research methods need to allow for a broader consideration of harm in order to capture the full scope of the effects of victimization. In general, respondents referred specifically to intangible costs, economic impacts, and harm caused by systems. The most common “frequently seen harms” were all inherently difficult-to-measure intangible costs: emotional suffering, social problems, and fear. These themes also extended throughout the written responses about harms to victims, harms to other individuals, and suggestions for how else to measure harms. For example, multiple respondents identified “loss of opportunity” and “quality of life” as essential measurements of harm, or they discussed trauma that affects the victim’s life in extensive, undefined ways. Similarly, the results made clear that economic impacts are much broader than just lost days or lost jobs and education, particularly related to questions about harms seen and factors that increase harm.

Most cost surveys assess some but not many economic impacts and components. Transportation, childcare, housing, and substance abuse are often missing from calculations. Considering whether studies are only capturing the most frequent costs, or also those that are rare

but hugely impactful, can be valuable. For example, legal costs and a lost job or withdrawing from school were seen less by the respondents, but when they do occur, they can have a huge effect on a victim's well-being and economic security. Lastly, harm caused by systems, particularly re-traumatization by the justice system, was cited frequently throughout the survey. However, this is difficult to define operationally, and few methods currently exist to measure it.

Based on how respondents said they would use cost information and their stated concerns about quantifying harms and service costs, researchers should consider how they are presenting this data and what context they are providing for the numbers. The two top-cited uses for both victimization costs and victim services costs were to “advocate for increased resources” and “reference for grant applications.” Both are relatively outward-facing and related to ensuring the continuation of their organization's ability to provide services. However, other uses of estimates differed based on the type of cost estimate. Respondents are more likely to use cost-of-victimization data for advocacy and education purposes than cost-of-services data. Conversely, service providers are more likely to use cost-of-services data to drive internal decisions about their services. Additionally, most of the respondents' primary concerns were about how cost data would be misunderstood by the public and therefore result in unintended consequences for victims, such as increased victim blaming, and decreased funding for programs. Each of these factors indicate a need to adequately explain what the numbers mean, what they are limited to, and how they can be applied, possibly with talking points for practitioners to use in their work.

Limitations. While the survey results provided meaningful information about how service providers across the country think about and use cost data, the relatively small sample size limited deeper analysis and the ability to draw conclusions about difference based on different types of victimization, sector, and respondent perspective. The respondents formed a non-representative sample of the agencies within the overall sampling frame. For example, the respondents were overwhelmingly from nonprofit organizations with fewer than 100 paid staff, were in senior positions, and had long tenures working with victims. There were not enough justice system, health care, or campus-based respondents to meaningfully compare responses.

Similarly, most respondents served victims of gender-based violence, particularly domestic and sexual violence. Because the question was asked as a “select all that apply,” it was difficult to disaggregate organizations based on types of victims served, which made it hard to distinguish between harms and the impacting factors based on the crime. Questions about how respondents would use cost numbers were also asked in this way and presented challenges to identifying significant comparisons based on organization or victim type. Certain other questions were not asked at all due to a commitment to keeping the survey at 15 minutes or less to complete and the survey's purpose of assessing the usefulness of data for victimization harms. Specifically, the survey did not ask respondents who had calculated costs what the actual cost was because of the time constraints and the perceived inability of service providers to identify specific numbers spontaneously.

Related to concerns about the sample, it is important to be aware of potential biases that may have been a factor. First of all, the respondents might serve and report on a

nonrepresentative subset of all victims, in terms of crime type, demographics, and level of need. Certain victims may be more likely to seek victim services, which may skew the perception service providers have of the field overall. Additionally, they may have cited harms that they see that directly correspond with their sector, which could have resulted in certain harms being over- or undercounted. For example, the low numbers of justice system professionals and campus-based professions may partially explain the lower responses for legal costs and withdrawing from educational institution respectively. Lastly, because the respondents are all service providers, it may be in their interest to say that victims' needs and the services that most help are aligned with what they are providing. It is clear that many of these groups want or need additional funding for their programs and that their primary use of cost data is currently for funding-related purposes.

Also worth noting is the high number of respondents who answered, "don't know" and for which questions. For example, 19 percent did not know if there was a type of crime with particularly misunderstood harms, 28 percent did not know how much harms differ for property crimes as compared to only 6 percent for violent crimes, and 22 percent and 25 percent, respectively, did not know whether their organization had calculated the cost of victimization harms and victim services. This is likely related to the sample of service providers and their experience with certain victimization types or harms, and the relevance of calculating costs for their work. Moreover, responses to the write-in questions indicated that there may have been some confusion by respondents over the difference between calculating the cost of harms to victims and the cost of victim services. This could have skewed responses on whether costs had been calculated, how, and for what purpose.

Survivor Survey

Methods

During the first Advisory board meeting, the project team decided to add a survey of crime victims and survivors to the originally proposed suite of data-collection initiatives. As a later addition to the project, the survey was relatively small in scope, posing ten questions covering the victimization type experienced, costs incurred, which costs were covered or not covered by services provided or victim compensation, experiences with victim services providers, and recommendations about what additional help might have lessened the harms experienced. The purpose was to discover what kinds of issues and considerations the project team may have been missing via our consultations largely with practitioner and academic experts of all kinds. What problems are still being missed by all the systems designed to support victims, if any?

The Urban Institute developed the survey with the input of partner organizations; development; testing, and deployment in Qualtrics was carried out as with the service provider survey. The final survey instrument can be found in **Appendix 1**. Twenty-one purposively-sampled service providers originally handed out postcards with a weblink to the survey to clients they served. In addition, an electronic weblink was provided after it was confirmed that tracking of IP addresses in Qualtrics could be turned off. This was necessary to comply with Urban's

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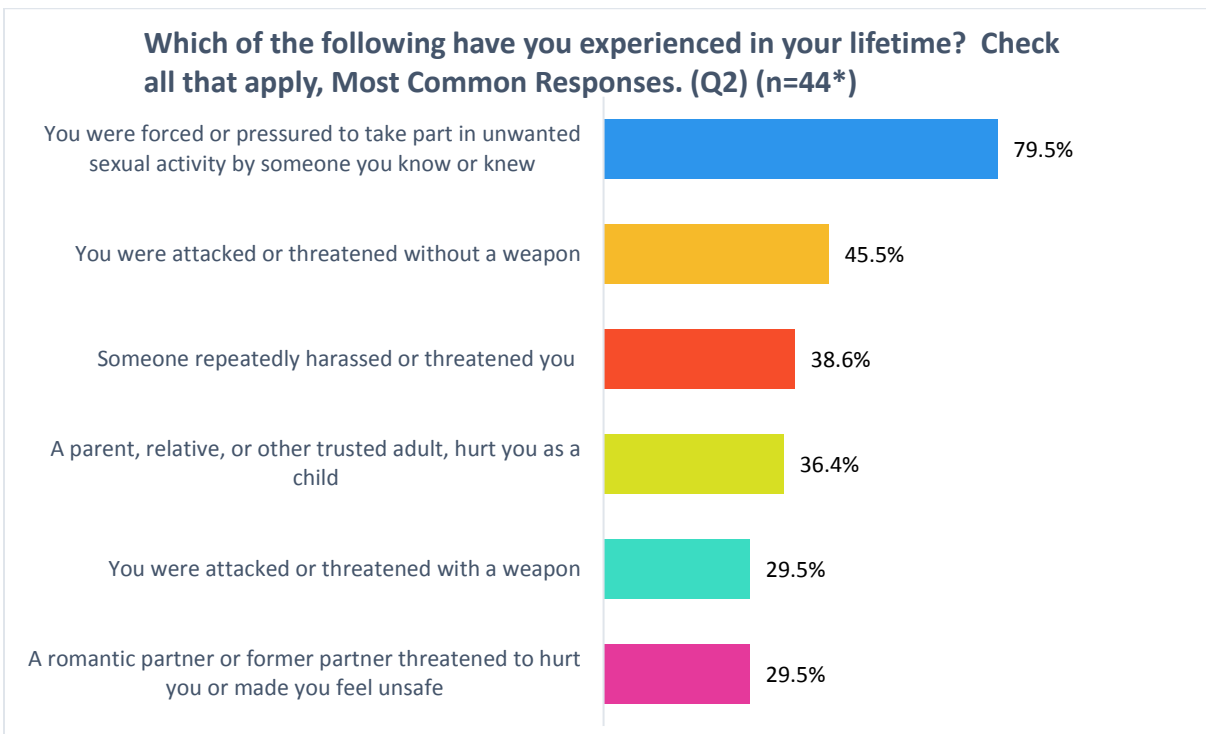
Institutional Review Board (IRB) requirements and the desire to allow survivors to participate in complete anonymity. The list of organizations chosen to communicate the survey opportunity to survivors is provided in **Appendix 4**. These organizations were purposely chosen for diversity of client type served and their willingness to assist the project team with the survey.

The survey was distributed through the direct service providers in accordance with approved IRB protocol, so that if aftercare was needed by respondents because of the questions in the survey, the direct service provider could fill that need. The “Life Experiences Survey” was a web-based, 10-question survey and took roughly 10 to 20 minutes for respondents to complete. After the target N of 50 survivor responses was achieved, the survey was closed. This target N was chosen to ensure variety in responses despite budget constraints. Follow-up consisted of reminder emails and phone calls to service provider organizations by the NCVV during the six-week survey period until the target was achieved.

Results and Findings

A total of 52 individuals responded to the survey. The project team did not collect demographic information from participants. Participants did not have to answer each question, so all percentages reported reflect the percentage of the total respondents to each question.

Figure 12: Victimization Experienced during Lifetime



* Of the 52 survey respondents, 44 provided valid data for the question "Which of the following have you experienced in your lifetime?" All percentages are calculated using only valid data provided by 44 respondents. Respondents could choose multiple categories and percentages will not sum to 100%. Of the 8 respondents who did not provide valid data, 1 respondent indicated "I prefer to skip this question", 3 respondents viewed the question but did not provide a response, and 4 respondents did not view the question.

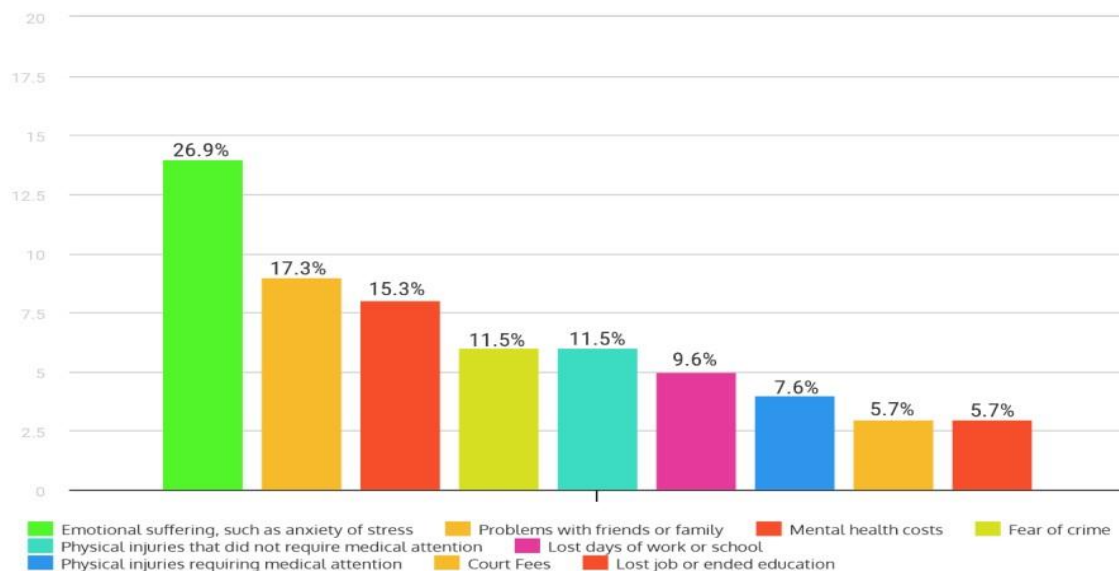
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Lifetime victimization. The most common crimes that survivors reported experiencing during their lifetimes were “forced or pressured to participate in unwanted sexual activity by someone [they] know/knew” (79.5%), “threatened or attacked without a weapon” (45.5%), and/or “someone repeatedly harassed or threatened you” (38.6%). These were not mutually-exclusive: respondents could select all that applied. See **Figure 12** above for the top six reported victimization types. Of the 44 survey respondents, however, only 13 indicated that they had experienced a crime within the last year. So, most of the victimizations reported below occurred more than twelve months prior to answering the survey.

Figure 13: Intangible Harms Experienced Due to Crime Victimization

People to whom these things have happened often suffer physical, emotional, or financial harms. Did you experience any of the harms [within the last year] listed below? Please check all that apply. (Q5)

Number of respondents who indicated they had experienced each type of harm in their lifetime



*43 respondents answered this question. Percentages are calculated within this total.

Another survey question that yielded interesting results was Question 5: “People to whom these things have happened often suffer physical, emotional, or financial harms. Did you experience any of the harms [within the last year] listed below? Please check all that apply.” Common harms experienced and identified by the 43 respondents to this question (see Figure 13 below) included emotional suffering such as anxiety or stress (26.9%), problems with friends or family (17.3%), mental health costs (15.3%), fear of crime (11.5%), and physical injuries that did not require medical attention (9.6%).

Seven respondents provided more detail about the nature of this stress in open-ended responses (Question 7). For example, one individual explained that living in the suburbs was

very stressful for them due to the isolation and harassment they experienced there. Other open-ended responses included the following direct quotes:

- “Impacted day-to-day life activities due to permanent injuries”
- “Living in the suburbs is isolating. We have been harassed. It is very stressful.”
- “Ongoing anger issues and deep lack of trust”
- “I have post-traumatic stress disorder and high anxiety”
- “Marital stress”
- “Yes, my family had to move from the home b/c it was owned by the abuser. He also threw away all our important mail. He has a large arsenal of guns and we fear for our lives.”

Respondents emphasized the significance of the burden of intangible costs and the fact that the burden of victimization extends to friends, immediate family, and extended family members (see discussion below). It is difficult to place an accurate monetary value on stress, emotional suffering, and the other harms described past the costs of therapy for the victim and victim’s family, although various methods have been developed and tried. This is consistent with the literature on intangible costs of crime victimization surveyed in Volume II.

Respondents also noted harms suffered by others as a result of their victimization (Question 8). Immediate family was the most frequently reported category of secondary victims/sufferers among the nine respondents to this question, who could select all categories of people they felt had suffered from their victimization, followed by friends, and then extended family members. Direct quotes regarding some of the harms include:

Harms suffered by **Family** (N=8):

- “My husband, who, since our finances are tied, also has to share the burden of paying for my therapy”
- “Emotional stress for parents - when I pressed charges as a teen. A lot of that was relieved when, eight years later, there was an arrest and state and federal convictions.”
- “Physical and emotional abuse”
- “Sexual difficulties impact husband”
- “Emotional harm”
- “My son b/c he is not from the relationship he was emotional & mentally abused”
- “Emotional stress, loss of relationships”

Harms suffered by **Friends** (N=2):

- “Yes, because the abuser, a widely respected coach, abused several of us”
- “Fear of being retaliated (against), will conform”

Harms suffered by **Extended Family** (N=1):

- “Emotional stress, loss of relationships”

Finally, ten individuals shared via open-ended response things that helped them recover from their victimization experiences (Question 9). These included supportive family, inpatient

and outpatient therapy, long-term commitment to a strong moral code for living, shelter and financial support, prayer, and receiving the long-term services of an advocate. A particularly illustrative quote from one survivor is as follows:

I waded through the mess with exceedingly more wonderful days than debilitating ones, laughing, in loving relationships, traveling and living in foreign countries, finding new friends in strangers and happily married. I've come to realize the messy story is not what defines me. It is, instead, what informs me. We are each the summation of a chain of people and events, sometimes out of our control, and the choices we make in the space between action and reaction, sometimes in the midst of chaos.

Survivor Survey Respondent

Implications for Research and Limitations

Implications for Research. This survivor survey was conducted for a very narrow purpose: to do a rapid inquiry regarding factors or victimization costs that the research team might be missing during the rest of this assessment of the field. This is a small, convenience sample that was not intended to be representative or to facilitate drawing conclusions, but only to provide a snapshot of insights on the above questions. Nevertheless, the responses received from the victim/survivors that chose to participate proved to be informative to the work.

Survivor responses about additional individuals impacted by their victimizations illustrate that impacts on family and friends are a concern, not only for research, but for crime victims. Respondents' answers about severity and incidence of harms suffered, particularly mental and emotional stress and anxiety, is in line with what has been reported in the literature. While the responses received were illuminating, no harms described represented completely new items not mentioned in the other data collections or the literature reviews. This does not mean that a different sample of survivors might not have identified something else. The direct quotes provided in the open-ended responses, however, serve as a reminder of how personal the experience of victimization is and how variation in experiences between victims must be included when researching this topic and generating cost estimates of various kinds.

Limitations. As a later add-on to our project design, our sample is quite small and limited to individuals who sought services and selected to respond to our self-report survey. As such, this sample is for illustrative purposes only. Further, since not all of our limited sample of respondents answered each question and because each victimization experience a victim may have had was not asked about separately, this data does not provide information about which victimization types caused which types or levels of harms. The number of questions was also limited to reduce the burden on any survivors who chose to respond. Additionally, of the 52 survey respondents, only 13 indicated that they had experienced a crime within the last year. This may be an artifact of the types or duration of services needed by many types survivors in order to recover, since participants were recruited through various service provider agencies. It

could also be indicative of general healing time needed by survivors of victimization before they are willing to respond to a survey such as this. Needed periods of healing time for survivors in relation to different victimization types, and the impact of that factor on willingness to participate in research, is important to consider. In this case, with a convenience sample, there is potential bias from having fewer survivors with recent victimization experiences versus more who have had a lengthier time to recover before answering the survey.

Taxonomy of Crime Victimization Costs

Before moving into a survey of the literature to date on both cost estimation and estimations of victimization prevalence, incidence, and concentration in Volume II, a general taxonomy of victimization costs is presented. The purpose of this taxonomy is to provide a visual list, a way of thinking about the various costs incurred as a result of crime victimization.

This taxonomy does not re-invent the wheel. Rather, it starts from the good work of Mark Cohen and colleagues (Cohen, Miller and Rossman, 1994; Cohen, 2005; Cohen and Bowles, 2010; Cohen, 2016; Miller et al., 1996; GAO, 2017), and then incorporates input received from this project's advisory board to present a general way to begin looking at crime victimization costs with the project's stated specific focus on victims. The purpose of its inclusion here is to serve as a reference for forthcoming discussions about research methods and practitioner and victim concerns.

The presentation approach taken is to split out cost types by three general payer categories. The first category includes costs borne directly by the victim and the victims' friends and family. The second category is business/private sector, and includes costs paid by businesses, communities, or private funders that are not government agencies. The third category is government/society, and includes costs borne by government funding or government-funded nonprofits or victim services organizations. Costs are presented by type, with brief definitions or examples of each, and a sample of potential data sources. Greater specifics can be found in the literature reviews. Finally, in Table 6, we present a list of considerations that can increase or decrease costs for different victimization or victim types that should be considered when calculating or interpreting estimates of victimization costs; there is great variation in how the same victimization may impact different people.

Costs presented in Tables 4-6 are intended to be general in nature. They include both tangible costs, which are easily assigned dollar values, and intangible, or harder-to-measure costs. The tables also include costs resulting from victimizations of common crimes, as well as costs of emerging crime victimization types, such as environmental or corporate crimes. However, the level of detail presented here is limited for reasons of space; greater detail is provided about these different types of victimization and their associated expenses in the literature review of Volume II and in the proposed menu of research ideas in Volume III. There is also a more detailed breakdown of potential data sources in Appendix 5. Here, it is hoped that

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this presentation of a taxonomy is useful for framing thought about types of victimization costs to be discussed in the rest of this report.

To begin, Table 4 presents direct costs to victims, their families, and their friends. Some cost types repeat in Tables 5 and 6, but portions are broken out by payer, since in many cases the burdens of these costs are shared by multiple parties. These costs extend from immediate healthcare, property loss, and funeral needs, for example, to longer-term costs associated with pain and suffering, quality of life, and the like.

Table 4. Costs to Victims and Victims' Families/Friends

COST	DEFINITION/ EXAMPLES	SAMPLE DATA SOURCES
Property loss	Losses of property not reimbursed by insurance or victim compensation	NCVS, UCR, victim service provider data
Physical healthcare (immediate and long term)	Emergency treatment, other medical care expenses not covered by insurance or reimbursed by victim compensation	Medical records, hospital data, insurance records re. non-covered expenses, NCVS
Mental healthcare	Psychological or psychiatric care or treatment, counseling expenses not covered by insurance or reimbursed by victim compensation. Includes effects of specialized mental healthcare not being available, thus exacerbating later costs; and care for primary, secondary, and tertiary victims, intergenerational costs	Medical records, victim service provider records, insurance records re. noncovered expenses, NCVS, hospital data, SAMHSA
Security expenditures	Alarm system, door/window locks, etc.	Consumer Reports, trade association data, NCVS
Repeat victimization avoidance behaviors	Moving, relocating, altering transportation mode/patterns (commutes, types of work, level of societal engagement, etc.)	Dept. of Transportation, real estate sales, rental statistics, Victim Comp/Assistance data, service provider data, NCVS
Lost wages	Workdays off during recovery, from lost childcare due to victimization, or to attend court proceedings, etc.	Department of Labor, NCVS
Lost school days	Immediate days lost, impact of lost school time on future academic trajectory and future earnings potential. Includes college/university (lost days, drop out, or decision not to pursue)	School/Truancy records, post-graduation placement records, NCVS
Household services, childcare, and elder care	Household services, childcare, and eldercare service costs, esp. for primary caretaker victims who can no longer provide the services they provided prior to victimization	National Partnership for Women and Families, Victim comp in states that cover child care, NCVS
Pain and suffering	Physical/mental pain and suffering, lost quality of life, increased suicide risk	QALY, ⁵ DALY, ⁶ jury award data.
Lost quality of life	Long term loss of affect/enjoyment of life	QALY; DALY, jury award data.

⁵ Quality-Adjusted Life Year estimates for various victimization impacts. Described in Volume II.

⁶ Disability-Adjusted Life Year estimates for various victimization impacts. Described in Volume II.

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Funeral/burial costs	Funeral and burial expenses not paid by government or nonprofit help	NCVS, Victim Comp/Assistance data, service provider data
Victim services	Expenses for other supportive services not listed above that are intended to facilitate making the victim whole again, which are borne by victim, not paid by government	NCVS, Victim Comp/Assistance data, service provider data
Civil legal claims	Legal expenses in damages suits not paid by other sources	NCVS, Victim Comp/Assistance data, service provider data

Note: Costs are estimated for the average crime victim but often require adjustments per Table 6.

Table 5 shows costs, or portions of costs, borne by businesses or private, non-government funders. These costs include those associated with personal as well as corporate or community-level victimization types, as well as those impacts of individuals' victimization experiences that may, in turn, impact businesses. One example would be a store that suffers a loss in business due to people avoiding that area of town following a high-profile victimization. Changes in the real estate market and community responses to crime also fall here, as do costs absorbed by communities when the effects of victimization on individuals are not appropriately redressed in timely fashion. Those might include losses in productivity or the resulting strains on other systems when victims are not provided appropriate care early enough, among others.

Table 5. Costs to **Businesses/Private Sector**

COST	DEFINITION/ EXAMPLES	SAMPLE DATA SOURCES
Property loss	Victim losses covered by private charitable giving sources (not victim or government)	NCVS; law enforcement data
Physical healthcare	Emergency treatment, other medical care, etc. covered by private charitable giving sources (not victim or government)	Medical records, insurance records, corporate and nonprofit records
Mental healthcare	Psychological or psychiatric care or treatment, counseling, etc. covered by private charitable giving sources (not victim or government)	Medical records, insurance records, corporate and nonprofit records
Repeat victimization avoidance behaviors	Losses to businesses caused by victims and others moving away, relocating, or altering their transportation mode/patterns away from businesses due to crime	Business tax records, Chambers of Commerce
Lost productivity	Costs to businesses due to victim workdays off during recovery, lost childcare resulting from victimization, or lost work time from victims attending court proceedings, etc. Hiring/training of temporary labor or replacements	Department of Labor, Business tax and accounting records
Environmental Quality/Safety	Cleanup expenses to ensure safety of water, air, soil, and other environmental needs for human safety.	Corporate reports, EPA data, Chambers of Commerce, ViolationTracker (Corporate Research Project)
Businesses moving in or out of an area	Businesses moving in response to crime patterns or to costliness of doing business	Municipal data, Tax records, economic development offices, Chambers of commerce

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Victim services	Expenses for other supportive services not listed above that are intended to facilitate making the victim whole again, funded by private charitable sources other than government or victims	Service provider 990s and other service provider data that covers services not federally funded.
Civil Legal Expenses	Legal expenses of companies or organizations involving cases of alleged criminal behavior	Tax records, court records, accounting records, FTC, ICCC, UCR

Notes: Costs are estimated for the average crime victim but often require adjustments per table below.

Table 6 covers costs to government and society. In this table, society includes the portions of services delivered by nonprofits and other organizations that are funded by federal, state, or local governments—and by extension, the taxpayer. As mentioned, the burdens of many of these costs are shared by multiple payers, and those portions are broken out between tables 4-6.

Table 6. Costs to Government/Society

COST	DEFINITION/ EXAMPLES	SAMPLE DATA SOURCES
Property loss	Property losses covered by victim compensation and/or insurance	NCVS; Victim Compensation program/Performance data
Physical healthcare	Emergency treatment, other medical care, etc. covered by victim comp/assistance or VAWA ⁷ programs	Victim Compensation and Assistance/VAWA program/Performance data
Mental healthcare	Psychological or psychiatric care or treatment, counseling, etc. covered by victim comp/assistance or VAWA programs	NCVS, Victim Compensation and Assistance/VAWA program/Performance data
Public Safety expenditures	More streetlights in at-risk areas, changes in police patrols and tactics, inter-agency coalition formation, foster care initiatives	Law Enforcement, Public Safety, and Municipal Expenditure Data. Federal grants data on awards to localities for different crime purposes
Repeat victimization avoidance behaviors	Moving, relocating, altering transportation mode/patterns	Dept. of Transportation, Residential records (noting changes after major incidents) VOCA comp/assistance records, service provider records, moving companies
Lost Wages	Lost wages due to workers' days off for recovery or court proceedings, reduced productivity during working periods of recovery. Amounts covered by Victim Comp/Assistance or VAWA programs	Department of Labor, Victim Comp/Assistance and VAWA records
Crime prevention programs	Mentorship programs, after-school programs, sports leagues in at-risk communities	Nonprofit 990s, Federal and State grant award data, school budgets
Neighborhood safety	Neighborhood watch programs	Public Safety data for watches that register
Public health	Long-term health outcomes of victimization from common crime or from emerging crimes like environmental crime, mass violence, or community toxic stress effects from high crime patterns	Public Health data

⁷ Violence Against Women Act

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Legal assistance	Civil and criminal procedure advocacy and legal aid programs for victims	Criminal Justice/Legal Aid program data, VOCA Comp/Assistance and VAWA program data
Funeral/burial costs	Funeral and burial expenses not covered by victim's family	NCVS, VOCA comp/assistance / VAWA records; service provider records
Victim services	Expenses for other supportive services not listed above that are intended to facilitate making the victim whole again, not born by victim, paid by NGOs or private funders	VOCA comp/assistance / VAWA records; service provider records, hospital program records, etc.
Cost of fraud/waste from crimes against government	Costs to the taxpayer of things like tax fraud and Medicare/Medicaid fraud – value of funds misappropriated and costs of investigating and remedying cases. Can include costs of cyberattacks and other attacks on government	OMB and GAO audit information, IRS, DHS, state level audit information, ICCG.

Notes: Costs are estimated for the average crime victim but often require adjustments per table below.

Table 7. Adjustments to Average Victimization Costs

ADJUSTMENT	RELEVANCE	ANTICIPATED EFFECT
Time since offense	Costs in the immediate aftermath of an offense	Reduces size of some costs but Increases size of some costs
Severity of offense		Increases size of some costs
Victim relationship to perpetrator	Harms can be more complicated with a closer or more complex relationship, especially if victim lived with the perpetrator	May reduce or increase some costs
Victim age	Children are often powerless to defend themselves or independently seek full recovery	Increases size of some costs
Victim gender		Increases size of some costs for marginalized victims
Victim race/ethnicity		Increases size of some costs for marginalized victims
Victim socioeconomic status	Affects victims' access to formal and informal supports to recover	Increases size of some costs for marginalized victims
Victim's prior trauma or series/polyvictimization	Creates heightened vulnerability to exacerbated revictimization experience	Increases size of some costs
Number of victims involved	Crimes involving multiple victims, or crimes with community-level impacts like environmental crime or mass violence, may involve higher costs to direct victims and many indirect victims also affected by trauma	Increases size of some costs

Notes: Adjustments should also be made as needed for costs that overlap or are interlinked.

From here, this report moves into the extensive literature review covering cost estimation techniques and on victimization prevalence, incidence, and concentration. The first half, surveying victimization costs, jumps off from this taxonomy to further investigate tangible and intangible costs, as well as a variety of top-down and bottom-up methods used to estimate them: simple summing methods of tangible costs, willingness-to-pay models, hedonic models, jury-award methods, discrete choice experiments, and others. The second half, looking at estimates of victimization incidence, prevalence, and concentration, examines data sources for a variety of

traditional and not-traditionally-examined victimization types; evaluates the utility of and gaps in existing data; discusses methods and concerns for estimates of victimization incidence, prevalence, and concentration; and discusses how these can impact cost estimates when incorporated to create national or subnational pictures of the size of victimization problems.

Volume III presents a menu of research ideas for advancing the field of estimating the costs of victimization that resulted from the primary data collections described in this volume, input from the Project Advisory board, and the literature reviews. As this project progressed, it became clear that no single victimization costs study could answer all policy, practice, and research questions on the subject. Instead, a suite of ideas is presented. Some are short-term projects and several are long-term or longitudinal studies. Any one study or combination of studies from that menu could help answer some of the specific questions that arise as a result of recognizing the variety of needs that victims have, and the various ways in which different stakeholders use these estimates.

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Volume II: Literature Reviews

Volume Authors:

Introduction

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Methods and Considerations in Estimating Victimization Costs

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Estimating Victimization Incidence, Prevalence, and Concentration

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Conclusion

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Overview

Volume II reviews the literature on the cost of victimization. The literature review is organized into two major sections. The first section centers on how to *monetize* harms experienced, quantifying the amount of harm produced by victimization by assigning dollar values to that harm, which then results in cost estimates. It also discusses the limitations inherent in monetizing experiences of harm, including intangible harms such as emotional harm. The second section discusses the literature concerning estimating the amount – the incidence or prevalence – of victimization.

This overview attempts to provide a brief roadmap of the literature on how researchers have approached estimating the costs of victimization, from the perspective of focusing on victims. The literature reviewed is usually referred to as the “cost of crime.” Because most crime involves direct victims, the “costs of crime” and the “costs of victimization” are largely synonymous, but they are considerably broader than the costs *to* victims. While interest in the cost of crime may often begin with a concern for direct victims, cost analyses quickly broaden beyond direct victims, who may then cease to be a focus of the work.

In general, the goal of monetizing the harms of victimization is to allow the costs of those harms to be compared either to each other or to costs associated with other policy or budget categories, like education, on a consistent metric. Following an overview of the methods used to estimate victimization costs, different policy uses of those estimates and some of their implications are discussed briefly.

Bottom-Up Versus Top-Down Approaches; Tangible and Intangible Costs

Researchers have approached the question of the cost of victimization using two complementary strategies. The first approach is essentially an accounting exercise in which researchers examine administrative data to see what costs have been incurred – and paid – as a result of victimization. The primary costs that have been examined are medical costs (including treatment of both physical and mental health), property loss, and costs of job or wage loss. This approach is bottom-up, in that it attempts to identify discrete, *tangible* costs and estimate each one. In considering these costs, it is important to think about who the payer(s) are for each cost. While these costs are experienced directly by crime victims and their families, some of these financial costs are often borne by insurers, employers, and other third parties.

Once the tangible costs of victimization, such as medical costs, are tallied, it becomes obvious that this accounting perspective misses critical costs. If insurers pay all the financial medical costs of a victim of assault, for example, does that mean that there is no residual medical “cost” to the victim? Surely, the pain and suffering of victims and their families also matter, as well as other intangible costs. Indeed, people spend money to try and avoid such pain and suffering, and juries award damages for such pain and suffering. These and other intangible costs are generally not captured in accounting systems, which most likely results in the sum of tangible costs of victimization greatly understating the true cost of victimization.

With this in mind, researchers have also tried to assess the total costs of crime in a top-down fashion. Rather than identifying discrete types of costs and then estimating each one, which again is a bottom-up approach, a top-down approach begins with the total cost. One might then subtract tangible costs from that total to estimate the intangible costs. Perhaps the primary approach to estimating costs is through surveys of various sorts, with questions such as the following:

“Suppose that you were asked to vote for or against a new program in your state to reduce gun thefts and illegal gun dealers.... It would reduce gun injuries by about 30%, but taxes would have to be increased to pay for it. If it cost you an extra \$X, would you vote for or against the new program?” (Ludwig & Cook, 2001, p. 212).

In this example, Ludwig and Cook randomly varied the dollar amount in this question to ask whether the respondents would be willing to pay \$50, \$100, or \$200. Depending on whether the respondent was willing to pay the initial amount, a follow-up question either doubled or halved the amount.

There are many variations in top-down approaches with different methodological nuances, as discussed in the literature review, but they generally try to directly estimate the total value of the victimization to be prevented. To estimate the cost of one victimization, this total is divided by an estimate of the number of crimes to be prevented. These methods are sometimes referred to as “willingness to pay” (WTP), or “stated preference,” methods.

Another approach has been to estimate how much people spend on avoiding victimization, such as by comparing home prices in more-or-less crime-prone areas or examining the premium in salary needed for jobs that expose workers to more victimization risk. These are sometimes referred to as “revealed preference” methods. A third approach is to use jury awards to estimate the total costs of victimizations, often focused on specific types of crimes. Jury awards for compensation are generally separated from jury awards for pain and suffering, producing separate cost estimates for two large categories of costs. As can be seen, bottom-up and top-down approaches are complementary and address somewhat different facets of costs of victimization.

The literature includes research that attempts to estimate both the costs of individual victimizations and the aggregate costs of all victimization, usually on an annual basis. The cost of individual victimizations can be multiplied by the estimated number of victimizations to generate an aggregate cost estimate. Conversely, estimates of the total cost of all victimizations can be divided by the number of victims or victimizations to attain average individual costs. In either case, understanding the number of victimizations, usually described on an annual basis, is an important element in research on the cost of victimization. Reviewing the literature on the number of victims (prevalence), the number of victimizations (incidence), and the distribution of victimizations among groups (concentration), is the topic of the second major literature review section.

Policy Uses

Why is estimating the costs of victimization important? This is primarily done to inform a set of somewhat interrelated policy questions. Six such questions are considered in Table 1.

Table 1: Some Policy Questions Informed by Estimated Costs of Victimization

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- | | |
|-----|---|
| (1) | Which types of victimization are most harmful, and how do they compare to each other? |
| (2) | How much should crime victims be compensated by the government? ⁸ |
| (3) | How much should the government spend on victim services? |
| (4) | How much should the government spend on crime prevention efforts? |
| (5) | How much would government investment in crime prevention offset the need for later government spending to respond to victimization? |
| (6) | How does the cost of victimization compare to the cost of other social problems? |
-

Relative Harms. Although the first question listed, concerning the relative harm of different types of victimization, is not a policy question per se, this comparative question often underlies other uses for victimization cost estimates. Obviously, some types of victimization are much more severe than others, so that simply counting the number of total victimizations provides a very crude way of thinking about the amount of harm. If the amount of harm can be estimated for each type of victimization on a consistent basis, then the sum of those estimates can provide a more useful summary of the total amount of harm caused by victimization.

Because the degree of intangible harm differs by type of victimization (e.g., property theft vs. rape), if one wants to compare total monetized harms (i.e., costs) between crimes, it is critical to include those difficult-to-quantify costs. Estimating those intangible costs, and deciding by what method and what criteria they should have monetary value assigned, has been a considerable focus of research.

Helping Direct Victims. Some policy questions specifically concern direct victims of crime (Questions 2 and 3), and therefore prioritize direct victims over other parties, while questions about investments in crime prevention (4 and 5) do not. Questions 4 and 5 concern *potential* victims, which can include most or all of society. Moreover, when victimization costs are used to argue for prevention efforts (Question 4), direct victims are generally not given special priority. Harm to other community members and costs that are borne by third parties, such as employers and insurers, are taken as equally relevant regarding prevention programs.

The direct victim questions are asked from a societal perspective. That is, what should society spend on matters that help crime victims? There is no necessary implication in these questions that the spending at issue should pay for itself. Therefore, the answers to these

⁸ The related question of how much offenders should compensate victims tends to be a specific determination by judge or jury, rather than a policy question.

questions are not simply technical economic questions. Rather, victimization costs are one metric to describe the magnitude of the problem, alongside simpler estimates of prevalence.

How much society is willing to spend to respond to the problem is a normative or values question rather than a technical question, but it is informed by society's ability to understand the magnitude of the harm. For example, Question 2 asks how much government should compensate victims for their costs and the harms they experience. One can imagine an extremely violent society in which the costs borne by crime victims exceed any conceivable government budget, especially when intangible costs are included, so that government compensation cannot possibly match victimization costs. Nonetheless, an understanding of the magnitude of those costs seems to have bearing on how much citizens will be willing to compensate victims.

The Value of Prevention. Answers to Questions 4 and 5 about prevention require estimates of the effectiveness of crime prevention efforts in addition to estimates of the harm to be prevented. Thus, addressing the policy question involves both estimates of the magnitude of the problem – the cost of victimization – as well as an estimate of how useful or effective the proposed response would be. The same is true for Question 3, concerning victim services, where one needs estimates of the effectiveness of victim services in mitigating harm to victims.

Policy questions concerning investment in crime prevention (Question 4) can include primary prevention activities such as adequate childcare, policing efforts to prevent crime, and incapacitation to prevent reoffending. Indeed, cost-benefit arguments have used estimates of the costs of crime in the past as support to argue for efforts ranging from investments in programs for children and youth (e.g., Greenwood, 2001) to proactive confrontational policing (e.g., Manski & Nagin, 2017).

In addition, while most of the literature has concerned typical crimes with known direct victims, other crimes that may impact most individuals only indirectly but have considerable societal economic cost have been studied less frequently. For example, financial fraud against businesses can lead to increased prices, and the costs of fraud against the government, such as Medicare fraud, may ultimately be borne by taxpayers and total in the tens of billions of dollars. Considering such crimes may be important for policy questions concerning the value of investments in prevention.

Answering questions about the economic value of prevention typically involves more complex economic analyses – typically cost-benefit analyses, also called benefit-cost analyses. These allow comparison of the cost of a prevention program/policy to the cost of the victimization that will be averted.⁹ Results are often expressed in terms of the return on investment, as in “society will save \$5 in prevented crime for every \$2 spent on Program X.” This may be expressed as a benefit-cost ratio, so that one might say that Program X's benefits are 2.5 times its costs. When the benefit is considered for society as a whole, that benefit typically

⁹ Note that in cost-benefit analyses of prevention, the (averted) cost of victimization becomes the “benefit,” while it is the cost of the prevention program that is referred to as the cost.

includes prevented intangible costs. Even when benefits to society exceed costs, there remains a normative question about whether society is willing to fund that expense, perhaps through taxes.

Saving the Government Money. There is one question that is more limited and might be considered purely budgetary or technical in nature: To what degree will a prevention effort save the government money? (Question 5) In other words, will the cost of the program be less than the costs that will accrue in other areas if the program is not funded? This is sometimes referred to as a cost-benefit question “from the government perspective,” because the only benefits that are considered are those that accrue to government budgets. Intangible costs are excluded, as are tangible costs borne by any parties other than government per se. Answering this question requires cost-benefit analyses where costs numbers are attached both to prevention efforts and to costs that accrue to the government from victimization.

When government budgetary savings are estimated to exceed government budgetary costs, this implies that the program or policy will pay for itself, in that it will save the government more money in averted costs than the government will spend on the program or policy. If so, one may argue that a government decision to implement such a program can be made purely on budgetary grounds, without requiring normative considerations. These analyses can be quite complex and technical, and they involve estimates such as the expected taxes to be paid by people who will be legally employed rather than in prison. Nonetheless, the universe of benefits considered are only those that appear eventually in government budgets.

Budgetary costs are typically up-front. For some prevention efforts – e.g., investing in children – the projected government savings may be expected to accrue many years later. In that case, the argument is that the government should invest now in policies or programs that will yield a budgetary benefit later.¹⁰ The time horizon for returns on investment introduces technical and political complexities, although those topics are beyond the scope of the present discussion.

While such analyses may seem purely budgetary, they also tend to incorporate assumptions about related political and policy decisions. For example, if averted costs of victim services are considered a benefit of a prevention program, this in turn depends on how much society is willing to spend on victim services (Question 3). If averted police costs are considered one of the benefits of a prevention program, this in turn depends on whether society/government/politicians are willing to actually cut the police force if victimization rates drop. Similarly, if reduced prison costs are considered a benefit of a prevention program, this in turn depends on whether the society is actually willing to close some prisons when the benefit is realized.

Comparing Victimization to Other Types of Harm. Finally, estimates of the costs of victimization can be used to compare victimization to other social problems (Question 6) to inform policy priorities. For example, how do the costs of crime victimization compare to the costs of natural disasters? For such comparisons, it is important that the different social problems are assessed on an equivalent basis, including equivalent time horizons, approaches to monetizing intangible costs, and so on.

¹⁰ This also applies to cost-benefit questions about prevention efforts in policy question 4 that are asked from the broader societal perspective.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

In conclusion, this list of policy questions is not exhaustive. It is intended to illustrate some key issues involved with how cost-of-victimization estimates may be used to inform policy questions. This can help provide context for thinking about the literature on cost estimates and how they are produced, and the strengths and weaknesses of the existing literature.

Literature Review: Methods and Considerations in Estimating Victimization Costs

Highlights

This review summarizes research on the costs of crime victimization over the past few decades, stemming as far back as the 1980s. Cost estimations have focused on two types of costs, tangible and intangible. The review discusses the methods that have been used to estimate such costs.

Tangible costs

Tangible costs of victimization can be measured directly in dollar terms. The primary tangible costs that have been examined are victims' medical costs (physical and mental health), lost property, and lost wages and productivity.

Intangible costs

Intangible costs, such as victims' pain and suffering, cannot be measured directly in dollar terms. The difficulty in monetizing intangible harms is demonstrated by considerable variation of cost estimates. Despite these challenges, measuring intangible costs is important for generating a complete picture of the costs of victimization.

Gaps/opportunities for future study

- Variation in the costs of victimization across different subpopulations
- Missing crimes, e.g. white-collar
- Missing costs, some of which can be large but infrequent such as bankruptcy of the victim or suicide
- Missing second-order costs borne by society but not by direct victims, such as moving to a safer

Introduction

Despite reductions in the United States crime rate in recent decades, crime victimization continues to be a pressing problem with enormous societal costs. Existing national estimates of victimization costs are between 2% and 6% of the nation's gross domestic product, which translates to hundreds of billions of dollars each year in tangible, intangible, and societal costs (Chalfin, 2014). Furthermore, state, local, and federal incarceration costs for crime incur costs to taxpayers upwards of \$80 billion per year (Hudson, 2015).

Understanding the financial costs of crime victimization enables policymakers and practitioners to use limited resources more efficiently. Policy analysts, for example, rely heavily on cost-benefit analyses to compare outcomes of potential crime reduction programs and victimization services along a common metric, namely the costs associated with the crimes addressed or prevented (Wilson & Krsulich, 2011; Downey & Roman, 2014; Roman, 2013; Kleiman, Caulkins, & Gehred, 2014). Such cost estimates can help policymakers gauge whether the benefits of certain programs and services (e.g., reductions in crime, improvements in victim well-being) warrant the costs associated with their implementation.

Results from cost-benefit models can be determinative in whether programs are adopted, scaled up, or retained (Wilson & CBKB, 2011; Yates, 2009). Invariably, such analyses rely heavily on monetized estimates of the harms associated with victimization. In fact, one prominent portfolio of cost-benefit analysis of possible prevention activities found that most of the monetized benefit from preventing crime would be due to prevented harms of victimization (WSIPP, 2015).

Although researchers have made enormous strides in increasing the breadth and depth of the literature over the past few decades, it is still notoriously difficult to quantify the costs of crime to victims. To date, cost estimations of victimization have focused on two categories of costs: (1) **tangible costs**, such as the value of household goods stolen during a burglary and (2) **intangible costs**, such as the pain, suffering, and trauma experienced by victims (Miller, Cohen, & Rossman, 1993).

Intangible costs have been found to be much larger than tangible costs. For example, a robbery resulting in injury was found to result in \$9,000 in tangible costs and nearly three times as much (\$24,000) in intangible costs (Miller et al., 1996).¹¹ Sometimes, separating tangible and intangible costs is difficult. Some methods used to estimate the intangible costs of crime, such as those focused on what individuals would pay to avoid crime, can produce estimates of the total cost of crime by combining intangible and projected tangible costs into one value.

Methodology

The search process for this literature survey included running searches iteratively every few months during the project period to ensure the latest studies were included. Searches utilized the Google Scholar, EBSCO, ProQuest Central, and JSTOR search engines and databases, and additional searches were conducted as topical needs arose. Initial search terms included “cost,” “costs,” “victimization,” and “crime” generally and in various combinations. Additional targeted searches were conducted for topical items such as different methodology types and crime types. Initial searches focused on publications dated 2000 and later and were supplemented by seminal pieces in the field with earlier dates. Studies were chosen for inclusion if they met at least one of the following criteria: a) seminal theoretical or methodological work, b) rigorous, original research study, c) grey literature that is either well-known or new and cutting-edge, or d) literature reviews that assess the state of a major topical or theoretical area. Studies that met these criteria were prioritized for inclusion if they added something new to the methodological discussion.

Scope of Review

This literature review summarizes research on the costs of crime victimization during the past few decades, going as far back as the 1980s. The focus was on identifying the major types of tangible and intangible costs that researchers have studied, along with the methods they have used to estimate such costs. The Glossary section at the end of the literature review provides definitions of key terms.

After discussing these cost types and estimation methods, the key limitations of victimization cost studies to date were identified, including the limited distinction of costs across differing crime types and victim characteristics; the sometimes outdated, inapplicable, or unrepresentative cost information; and the exclusion of a wide range of other potential harms and consequences suffered by crime victims that service providers in particular have noted in recent

¹¹ Inflated to 2017 dollars, rounded to nearest \$1,000. In 1993 dollars, a robbery with injury was estimated to result in \$5,200 in tangible costs and \$13,800 in intangible costs.

years. While rigorously quantifying the impact of many of these harms would be difficult, it is worthy of consideration.

Estimating Tangible Costs

Tangible costs of victimization are those that can be measured directly in dollars, including victims' physical and mental healthcare costs, lost property, lost wages, and services sought. To identify the tangible costs of victimization, researchers rely on existing data sources that address crime victimization prevalence, victim experiences, lost wages, and medical expenditures. Commonly used data sets include the Federal Bureau of Investigation (FBI) Uniform Crime Reporting (UCR) Program, the National Crime Victimization Survey (NCVS), the National Violence Against Women Survey (NVAWS), and various medical expenditure surveys. Because tangible costs of victimization are so closely tied to medical expenditures, research in the field of crime cost estimation relies heavily on the cost-of-illness method established in medical literature (Yates, 1999). This widely used costing method comes in two different forms: the incidence approach and the prevalence approach.

In general, the cost-of-illness method uses hospital databases, budget data, and salary data, in addition to incidence data gathered through UCR (or similar databases in international studies) and in victimization surveys (such as NCVS), to estimate the costs of victimization to society. The incidence approach focuses on when crime incidents occur; for an incident that occurs in a given year, costs may be forecast for the victim's lifetime. The prevalence approach focuses on when the costs are incurred, regardless of how long ago the incident occurred (Cohen & Bowles, 2010). Studies that employ the prevalence approach tend to address costs beyond the crime's impact on the victim, including those impacting the economy (lost wages or productivity), the justice system, service providers, and the victim's family.

Studies of the tangible costs of victimization focus mainly on medical costs (including physical and mental healthcare), lost wages or productivity, and victim services. Within this subset, most tangible cost studies address physical and mental healthcare costs, yet each study considers the cost of victimization at different group levels to determine who beyond the victim bears the economic burden of crime. These differences in measurement will be noted where necessary. Given the literature base's focus on medical costs, lost wages or productivity, and victim services, this review will address the literature in that order.

Medical Costs: Physical and Mental Healthcare

The financial burden of victimization is most often characterized as short- and long-term medical costs either directly to the victim or to society. Multiple approaches have been used to calculate these physical and mental healthcare costs. In a series of papers in the late 1980s and early 1990s, Miller & Cohen et al. employed a method that quantified the loss of quality of life due to injury to create a proxy for the general cost of victimization.

Miller, Cohen, and Rossman's 1993 publication estimated the costs of medical needs due to injury or death, in addition to some intangible costs. Relying on the NCVS, which asks

respondents ages 12 and older about selected costs and work losses, the authors first approximated the incidence of nonfatal crimes.¹² Then, authors relied upon the Detailed Claims Information Database of the National Council on Compensation Insurance to approximate long-term medical costs – costs incurred after initial medical treatment is received. The authors derived estimates of mental healthcare costs for various crimes by turning lost quality of life (discussed in more detail in the following section on intangible costs) into a monetary measure from extant literature on the topic (Cohen, 1988). They found that, in 1989, physical injury caused \$10 billion in potential lifetime health costs.

Miller, Cohen, and Wiersema (1996) followed up on these measures with a National Institute of Justice (NIJ) report on the cost consequences of crime, which is recognized as a seminal report. The NIJ report's results were similar to those of their 1993 paper, with the additional finding that violence against children makes up 20 percent of the tangible costs of crime. This report also lays out a comprehensive list of the financial costs of crime and who bears the economic burden of each cost.

The ability to gauge the costs of mental health services to victims of crime is limited because there are very limited data available to describe mental healthcare accessed by victims of crime.¹³ For example, the work conducted by Miller et al. (1996) found that costs vary by victimization type and that the average cost of mental healthcare per victim can range from \$100 to \$5,800. They relied upon a pilot survey of 168 health care professionals from seven professional organizations, concerning the number of visits by clients served primarily because of crime victimization. Using data from 1991, Cohen and Miller (1998) found that between 3.1 and 4.7 million people who identified as victims of crimes sought mental health services. Through the same survey of service providers, the researchers estimated the average session fee paid by an individual and used that, in addition to the frequency of treatment, to estimate the total cost of mental healthcare for victims. Based on this calculation, the cost of mental healthcare services for victims of crime was estimated to be between \$5.8 and \$6.8 billion (1991).

Specificity in Costs by Crime Type

In addition to the costs of general victimization, scholars in the field have also focused on specific types of victimization (Miller et al, 1996). These focuses included violence against women (CDC, 2003), intimate partner or domestic violence (Access Economics, 2004; Arias & Corso, 2005; Max et al., 2004; NCIPC, 2003), and child abuse (Wang & Holton, 2007).

For example, in 2004, a report produced by Deloitte Access Economics estimated the costs of domestic violence (DV) to the Australian economy. The researchers classified the costs of DV into seven categories, which included six tangible costs (health, production-related,

¹² In this paper, the following are considered nonfatal crimes: rape, robbery, arson, and assault.

¹³ Here, crime is defined as the following: witnessing a murder/losing a loved one to murder, child abuse, rape and sexual assault, other assault, robbery, drunk driving, arson, larceny, burglary, and motor vehicle theft.

consumption-related, second generation, administrative, and transfer costs) and one intangible cost (pain, suffering, and premature mortality as one category).

Focusing on tangible costs, the researchers defined eight groups of agencies/organizations who might bear the costs of DV, while the bulk of the report focused on the financial burden on victims. Deloitte Access Economics used the prevalence approach to estimate these tangible costs. In a manner similar to the cost-of-illness approach, this report used different estimates of cost from older papers to calculate the cost of DV. Using health cost data for conditions commonly associated with victims of DV, the researchers found that the total cost of medical services for female DV victims between 2002 and 2003 was estimated to be 314 million Australian dollars. Victims overwhelmingly bore most of the costs of domestic violence victimization.

The existence of specialized victimization data in the United States further influenced the types of papers being produced by economists. For example, when the NVAWS was created in the mid-1990s, it generated information about the incidence and consequences of crime against women age 18 and older.

At the request of the United States Congress, the National Center for Injury Prevention and Control (NCIPC) used data from the NVAWS to estimate the number of intimate partner violence (IPV)-related injuries and the healthcare costs they incur. To establish the physical healthcare costs of IPV, NCIPC used Medical Expenditure Panel Survey (MEPS) data and Medicare's 5% sample beneficiary *Standard Analytic Files*.¹⁴ MEPS provided the researchers with unit medical cost information for various injuries that were associated with rape or physical assault. To examine mental healthcare costs, NCIPC examined the responses to questions in the NVAWS about seeking out mental health services. The NCIPC found that the mean cost of healthcare, not including mental health, was \$516 for IPV rape and \$548 for physical assault (1995). For those who sought mental health treatment, the mean cost ranged from \$269 to \$323 per incident of IPV in the given year.

Using a highly similar approach, Max et al. (2004) tapped the NVAWS and the MEPS to estimate medical costs from IPV. They used the Medicare 5% *Standard Analytical Files* to estimate other medical costs, such as paramedic services. However, they also used U.S. Census data to estimate lifetime earnings. Their study found higher victimization costs compared to the NCIPC study: \$992 for each incident of rape and \$954 for each physical assault (1995). Max et al. also noted that medical costs accounted for 45 percent of the tangible costs of IPV victimization. Mental healthcare costs were 25 percent (separate from medical costs) of the total cost. Lost productivity and murder by intimate partners accounted for the last 30 percent.

Within the scholarship that has examined the cost of IPV, Arias and Corso (2005) further advanced the field by disaggregating the cost of IPV victimization by males and females in heterosexual relationships who were victims of IPV. They then calculated the cost of this

¹⁴ The Centers for Medicare and Medicaid Services collects information on benefits and claims filed from hospitals that provide services to Medicare beneficiaries. The resulting data sets are called *Standard Analytic Files*.

difference at the individual level. They based their estimates of medical costs, mental healthcare costs, and productivity loss on findings from the NVAWS. Between November 1995 and May 1996, the NVAWS collected information from 8,000 male and 8,000 female victims of IPV regarding injuries they incurred, medical services they sought after their victimization, and any productivity loss.

After gauging rates of service utilization, Arias and Corso calculated the average cost per person victimized. Unit medical costs were derived from NCIPC's report, *Cost of Violence Against Women* (2003). Using these per-unit estimates, the researchers found the total average cost of victimization, for at least one instance of IPV victimization, was \$948 for women and \$387 for men. Disaggregating the cost by gender meant that the researchers could illuminate disparities in cost to distinguish which victims and organizations bore the largest financial burdens of victimization.

In studies of other victimization types, Wang and Holton (2007) examined the costs of child abuse to hospitals, mental healthcare agencies, the child welfare services system, and law enforcement. To do this, they largely relied upon the cost estimate from other studies. For example, from Miller et al. 1996 they cited the per-person cost of mental healthcare for victims of sexual abuse as \$5,800. The key limitation of their approach was the failure to distinguish variations between victims of child abuse and adult victims whose costs were analyzed in previous studies, including how these variations may affect costs of both groups. Overall, Wang and Holton estimated the lifetime tangible costs of child abuse and neglect to be \$103.8 billion.

Fang, Brown, Florence, and Mercy conducted a study in 2012 that took a more nuanced look at the lifetime costs of child abuse. They defined child abuse as physical abuse, psychological abuse, sexual abuse, and neglect of a minor. The authors found that the average lifetime cost per nonfatal victimization amounted to \$210,012 for cases that occurred in 2008. This number, however, includes costs to the justice system (e.g., criminal court proceedings) and to the child welfare system. The paper distinguishes between the costs of fatal and nonfatal incidents of child abuse because of the differences in the outcomes of each. The cost estimate for fatal incidents is disproportionately higher. Fang et al. (2012) estimated that the average lifetime cost per fatal event is \$1,272,900, with 99 percent of that figure representing an economic productivity loss to society. In nonfatal cases, productivity loss – measured as loss to yearly earnings – was 69 percent of the per incident figure. The total lifetime cost for new cases of child abuse in the United States in 2008 was estimated at \$124 billion.

Focusing on a variety of violent crime types, McCollister et al. (2010) estimated the tangible and intangible costs to society using data that was close in date to the time of their analyses. McCollister's analysis of tangible costs used estimates of medical spending and lost earnings from previous studies (Miller et al., 1996; Miller et al., 2007; Corso et al., 2007) that were based on results from the NCVS. They wrote that the NCVS underestimates the medical costs incurred due to victimization because it does not include insurance costs or long-term costs (e.g., mental healthcare). McCollister and colleagues found that "predatory" crimes are the most expensive to society, estimated at \$1.28 million per murder, \$41,247 per rape, \$21,398 per

robbery, and \$19,537 in tangible costs per aggravated assault (2008 dollars). One highlighted limitation of their work is that they were not able to account for additional costs of sex offenses, such as pregnancy, substance abuse, suicide, or sexually transmitted diseases.

Peterson et al. (2017) estimated the lifetime financial burden of rape in the United States. The authors pulled data from the National Intimate Partner and Sexual Violence Survey (NISVS) and NCVS data to determine the percentage of rapes that resulted in property loss, medical costs, and work days lost. They also examined tangible medical costs and lost productivity for several mental health disorders, including depression, eating disorders, anxiety, and post-traumatic stress. Using the 2005 Behavioral Risk Factor Surveillance System survey and the 1990-1992 National Comorbidity Survey, they calculated increased alcohol, tobacco, and substance abuse and the resulting medical losses from these factors. Drawing on all these resources to estimate costs for 1990, the authors found that the long-term tangible cost of rape was \$122,461 per victim, specifying that 39 percent of this goes to medical costs. However, in establishing the parameters of their data analysis, they assumed that age at first rape was 18 years old, which limits the population to which these costs are applicable.

Two state-specific studies concerning Iowa (Yang et al., 2012) and Minnesota (Miller et al., 2007) used a much broader age range when calculating the tangible costs of sexual violence. Using similar methodologies, the authors employed state public health surveys to estimate instances of sexual assault, including rape and child sexual assault, to produce cost estimates to society or state governments. The Iowa study found that the total cost of sexual assault to the state was around \$5.8 billion in 2009. Broken down into tangible costs, mental healthcare amounted to \$135.7 million, lost work to \$132.9 million, and medical care to \$38.9 million. In Minnesota, the cost of sexual assault, including intangible consequences (e.g., pain and suffering or fear of crime), was estimated at \$8 billion (2005) with mental healthcare at \$245.6 million, lost work at \$162.8 million, and medical care at \$35.2 million. Interestingly, both analyses looked at the economic impact of pregnancy and sexually transmitted diseases (STDs) in these cases, independent of general medical costs. These two items are unique to this type of victimization and are important to consider in understanding what services a victim might need. Both studies also highlight the importance of mental healthcare in cases of sexual assault.

As observed by McCollister and colleagues, crimes of a predatory nature tend to be the costliest to society. Most of the studies in this crime-specific subset looked at the consequences of intimate partner violence, child maltreatment, and sexual assault. The studies in this section overwhelmingly brought attention to the long-term financial harms of these crimes. For victims of IPV, medical and mental healthcare services accounted for the largest share of cost. Victims of child abuse or maltreatment suffered larger losses around productivity. IPV and sexual assault have so far been the only types of crimes for which the cost of victim services has been evaluated. As illustrated by the studies summarized here, certain types of victimization compel people to seek out different types of services. Type of victimization also impacts for how long and when researchers assume that financial harms may occur. By focusing on financial harms by crime type, researchers can bring to the surface the unique challenges faced by victims.

Medical and Other Costs of Gun Violence

Gun violence research is another specialized area where scholars have focused on the medical costs of a specific crime. Gun violence accounts for a large percentage of victimization in the United States and has recently received attention from researchers estimating the costs of its impact. The earliest studies focused on costs incurred by hospitals, not on the long-term costs to individuals. By contrast, Max and Rice (1993) employed an incidence-based cost estimation model to examine long-term medical costs, such as those related to rehabilitation, professional services, medical equipment, and supplies, through the lens of fatal, hospitalized, and non-hospitalized firearm injuries. They used information on incidence rates from the National Hospital Discharge Survey and medical costs from the National Medical Care Utilization and Expenditure Survey.

Max and Rice found that firearm injuries cost the United States \$14.4 billion (1990 dollars). However, only a third of this figure represented costs related to medical expenditures. At the individual level, the total direct medical costs of firearm injuries were \$91,476 for fatal injuries, \$784,002 for hospitalized injuries, and \$35,733 for non-hospitalized injuries. Though these medical costs were substantial, the takeaway from this study was that the biggest loss incurred by both the victim and society was due to lost productivity, which is discussed more in the next section.

Cook, Lawrence, Ludwig, and Miller (1999) published a study similar to that done by Max and Rice (1993) that analyzed the costs of firearm injuries nationwide using medical cost data from New York, South Carolina, and Maryland. They looked at the incidence of gunshot injuries that occurred in these states in 1994. Like Max and Rice, the authors focused on the emergency department and long-term treatment costs for these victims. They estimated a mean medical cost per gunshot injury of \$17,000, producing \$2.3 billion in lifetime medical costs, approximately \$1.1 billion of which was borne by the American taxpayers. Their cost estimate was smaller than the one put forth by Max and Rice because they did not consider firearm-related fatalities or lost productivity. They also tapped data sources that had not been previously used by Max and Rice.

In general, most studies examining the costs of firearm-related crime to the hospital system have focused on how much of the costs are borne by the system rather than the victim. A 2013 report by the Urban Institute highlights this system-focused view of the cost of firearm violence. Howell and Abraham found that the total firearm injury cost for U.S. hospitals was around \$630 million (2010 dollars), a figure substantially lower than the two studies previously mentioned because of the report's focus on emergency departments. Another contributor to this lower cost estimation was that billing information was missing for 18 percent of emergency department visits (Howell & Abraham, 2013). Even with this limitation, Howell and Abraham's work was significant in that it provided a more detailed look at the demographics of the victims captured in the Nationwide Emergency Department Sample and the Nationwide Inpatient Sample. Those hospitalized for firearm injuries were overwhelmingly young, male, low-income, and either received insurance from the state or were totally uninsured (Howell & Abraham, 2013).

Although intangible costs and how they are assessed are discussed below, it is worth noting that two articles in the mid-1990s looked at the costs of gunshot wounds in the United States and Canada using the same methodology, but they also included some intangible costs. Miller's 1995 article on the incidence and costs of these injuries in Canada primarily looked at hospital release and emergency department data. Additionally, it pulled information from public service data, productivity losses, funeral expenses, and several intangible costs. Including intangible costs, the total cost of gunshot wound cases was estimated at \$6.6 billion. Medical and mental healthcare amounted to \$63 million and \$1.5 billion, respectively. In 1997, Miller and Cohen applied the same analysis to the cost of gunshot and stab wounds in the United States. For gunshot wounds, medical needs because of injury cost \$3 billion and productivity loss cost \$37 billion. Across studies that use this incidence-based methodology, productivity or work lost consistently represents the other large share of the tangible costs of crime to society. Miller and Cohen (1997) make a point to compare these findings to the 1995 Canadian findings to estimate how strict gun control might impact the severity and incidence of injury. Indeed, they found that the cost of gunshot wounds was \$180 per resident in Canada and \$495 per resident in the United States.

Because of recent events in the United States, the consequences of mass shootings have been looming large in the public imagination. Miller's cost methodology has been adopted by non-academic, journalistic voices to broadcast the cost of gun violence to society. In 2015, *Mother Jones* published a piece of long-form journalism that touches on victim experiences, barriers to research, and the economic burden of gun violence (Follman, Lurie, Lee, West, & Miller 2015). Miller and a team of journalists from the publication found that, in 2012, the annual cost of gun violence was more than \$229 billion, inclusive of intangible and system-related costs. Lost productivity is estimated to cost \$49 billion, and mental healthcare costs were estimated at \$410 million annually.

Lost Wages and Productivity

Lost wages and productivity are additional tangible costs of victimization, which can be estimated by looking at the time lost from work due to injuries or the size of workers compensation claims for similar injuries suffered on the job. Lost wages are often mentioned in tandem with healthcare costs throughout the literature, though not all studies categorized lost wages and productivity as tangible versus intangible costs.

In the previously mentioned study where Arias and Corso (2005) calculated the average cost of IPV victimization by gender, they also estimated wage losses. Using those per-unit estimates, the researchers found that IPV victimization resulted in an average of \$224 in productivity losses for men and \$257 for women. Notably, wage productivity losses were the only IPV cost estimates they generated that were near parity for both men and women; costs of injuries and service utilization, by contrast, were far greater for women than men who were victims of IPV (Arias & Corso, 2005).

Corso et al. (2007) also examined the productivity losses of fatal and nonfatal assault injuries. They used six different medical data sets¹⁵ to get a count of fatal injuries, nonfatal violent injuries resulting in hospitalization, and nonfatal, non-admitted medically treated injuries for the year 2000. Unlike most other cost studies, their work disaggregated productivity losses by gender and age categories, rather than by crime category. They argued that because women and youth are paid less for work, it was necessary to examine these costs separately by gender and age.

Corso's team calculated the incidences' tangible costs of injuries. Productivity losses were calculated using average daily wage and fringe benefit cost estimates from the 2000 Current Population survey and injury incidence information. Corso and colleagues found that the total lifetime costs associated with nonfatal injuries and deaths caused by violence were more than \$70 billion (2000). Ninety-two percent of this cost was due to lost productivity. Similarly, Peterson and colleagues (2017) found that 52 percent of the economic burden on individuals from rape was from lost work productivity for both victims and offenders, while medical costs accounted for 39 percent of that total.

Max and colleagues quantified lost productivity as "the present value of lost output due to reduced or lost productivity caused by IPV, including the value of lost work days and an imputed value for lost housekeeping days due to injury and disability." (Max et al., 2004) Borrowing methods from previous papers (NCIPC, 2003), Max and colleagues calculated lost productivity for women as days lost during the year multiplied by average daily earnings by age. Their calculation also considered lost household production and premature death. Though published in 2004, the costs estimated are for the years 1995 to 1996. On average, the value of lost time from paid work was \$557 for rape, \$670 for physical assault, and \$940 for stalking.

McCollister et al. (2010) followed a similar approach to Max et al. (2004) in approximating lost wages. To get the value of lifetime earnings, McCollister and colleagues calculated the present discounted value of lifetime earnings. The authors used Department of Labor data to estimate the percentage of the population that was not in the labor force (Max et al., 2004). For those not employed, they estimated the lost household work by looking at the costs of housekeeping services and combining that with the mean annual earnings of the employed population. Per-offense costs to a victim's career ranged from \$660 for fraud to \$148,555 for murder.

Bowlus et al. (2003) measured the tangible costs of child abuse in Canada and found that productivity losses accounted for much of that cost. They measured costs in six different areas: judicial, social services, education, health, employment or lost productivity, and personal costs. The costs in these areas were estimated at the national level in 1998. The researchers drew their data from a survey of residents of a program for traumatic stress recovery for personally incurred costs, including information on Surveillance System–All Injury Program (NEISS-AIP), the 1999 and 2000 National Hospital and Ambulatory Medical Care Survey (NHAMCS), and the 1999

¹⁵ Those data sets were: 2000 National Vital Statistics System, 2000 Healthcare Cost and Utilization Project– Nationwide Inpatient Sample, 1999 Medical Expenditure Panel Survey (MEPS), 2001 National Electronic Injury Surveillance System.

and 2000 National Ambulatory Medical Care Survey (NAMCS). The biggest challenge was that no national surveys existed at the time that estimated the prevalence of child abuse. Since then, the Children's Exposure to Violence survey by Finkelhor et al. (2009) has attempted to capture a national rate of child maltreatment. Bowlus and colleagues also specified that they used the prevalence-based cost approach which considers costs resulting from past and present child abuse in a given year. They estimated the total cost of child abuse in Canada to be \$15.7 billion. Broken down into the six different areas of burden, employment losses (\$11.3 billion) and personal losses (\$2.4 billion) represented the largest fractions.

Within the studies that address losses to productivity, the economic valuation of this financial harm varies. This is partially attributed to differences in what is considered "productive." Some studies chose to include household work in addition to work that earned a tangible wage (e.g., Max et al., 2004). One study also included the perpetrator's lost productivity in its estimate of the impact on society (Corso et al., 2007). These additions to the calculation would overestimate the financial harm of certain crimes when compared to studies that do not use them. Differences in the severity of the crime and when the crime occurred during the victim's lifespan also have an impact on the estimate. For example, in the literature, productivity losses are consistently estimated as the highest financial burden for victims of child abuse or maltreatment. Long-term issues with trauma can interrupt educational attainment and, as such, stifle a victim's ability to gain employable skills. Whether measured in aggregate or per individual, productivity and wage losses play a significant role in determining the financial harm to a victim or society at large.

Victim Services

Victim services, such as services to aid emotional or physical recovery or to receive restitution, are not commonly explored in cost estimation studies. Victim services represent a variety of forms of support, including legal aid, counseling, case management, support groups, and housing. Some researchers exclude this information from analyses because of a lack of a breakdown by victim or offense type (Miller et al., 1993). In a 2011 Bureau of Justice Statistics (BJS) report, Langton used data from the NCVS to examine the proportion of people reporting victimization who have accessed certain services. Langton (2011) found that between 1993 and 2009 only 9 percent of victims of serious violent crimes received direct assistance from a victim services agency. Lower rates of victim services utilization decrease the tangible costs of victimization to the government. However, those lower utilization rates might also increase the overall long-term costs of victimization if the victim services have a net cost benefit, such as reducing the impacts of trauma, for example.

One might aim to estimate the cost of victim services *per client* served, if there are good data on the number of clients served. Alternatively, one may estimate the cost of victim services *per crime*. In view of the low utilization rates, to get the costs per crime, researchers generally divide overall service costs by the number of crimes, whether or not victims were served. This gives an estimate of how much is actually being spent per crime (Miller, Cohen, and Rossman, 1994), but can significantly underestimate the cost of victimization if all victims were served.

Yodanis, Godenzi, and Stanko (2000) built upon the idea that victim services providers can impart valuable information for cost estimation studies. They noted that victim service organizations were already collecting service receipt data that can be used in calculating better estimates of victimization costs. The release of their paper coincided with the U.S. government reducing many social services. Because violence against women forces more women to seek out government services, it was expected that these cuts might have reduced the government's cost resulting from violence against women. However, this is simply the cost to the government; the net cost to society of violence against women is likely increased by reducing government investment in services because those services, if effective, prevent more long-term, ongoing costs.

Tangible Costs Summary

Studies examining medical and mental healthcare costs have evolved from examination of crime generally to creating estimates for specific crime types, and from using outdated to current cost figures that account for differences in the medical costs of injuries, as well as levels of service utilization, between different crime victims. Most studies used crime prevalence figures from victimization surveys that have also evolved over time to collect more specific crime-type and cost-related information.

Currently, the field recognizes all the mentioned cost-of-illness methodologies as appropriate for estimating the healthcare costs of victimization. Limitations of studies related to the applicability of costs for different types of victims (e.g., by gender and age) have been raised, which leads to a call for greater attention to the diversity of crime victims even within the same crime types.

Across the studies that look at lost wages or productivity, it is abundantly clear that the cost of missing work due to injury and the cost of treating emotional distress comprise the largest part of the tangible cost burden of victimization. These findings have ramifications for victims, families of victims, businesses, and the economy at large.

Victim usage of support services as a cost of victimization is one area where there remains a dearth of research. This is due to a lack of service-access data collected from providers, who track information about the people that come to them for services. Studies so far have found low levels of victim services usage compared to the total number of people estimated to have suffered victimization.

Estimating Intangible Costs

Intangible costs of victimization are those, such as victims' pain and suffering, that cannot be measured easily in dollars as opposed to something like medical costs for which one receives a bill. Intangible costs also include second-order costs to individuals who are not directly victimized, such as fear or avoidance of crime costs. Several methods for quantifying intangible costs have been developed over the years, each with their own set of strengths and limitations. Placing a dollar amount on pain and suffering would seem to be an almost impossible task, and

this difficulty is demonstrated by the wide variation of estimates in the literature. Despite these challenges, it is routinely done outside of the crime context. Measuring intangible costs is an important part of generating a complete picture of the costs of crime as there is evidence that intangible costs might even dwarf the more easily measured tangible costs of victimization.

As no direct measure of the cost of pain and suffering is available, researchers have turned to several sources as potentially valid proxies: (1) jury awards, which are the monetary compensation amounts awarded by civil juries to crime victims, (2) survey responses, such as from surveys that ask members of the public how much they would pay to avoid victimization, and (3) market prices for goods or services that help people avoid crime or risk of bodily harm. The corresponding methods used to convert these data into victimization cost estimates are the jury compensation method, the stated preference method, and the revealed preference method.

These three methods have in the past few decades dominated research into the intangible costs of victimization. They are general methods, meaning they can be used to look at the intangible costs of many crime types. However, the jury compensation and revealed preference methods have been largely used to examine the cost of assault and fatalities and, to a lesser extent, other types of crimes. Furthermore, most conceptualization of the intangible costs of crime is holistic, and theoretically includes all costs imagined by the decisionmaker.

These three methods aim to measure how much society is willing to compensate victims after victimization has occurred (referred to as *ex post*) and how much people indicate that they are willing to pay (WTP) to prevent victimization in advance (referred to as *ex ante*). In the context of crime victimization, researchers endeavor to estimate the intangible costs of victimization via these methods. The jury compensation method aims to capture compensation, while the stated preference and revealed preference methods aim to capture average WTP.

There are theoretical reasons to expect compensation estimates to be higher than WTP. One reason is the “substitution effect,” which is the theory that if it is easy to purchase a good or service to replace the well-being lost, then it will take fewer resources to bring someone’s well-being back to where it was before the loss.¹⁶ However, if what is lost is hard to replace, such as the feeling of being safe, then it would take a great deal of resources to bring someone’s welfare back to pre-victimization levels. Compensation could theoretically be used to purchase goods or services to directly address the victimization impacts, such as moving to a new apartment, or it could be used to buy other goods or services that improve the individual’s total happiness level to where it was at prior to the victimization. Another reason that estimates of the cost of victimization based on compensation might be higher is that compensation, unlike WTP, is not constrained by a victim’s own income (Shogren et al., 1994). This fact is particularly salient, because lower income populations are often at greater risk of victimization.

Jury Compensation Method

One of the few ways that victims of crimes are monetarily compensated for intangible losses is through civil suits in which the compensation amount is determined by a jury. Cohen

¹⁶ The economic term for well-being in this instance would be utility.

(1988) was one of the first to consider jury awards as a source of estimates of the intangible costs of victimization, and several studies since have used this jury compensation method. Jury award data is used to calculate the perceived value of pain, suffering, and fear of injury. Cohen (1988) argued that jury awards were helpful for estimating the cost of pain and suffering because juries are instructed to award “fair” and “reasonable” amounts of money to make the plaintiff whole. The relevant portion of the awards is the compensatory damages, excluding punitive damages.

Cohen combined jury award data with general data on the cost of injuries and injury probability to calculate the average pain and suffering caused by individual crimes.¹⁷ Jury awards not directly tied to crimes can be linked to victimization costs through the type of injuries, assuming in part that the cost of injuries is similar whether they were caused by falling down stairs or by a crime (Cohen & Bowles, 2010). Unlike other sources of estimates, jury awards reflect actual expenditures and therefore are potentially more reliable. However, the amount is not determined by the person paying, and it is not subject to a budget constraint. By comparison, state victim compensation funds have fixed budgets that limit possible compensation.

The simplest version of this method would be to look at the mean compensatory damage amount awarded to victims of crimes as the average cost of victimization. Medical costs and lost wages are part of compensatory damages and are removed to isolate the pain-and-suffering compensation. However, it would be unwise to simply use the mean award amount, as only a small portion of victimization cases go to trial in civil court, and they are not representative of most victimization cases. To partially control for this, Cohen (1988) used regression analysis and jury award data to calculate pain and suffering as a function of lost wages and medical costs. Using that function and the tangible characteristics of a wider distribution of crimes, Cohen was able to generate mean pain and suffering costs for several crime types. The function indicated that each dollar in tangible costs (medical and productivity lost) is associated with X dollars in pain and suffering. Similarly, pain and suffering costs were estimated by Miller et al. (1993) as the dependent variable in a regression with medical and productivity costs, with category of injuries and average costs by crime as covariates.¹⁸ These models can then be applied to the actual distribution of victims of crime to create average cost estimates for a variety of crime types (Cohen, 1988; Miller et al., 1996). Roman (2009) included more jury award observations by linking, through injury characteristics, jury award data for all crime-related and non-crime-related cases that resulted in an injury with incident-level crime data from the National Incident-Based Reporting System (NIBRS).¹⁹ These studies attempt to determine the functional relationship between measured outcomes, such as seriousness of injury and monetary cost, which helps to control for representativeness concerns (Cohen & Miller, 2003).²⁰ These analyses assume, in part, that individuals received needed mental healthcare services, otherwise long-term costs would be higher (Miller et al., 1993).

¹⁷ Pulled from three different datasets: injury distribution data from Consumer Product Safety Commission, insurance claims data, and lost work day data.

¹⁸ Jury award data was from Jury Verdict Research. Average costs by crime were from the National Crime Survey and crime rates were from the FBI's Uniform Crime Reports. To estimate the cost of fear to victims who are not physically injured, data from Louisiana was used since Louisiana allows recovery for fear.

¹⁹ Created by the RAND Corporation.

²⁰ Other measured outcomes include medical and wage costs.

In a more recent study, Miller et al. (2017) used Jury Verdict Research (JVR) data on 1,467 jury awards for physical or sexual assault. They were able to code the data, generating case-level variables about the defendant's characteristics, the plaintiff's characteristics, the event itself, noneconomic damages, injuries, and medical and wage costs. Using regression analysis they created an equation to predict the compensatory damage amount using those case level variables.²¹ They then entered NCVS data on victim demographics and Centers for Disease Control and Prevention (CDC) medical cost data into the regression equations to generate average costs for different types of victimizations, broken down by victim demographics and other event characteristics (Miller et al., 2017).²² They separated out sexual assault data and ran separate regressions and analyses. Their regression models explained 45-50 percent of the variation in compensatory damage amount for physical assaults, demonstrating a strong relationship between the severity of physical injuries and the non-economic cost of victimization. To calculate the intangible costs of victimization, they subtracted the medical and wage costs from the predicted award amount. They found that sexual assaults were three times as costly as other physical assaults, which is similar to what has been found in WTP research (Cohen et al., 2004). Miller et al. (2017) argued that, unlike WTP methods, the jury compensation method does not include costs to non-victims, such as fear of crime. The estimates generated from the jury compensation method are therefore just part of a bottom-up approach to estimating the cost to society of crime, whereas WTP approaches take a top-down view (Miller et al., 2017). A bottom-up approach calculates costs separately from different areas and then combines them to get the total cost; a top-down approach generates one estimate of the total cost of the victimization that cannot be easily divided into different areas such as long-term and short-term costs.

One measure that researchers use to quantify welfare losses short of death are quality-adjusted life years (QALY), which quantify the percentage of health or well-being lost per year due to an impairment.²³ QALYs are useful in part because they can be utilized to monetize injuries by comparing them to the value of a statistical life (VSL), for which there is a rich literature. To do this, one projects the percentage of lifetime quality of life lost (in QALYs) and multiplies that by the VSL.²⁴ The VSL is a holistic estimate of the value of avoiding a fatality and includes both tangible values, such as lost earnings, and intangible value, such as lost quality of life. Cohen and Miller (2003) linked injury information from the jury award data to measures of lost quality of life for those types of injuries. They could then estimate the victimization cost in QALYs. From this they built a regression model to control for other case characteristics and produced VSL estimates using the jury award data. These VSL estimates were similar to those found in WTP methods such as wage-risk studies, which will be discussed further below.²⁵ Other

²¹ The dependent variable was a natural log transformation of compensatory damages.

²² They used the WISQARS online data analysis tool provided by the CDC.

²³ Perfect health for one year is measured as one QALY.

²⁴ "To estimate an overall QALY (utility) lost due to a particular injury, the expected percentage utility losses a year after injury must be summed over the victim's remaining lifespan (suitably discounted to present value). For example, Table 4.10 of Miller et al. (1995) shows the first year's utility loss for a hospitalized brain/skull injury to be 62.8%, indicating that the average injury causes a reduced quality of life of 62.8% during the first year. That loss reduces to 19.68% in years two through five, and 8.05% in year six onward. These fractions can be compared to a 100% healthy status (the discounted present value years in the person's expected lifespan according to a life table). With a 2.5% discount rate, an individual who has this injury and expects to live another 10 years has a lifetime utility loss of 19%." (Cohen and Miller, 2003)

²⁵ Cohen and Miller (2003) found VSL estimates between \$1.9 and \$3.8 million, which is a smaller range than the \$3 to \$8 million found by Viscusi (1993). However, it was close to the estimate found in a more recent meta-analysis by Mrozek and Taylor (2002), which was \$1.5-2.5 million.

research has found that VSL figures calculated from jury awards were 25 percent to 40 percent higher than those calculated using WTP methods (Miller et al., 1993; Miller, 1990). This rather large difference is unsurprising, because as mentioned previously, theory predicts that individuals would demand more in compensation post-hoc from an injury than they would pay to prevent that injury (WTP). QALYS are discussed in more detail in the *Further Research* section.

Stated Preference Method

Another approach for estimating intangible victimization costs is to look prospectively at how much people are willing to pay to avoid crime. This is referred to as the contingent valuation (CV) or stated preference (SP) method. It is also considered a top-down approach, as it estimates the total cost of crime, including intangible costs (Cohen & Bowles, 2010). In contrast to jury awards which consider the intangible costs to victims, this method considers the costs to society at large and thereby also encompasses intangible costs to people who have not been victimized, such as fear of crime. With this method, researchers survey people about how much they would be willing to pay to reduce crime by a certain amount – usually a percentage compared to the current rate – and then combine that with some measure of the crime rate to generate a per-victimization cost estimate (Arrow et al., 1993; Cohen et al., 2004; Cohen & Piquero, 2009). Unlike the jury compensation or revealed preference methods, the SP method is based on hypothetical scenarios, designed to get directly to the policy question: “How much should be spent to reduce the risk of victimization?” (Cohen and Bowles, 2010). The SP approach measures the WTP, the amount someone is willing to pay to avoid a certain outcome or for a given level of safety. Unlike other methods, the SP method allows cost estimates to be differentiated by crime type. One limitation to this approach is that it relies on survey responses to abstract, theoretical questions regarding victimization experiences, which individuals may be poor at predicting (Tonry, 2015).

SP surveys are used for cost-benefit analysis in many fields, including environmental policy, where the surveys measure the value people place on passive use of certain natural resources (Arrow et al., 1993). An example of passive use of a resource is the desire someone has to have a beach preserved even if they never used that beach. SP surveys provide important estimates of the economic costs of events for which there are no behavioral trails to examine (Arrow et al., 1993).

The quality of SP research is often tied to the structure and wording of the survey questions; over time, some best practices have been developed. One best practice is to format SP questions like referenda, with specific response options, as opposed to open responses, which might invite strategic overestimation by those who think the survey results will impact policy (Arrow et al., 1993). Referenda are common in real life, reducing the instructions needed for survey respondents to complete the questions (Arrow et al., 1993; Ludwig & Cook, 2001; Cohen et al., 2004; Atkinson et al., 2005).

Several studies have used this referendum approach. One study by Cohen and colleagues (2004) asked respondents if they would be willing to vote for a proposal that would require each household to pay a specific amount to prevent one in 10 crimes in their community. The prompt

in the survey asked if they would be willing to pay to reduce the likelihood of a randomized crime type for a randomized amount.²⁶ To test for income effects, the survey also asked respondents if they would be willing to pay that amount out of their own pockets.²⁷

Another study by Ludwig and Cook (2001) sought to determine the VSL by asking respondents how much they would pay for a 30 percent reduction in gun assaults. The survey asked about specific gun-violence reduction policies that the authors believed would not impact the ability of law-abiding citizens to purchase guns. They hoped this would allow them to isolate the relationship between economic cost and benefit, not general policy preferences. A third SP survey asked respondents to express a WTP to reduce their likelihood of being a crime victim by 50 percent in the next 12 months (Atkinson et al., 2005). The cost of reduction was described as a one-time increase in charges for law enforcement. They were told to only value the intangible costs of crime they hoped to avoid.²⁸ SP surveys have examined a variety of crime types, including white-collar crimes such as identity theft (Piquero et al., 2011).²⁹

Survey responses can be converted to measures of WTP by comparing the desired percentage reduction to baseline measures of crime rates. For example, Cohen et al. (2004) took the number of households in the United States at the time, 103 million, multiplied it by the average WTP for a program to reduce that crime by 10 percent, then divided it by the crimes averted (10 percent of the UCR incidents of that crime). Using this calculation, WTP to prevent robbery was found to be \$31,000; \$75,000 for serious assaults; \$253,000 for armed robbery; \$275,000 for rape and sexual assaults; and \$9.9 million for murder. As an alternate approach, Giles Atkinson et al. (2005), gave respondents the baseline rates in surveys. Picasso and Cohen's (2018) analysis produced a VSL of \$9.7 million, similar to that found in Cohen et al. (2004), and a cost of a violent crime of \$9,000, similar to that found in Atkinson et al. (2005).

Individuals' WTP to avoid crime is expected to vary significantly based on individual characteristics. SP surveys often collect data on respondent characteristics and use regression analysis to examine which factors impact the WTP. Regression model coefficients can then be used to estimate WTP for other groups beyond survey respondents (Ludwig & Cook, 2001). This type of analysis has found that WTP estimates are unsurprisingly positively correlated with income and risk of victimization (Cohen et al., 2004). Political ideology also likely biases WTP responses, as people could value reduced victimization highly but be opposed to the government policies or taxation in the question (Arrow et al., 1993). To address political biases, Ludwig and Cook (2001) suggest SP surveys should have separate questions about possible political subjects, such as taxes, and then use that response to exclude from the results individuals who are ideologically opposed to taxes.

²⁶ The randomized amount was between \$25 and \$225.

²⁷ When asked how much they would be willing to pay to reduce incidents of these crimes by 10%, responses ranged from \$111 for burglary to \$149 for murder (Cohen et al., 2004).

²⁸ The study produced cost estimates for common assaults of £5,300, £31,000 for crimes with moderate wounding, and £36,000 for crimes with serious wounding (Atkinson et al., 2005).

²⁹ Respondents were asked how much they would pay for government programs that reduce identity theft by 25 percent or 75 percent. Between 40 percent and 66 percent of respondents indicated a willingness to pay to reduce the crime, and more would be willing to pay for the more effective government programing, resulting in a WTP of \$87 dollars and an average cost per identity theft of \$2,800 to \$5,100.

To address the difficulty in obtaining valid answers to the abstract questions, researchers have proposed several question-framing methods. Question framing is important, as there is evidence of significant variation in what people state they are willing to pay based on the survey structure (DeShazo & Fermo, 2002). DeShazo and Fermo proposed a method to encourage tradeoff thinking by respondents by reminding them about alternative uses of the funding – that expenditures in one area would likely reduce them another area. Arrow and colleagues (1993) also suggested questions about crime prevention program funding could include the caveat that education funding would be reduced to compensate. Surveys can also contain follow-up questions to examine respondents’ motivations. More WTP studies have incorporated such methodological features (e.g., Cohen et al, 2004).

To examine the extent of these possible error sources and validate SP research results, researchers could look to the outcomes of actual referenda and their implied individual costs. Other suggestions for improvement include having surveys ask how much respondents would pay to compensate victims using a taxpayer-funded victims compensation account, or prompting respondents to think more like policymakers and envision enacting their stated preferences. Researchers could, for example, explain in the survey how victimization costs would result in the government funding programs aimed at avoiding victimization (Dominguez & Raphael, 2015). This way, even if the results are not interpreted as a perfectly valid estimate of the cost of victimization, they are informative to policymakers who themselves might be the ultimate audience of any cost of victimization literature.

Discrete Choice Experiments. Recently a more complex stated preference method called Discrete Choice Experiments (DCE) has been applied to the cost of crime, with respondents in Argentina (Picasso & Cohen, 2018). DCE have been used in other fields, such as environmental economics. Similar to SP surveys, they present the respondent with hypothetical scenarios with multiple features. For example, Picasso and Cohen (2018) asked respondents to “Please compare these two security programs for Buenos Aires and choose the one you prefer, considering their characteristics as well as the tax contribution required.” Two alternative programs were presented in tabular form on computer screens, and their features included:

- The expected number of homicides per year (e.g., 900 vs. 1100)
- How many of the victims would be friends and relatives (e.g., 1 of 20 vs. 4 of 20)
- The intensity of police presence (e.g., intense police surveillance vs. “as today”)
- Treatment of offenders (e.g., strict incarceration periods without temporary release vs. “as today”)
- Tax contributions (e.g., \$50 vs. \$400 per month, Argentinean dollars)

Accordingly, a respondent is presented with a “discrete choice” between two alternative programs. Using such scenarios, researchers can vary particular features – such as the number of homicides and the tax costs – while holding the other features constant in order to obtain how much as respondent is willing to pay for a given outcome (e.g., to prevent 200 homicides). Researchers can also explore whether respondents’ WTP varies with different program features

(e.g., intense surveillance vs. harsh treatment of offenders). Put another way, researchers can explore WTP for one type of program over another if the program outcomes are held constant.

Consequently, both program preferences and the value of crimes prevented can both be examined. Each respondent can be presented with more than one discrete choice question, which can considerably boost statistical power and precision. Which combinations of scenarios are asked of each respondent can be varied in a systematic way. Contemporary technology allows for considerable flexibility in varying program features and in testing the sensitivity of WTP results to both substantive features (e.g., the intensity of police surveillance) and methodological features (e.g., order of questions). The DCE approach is seen by many as superior to previous SP studies because it allows within-respondent comparisons of the value of different programs, and because it allows researchers to better separate preferences for crime reduction from preferences for specific policies.

Revealed Preference Method

Another method for assessing the monetary cost of crime is the revealed preference method, which examines how the prices of goods are impacted by the prevalence of crime or risk of injury and then uses that impact to calculate costs of crime and risk. This is also known as the hedonic pricing approach. The cost of crime victimization resulting from this type of analysis are holistic and top-down, meaning they include both tangible and intangible costs and both short- and long-term costs. Two prominent markets where crime or risk of injury are important determinants of price are real estate and wages. Researchers have looked at the decisions people make regarding the trade-off between risk and wages for different jobs to estimate the WTP of people to reduce the risk of injury or death. If it has been shown that the mean WTP to lower the risk of death in one year by 1 in 100,000 is \$30, then the VSL estimate would be \$3 million. The hedonic-wage method is the most common revealed-preference method used in the United States to estimate VSLs (Kochi & Taylor, 2011). For example, VSLs estimated using hedonic wage analysis are often used by the U.S. government in cost-benefit analyses to assess proposed regulations (Kochi & Taylor, 2011).

The hedonic pricing approach was first developed by Richard Thaler (1978), and it involves using regression analysis to examine the impact of crime on prices of goods, such as houses. Hedonic demand theory tries to break down the value of a good based on its characteristics, attempting to estimate a value of the characteristics themselves. As violent crime increases, people are not willing to pay as much to live in an increasingly dangerous neighborhood, thus revealing how strong their preference is to avoid crime victimization (Thaler, 1978; Shapiro & Hassett, 2012). Such a study shows how much people are willing to spend to avoid the risk of crime or reduce the risk of themselves or their family members being a victim of crime. Unlike stated-preference methods, revealed-preference methods use actual choices individuals make with their own money, constrained by actual budgets. However, these choices are also impacted by many factors beyond safety, making the isolation of the WTP specifically to avoid victimization difficult. Hedonic pricing analysis also assumes perfect markets, where buyers are aware of the crime rate. Furthermore, crime likely covaries with other determinants of

house prices, such as wages. We would expect crime to depress the local economy, lowering wages and thereby individuals' means to purchase homes (Cohen & Bowles, 2010).

A recent occurrence of a crime near a house is a strong predictor of whether someone moves (Dugan, 1999). Data on home pricing and market characteristics can be used in time-series econometric models to isolate and estimate the impact of crime levels on home prices. This is done by examining how changes in crime rates impact changes in house prices within small areas such as zip codes (Thaler, 1978; Shapiro & Hassett, 2012).³⁰ This type of analysis requires detailed location-specific data and only produces estimates of the marginal value of reduced crime. These marginal values are dependent on the given relative level of crime in the area when the purchasing decision was made (Cohen & Bowles, 2010).

Recent theoretical work argues that the more simplistic regressions used in the past do not accurately capture hedonic preferences. Yinger and Nguyen-Hoang (2016) provide a thorough overview of what should go into a hedonic demand regression for studies attempting to quantify what people are willing to pay for household amenities, such as safety. Because a house's safety is determined by its location, households likely choose location based on demand for safety, sorting into a location and then choosing a house within that location based on the house's other characteristics. The marginal cost of safety within that locality might then appear lower, but the household has already chosen a high level of safety. This is due in part to declining marginal utility, an economic concept meaning the utility provided by an extra unit of a good decreases as someone possesses more of those goods (Yinger & Nguyen-Hoang, 2016).

With this two-step process (first choosing a locality, then a house within that locality) in mind, hedonic regression equations should include interaction terms between other household characteristics and safety, in addition to non-linear terms for safety, to capture the non-linear demand curve (Yinger & Nguyen-Hoang, 2016). Using panel data with repeated sales, including fixed effects and excluding other house characteristics that impact demand for each home, helps to control for this and yet presents other challenges. Yinger and Nguyen-Hoang also show that WTP found in hedonic studies of house prices only applies to very small changes in safety, and not the "WTP for meaningful policy changes" (Yinger & Nguyen-Hoang, 2016). Furthermore, due to sorting, the mean WTP found in hedonic studies is very dependent on the sample used. While looking at changes in individual house prices over time does control for time-invariant factors, it does not control for changes in preferences or characteristics of house buyers over time. The resulting estimates of marginal willingness to pay are tied to specific sorting equilibriums. Furthermore, using border fixed effects (BFE) changes the interpretation of the coefficients. For example, border fixed effects limit the comparison to within whichever locality is shared by both houses along the border. Yinger and Nguyen-Hoang (2016) show that including other variables in a regression that impacts demand – without including interaction terms between those demand impacting variables and the amenity in question, for example crime – could lead to a downwardly biased estimate of the WTP for the amenity in question. Overall, the authors concluded that:

³⁰ Shapiro & Hassett (2012) also used a Granger causality test to test for causal relationships.

Scholars should select functional forms for hedonic regressions that do not rule out sorting and that are consistent with second-step demand estimations. They should recognize that regressions including demand variables as controls may be bid-function regressions, not hedonics, in which case these regressions should include interaction terms and address endogeneity. They should interpret results carefully, particularly when comparing results to those of other hedonic studies, when regressions include BFEs, or when using double sales data (Yinger & Nguyen-Hoang, 2016).

Yinger and Nguyen-Hoang showed that conducting hedonic analyses is rather complicated, and the interpretation of such results should be conducted with caution.

While most hedonic house-pricing research cannot isolate the cost of individual crime types, Linden and Rockoff (2006) were able to use sex offender registry data to estimate the cost of sexual assaults. They looked at how house prices changed after a registered sex offender moved into a house nearby. The authors compared changes in values of homes located very close to sex offender's houses – 0.1 miles – compared to those slightly further away. They found statistically significant impacts but did not find impacts for further distances. To convert this price differential to a cost of victimization, they had to create an estimate of the increased risk of victimization that arises from living close to a sex offender. Their resulting estimates of the cost of sexual assault were much higher than other studies have found.³¹ This high value could be attributed to home buyers overestimating increased risk or other intangible costs, such as fear, of living close to someone convicted of a sex offense, among other reasons (Linden & Rockoff, 2006).

A recent paper from Autor et al. (2017) looked at causation in the other direction: the impact of increased rents on crime. Researchers utilized a natural experiment: the abrupt end of rent control in Cambridge, Mass. The natural experiment was that, prior to the policy change, some neighborhoods had a higher percentage of apartments subject to rent control than others, so the authors could exploit that variation to examine the impact of relaxed rent control on crime. They then monetized the reduction in crime found due to the end of rent control and used crime estimates from Cohen and Piquero (2009) to estimate the percentage in property value appreciation due to reduced crime. Using those estimates, they found that only 10-22 percent of the increase in property value due to the end of rent control was attributable to reduced crime. These findings provide evidence that the cost of victimization estimates by Cohen and Piquero, and cost of crime estimates in general, are not upwardly biased (Autor et al., 2017).

Another large subsection of the revealed preference method is hedonic wage methodology, which looks at the impact of risk on the wages that individuals demand. This method relies on the assumption that individuals will demand higher wages for jobs that come with a higher risk of injury or mortality than otherwise similar jobs. The basic elements and theory of the hedonic wage methodology were laid out in Viscusi (1993). Since firms must spend money to make their

³¹ Baseline assumptions generated an estimated total victimization cost of \$1.242 million, with a range based on different levels of assumed risk aversion of \$2.186 million to \$890,000. This compares to estimates from Miller et al. (1996) of \$113,732 for the cost of rape and sexual assault.

workplaces safer, they pay a lower wage to offset the safer work environment. The wage-offer curve, therefore, is an “increasing function of risk” (Viscusi, 1993). While this can be partially examined at the industry level, it is much more accurate if individual, micro-level data is used.³²

This risk-wage tradeoff is confounded and complicated by many factors. For example, an individual’s wealth is a factor, because the greater an individual’s income or wealth, the more safety he or she will demand.³³ Additionally, employers might have more incentive to protect higher-wage employees because they have made larger investments in developing their skills. These confounders can be partially accounted for by including measures in the model that are proxies for general productiveness, such as a worker’s education (Viscusi, 1993). Once enough data is gathered, a simple regression of wages on risk, with individual characteristic covariates, can be used to estimate the risk premium (Viscusi, 1993).³⁴ The risk premium is the additional compensation employees demand for increased risk of harm.

An important consideration when using this method is determining the correct measure of risk. The ideal measure of risk is likely the subjective opinion of risk by the individual and the employer (Gegax, Gerking & Schulze, 1991).³⁵ However, risk levels based on self-assessment suffer from the fact that people often think their job’s risk level is much higher than it really is. They might assume a 1 in 2,000 risk of mortality versus an actual value of 1 in 10,000. Outside measures of risk can also be used.³⁶ Methods where the risk level is determined by non-workers, however, might underestimate the risk-wage premium, because people who are less risk-averse might self-select into riskier professions. Furthermore, data on the mortality or health of people in certain professions often fails to account for determinants of injury unrelated to the job itself. Individuals also tend to overestimate the likelihood of low-probability events and underestimate the likelihood of high-probability events. This misestimation means individuals are likely to underestimate the extent to which risk changes and therefore demand less of an increase in wage than a perfectly rational person would (Viscusi, 1993).³⁷

Despite these caveats, relying on wages is potentially more accurate than using other market transactions, because information on individual wage and risk levels is more readily available (Viscusi, 1993). Some revealed preference studies compare the cost in time to the amount of safety gained. One example is the extra time it takes to drive slowly. Researchers can monetize that time and examine how individuals value risk by how much of their time they are willing to spend going slowly to reduce their risk of death. These studies must impute some value for the time, making them more speculative than studies that utilize risk-wage tradeoff, in which risk and wage are both given. VSLs generated from these non-labor-market revealed

³² Industry level data is not sufficient because it does not provide information on individual decision points.

³³ Economists would classify safety as a normal good, meaning demand for it increases as income increases.

³⁴ Simple regressions might be preferred to more structural estimate models that place more demands on the data.

³⁵ Some studies have used workers’ self-assessment of risk and others have used the National Institute of Occupational Safety and Health’s death risk data, which has more granular data by sub-industry and state.

³⁶ Such as from the Society of Actuaries, or certain other professions.

³⁷ Rational in the economic sense: one possessing perfect information to make a decision in his/her own best interest.

preference studies ranged from \$700,000 to \$4 million, which is less than estimates based on the wage premium (Viscusi, 1993). As Viscusi argues,

Such studies provide a lower bound on the value of life but will not provide information about the consumer's total willingness to pay for safety, because with such discrete decisions, consumers are not pushed to the point where the marginal cost of greater safety equals its marginal valuation (Viscusi, 1993).

For example, perhaps a smoke detector only costs \$5, but it increases safety dramatically. The fact that the price of the smoke detector is only \$5 does not mean that individuals are only willing to pay \$5 for that amount of reduced risk, but instead reflects the fact that smoke detectors are sold in a competitive market. Some have argued that VSL estimates should be looked at skeptically and provide a range of possibilities more than a precise outcome. Revealed preference studies have generated VSLs ranging from \$700,000 to \$16 million and a cost of various injuries between \$15,000 and \$80,000 (Viscusi, 1993).

As with the CV method, estimates produced through revealed preference studies can be significantly impacted by risk preferences of individuals. Research has found that the value of a lost workday injury for smokers, assumed to be less risk-averse, was \$30,781, \$56,537 for the population at large, and \$92,245 for seat belt users, assumed to be more risk-averse (Hersch & Viscusi, 1990). This has implications on the study of costs of victims of crime. For example, some victims of violent crime might be voluntarily involved in the illegal narcotics trade. They might get involved in part because they are less risk-averse, and therefore the costs of their victimization might be lower than others. They might even want lower costs estimates for themselves, as they might bear the brunt of increased enforcement, prompted in part by analysis showing high costs of crime.

One key limitation to hedonic wage research is that it does not differentiate between types of death. This type of limitation cannot be overlooked, as the percentage of workplace fatalities due to homicide has increased, and there is evidence that individuals fear death resulting from crime more than death resulting from an accident (Scotton & Taylor, 2011). Recent research indicates that the cost of homicide is different than for other workplace fatalities, and therefore researchers should not in general consider the cost of workplace fatalities a valid proxy for the cost of homicide or crime (Scotton & Taylor, 2011).

Scotton and Taylor (2011) created a new data set that calculated risk rates for three types of death: transportation-related accidents, other accidents, and violent assaults.³⁸ This risk data was matched with data on individual characteristics for non-self-employed civilian workers. The sample was limited to higher-wage workers, because many low-paying positions are associated with higher risks of violence and many individuals in those positions have limited outside employment opportunities. Many of these individuals emigrated from another country, for example, reducing their options for employment. The Scotton and Taylor model controls for individual characteristics as well as the occupation and industry of employment. This builds on

³⁸ They removed deaths from suicide or personal conflict unrelated to the work.

earlier work that only examined inter-industry risk differentials. When looking at overall risk, they found VSL between \$6 million and \$10 million, which is similar to previous research but still a large range. However, unlike past research, they then separated fatality risk by type and found implied VSLs for violent death that are three times as large (Scotton & Taylor, 2011).³⁹

Kochi and Taylor (2011) also looked at risk heterogeneity but only for one type of occupation: drivers. In one of their models, they named the natural log of wages as the dependent variable, while the right side of the equation included rates of homicide, accidental death, assault injury, and accidental injury. The model also included variables for driver demographics, types of drivers (e.g., taxi), and other job characteristics, such as whether they were unionized. Kochi and Taylor (2011) had a separate model with undifferentiated fatal risk as an independent variable. The authors calculated fatality risks by dividing deaths for each driving occupation (from the Census of Fatal Occupational Injuries) by the number of individuals in each driving occupation in each Metropolitan Statistical Area (MSA). They combined this with information on wages and worker characteristics from the Outgoing Rotation Group of the Current Population Survey (CPS), producing a sample of 5,867. They found that VSL calculated using undifferentiated fatality risk was \$2 million, but that risk of homicide indicated a VSL of \$5 million. They also found that risk of assault had a statistically significant impact on wages, but risk of injury from accident did not. They wrote that VSLs based on undifferentiated, average risk in the labor market might be significantly biased. They inferred that their research provides evidence that “voluntarily-accepted private risks routine to a specific occupation are not necessarily compensated in the labor market.” Kochi and Taylor (2011) caution against the use of VSL estimates based on privately-borne risk to evaluate public policies whose risk impact would be borne by the public.

Researchers must be aware that policy makers often make decisions balancing risk and quality of life. Some regulations might reduce the level of risk, but burden consumers. The regulation area of automobile safety and speed limits represents the importance of this balance. A higher speed limit would increase quality of life because people would spend less time driving, but it would also increase risk. Ashenfelter and Greenstone (2004) examined the impact of the 1987 increase in some area speed limits from 55 to 65 miles per hour. They documented how policymakers understood the risks well, because when they reduced the speed limit previously, fatalities were reduced. The impact of the 1987 increase was a 35 percent increase in the rate of fatalities. Drivers saved a substantial amount of time, amounting to 125,000 hours per each increased fatality. Since the general public both bore the increase risk and benefited from the policy, it was very close to a deliberate public choice to make the risk and quality-of-life trade-off (Dominguez and Raphael, 2015). Multiplying the average wage by the 125,000 saved hours produced (in 1997 dollars) a VSL of \$1.54 million (Ashenfelter & Greenstone, 2004). This is on the low side of VSL estimates.

³⁹ When examining the risk of violent death, they used a measure called a value of risk reduction (VRR), which is the implied cost of moving to the 99th percentile of violent risk. They also found that a one standard deviation increase in risk of violent death is valued at approximately \$5 million.

Another study that exploited policy changes to generate VSL estimates is a 2012 study by Greenstone et al. which examined the decisions U.S. army members made regarding whether to reenlist. The Army offers reenlistment bonuses to people who agree to reenlist in certain occupations. Those bonuses, calibrated to ensure sufficient enlistment, changed over time. Greenstone et al. built on the basic hedonic wage methodology but used a random utility model of discrete choice, similar in theory to the model used by Picasso and Cohen (2018). Instead of the choices being hypothetical, as in Picasso and Cohen (2018), the choices in Greenstone et al. (2012) were very real. Their analysis utilized variation in combat mortality risk, over time and by military occupation, and the retention bonuses the Army offered to induce reenlistment. They then estimated what wage the individuals could have earned in the civilian workforce and their civilian mortality rate. They made two strong assumptions: that individual soldiers could not change their mortality risk and that the mortality risk they faced when making the reenlistment decision stayed the same during the reenlistment period.

Furthermore, because the military provides mandatory counseling prior to the reenlistment decisions and military mortality is well publicized, the authors concluded that reenlistment decisions were rather well-informed. Similar to other hedonic wage analyses, their model made a number of assumptions, including no variation in individual preferences to military service or risk. The study produced VSL estimates using several different models, including a simple binary choice (logit) model. The covariates included in the model were differential in earnings between civilian and military work; estimated civilian mortality rate based on home-record county, demographics, occupation; and decision-year dummies. The independent variables of interest were the bonus offer and the mean-reverting measure of military mortality; they found both to have a statistically significant impact. The researchers found that an increase in the bonus of \$1,000 was associated with a 2 percent increase in the probability of reenlistment for men and a 1.5 percent increase for women. Increasing the military mortality hazard by 1 death per 1,000 reduced the probability of reenlistment by 1 percent for men and a much larger 4.3 percent for women. Using these impacts, the authors estimated VSLs of between \$4.6 million and \$4.9 million for men and \$27.7 million for women. The estimated VSL for men in combat occupations was rather sensitive to the estimated civilian earnings options, as it fell to \$3.1 million when a different measure was used. Overall, their analysis produced VSL of between \$3 million and \$4 million (in 2010 dollars) for young people who volunteer for military service. By including interaction terms with the hazard rate, marital status, and age, they found variations in VSL based on individual characteristics, as might be expected. For example, people who were married or older were more sensitive to mortality hazards than those who were single or younger (Greenstone et al., 2012).

Moore and Shepherd (2006) utilized a rather different methodology in place of the more traditional revealed preference methods, but this “shadow pricing” also uses income to estimate the intangible costs of victimization.⁴⁰ The authors cited literature showing that fear of crime decreases as income increases and that fear of crime increases with victimizations. The literature

⁴⁰ They used the British Crime Survey and the Index of Multiple Deprivation victimization survey.

does not necessarily imply that higher incomes cause lower levels of fear of crime directly, just that they are related.⁴¹ Since victimization and income are both related to fear of crime, measures of fear of crime can be used to measure the impact of victimization in income. Using survey data, Moore and Shepherd examined how much incomes must rise to reduce measures of fear of crime as much as measures of fear of crime are increased when someone experiences their first crime victimization.⁴² This method generated a willingness-to-accept (WTA) estimate, an estimate of the amount someone needs to be compensated to return them to their pre-victimization level of well-being. They found that it would take an almost five-fold increase in income to bring the level of fear of walking in the dark back to where it was prior to the first time someone was threatened with physical violence. It would take a 115 percent increase in income for fear of being home alone. These are large estimates of the costs of victimization, yet they are important reflections on the impact victimization can have on fear.

The revealed preference method produces potentially more valid estimates because it looks at actual decisions consumers and workers make in balancing risk and money. However, these decisions are not solely influenced by risk or crime, making it difficult to isolate the impact of risk and crime on price. Recent research also showed that modeling the relationship between crime and price is more complicated than previously thought (Yinger & Nguyen-Hoang, 2016) and that people can value different types of risks very differently (Kochi & Taylor, 2011). Sometimes natural policy experiments occur that produce more reliable estimates (Greenstone et al., 2012), but those experiments are difficult to find, and the results are not completely generalizable.

Intangible Costs Summary

Intangible costs of victimization are those that are not easily quantifiable, such as pain and suffering and lost quality of life, and may also include second-order costs to individuals not directly victimized, such as costs of avoidance behaviors due to fear of crime. They are different than tangible costs, like medical costs, for which one can receive a bill and know the cost immediately. Placing monetary values on intangible costs, thought in many cases to be even greater than tangible costs, has been a considerable endeavor for researchers, but there is still wide variety between estimates depending on method used and data employed. This section covered three main methods in current use: the jury award method, the stated preference method of willingness-to-pay surveys and the recent development of discrete choice survey experiments for more precision, and the revealed preference method, which examines consumer decisions such as where they move as it is influenced by, among other things, victimization experience or victimization risk.

⁴¹ Income is negatively correlated with fear of crime.

⁴² A measure of the compensating income variation can be constructed from the results of a regression with measures of the fear of crime as the dependent variable and the coefficients representing the marginal impact of victimization and income.

Limitations to these Methodologies in the Current Research

As might be expected, given the difficult nature of the task, there are a number of methodological critiques of all of main methods used to calculate the intangible costs of victimization, as well as some critiques that apply to research into the costs of victimization in general (both tangible and intangible). These methodologies are further limited in their ability to generate cost estimates for certain crime types, such as white-collar crime or crimes where the individual victims are not identified.

Several of the primary criticisms discussed in the literature are summarized below. One of the leading investigators on the costs of crime has recently responded to much of this criticism along with his own suggestions of how to move the field forward (Cohen, 2016b).

Tangible costs

The universe of researchers in the field of the tangible costs of victimization has not reached a consensus on how to categorize certain costs. In a paper assessing the purpose of cost estimates, Kleiman et al. (2014) spoke on dividing tangible costs into direct and indirect costs. Direct costs are those that arise immediately after the incident, such as treating injuries from victimization. Indirect tangible costs would be those incurred as a loss of opportunity or a victimization consequence like lost wages (some articles mentioned in this review make that distinction). Still, the authors deemed the widely used cost-of-illness model insufficient to measure the cost of victimization or crime because these costs are borne by both the public and by private individuals. Public costs are sometimes capped, because agencies can only spend what they are budgeted or appropriated. Some have found this cost-of-illness approach useful in calculating the direct costs of crime to include in estimations of the cost of reducing violent crime (Shapiro & Hassett, 2012).

Variability in Costs

One criticism of the costs of victimization literature is that the sheer variation in estimates is indicative of their underlying unreliability (Tonry, 2015). While these disparate approaches often produce estimates of similar magnitudes, there is still substantial variation within them, particularly for crimes with the highest levels of harm such as homicide (Chalfin, 2014). This is highly problematic for cost-benefit analyses, because averted victimization harms make up most of the benefits from averted criminal events (Washington State Institute of Public Policy 2015), and heterogeneity in estimates of these harms can substantially impact cost-benefit findings (Taxy, 2013). Due to this variability in estimates, some have argued that they should not be used to make important policy determinations in areas such as sentencing policy (Tonry, 2015).

Jury Compensation Method

Critiques of the jury award estimation method assert that the estimates are not reliable because of great variation in award amounts and because jury members decide amounts but do not have to pay awards. Studies have found a high level of variability in jury awards for pain and suffering due to physical assaults; of course the actual degree of injury differs among incidents. One study's jury award sample had a mean of \$568,000 for this portion of the award, but a median of only \$37,000 (Cohen & Miller, 2003). Awards might also contain significant attorney fees, which can account for up to a third of the total, and awards in the United States tend to be higher than in other countries (Dominguez & Raphael, 2015). Also, jury award data often does not include out-of-court settlements, in which the defendant agrees to a settlement amount (Cohen, 1988). It is unlikely the victimizations or injuries in the cases are representative, which potentially biases the estimates upwards (Tonry, 2015). Since the cost of taking a case to trial can be substantial, jury awards reflect the most serious or easily provable cases (Shapiro & Hassett 2012; Tonry, 2015). This means the cases involved a heinous crime, had a well-insured or wealthy defendant, or involved a highly sympathetic victim.

Often those who commit the crimes do not have sufficient assets to pay damages, so victims sue third parties (Miller et al., 1996). For example, if someone was assaulted in a parking garage, he or she might be able to sue the parking garage owner for inadequate lighting. Consequently, jury compensation award data often includes awards being paid by a wealthy entity, such as the business where a crime occurred or an insurer (Tonry, 2015). Moreover, research indicates that compensation from WTA estimates can be two to three times larger than WTP estimates (Isoni et al., 2011). It is worth noting that jury awards are not direct estimates of victims' WTA, because they are compensation for actual events not determined by the victim (Cohen & Miller, 2003).

Stated Preference Method

Even if best practices are followed and all due consideration is put into crafting survey questions, weaknesses in SP research will remain. Research comparing SP responses to actual spending has found that SP estimates are upwardly biased (Arrow et al., 1993). This aligns with market research showing that WTP estimates for new goods are often biased upwards compared to actual purchases, and that it is easier to estimate relative demand than absolute demand (Arrow et al., 1993).⁴³

Criticisms of SP methodology include the possibility that respondents are not properly informed about the subject, or that they are expressing feelings as opposed to rational choices, subject to a budget constraint. SP surveys are susceptible to the "warm glow" effect, meaning the responses reflect respondents' approval for the policy as opposed to a real WTP. Additionally, past results do not seem to follow rational choice theory, which expects people to pay more for higher quantities of a good they desire (Arrow et al., 1993). This is an "embedding" problem,

⁴³ The demand in this case would be for crime prevention policies.

whereby respondents value problems the same amount, regardless of scale. For example, they might be willing to pay the same amount to prevent 5 assaults versus 50. Research has found that respondents are only willing to spend a little more to clean up a very large number of lakes, as opposed to a smaller number of lakes (Kahneman, 1986).

Additionally, SP surveys measure preference beyond avoiding victimization. Someone's WTP to reduce gun crime does not simply capture how much they value reducing their likelihood of victimization, but it also reflects their potential desire to prevent people they know or those in the community at large from becoming victims of a gun crime. SP survey responses capture secondary victimization costs as well and therefore may be truly measuring the total cost of victimization and not just cost per crime (Ludwig & Cook, 2001; Soares, 2009).

Also, results can be difficult to interpret (Kleiman et al., 2014). For example, if someone says that they would pay X amount to not be the victim of a robbery or burglary, does that mean they would pay two times that amount to avoid both? It is unlikely that the estimated costs should be summed linearly. Sometimes authors will take values for the cost of single victimizations to generate the total cost of crime to society. However, a strong argument can be made against using what someone would pay for a 10% reduction in the likelihood of victimization to estimate the total cost of victimization, because it would be impossible to eliminate crime (Kleiman et al., 2014). It would be better to use such estimates to capture marginal effects.

The question of variation in baseline risk of crime victimization is important, as it could significantly impact any SP findings. For example, gunshot injuries are concentrated within a subpopulation that is "far less risk averse" than the general population, namely young men, which complicates the interpretation of answers from respondents who are not at risk (Ludwig & Cook, 2001). SP surveys rely on the knowledge respondents possess about crime. There is evidence that people overestimate the likelihood of victimization, meaning that "a hypothetical percentage point decline in crime will be perceived as having an impact on crime that is exaggerated," resulting in an overestimate of the cost of victimization (Dominguez & Raphael, 2015). Even as crime has fallen during the past few decades, survey respondents have said that crime is increasing (Tonry, 2015; Roberts et al., 2004). Additionally, citizens report that sentences are too lenient, but the sentences they propose as appropriate are often less severe than actual average sentences.

These misperceptions can likely be traced to the general public's knowledge of crime coming from mass media outlets that highlight "sensational crimes and anomalous punishments" (Tonry, 2015). Tonry (2015) argued that while surveys might be good indicators of society's general priorities, they should not be relied upon for precise value estimates. However, there is debate on this issue, as others have countered that individuals go beyond passive observation of the news and do research the risk of victimization, for instance by researching which neighborhoods or towns to live in (Ludwig & Cook, 2001).

Revealed Preference Method

Criticisms of SP methodology include that respondents might not be properly informed about the subject, or they might be expressing feelings as opposed to rational choices subject to a budget constraint.⁴⁴ Studies that examine wage-risk tradeoffs to generate VSLs cannot be used as easily to estimate the costs of gun violence because of a lack of data on the occupational risk of being shot (Ludwig & Cook, 2001). As opposed to the stated preference method, it is difficult to generate crime-specific estimates of the cost of victimization using the revealed preference method.

Another difficulty is that there are likely unobservable confounding factors correlated with both risk and pay, biasing the estimates (Dominguez & Raphael, 2015). Similarly, research on the impact of crime on house prices is weakened by the fact that there are many factors (such as an area's poverty level) which are highly correlated with both real estate values and crime, making it difficult to isolate the impact of crime from the impact of those related factors. Research using cross-sectional hedonic wage models can include dummy variables for occupation and industry to control for unobservable characteristics related to those classifications; however, risk is also measured at those levels, increasing the likelihood of mismeasurement (Scotton & Taylor, 2011).

The fact that individuals are not proficient at estimating the risk of low-probability events can bias revealed preference analysis as it does stated preference analysis. Furthermore, individuals' choices could be "constrained by non-competitive forces that also distort the price signal," such as discrimination based on race, making it difficult to live in certain neighborhoods or get certain jobs (Dominguez & Raphael, 2015).

Revealed preference analysis is used most often to generate estimates of the VSL. The literature has produced a wide range of estimates. For example, an examination of 31 separate studies using labor market data found a mean VSL of \$9 million, but also found a large range of \$700,000 to \$26.4 million. Studies that used consumer purchasing behavior instead had values that ranged from \$1 million to \$11.1 million, with a lower mean of \$3.4 million (Dominguez & Raphael, 2015).

There are theoretical reasons to expect that VSLs based on the hedonic wage approach are the upper-bounds of WTP estimates. A primary reason is that the methodology assumes risks are independently determined and that people cannot take individual action to reduce that risk (Scotton & Taylor, 2011). Since the ability of workers to self-protect is not incorporated into the model, the actual risk/wage trade-off is likely lower than the estimated value. Workers in an occupation will have varying degrees of skill in reducing risk and different risk preference – both unobservable – making it difficult to isolate the risk preference in a model (Shogren & Stamland, 2002). Furthermore, the wage is likely to be set by individuals who are low-skilled at reducing risk, but the risk level used in the model is the average risk for all workers. This will inflate the VSL because it appears as if workers are demanding \$X in wages for Y increased risk, but the

⁴⁴ *Hedonic pricing analysis can thus suffer from endogeneity bias (Roman 2009).*

value of X is determined by the marginal worker who faces an actual risk level potentially much larger than Y, meaning each unit of Y costs less than it would appear (Shogren & Stamland, 2002).

Uncertainty and Sensitivity

With the range of methods that have been used to estimate the costs of crime, it may not be surprising that there are no common conventions for describing the uncertainty of those estimates that can be applied across methods. In some cost studies, confidence intervals are included to describe the sampling error (e.g., Cohen, Rust, Steen, & Tidd, 2004). But other cost studies report technical difficulties that challenge the estimation of such confidence intervals, such as the integration of disparate sources of data (e.g., Miller, Cohen & Wiersema, 1996). When cost estimates are then included in cost-benefit calculation, which also integrates different types of data, results are often reported simply as point-estimates without confidence intervals. Some analyses have attempted to generate distributions using Monte Carlo methods that would allow the description of the uncertainty around the estimates (Taxy et al. 2012, WSIPP, 2015).

In addition, cost estimates may be sensitive to a variety of methodological details as well as substantive assumptions (e.g., which costs to include). Some studies have conducted sensitivity analyses to see how changing assumptions will affect the cost estimates. For example, McCollister et al. (2010) explored how estimates of the total cost of crime change when they incorporate different assumptions about the value of a statistical life, about criminal justice costs, and about the magnitude of medical costs and productivity losses. In some cases, one specific assumption or set of assumptions may be clearly superior. In other cases, different assumptions may make sense for the purposes of different studies, or there may not be a consensus about which assumptions are best. All these issues add to the degree of uncertainty warranted around particular cost estimates and/or cost-benefit estimates. None of these issues are new (e.g., Cohen, 2000; Welsh & Farrington, 2000). That the literature does not use common methods or conventions to describe the uncertainty around estimates of the cost of crime may leave consumers of the literature hard-pressed to know when different point estimates are consistent or inconsistent.

Topical Gaps in the Existing Cost Estimation Research

There are several areas that have not been explored extensively from a cost estimation perspective; some involve significant measurement difficulties. Whether addressing these gaps is important may depend on the policy implications of changes to estimates, and how the direction of any bias will impact policy decisions.

Crime Types

Much more research has been conducted on the tangible and intangible costs of some crime types, such as murder and intimate partner violence, than others. In part, this is because those

crimes that have been researched are the costliest violent crimes or have the largest impact on public fear. White-collar crime, which encompasses many types of fraudulent activity, is one of the most often excluded crime categories. White-collar crimes are difficult to track, as it is often not immediately obvious to a person that they have been the victim of such a crime (Cohen, 2016a). In 2006, the Federal Trade Commission (FTC) commissioned a report that measured the effects of identity theft based on a survey of identity-theft victims (Synovate, 2006). The survey found that the median value of goods acquired by identity thieves was \$500, while out-of-pocket expenses for victims ranged from \$0 to \$5,000. The FTC has also conducted a survey of victims of consumer fraud that found the most commonly reported fraud activities are "fraudulent weight-loss products, fraudulent prize promotions, being billed for a buyers club membership that one had not agreed to purchase, being billed for internet services that one had not agreed to purchase, and fraudulent work-at-home programs" (Anderson, 2013). The research on white-collar crime that has been done explored an individual's or a business's willingness to pay to avoid financial victimization or fraud (Cohen, 2015; Piquero, Cohen, & Piquero, 2011).

Additionally, many people are often victims of white-collar crimes, such as consumer fraud, without knowing it. The collateral consequences and prevention/avoidance costs of white-collar crime are particularly difficult to quantify (Cohen & Bowles, 2010). Similarly, the acute or individual victims of most environmental crimes cannot be identified. A review of Environmental Protection Agency (EPA) enforcement cases found that only 3 percent had identifiable individual victims (Jarrell & Ozymski, 2014).

Sub-population variation

One important consideration for policymakers is the cost of victimization for their constituency or the constituency that will be impacted by a certain policy or program. There are reasons to believe that the costs of victimization vary significantly based on the sub-population or individual in question; however, there has not been significant research in this area to date. Some work has used the demographics of respondents in stated preference surveys and found that, as expected, individuals with higher incomes would be willing to pay more to reduce crime (Cohen et al., 2004). While it might seem unethical to value victimization differently depending on who the victim is, often the burden of reducing crime falls on the population more likely to be victimized. As mentioned, very often individuals convicted of crimes have themselves been victimized in the past. Furthermore, resources that go toward crime prevention can always be used on different services that might be more desired by these constituencies. So, if their cost of victimization is less than for other groups, perhaps more resources should be shifted from crime prevention to government services in those areas.

Recent studies have highlighted the need for more nuanced understandings of victimization harms. Using individual level microdata, recent evidence has shown that the mean estimate of victimization harms is a poor descriptor for the experiences of most victims (Roman, 2011). Even beyond the wide range of crime victimization types – homicide, child abuse, intimate partner and sexual violence, elder abuse, and so forth – there are substantial ranges in the levels of harms experienced by victims who experience similar victimization events. A minority of

criminal victimizations may be very costly, while most impose substantially less harm on victims. Similarly, there is notable variation between the costs of crime in various large cities throughout the United States (Shapiro & Haskett, 2012).

Although it is not surprising that crime victimization impacts different people in different ways, the literature is only beginning to respond to these findings. These issues – which form the basis of demand for the proposed comprehensive study of crime victimization costs – have important repercussions for policymakers and analysts at the federal, state, and local levels who use cost-benefit analysis, and for the millions of crime victims affected by changes in crime policies, programming, and services.

Additional costs

Victimization can impact people in a variety of ways with large differentials in impact. Some types of costs have not been covered extensively in the current literature, in part because they impact a small percentage of all victimizations. For example, substantial but less researched victimization costs might include increased risk of suicide, increased vulnerability to future victimization, long-term health impacts such as obesity, chronic pain, and substance abuse. Research indicates that peer victimization increases risk of suicide as well (Moon et al., 2015). There is also evidence that victimization increases the likelihood of future offending, creating cycles of violence; however, most of this research has focused on victims of child abuse (Macmillan, 2001). Identifying the causal pathways between victimization and long-term costs such as future victimization is difficult, as many of the determinants of the first victimization will also increase the likelihood of a subsequent incident (Stewart et al., 2004). How then can researchers isolate the extra cost generated from one victimization due to the increased likelihood of a subsequent victimization?

Some of the methodologies discussed here move past these questions by generating holistic cost estimates which implicitly include all possible costs. This is simpler than trying to estimate the marginal impact of victimization on certain deleterious outcomes. One should keep in mind, however, that those estimating the lump sum amount – such as survey respondents, home purchasers, or jurors – may fail to factor in all possible costs. Research using jury verdicts uses the lump-sum amount as a starting point to determine the cost, though that amount can be divided between tangible costs, such as reimbursements for medical care, and intangible costs, such as pain and suffering.

Another difficulty and potential pitfall in estimating all costs of victimizations is that some costs may overlap. If all types of costs are counted independently and then summed, the resulting sum will overestimate the cost of victimization. Examples include costs in lost wages due to terminated education and mental health costs resulting from depression. A mechanism through which victimization might result in terminated education is through increased probability of depression that then increases the likelihood that an individual will abandon education efforts. Public health researchers refer to this problem as comorbidity. In a study of the economic cost of heroin addiction, the authors subtracted out the costs of psychiatric comorbidity from their calculations of productivity loss due to heroin use (Mark et al., 2001).

An additional difficulty also discussed in the public health field is determining the attributable risk factor or percentage of a certain outcome's cost that can be attributed to the victimization event (Mark et al., 2001). Mark and colleagues (2001) estimated that half of all cases of incarceration where heroin use was reported within a month could be attributed to heroin addiction; therefore, half the cost of incarceration should be included in the total cost of heroin addiction (Mark et al., 2001). Researchers looking to examine all cost areas need to determine what percentage of a specific outcome can be independently attributed to the victimization, the percentage of victimizations with that outcome, and the cost of that outcome. Those three elements would then need to be multiplied together to total the per-victimization cost. These attribution determinations would need to be done for each substantial negative outcome in order to avoid downwardly biasing a valid cost estimate.

Miller (2004) examined the costs of adolescent problem behavior, such as unprotected sex. One large potential cost resulting from unprotected sex is the transmission of sexually transmitted diseases (STDs), including HIV/AIDS. To estimate the additional intangible costs of sexual violence, Miller (2004) utilized public health literature (Trussel et al., 1997) to first estimate the incidence of STD transmission during unprotected sex, and then multiplied that by estimates of QALYs lost due to HIV/AIDS infection (Holtgrave & Pinkerton, 1997). In J. Yang et al. (2012) these costs were applied to research on the costs of sexual violence in Iowa.

Yang et al. (2012) also examined the impact of sexual abuse on the incidence of suicidal acts and substance abuse, citing twin studies research. In twin studies, the impact of certain incidents is estimated by looking at differences in outcomes for twins when only one of the twins suffered the incident in question. After estimating the incidence of substance abuse and suicidal acts resulting from sexual abuse, Yang et al. (2012) could then apply other research which estimated the unit cost of substance abuse and suicidal acts. Generating reliable, complete estimates of the cost of victimization requires accurate data on the incidence of the victimization, the incidence of harms the victimization caused, and the tangible and intangible costs of those harms. Cost-of-crime researchers can and have utilized the rich literature on the incidence and impacts of harms (in QALYs) of various physical impairments.

Second Order Costs

Determining what falls under the umbrella of victimization costs is difficult. However, cost-benefit analyses that examine the impact of public policies should aim to include all costs and benefits of policies, even those affecting people not directly impacted. The societal value of crime reductions is not merely the aggregate of individual victimizations, but also includes substantial primary and secondary avoidance costs (Kleiman, Caulkins, & Gehred, 2014). Second-order costs are victimization costs for people who are not directly victimized and do not know the victim. Money spent to reduce one's likelihood of victimization is not captured as frequently in the literature. They include reduced job opportunities when a business moves, residual fear, social hostility, and indirect costs of increased law enforcement presence (Kleiman et al., 2014). For example, businesses might receive less patronage if a crime happened recently nearby. Certain crimes, such as rape or homicide, generate the bulk of this residual fear.

Researchers could examine the opportunity costs endured to avoid crime, including, for example, the time taken to lock their doors or to travel a longer route home. This time cost can be monetized through wage rates as proxies for the value of leisure time (Cohen & Bowles, 2010). Some or all of these costs may be included in responses to existing WTP surveys, but little research has been done to explore this question.

While more research is needed in this area, some have been able to generate estimates of second-order costs. Violent crime can have an impact on the development of business in certain communities (Greenbaum & Tita, 2004; Irvin-Erikson et al., 2016; Stacy, Ho & Pendall, 2017). Researchers at the Urban Institute have shown that declines in violent crime are related to increased economic growth (Stacy, Ho & Pendall, 2017). A separate study has found that surges in gun violence can slow the growth of retail sales, home values, and home appreciation (Irvin-Erikson et al., 2016). Greenbaum and Tita (2004) studied the effect of gun homicides on businesses and found that an increase in homicides can lead to downsizing and decreased development. Downsizing can be tied to the monetary costs of crime prevention incurred by businesses.

Some studies have estimated QALYs lost, due to fear of crime, by matching values on an instrument for measuring health status to levels of fear of crime. Using monetary values for QALYs from the literature, researchers estimated the average annual cost of fear of crime was only between \$26 and \$69 per person in 2007 dollars, with most respondents reporting no health loss due to fear of crime (Dolan & Peasgood, 2007; Farrall & Gadd, 2004).

Worth noting is that these second-order costs likely do not scale linearly to the number of victimizations, as the 100th murder impacts fear less than the first. This is somewhat the opposite of criminal justice system costs, where eliminating a fifth murder might be much more difficult and expensive than the 100th. Researchers should also consider general equilibrium impacts on avoidance costs; as crime falls, so will precautions, which might then result in a higher crime rate (Kleiman et al., 2014).

Long-term costs

Another complicated consideration in estimating intangible costs is how to capture long-term costs. Costs of victimization based on one-time payments might miss long-term costs, since they are upfront payments difficult to estimate initially (Macmillan, 2001). For example, if violent trauma disrupts someone's investment in education, then that will likely reduce their income in the future. Macmillan (2001) found that victimization does diminish education and occupational attainment, and this reduces long-term income.⁴⁵ While long-term costs can be substantial if summed over many years, it is important to discount future costs using a discount rate, reducing the total (Roman & Farrell, 2002).

A great deal of work has been done in the public health field to quantify long-term costs of health impairments that do not directly result in death. In respect to the public health field, this

⁴⁵ Using National Youth Survey data.

work is helpful because it informs decisions, such as whether to undergo a surgery which, if successful, could dramatically improve quality of life, but if unsuccessful would result in death. Looking at the expected improvement in quality of life compared to risk of death allows practitioners to make informed decisions. This is sometimes called cost-utility analysis; results are measured in QALYs or disability-adjusted life-years (DALYs) (Boardman, 2008). QALY values are estimated through surveys of the public, medical professionals, and patients who have experienced the disability in question.

Researchers have found that in general the loss in utility in declining from perfect health to impairment is larger than the gain from impairment to perfect health. This can be explained in part by loss aversion. One way to measure QALYs is the Health Rating Method, whereby respondents are asked to rate certain conditions between 0 (death) and 1 (perfect health), or they are asked to find which health condition is the midpoint between 0 and 1 (Boardman, 2008). Another method is the Time Trade-Off Method where respondents are asked different pairings of quality and length of life. For example, respondents would be asked if they would rather live 20 years during which they could not walk or 10 years during which they were in perfect health. If the respondent were indifferent, then the health status of being unable to walk would be assigned a utility of one-half. A third method is the Standard Gamble Method, where the respondent is asked to consider the trade-off mentioned earlier: what percentage of certain death would they risk to attain a certain number of perfect health years?

Lastly, the Health Index Method asks respondents to rate their level of certain attributes, such as pain, emotion, ambulation, etc. The respondent rates those attributes on a scale, similar to a Likert scale. Utilities can then be constructed from those scale values (Boardman, 2008). The health states or statuses resulting from various medical problems are determined by an expert physician's judgement or a patient survey/observation. To determine change in QALY from a medical problem, these statuses are then mapped on to the utilities constructed previously (Miller, 2004).

QALYs can then be converted to statistical life years and then converted to dollar amounts using the VSL. Cohen and Miller (2003) used jury award data and estimates of the impact of crime victimization in QALYs to generate implied VSLs. The value of reducing risk by one QALY can be determined by taking estimates of the VSL, subtracting lifetime wage loss to avoid double counting, discounting the remainder to present value, then dividing by expected healthy lifespan remaining (Miller, 2004). Miller (2004) found that, using that method, if the VSL is \$3.5 million in 1999 US Dollars, a fully healthy QALY was worth \$135,000.

Researchers in the United Kingdom linked reported injuries from the British Crime Survey (BCS) to public health databases which have "disability weights" and durations for a variety of injuries.⁴⁶ They linked types of victimizations to losses in QALYs. To monetize these QALY values, they used the UK's National Institute for Clinical Excellence's (NICE) value of approximately \$40,000 per QALY (Dolan et al., 2005). In the United Kingdom, NICE helps make decisions about which medical procedures are worth government funds. Beyond simply

⁴⁶ The disability weights were taken from the *Global Burden of Disease (GBD)*.

using QALY values from public health research, victimization-cost researchers could consider conducting similar surveys of both crime victims and the public, asking about crime victimization. Cost-of-crime researchers could then generate QALY values specifically for crime victimization.

Policy Implications

Stepping back to consider how any estimates of the financial cost of victimization will be used is important. Some critics have argued that cost estimates should only be used for some policy purposes or only in certain ways (e.g., Dominguez & Raphael 2015). For example, it seems improper to compare total costs of crime, including intangible costs, to tangible values such as gross national products, because such comparisons will exaggerate the relative impact of crime (Tonry, 2015). For some benefit-cost purposes, the relative rankings of benefit-cost results may be more useful than their absolute values (Aos, 2015; Dominguez & Raphael, 2015).

However, cost estimates are generally produced as general estimates, which are then used to inform different policy uses. As discussed in the introduction to this volume, some of these policy uses include comparing the harm among crimes and comparing the harm from crime to that of other social problems, informing policy decisions concerning the level of spending for victim services and for victim compensation, and helping to understand the potential benefit of crime prevention efforts. As well, there are differences in the implications for different parties, including direct victims, employers, insurance companies, government budgets, and taxpayers.

Because different methodological features and limitations can have different implications for different policy purposes, it is important for users of those estimates to be able to understand those nuances. Therefore, even as methods for estimating the cost of crime and victimization continue to develop in new ways, there is also a countervailing need for more standardization and conventions that could simplify estimates, make them more transparent, and help guide users in appropriately using them.

Literature Review: Estimating Victimization Incidence, Prevalence, and Concentration

Highlights

This second literature review looks at measurement issues in estimating the prevalence, incidence, and concentration of victimization. This is the other major category of data used to create total estimates of victimization costs. Three major topical areas are covered:

Victimization surveys/Data sources.

The review begins with the NCVS and national crime statistics, moving into state surveys, public health data, school surveys, and crime data for emerging crime types such as white-collar crime, financial crime, cybercrime, and others.

Initiatives to reach difficult-to-capture subpopulations.

Methods developed to reach marginalized populations not always captured in major surveys are addressed, using the examples of public housing residents, victims of sexual offenses, and mentally ill individuals. Other groups are identified.

Technical issues affecting estimates.

Issues that can distort estimates include different units of analysis required, repeat/ polyvictimization, unequal distribution both in victimization and services delivered, and survey method issues.

The review concludes with a summary of opportunities to improve estimates of prevalence, incidence, and concentration of victimization and, in turn, estimates of costs that incorporate them.

Introduction

Crime victimization has significant economic costs. Researchers and practitioners are recognizing the importance of accurate estimates for victimization prevalence, incidence, and concentration to better understand these costs. Per-incident cost estimates alone cannot capture the full price that victimization exacts on localities, states, and the nation without prevalence estimates to reveal the full picture. If the multipliers used with per-incident costs to estimate total costs are inaccurate, then national, state, and local estimates could be catastrophically flawed. An exploration of the questions raised by this critical need is the purpose of this literature review.

Methodology

An intentional method was applied to the literature search, including running searches iteratively every few months during the project period to ensure the latest studies were included.

Searches utilized the Google Scholar, EBSCO, ProQuest Central, and JSTOR search engines and database iteratively over the life of the project. Additional searches were conducted upon request by librarians at the National Criminal Justice Research Service (NCJRS). Search terms included “victimization surveys,” “crime data,” “NCVS,” “prevalence rates,” “incidence rates,” “state victimization surveys,” “Unified Crime Report,” “National Incident-Based Reporting System,” “public health victimization data,” “willingness to report crime,” “victimization data sources,” and various combinations of these terms. Additional targeted searches were conducted for topics such as white-collar crime, financial crime, cybercrime, homeless victimization, and gendered victimization. Studies were chosen for inclusion if they met at least one of the following criteria: a) seminal theoretical or methodological work, b) rigorous original research study, c) grey literature either well-known or new and cutting-edge, or d) literature review that assesses the state of a major topical or

theoretical area. Studies that met these criteria were chosen for inclusion if they added something new to the methodological discussion, such as “Methods for capturing victimization in institutionalized populations may be similar whether that population has mental illness or is elderly.”

Scope of Review

Several audiences can benefit from advancing the current state of knowledge on the cost of victimization. These include practitioners in government, law enforcement, service providers, those in other policy circles, and academics who study various crime and victimization problems. This literature review attempts to speak to these audiences by being as thorough as possible, while not overwhelming an audience with overly technical jargon and formulae beyond that which addresses their needs.

Thus, this literature review proceeds as follows. First, several sources of data that can be used to estimate incidence and prevalence of crime victimization in the United States are discussed. These estimates are the multipliers which, when combined with cost estimates, generate a total estimate for the cost of victimization to the country or a state/region, or the cost for a specific type of crime. Major national data collections, state-level victimization surveys, school surveys, and several public health surveys and data sources are presented first. Next, sources of data on less traditional types of victimization are covered, such as financial schemes (consumer and terrorist-financing), cybercrime, white-collar crime, environmental crime, and other potential data sources like campus police data, victim services provider data, and data from ombudsmen that take reports on elder abuse. This section looks deeper into these data sources and examines initiatives to access harder-to-reach or less-commonly-measured sub-populations that are not necessarily captured using the typical sampling procedures in a nationwide or statewide victimization survey. Following that, technical issues that are important when generating or interpreting rates of victimization incidence, prevalence, and concentration are examined. Finally, recommendations from past literature for collecting the necessary data and calculating more precise and accurate rates in the future are presented.

Victimization Surveys and Other Data Sources for Incidence of Crime

National victimization surveys and national crime data are the primary data sources used to calculate victimization rates. This section begins with a discussion of the NCVS, followed by the FBI UCR Program, which includes both the Summary Reporting System (SRS) and the NIBRS. Other types of data are then presented, including public health data, school surveys, data collections that access populations not necessarily covered by the NCVS (i.e., public housing residents or mentally ill and homeless persons), and data sources for non-traditional crime types, such as financial crime, white-collar crime, and other victimization types that may not be captured in the most commonly used federal data collections.

The National Crime Victimization Survey (NCVS)

In response to the recommendations of the President's Commission on Law Enforcement and the Administration of Justice in 1967 to better understand crime, several prototype studies were launched in the late 1960s, including the flagship National Crime Survey (NCS), later known as the NCVS. Covering 72,000 households, NCVS was the first large-scale survey to ask specific details on crime and victimization incidents experienced by individuals and households (Lauritsen & Cork, 2016), and is still the largest annual survey on crime victimization fielded in the United States. Used at the national, state, and local levels, as well as for academic work, the main goals of the NCVS were to shed light on the "dark figure of crime" not reported to the police, to complement UCR data by providing more detail on the incidents reported, and to survey a nationally representative sample of the population (Lauritsen & Cork, 2016).

The first results, from the 1972 survey fielded by the Census Bureau, were shocking at the time. They showed that, for many crimes, UCR/police data totals were one-half to one-third of the total amount reported in the NCVS (Lauritsen & Cork, 2016). Since its launch, the survey has been revised and revamped several times and moved under the administration of BJS.

The basic methodology of the NCVS is to interview all members of a household age 12 and older, beginning with a "screener" section meant to prompt recall and accounts of individual victimization incidents for a variety of crimes. This is followed by a detailed incident report taken to describe each incident named during the screener section (Lauritsen & Cork, 2016). Designed as a panel survey, each household is ideally interviewed a total of seven times, at six-month intervals (Conaway & Lohr, 1994). The first interview was discarded as a "bounding interview," intended to draw a line in the respondent's memory around which to place events in more accurate chronological order, and the remaining six were used to estimate national victimization rates (Conaway & Lohr, 1994). The bounding of each interview controls for telescoping, the inaccurate reporting of the timing of incidents that occurred outside the reference period. Every six months, a new panel of households replaces one-seventh of the households in the sample; this ensures continuous sample rotation and makes longitudinal analyses possible (Conaway & Lohr, 1994). Several methodological changes were made to the survey in 2006, including the introduction of a new sampling design based on the 2000 Census; the practice of incorporating the bounding interviews in the generation of estimates; and the introduction of computer-assisted interviewing (Rand & Catalano, 2007).

In question construction, the NCVS avoids legalistic language in favor of behavioral and descriptive language. This was done to mitigate for crime-definition differences between statutes and jurisdictions; to minimize potential cognitive, educational, or cultural barriers; and to allow for comparisons across jurisdictions and over time (Lauritsen & Cork, 2016). Crime classifications are made later, based on the incident attributes identified. A secondary offense code is also assigned to each incident to allow for flexibility in incident classification. Box 2.4 in the original Lauritsen & Cork 2016 report (pp. 53-54) gives the full list of covered crimes, which at present is still limited to street crime, though new crimes have been added over the years through supplemental surveys. Supplemental surveys to the NCVS include the Police-Public

Contact Survey (PPCS), the School Crime Supplement, the Identity Theft Supplement, the Supplemental Victimization Survey (which assessed criminal harassment and stalking), and the Workplace Risk Supplement (Lauritsen & Cork, 2016). Additionally, BJS fielded a survey on personal financial fraud during the last quarter of 2017. The NCVS also allows for the generating of different metrics of “harm” induced by crime (physical harm, financial harm, etc.) and can be used to study individual reactions to and losses due to crime. The NCVS further enables use of the household as a unit of analysis to look at family effects of crime (Lauritsen & Cork, 2016).

While the NCVS provides invaluable information on the so-called “dark figure of crime,” researchers and stakeholders have identified several key gaps in the ability of the NCVS to measure victimization. For example, it does not include information on several crime types, such as homicide, crimes against children younger than 12, and non-individual crimes, such as white-collar crime. As with all such surveys, certain specialized populations are missed in the sampling frame, including the homeless or those living in certain types of congregate facilities. These may include domestic violence survivors living in shelters, individuals living in military barracks, or those in prisons, nursing homes, or mental health facilities.

Another drawback of using the NCVS to assess victimization rates is that its design as a nationally representative survey limits its use to national estimates; it has historically been less useful in generating subnational estimates measuring victimization in specific states or localities. However, work is underway to test methods to do this, as described here. Sparks (1981) had noted that the NCVS almost certainly undercounts victimizations, and there is also some evidence of bias associated with class-linked variables, such as education. Even though data is collected every six months, declining crime and response rates in certain categories have resulted in larger windows of time needed – two-year spans – in order to amass sample sizes large enough for some trend analyses, (Lauritsen & Cork, 2016). Conaway and Lohr (1994) also identified the fact that the survey follows addresses, rather than family households, as a potential weakness; if the members of one household move from an address, and members of a new household move in, the new household is interviewed in the next wave (Conaway & Lohr, 1994, p. 28).

Counterarguments have been made, however, that address-based sampling is one of the most effective approaches for achieving a nationally representative sample because it ensures that an adequate variety of geographic and socioeconomic characteristics will be included in the sample (Rand, 2006). Nevertheless, BJS is currently working on a revision to its sampling design to further improve representation in some areas. Statistical corrections and research-design adjustments have included the following techniques: NCVS sample-size boosting in large places, model-based estimates for states/other large areas (i.e. metropolitan areas, counties), generic area typologies, and the use of small-area estimates (SAEs) (Diallo & Fay, 2015).

Diallo and Fay (2015) tested several methods to assess their efficacy in generating valid SAEs, or subnational estimates, using NCVS data alone or in combination with UCR data, as well as via other methods. However, SAEs have several uses, such as benchmarking (comparison of states to national estimates), understanding the composition of crime within a state or metro

area, comparing crime rates in one state to those in similar states, examining differences in crime trends between states, assessing the impact of victimization statistics on funding allocations, and comparing state victimization estimates to official police statistics. The methods detailed in their 2015 article include: (1) direct estimation via a pilot study in 11 states between 2013 and 2016 alongside a sample redesign using 2015/16 NCVS data for 22 states, (2) a low-cost mailed, self-administered companion survey to the NCVS that focuses on a smaller area, and (3) model-based small-area estimates using existing NCVS data and UCR data.

This project is ongoing. The companion survey has been administered in the 40 largest Metropolitan Statistical Areas (MSAs) and one of the related products will be a toolkit that states can use to conduct similar surveys and have comparability across states. Diallo and Fay have produced model-based SAE estimates for all 50 states and large MSAs.

Diallo and Fay's 2015 report describes the statistical modeling approaches used to produce state-level estimates and notes statistical difficulties such as dealing with small numbers of rare events when drilling down into smaller locales. For example, per Diallo and Fay, there may be only three homicides in a sample of 2,000. They are still working to refine these models. Approaches 1 and 2 are very separate from the modeling efforts and have not yet been compared to the model-based estimates. Regarding the direct NCVS estimates, BJS redesigned the NCVS sample in 2016 and will be releasing new, model-based estimates in early 2018 for the largest 22 states, which account for about 80% of the population. Estimates for large MSAs within those states will follow as well.

One area that published studies have not focused heavily on until recently is rural victimization patterns at the subnational level. Not surprisingly, individuals living in urban environments tend to experience more victimization than those in rural environments (Block, 1988). Sacco, Johnson, and Arnold (1993) found this effect to be more pronounced for property crime than for personal crime, and they show males more likely to be victimized than females, although willingness to report victimization certainly can impact the rates found in victimization surveys and police data (see, for example, Helfferich, Kavemann, & Rabe, 2011). The small numbers of offenses and sparse populations can make SAE generation for rural areas statistically difficult. BJS releases annual estimates of rural victimization, enhanced most recently by the 2016 sample redesign discussed below, but other researchers are not using NCVS data to generate SAEs on rural areas as much. Initial searches uncovered more publications related to boosting metro area samples than studies that focused on rural areas. Much is yet to be learned about patterns of rural crime victimization.

State Victimization Surveys

Several state-level victimization surveys have also been conducted. In 2014, Orchowsky and colleagues examined a sample of 25 victimization surveys fielded by 14 state Statistical Analysis Centers (SACs) and found varying levels of scope and quality in work conducted thus far. Seven of these surveys were conducted by mail, while the remainder were conducted by phone or a combination of web-based and phone surveys. According to Orchowsky et al., 9 of

the 17 surveys that used random-digit dialing also reported including cell phones. All surveys collected data on individuals, rather than households, and included individuals ages 18 and older unless they sampled from lists of valid driver's licenses, in which case individuals as young as 16 were included. This is in contrast with the minimum age of 12 included in the NCVS. Sample sizes ranged from 200 to 5,508, with average sample sizes of 1,540 for phone surveys and 2,980 for mail surveys. Response rates ranged from 9% to 70%. Nine of the 24 state reports resulting from these surveys failed to include response rates. A majority of states modeled their survey instruments after the NCVS or after other states' victimization surveys. At a minimum, all surveys asked about violent crime and property crime, with the exception of those focused only on rape or sexual assault (i.e., Alaska). The state surveys that focused on sexual victimization alone were largely based on the state of Washington's work, which in turn emulated the NVAWS, which is discussed later, and the National Women's Survey. Some also asked questions about fear of crime and performance of law enforcement agencies and officers, in addition to victimization incidents.

Of those reviewed, Illinois's 2002 victimization survey report provided an excellent methodology section (Hiselman, 2005). Arizona's 2013 report gave a solid explanation of its sampling procedure and how representative the data were of the population (Stevenson, 2013). Wyoming (2011) described its weighting procedure, showing before-and-after calculations based on census data (Dorssom, Furgeson, & Lee, 2011). Most SACs, however, could have provided more detail about their sampling and methodologies either in their reports or appendices. According to Orchowsky et al. (2014), SACs at minimum should include contact, refusal, and cooperation rates, as well as procedures for handling partially completed surveys, per American Association for Public Opinion Research (AAPOR) standards. Also missing were methods for counting repeat or multiple victimizations and instrument/question development for items not modeled on the NCVS.

Some work is underway at the state level to improve and generate more robust state victimization surveys. For example, McGarrell (2017) is completing a three-city experimental study in Michigan comparing different methods of survey delivery to assess the impact of survey delivery method on response rates. So far, data collection has been completed for Saginaw and Detroit, and collection in Battle Creek is underway as of this writing. Preliminary results show that respondents can be encouraged to respond via a web-based tool, though they seem to prefer pen and paper if available. Older people tended to be more willing to respond, however, which could skew these results. As a result, Michigan is exploring methods to broaden the survey's reach. Continued experiments test the effectiveness of different financial incentives to encourage response. Further exploration of sampling and communication techniques to reach younger individuals are also underway, including recruitment by text messages on cell phones versus mail and landlines. With increased response rates, Michigan hopes to generate more precise estimates of victimization in the state and in specific locales.

UCR and NIBRS

The FBI's UCR Summary Reporting System (SRS) began collecting crime data in 1929 and continues to compile monthly summary data reports of several types of crime from law enforcement agencies on the incidents known to police (Lauritsen & Cork, 2016). Arrests and clearances are also included. These offenses are grouped into Part I crimes (usually most severe) and Part II crimes (usually less severe).⁴⁷ In tracking and reporting crime to the FBI, the SRS utilizes the "hierarchy rule," which stipulates that only the most serious offense committed during a criminal incident is reported. While offenders may commit and be charged with multiple law violations within an incident, only the most serious violation is reported to the UCR Program. Such an incident might be robbery with aggravated assault. These two incidents are given only one classification for UCR purposes – robbery the more serious charge in this example – with the other charge is not included in UCR counts (Lauritsen & Cork, 2016).

In nearly all cases, reports are aggregated under the UCR within a state level agency and then submitted to the FBI. While some crimes have been added to the offense lists over the years, general crime classifications have remained relatively unchanged since 1929 (Lauritsen & Cork, 2016). Several supplemental data collections also occur, such as the Supplemental Homicide Report (SHR); earlier collections on arson, human trafficking, hate crime, and cargo theft incidents known to law enforcement; law enforcement officers killed or assaulted; and an annual count of full-time law-enforcement employees at each agency. Some of these crime types, such as arson and human trafficking, have since been moved into the regular data collection (Lauritsen & Cork, 2016; Max, Rice, Finkelstein, Bardwell, & Leadbetter, 2004).

Initiated in the 1980s, NIBRS allows for categorization of multiple offenses per incident reported, lengthens the list of crimes on which to collect data, and also collects victim and offender information for each incident, which allows for much deeper, more nuanced analysis (Chilton & Jarvis, 1999; Lauritsen & Cork, 2016). By 2015, 6,648 of the 18,000-plus law enforcement agencies in the United States reported NIBRS data, representing coverage of more than 96 million Americans.⁴⁸ However, most of the largest cities in the United States are still reporting UCR summary data rather than NIBRS (Lauritsen & Cork, 2016).

While there are notable challenges for jurisdictions in transitioning from SRS to NIBRS and its increased data tracking and reporting requirements, many benefits result from adopting NIBRS. For example, NIBRS collects and reports information on up to 10 offenses per incident, not only the most serious offense. In addition, each incident includes counts of the number of unique victims associated with it, along with characteristics of the victim and the offender, and their relationship. These differences allow for a more accurate count of the number of victims associated with crimes reported to the police.

⁴⁷ Severity was not the only distinction between Part I and Part II crimes when the UCR was established, and it is not necessarily the most salient distinction between Part I and Part II today. Part I crimes, which make up the crime index, were chosen because they are/were the crimes with the most uniform definitions across jurisdictions, the crimes expected to have the highest total numbers, and the crimes most likely to be reported to police. Those distinctions tend to overlap with more serious crimes (Minnesota Justice Information Services, 2015).

⁴⁸ https://ucr.fbi.gov/nibrs/2015/resource-pages/nibrs-2015_summary_final-1.pdf

In recent years BJS, in partnership with the FBI's Criminal Justice Information Systems (CJIS), has been implementing the National Crime Statistics Exchange (NCS-X) program. This program is designed to provide funds, training, and technical assistance to facilitate the transition of 400 law enforcement agencies from SRS to NIBRS. When data from these 400 agencies are combined with data from the law enforcement agencies that already report NIBRS data, NIBRS will be able to produce national estimates of crime that can be disaggregated by victim-offender characteristics, the circumstances of the event, victim-offender relationship, and other important elements of criminal events (Snyder, 2013). The FBI has committed to completely shifting from UCR to NIBRS reporting by 2021.

UCR Data Limitations

Even if all agencies were able to transition to NIBRS by 2021, relying on crimes reported to the police to create an indicator of victimization will always underestimate victimization, since a great number are never reported to police. Additionally, UCR reporting is voluntary and can be inconsistent across agencies and time periods. The exact proportion of crimes reported to police varies widely depending upon a variety of factors, such as the specific offense, the locality, the nature of the victim-offender relationship, and race/ethnicity of the victim. For example, Bachman (1998) found that only about one in four rapes or sexual assaults were reported to police. More recently, Tjaden and Thoennes (2006) found that only 19% of women and 13% of men who were raped since their 18th birthday reported the rape to the police. Several studies have shown that the likelihood that a sexual assault will be reported to law enforcement decreases with the victim's age (Kilpatrick, Saunders, & Smith, 2003; Sorensen & Snow, 1991). Relying on police data alone will not capture these victimizations,⁴⁹ although one exception may be homicides, which are thought to be more accurately counted in the UCR (SRS or NIBRS) due to the severity of the offense.

Hospital/Emergency Department/Public Health Data Sources

Public health agencies are another source of victimization data, particularly regarding violent crimes, sex crimes, and drug crimes. Gelles (2000) compared the NCVS, UCR Supplemental Homicide Reports (SHRs), three national self-report surveys, and emergency room/hospital data on incidence and prevalence of violence against women to analyze strengths and weaknesses of each data source. SHRs, it should be noted, have several missing data points. For example, some cases are misclassified because homicides reported may not note that related crimes like domestic violence were also involved. NIBRS and SHRs both capture incident-level, victim-offender data. The other national self-report surveys examined by Gelles included the National Hospital Ambulatory Medical Care Survey (NHAMCS), which consists of a national sample of visits to emergency departments (EDs) and outpatient departments of non-institutional and short-stay hospitals but excludes federal, military, and Veterans Administration hospitals, and the National Ambulatory Medical Care Survey (NACMS). Gelles notes that both of these omit those who visit private physicians or do not seek care at all. As well, the National Hospital

⁴⁹ Some, such as Cohen and Piquero (2009) have applied multipliers based on arrests to crimes committed to estimate total lifetime costs of offending behavior.

Discharge Survey (NHDS) entails comprehensive surveillance data collection across systems on deaths in each locale, including a CDC-funded system in Rhode Island that triangulates police data, court system data, the restraining order registry, and medical examiner records. It is also incident-based but excludes non-fatality medical data. Taken together, these surveys can provide estimates for certain types of victimizations, but the limits on their data collection make it difficult to combine the information and gain an accurate sense of the range of victimizations that are treated/handled at the hospitals that complete these surveys.⁵⁰

Masho, Schoeny, Webster, and Sigel (2016) also compared several national and local public health and surveillance data sources on youth violence victimization prevalence and incidence used by six university-based Youth Violence Prevention Centers. These data sources included the National Violent Death Reporting System (NVDRS), mortality data, crime incident data (general), school discipline incident data, juvenile justice services data, ED data, ambulance data, data from the Chief Medical Examiner, and data from the Youth Risk Behavior Surveillance System (YRBSS). The authors identified the strengths and weaknesses of these sources (see table on pp.124-126 in original source) and noted the utility of each in tracking different types of violence, such as fatal versus non-fatal. They recommended combining and triangulating surveillance data from several sources to understand prevalence, incidence, and geospatial features of victimization and to demonstrate how focusing on the occurrence of violence versus the occurrence of crime or named victimization may result in more robust numbers than relying on crime data alone.

Sumner et al. (2015) provided an example of this triangulation approach in an examination of interpersonal violence in the United States, synthesizing information from multiple national violence data systems, including the National Vital Statistics System (NVSS), UCR, NCVS, the National Survey of Children's Exposure to Violence (NatSCEV), National Child Abuse and Neglect Data System (NCANDS), the National Intimate Partner and Sexual Violence Survey (NISVS), the Youth Risk Behavior Surveillance System, and the National Electronic Injury Surveillance System—All Injury Program. See descriptions for some of these below. The authors used these data sources to examine trends in interpersonal violence, changes in case fatality rates, and related issues. Other sources, especially for ED data, included the Substance Abuse and Mental Health Services Administration (SAMHSA),⁵¹ BJS data on drug use among high school youth,⁵² and emergency-department-use data from the CDC.⁵³

The CDC also collects data on interpersonal and sexual violence.⁵⁴ This includes information on non-fatal injuries treated in emergency departments, including non-fatal gun violence (National Electronic Injury Surveillance System – All Injury Program, NEISS-AIP, mentioned above)⁵⁵; the National Violence Against Women Survey (NVAWS); and the more

⁵⁰ A useful table in the original report compares all the estimates side by side, along with the validity problems associated with each data source, and is an excellent reference even if dated (Gelles, 2000, p. 799).

⁵¹ <https://www.samhsa.gov/data/emergency-department-data-dawn>

⁵² <https://www.bjs.gov/content/dcf/du.cfm>

⁵³ <https://www.cdc.gov/nchs/fastats/emergency-department.htm>

⁵⁴ <https://www.cdc.gov/violenceprevention/sexualviolence/datasources.html>

⁵⁵ <https://webappa.cdc.gov/sasweb/ncipc/nfirates2001.html>

recent NISVS.⁵⁶ The NVAWS was a national probability-sample phone survey of 8,000 women and 8,000 men conducted from 1995 to 1996 which produced data on victimizations, the use of medical visits after the incidents, and time lost from “usual activity” after the most recent victimization (Max et al., 2004).

More recently the NISVS, which grew out of the NVAWS, implemented a similarly designed telephone survey which began in 2010 using random-digit dialing of landlines and cell phones. To date, reports have been published for data collected in 2010 and 2011.⁵⁷ In 2010, complete interviews were obtained from 16,507 adults (9,086 women and 7,421 men) ages 18 and over. The NISVS instrument also advanced ethics practices over the NVAWS by incorporating safety-planning protocols for conduct of the survey – for example, what to do if a respondent’s abuser walks into the room during the telephone interview. Now it collects additional data on health outcomes resulting from IPV (Basile et al., 2011; Walters, Chen, & Breiding, 2013). Discussed earlier as being more effective at eliciting positive responses than legalistically worded questions, several behavior-oriented questions were asked about a range of IPV victimization types. They asked first about lifetime experiences, then experiences within the previous 12 months, as well as about the perpetrators of each incident. Victimization estimates for each form of violence were extrapolated from the sample based on U.S. census projections by state, sex, age, and race/ethnicity (Walters et al., 2013, p. 6).⁵⁸ Relative standard error (RSE) were used to determine reliability of estimates: if the RSE was greater than 30%, the estimate was not included (Basile et al., 2011; Walters et al., 2013, p. 6).

Public Health Data Limitations

These data sources also suffer from limitations. As with the NCVS, larger health-based surveys tend to exclude certain difficult-to-reach sub-populations, such as the homeless. A few studies have targeted single localities in the course of research on other questions, such as reasons for ED use among the homeless or mentally ill (Kothari et al., 2015; Kushel, Perry, Bangsberg, Clark, & Moss, 2002; and Padgett, Struening, Andrews, & Pittman, 1995, for example), but there have not been many attempts to use health-related data to establish prevalence rates among these populations. Similarly, usage-based data, such as ED usage, are limited to those who seek treatment for injuries. These usage rates vary according to several factors, such as nature of the injury, victim-offender relationship, gender, and race/ethnicity.

Youth Risk Behavior/School Surveys

A number of studies examine various aspects of youth victimization, often via surveys conducted in schools (for example, George & Thomas, 2000; Ousey, Wilcox, & Fisher, 2011; Pereda, Guilera, & Abad, 2014). George and Thomas (2000) found differences between student-level and school-level predictors of victimization – specifically that school-level factors were more predictive of victimization in eighth graders, while individual-level factors were more

⁵⁶ <https://www.cdc.gov/violenceprevention/nisvs/index.html>

⁵⁷ <https://www.cdc.gov/violenceprevention/nisvs/summaryreports.html>

⁵⁸ <http://www.census.gov/popest/data/index.html>

salient for tenth-graders. Along with victimization rates, this has implications for allocations of school resources. Tillyer and Tillyer (2016) analyzed data collected from 11,070 adolescents (mean age = 15.04 years, 51 percent female) during the first two waves of the National Longitudinal Study of Adolescent to Adult Health fielded by the University of North Carolina, Chapel Hill. The results indicated that being male, peer deviance, violent offending, gang membership, and low self-control were significantly associated with increased odds of violent victimization for all groups, with several breakdowns by gender and race.

Becker-Blease, Turner, and Finkelhor (2010) also looked at children's mental health and victimization experiences after suffering disasters, using the Developmental Victimization Survey (see also Finkelhor, Turner, Shattuck, Hamby, & Kracke, 2015). This survey was conducted via the phone with parents and youth, rather than in school, and had the advantage of including victimizations of individuals under 12 years of age who are missed by the NCVS. Again, estimates in this article were not generalizable to a larger population, but these kinds of surveys may also be employed as part of a design to measure costs associated with a specific population. Of these three surveys, the broader Developmental Victimization Survey tool may be most applicable for estimating victimizations of children under 12 years of age that are not captured by the NCVS, although some victimizations are likely to still go unreported either due to children not disclosing some incidents to parents, or parents wishing to protect children during the interview. The NCVS School Crime Supplement, a joint BJS/National Center for Education Statistics collection, also collects information from all NCVS respondents ages 12 to 18 and enrolled in school. Information is captured about bullying, among other crimes which can have significant associated costs.

White-Collar Crime (Corporate Crime) Data

By one estimate, the total cost of "street" crime in the United States was \$3.2 trillion in 2010 (Anderson, 2012), exceeding the total cost of healthcare (\$2.7 trillion) that same year (Anderson, 2012). While the healthcare costs mentioned by Anderson do not include intangible costs, systemic response costs, or prevention costs as his crime estimate does, street crime costs may still total hundreds of billions if not over a trillion annually. The costs of white-collar crime, however, may exceed those of street crime (Cohen, 2016a). Businesses and individuals that engage in white-collar crime also go far to avoid being charged with a crime, especially because there is no *mens rea*, often referred to as criminal intent, requirement in corporate criminal offenses. Business make every attempt to handle incidents outside the judicial system via arbitration or corporate structures that limit liability. This may lead to undercounting of incidents and victims and misrepresentation of true victimization costs. Nonfinancial (nontangible) costs also accrue as a result of white-collar or corporate crime, including physical/psychological harm to people or the environment from faulty products or business practices, or erosion of trust in economic or political institutions. To date, few comprehensive victimization surveys cover these types of crimes in any systematic way.

However, Croall (2016) argues that white-collar crime is widespread, involves multiple/repeat victimization patterns, and exceeds conventional crime in costs to society. Some

white-collar crime may constitute intentional defrauding or skirting of regulations, and some may be a result of negligence or shoddy practices that hurt or kill people (i.e. baby formula contamination, asbestos deaths, workplace safety negligence). Croall argues that white-collar crime directly and indirectly affects everyone and has severe impacts on individual victims as well as on communities and businesses, especially those least able to protect themselves – the poorest in Western nations and globally. Croall defines white-collar crime as crime committed in the course of a legitimate occupation or business, including offenses against criminal, regulatory, administrative, and other laws, as well as acts decried by some as immoral that they feel should be against the law. As such, there is debate among white-collar scholars about what crimes should be included; decisions on what to include or exclude would need to be made in any attempt to quantify the associated costs.

Croall also emphasizes the challenges in drawing a clear distinction between legitimate and illegitimate businesses (i.e., "front" businesses that may engage in both legal and illegal ventures). Most victimization surveys omit white-collar crime because of these concerns. However, the National White Collar Crime Center (NW3C) administered the National Public Survey on White Collar Crime (NPWCC) in 1999, 2005, and 2010.⁵⁹ Few of these offenses get reported to law enforcement, in part because people are not sure to whom to complain. Many complain to the FTC or other business regulatory agencies, as described above, rather than to police. Very little white-collar crime results in a criminal court prosecution.

The Corporate Research Project is one nonprofit that maintains a large database, called Violation Tracker on corporate violations.⁶⁰ It contains more than 300,000 violations that have been subject to civil and/or criminal prosecution since 2000 by over 40 federal government agencies and the Department of Justice. It covers banking, consumer protection, false claims, environmental, wage and hour, unfair labor practice, health, safety, employment discrimination, price-fixing, bribery, and other case types. The database is searchable by industry, offense type, and other criteria, and the website also provides an exhaustive list of online sources of company information for conducting one's own research.

Current standard victimization surveys focus mostly on fraud: credit card, identity theft, investment fraud, and other crimes that have identifiable and distinguishable individual victims.⁶¹ These surveys do not survey businesses, government, and other entities that may also be victims of crimes committed against them by individuals; these can include embezzlement, tax evasion, insurance fraud, Medicare fraud, and many others (Lauritsen and Cork, 2016). The often-substantial costs of these, such as the approximately \$100 billion per year in Medicare fraud (Clemente, McGrady, Repass, Paul III, and Coustasse, 2018), are then passed down to consumers, shareholders, and taxpayers who ultimately foot the bill for these victimizations.

Impacts on victims from white-collar crime are as varied as from conventional crime (ex. direct and indirect, short-term and long-term, interactions with the criminal justice system), but

⁵⁹ <https://www.nw3c.org/research>

⁶⁰ <https://www.corp-research.org>.

⁶¹ Victimization surveys are also not standardized across countries that also study fraud victimization, such as the United Kingdom and Australia, which limits their comparability.

the added denial of crime-victim status by agencies or law enforcement, in many cases, leads to little relief, according to Croall. Broader, societal-level impacts of white-collar crime include delegitimization of institutions and businesses and spillover effects on whole communities, for example, the impact of a company's collapse or of excess pollution on a community, or the impact of changes in investment behavior on businesses or the larger economy.

Environmental Crime

Jarrell and Ozymy (2014) detail cost estimates for environmental crime, which includes not only pollution and waste mismanagement, but also littering, poaching, wildlife trafficking, and other offenses. They looked at EPA criminal investigation cases from 2001 to 2011. Out of 972 total criminal cases, only 3% of cases involved identifiable victims as opposed to larger, overall damage.

Environmental crime victims, unless immediately and/or individually harmed, are not likely to play a major role in the prosecution of environmental crime cases, thereby limiting political and public attention to victims and limiting the ability to count those victims and measure their costs. Despite their estimated numbers often being higher, EPA-prosecuted cases seldom identified specific victims by name. Populations of areas affected (i.e., near a hazardous waste site) are typically not counted in a prosecution. Only a named person who died as a direct result of the act being prosecuted, and therefore material to establishing the burden of proof, would be identified or counted in a prosecution. Meanwhile, the EPA estimates millions of illnesses and deaths from air pollution, contaminated water, untreated human waste, and living near a superfund site or other polluted site. It should be noted that Violation Tracker, described above under White Collar Crime, also captures environmental violations. So, that is a potential data source that could also be tapped for newer work in this area, although it is an open question how close that data could allow one to get to a true prevalence estimate. Triangulation with data collected by environmental groups could be a useful exercise.

Financial Crime Victimization Data

While white-collar crime can be thought of as crime committed in the course of a legitimate occupation or business, some financial crime is perpetrated to fund black markets for things like drugs, weapons, wildlife, human trafficking, and terrorist organizations and operations. The targets of these financial schemes may be businesses or ordinary citizens and can include not only individual and corporate tax avoidance, identity theft, and fraud, but other more overt financial crimes as well.

Numbers capturing the magnitude of these financial crimes are known to be spotty and lacking, but some data sources are available. For example, the Financial Crimes Enforcement Network (FinCEN), run by the U.S. Department of the Treasury, tracks money laundering and other financial crimes associated with organized-crime and terrorist activities. They have a publicly searchable database of Suspicious Activity Reports (SARs),⁵³ which contain statistics on financial transactions. These may tie to an individual victim or to financial dealings that may harm groups, governments, or society as a whole.

One study that brought together a number of data sources, and that can serve as an example of how to combine data to estimate prevalence and costs of a number of financial crime types, is Sullivan, Freilich, and Chermak's 2016 evaluation of the U.S. Extremist Crime Database (ECDB) that tracks financial crime perpetrated to finance terrorism. This data source is part of a series of databases run by the Study of Terrorism and Responses to Terrorism (START) Center at the University of Maryland.⁶² The dataset was compiled using multiple sources, including crime records, the open-source Global Terrorism Database (GTD), and other sources that include details on these financial schemes. This particular article examines financial crimes committed by Al Q'Aeda and Affiliated Movements (AQAM) and the American Far Right, using the "scheme" as the unit of analysis. Schemes can be ideological and non-ideological in motivation. The ECDB universe of cases includes those indicted in the United States and those that occurred between 1990 and 2013, in which at least one of the suspects is a political or religious extremist (supporting AQAM, or Far Rightists such as white supremacists, sovereign citizens, militia/patriot movements, and tax protesters).

Several types of financial crimes detailed in the ECDB were analyzed by Sullivan et al. (2016). Related to AQAM (N=145 schemes, 279 perpetrators), the most common schemes involved bank fraud schemes, tax fraud, terrorist financing, and cigarette and other smuggling operations. Related are material support schemes, such as provision of resources, training, or supplies, and "money dirtying" – taking legitimate money and generally funneling it to support specific acts or a terrorist operation. All of these represent types of schemes used to finance a wide variety of illicit industries.

The schemes represented in Sullivan, Freilich, and Chermak's analysis largely constituted monetary and material support for terrorism, with citizens and businesses suffering their impacts along the way. Among the American Far Right (N=609 schemes, 1345 perpetrators), schemes included more non-extremist perpetrators involved purely for financial gain (20% of sample) than AQAM. The highest-incidence category is tax avoidance, followed by false property liens used to retaliate against public officials, check fraud, alternative banking schemes, loan fraud (including mortgage/real estate fraud), investment scheme fraud (i.e. pyramid, Ponzi, debt relief, putative access to "secret" government funds owed to U.S. citizens), identity theft, false legal or tax documents filed against officials, insurance fraud, embezzlement, counterfeiting, and internet schemes. Far Right-affiliated schemes tended to have more of both ideological and profit motivations than those of AQAM. Cross-referencing these cases against cases of fraud reported to the FTC, whose data is described below, to determine whether there is any overlap between datasets, would be an interesting exercise.

While these types of financial schemes do not always have clearly identifiable individual victims, making them more difficult to prosecute in venues that demand the identification of such in order to bring a case even if the victim is a business or the government, many fraud schemes certainly do victimize specific individuals. A look at related class-action suits may also be informative in some respects. However, this makes these victimization types difficult to

⁶² Sullivan et al.'s article is available on the website, but the dataset is not currently public.

incorporate with more traditional and incident-based or discrete-event-counting data collections such as UCR, NIBRS, or the NCVS. Nevertheless, financial crime for illicit purposes results in enormous costs to individuals, governments, businesses, and societies.

General consumer fraud of various kinds is another type of financial victimization impacting millions of Americans. The FTC maintains a database of consumer complaints in its Consumer Sentinel Network (CSN), including dollar amounts of complaints when provided. These data are available to law enforcement. Debt collection was the number one complaint category in the CSN for calendar year 2016, representing 28 percent of the overall complaints, followed by impostor scams (13%); identity theft (13%); telephone and mobile services (10%); banks and lenders (5%); prizes, sweepstakes, and lotteries (5%); shop-at-home and catalog sales (4%); auto-related complaints (3%); and credit bureaus, information furnishers and report users (2%). These complaints are more often made to the FTC or the Better Business Bureau instead of to law enforcement, reflecting the fact that not all victimizations are handled through the same channels, nor do their victims define them all as crimes. Thus, more creative data sources must be used to quantify these other types of victimizations.

Almost 1.3 million complaints to the FTC in 2016 were fraud-related. Consumers reported losing over \$744 million in these fraud complaints; the median amount paid was \$450. While small in comparison to Medicare fraud, the costs of which are passed onto taxpayers, consumer fraud is still a substantial category of victimization, the costs of which impacts consumer prices for a number of goods and services. Employment or tax-related fraud (34%) was the most common form of reported identity theft to the FTC in 2016, followed by credit card fraud (33%), phone or utilities fraud (13%), and bank fraud (12%). Other significant categories of identity theft reported by victims were loan or lease fraud (7%) and government documents or benefits fraud (7%) (FTC, 2017). While this dataset tracks numbers of complaints and amounts, it does not capture costs to individuals in time spent to resolve the complaints and similar expenses.

Cybercrime Data

Cybercrime is comprised of an ever-growing group of internet-related or facilitated activities that victimize a large number of individuals, organizations, and governments every year. Cybercrime encompasses a range of illegal activities and includes malware attacks on individual, government, and business computer systems; bot attacks; hacking computer systems and especially repositories of personal information such as social security numbers; spammers; phishers; credit card theft; and account information theft. A large number of other crimes are also perpetrated or facilitated via the regular web or the “dark web,” including the distribution of child pornography and trafficking in persons, drugs, weapons, commodities, art and antiquities, and more. Moore, Clayton, and Anderson (2009) identify a number of data sources that can be used to garner information on the prevalence of cybercrime, beginning with internet security providers such as Symantec, Norton, and McAfee; internet service providers (ISPs); anti-phishing groups such as PhishTank; banking trade associations such as the United Kingdom’s Association for Payment Clearing Services (APACS); banks; and others.

The internet's global, distributed architecture means that security is only as good as the weakest link. This exposes the poor coordination among internet defenders and public and private investigators. Moore and colleagues presented empirical evidence of how agile attackers shift across national borders as earlier targets became aware of these tactics, and they discussed ways to improve law-enforcement coordination. People who collect and share data may decide to overreport (i.e. groups that attack online crime like PhishTank) or underreport (i.e., governments, ISPs) depending on their motivations. Other promising cost-data sources available at the time of Moore's analysis included banks' aggregated annual loss figures and nations' security breach reporting laws. ISPs also have a central role to play in providing data and preventing cybercrime.

In cybercrime, it is also unclear how to count incidents. Not all cybercrime will have a clear count of individuals associated, not all will have a 1-to-1 victim-to-incident ratio, and many types of internet crimes occur over a period of time. These realities make delineation of discrete incidents difficult. Nevertheless, these data are important to capture, as the costs of these types of crime to societies and economies can be great. Some activities also result in great violence when the activity moves off the web and into real life, such as the physical shipment and receipt of children for sexual exploitation, of illegal weapons, and more.

One repository used to collect these complaints is the FBI's Internet Crime Complaint Center (IC3).⁶³ Founded in 2000, this center is used by the FBI and local law enforcement to build investigations and cases, particularly around larger scams like investment fraud or internet scams, for example, beginning with analyzing patterns such as many individuals reporting complaints about the same individual or organization or experiencing the same pattern of victimization (Bidgoli & Grossklags, 2016). The Operation Wellspring initiative launched in 2013 helps IC3 work with state and local authorities to increase their investigative capacity in this area. The IC3 system receives an average of 284,000 complaints per year. Summary statistics broken down by state and demographic categories are published in IC3's annual reports (e.g., ICC3, 2017).

Other Potential Data Sources

Other potential data sources exist that might be useful for measuring the prevalence of certain types of victimizations, as well as their costs. For example, the U.S. Department of Education⁶⁴ collects campus security data on victimization on college campuses. Data might also be collected from victim services providers about services rendered, whether or not the victims reported their crimes to police. A certain amount of such data are collected by funders of victims' services, such as the Office for Victims of Crime and the Office for Violence Against Women, but those data collections cover only the portions of services rendered that were paid for by their associated federal grants. More individuals are served every year by most providers than are covered by a single grant. Additionally, data may be available from nursing facility ombudsmen and others on the topic of elder abuse and victimization. Elder abuse data is available from those cases reported to police via NIBRS data collection (Stamatel &

⁶³ <https://www.ic3.gov/default.aspx>

⁶⁴ <https://www2.ed.gov/admins/lead/safety/campus.html>

Mastrocinque, 2011), as well as from larger national and state-level studies of non-institutionalized individuals that included one or more elderly fraud scam questions (Burnes, Henderson Jr., Sheppard, Zhao, Pillemer, & Lachs, 2017), but these do not address victimization within institutions and among other elderly who may not be able to answer for themselves.

Limitations in Data Sources for Non-Conventional Crimes

While a great number of attempts at collecting prevalence and incidence data have been undertaken for non-conventional crimes, as has been covered in the preceding pages, they are beset by some cross-cutting limitations. First, only some of the above data collections are carried out on a regular basis; this is often a function of whether funding is available to undertake them. Second, data on a number of victimization types can be difficult to come by, especially for victimization types that are not always reported to the criminal justice system (several kinds of fraud), victimizations that go underreported (sexual assault and human trafficking are examples), and victimizations affecting individuals from difficult-to-reach subpopulations (i.e., people living in congregate living facilities or individuals living with dementia). Third, and this point will be discussed in more detail below, data on crimes without easily distinguishable victims, such as environmental crimes, can be difficult to work with particularly since prosecutions rarely go forward without identifiable individuals as victims. Fourth, various datasets do not always blend well with each other due to differences in measurement, sampling methods, and other methodological concerns that render them non-comparable. So, while undertaking more regular data collections on the incidence and prevalence of non-conventional victimizations is important, as is continuing to broaden existing major victimization data collections such as UCR and the NCVS, currently available data possesses limitations that should be addressed as these data collections proceed.

Summary

This section summarizes several sources of data that can be, and have been, used to estimate incidence and prevalence of crime victimization in the United States. Estimates of costs are multiplied by these figures to generate total estimates for the cost of victimization to the country, to a state or region, or for a specific type of crime. The project team first presented the national NCVS, the FBI's SRS and NIBRS data collections, state-level victimization surveys, school surveys, and several public health surveys and data sources. This section also incorporated sources of data on less conventional, yet still costly types of victimization, such as financial schemes (consumer and terrorist-financing), cybercrime, white-collar crime, environmental crime, and financial crime. Other areas proposed as sources for victimization information include campus police data, victim services provider data, and data from ombudsmen who take reports on elder abuse.

The next section delves into the latter type of data sources and looks at initiatives undertaken to access harder-to-reach sub-populations not necessarily captured using the typical sampling procedures in current nationwide or state-wide victimization surveys. Section III presents methods and concerns in calculating incidence and prevalence of victimization. A brief

discussion of gaps and opportunities in the victimization and prevalence data and literature follows in Section IV. Finally, a table comparing the most useful data sources, their strengths and weaknesses, and their utility in recommended research designs for quantifying the costs of victimizations is available in **Appendix 5**.

Initiatives Accessing Difficult-to-Capture Sub-populations

Several projects related to or building upon the above data collections are intended to access populations that may not be well-represented using the general sampling frames. These groups may be underrepresented due to where they live (tribal lands, public housing, college campuses, or nursing homes and other congregate living situations), who they are (children, the elderly, the mentally ill), or the nature of the victimization (e.g., domestic violence or sexual assault). Issues discussed in this section include both locating/gaining access to individuals and obtaining valid and reliable information from them. Discussed below are *methods* and needs related to three of these groups: individuals living in public housing, those sexually victimized, and mentally ill individuals.

Public Housing Residents

While studies do exist on various crime issues related to individuals living in public housing (i.e., Suresh & Vito, 2009), only a few data collections outside the NCVS attempted a victimization survey or rate estimate as a focus of their research design. While the NCVS does capture this population in the United States, at least during some years, the following short discussion is included as an example of methods developed to reach hard-to-access populations and may be instructive for more locally-based future research.⁶⁵

Hope and Foster (1992) evaluated the effects of a program to improve safety in public (council) housing in the United Kingdom, partially by employing victimization surveys before and after their intervention.⁶⁶ Gaining access to these populations and earning their trust to answer a survey were particularly difficult as this population included individuals and families who were formerly homeless, released from incarceration or other institutional settings, low-income, single mothers with children, and representatives of similarly vulnerable groups. An ethnographic component to their research revealed a higher vulnerability to victimization and to people involved in crime, with higher concentrations of victimization shown among this group versus the general population. Thus, development of methods to include these populations is important to understanding victimization, prevalence, and concentration rates.

Holzman and Piper (1998) tested a similar methodology to that of Hope and Foster, using the NCVS as a starting point. Designed to help evaluate a program for the U.S. Department of Housing and Urban Development (HUD), the Victimization Survey of Public Housing Residents (VSPHR) was tested in two Public Housing Authorities (PHAs) on the U.S. East Coast. The

⁶⁵ As such, this discussion is for the purposes of illustrating a methodology for reaching more difficult to reach populations and not for establishing a basis for whether or not they are underrepresented.

⁶⁶ This is one of several areas where work done internationally can inform potential methods in the United States.

population consisted of 510 households, including 170 without phone service, thus requiring in-person data collection. The 340 with phones were split evenly between phone and in-person data collection, to see which method generated a higher response rate and more complete responses. Of the 510 households sampled, 323 responded, representing 591 individuals aged 12 and over – the same age range as the NCVS. Person-level and household-level responses were collected, with individual interviews conducted only when completed household-level interviews were obtained first. The response rate for face-to-face interviews requested after a household interview was over 90 percent, similar to general population surveys. Household refusal rates were very low at 18 percent for phone and 6 percent for in-person, which is positive for this type of survey.

In order to conduct the surveys, the housing authorities “provided three types of assistance: (1) rosters of official tenants... [with contact information]; (2) staff for liaison activities with resident associations;⁶⁷ and (3) help informing the residents of the impending research via public meetings, letters, posting brightly colored public notices, and responding to residents' questions” (Holzman & Piper 1998, p. 335). Cognitive testing of the instrument was also completed to ensure questions could be understood by most residents. Safety, trust, and security concerns were paramount, and residents were introduced to the researchers well in advance to establish trust. These methodological concerns are important for victimization survey designs and implementation plans for accessing vulnerable populations that may be less trustful of researchers.

Victims of Sexual Offenses

Measuring rates of sexual victimization is a priority for researchers and policymakers alike, given the high profile of the issue and the funds appropriated every year to combat it. However, there have been concerns about how these rates are estimated over the years; issues such as low reporting rates impact the generation of accurate estimates (Wiseman, 2015). Krebs (2014), for example, in his examination of what methods may increase disclosure of sexual victimization, concluded that “using behaviorally specific questions and self-administered survey modes produces better estimates when collecting data about sensitive behaviors” (p. 175). He believed that phrasing questions more like the NISVS will generate higher disclosure rates than the NCVS. Wilson and Miller (2016) agree, stating that many women have had experiences that they do not acknowledge as rape, but that do fit the definition of the crime. A number of other studies, including D. G. Kilpatrick, Resnick, Ruggiero, Conoscenti, and McCauley (2007) and Krebs, Lindquist, and Barrick (2011), have also been widely cited for the high rates of campus sexual assault they reported. However, Rennison and Addington (2014) used NCVS data to compare rates between female college students and females of the same age who were not college students. They found that female college students are victimized at lower rates than women of the same age who are not attending college. This comparison shows that the effects of sampling, along with survey construction and delivery method, can complicate the generation of

⁶⁷ These individuals met with Residents Association groups to talk about the survey and familiarize residents with it in advance in order to build trust with communities and increase response rates when calling on households.

accurate numbers for this population that is generally reluctant to report victimization. BJS has also released several reports examining this issue.

Conceptual variation in what is measured is among the other difficulties found when comparing rates across different data sources. Fedina, Holmes, and Backes (2016), in their meta-analysis of 34 studies on college sexual assault, found that several studies measured broad constructs of sexual assault that typically included combined forms of college-based sexual victimization (i.e., forcible completed or attempted rape, unwanted sexual contact, and/or sexual coercion), but extensive variability exists between studies for each type of sexual victimization measured. Differences in sampling strategies and overall study designs, as well as measures of sexual assault used, also created difficulty in comparing estimates in more than a broad sense (see also Rand & Rennison, 2005). These definitional and sampling challenges exist beyond sexual assault studies to other crime types as well and are important to consider when blending multiple datasets.

Potter and Laflamme (2011) looked at sexual assault prevalence at the state level, examining the effects of sampling, question construction, introductory wording, provision of a safe interview environment, and interviewer gender on the validity of three data sources: the Behavioral Risk Factor Surveillance System (BRFSS), NVAWS (state data), and replications of NVAWS. These are national data collection instruments being used at the state level, a common state practice for data on many victimization types.⁶⁸ Overall, while the specificity of the questions used in the NVAWS provides a clearer picture of the prevalence of sexual assault than the BRFSS, the sexual violence module in the BRFSS survey has the advantage that it is used regularly by several states, thus offering some ability to compare rates. The authors also noted that prevalence rates estimated using state victimization surveys tended to be higher than those extrapolated from national datasets – another argument for states to conduct their own surveys when possible, rather than relying on SAE statistical models using NCVS data (see Orchowsky, Trask & Stabile, 2014, discussed above). However, with its 2016 sample redesign, the NCVS has furthered its ability to generate state-level estimates directly by boosting samples in the 22 most populous states, covering 80% percent of the national population.⁶⁹ Surveys at both levels may still underestimate rates of sexual victimization among younger and low-income populations.

Limitations on the quality of data available for prevalence and incidence estimates of sexual victimizations include gaps in addressing where the criminal justice system may contribute to underreporting by victims (thus improving police data and service provision); the need for more rigorous testing of survey methods to increase reporting rates; and the need for more research on understanding the nature of sexual victimization of individuals in vulnerable situations (Wiseman, 2015). Sources that suffer from definitional problems affecting accurate counts include UCR data, which is affected by the underreporting of sexual victimization to police and also excludes sexual victimizations that do not fit the FBI's definition of rape. Only recently has the FBI expanded its definition of rape beyond forced vaginal penetration.

⁶⁸ The original article provides informative tables throughout on differences between BRFSS, NVAWS, and replications, issue by issue.

⁶⁹ <https://www.bjs.gov/index.cfm?ty=tp&tid=911>

Both the UCR and NIBRS also leave out victims under the age of 12. The NCVS may also exclude victimizations that respondents do not label as crimes. NISVS takes a public health approach, using behaviorally focused questions and including both men and women, but the sampling issues regarding sub-populations and the reliance on self-reporting remain. Other sources that target pieces of the total population of victims of sexual offenses include the National College Women Sexual Victimization Study (NCWSV), the Sexual Experiences Survey (SES), NCANDS, which collects data from child welfare agencies, NatSCEV,⁷⁰ and the Developmental Victimization Survey (Wiseman, 2015). Each of these has strengths and weaknesses, either methodologically or in frequency conducted (annually or one time). The common challenge is determining whether the concepts being measured, the disclosure rates, and the sampling frames are compatible when blending multiple datasets together for a national picture or for a smaller-area estimate.

Mentally Ill Persons: Data Sources and Risks for Victimization

Studies involving victimization among the mentally ill show that this population is at a disproportionately high risk of victimization, and that information must be sought outside of traditional NCVS means, by accessing mental health facilities and those that serve the homeless. Roy, Crocker, Nicholls, Latimer, and Ayllon (2014) conducted a meta-analysis of 21 studies of people with mental illness and the correlations of victimization among them. Six studies examined the prevalence of victimization, with lifetime rates ranging between 74 percent and 87 percent for this population. Significant correlates of victimization among the mentally ill included female gender, history of child abuse, and depression. They concluded that rates of criminal behavior, contacts with the criminal justice system, and victimization are higher among homeless adults with severe mental illness (SMI) than those with SMI who are housed.

This fits with the data on emergency room use among homeless individuals (see Kushel et al., 2002; and Padgett et al., 1995, discussed earlier under public health data), and speaks to the need to reach homeless individuals in victimization surveys. Marjorie Stanek of the Kentucky Criminal Justice Statistical Analysis Center is conducting a pilot study in cooperation with the state Housing and Urban Development Department and with homeless shelters in her state to develop methods for reaching these populations with victimization surveys (Stanek, 2017). Stanek is currently working to build relationships with community members and stakeholder groups before administering an adapted and pilot-tested version of the NCVS which asks modified questions to increase disclosure rates, for example: “Has someone ever broken into where you are staying?” instead of “Has anyone ever broken into your home?” The survey is expected to launch in a phased approach in 2017-2018. Combining these methods to reach the overlapping populations of mentally ill and homeless individuals could yield fruitful estimates for capturing these incidence rates and costs.

Teplin, McClelland, Abram, and Weiner (2005) administered the NCVS to a random sample of mentally ill patients at sixteen Chicago mental health agencies (sample size=936) and

⁷⁰ NatSCEV is currently undergoing a methodological redesign.

conducted t-test comparisons for determining the statistical significance of their results against means from the general population NCVS sample from 1997 to 1999. In their sample, more than 25 percent of persons with SMI had been victims of a violent crime in the past year – a rate more than 11 times higher than the general population, even after controlling for demographic differences. Depending on the type of violent crime (rape/sexual assault, robbery, assault, and their subcategories), prevalence was 6 to 23 times greater among persons with SMI than among the general population. Internationally, Kamperman et al. (2014) found similarly that almost half of the severely mentally ill outpatients (47%) in the Netherlands had been victim of a crime – almost fourteen times the rate among the general population. This indicates a need to survey populations in mental health facilities as well as accessing general public health data, although individuals with mental illness so severe that they could not answer survey questions were still excluded. With high rates of mental illness also prevalent among incarcerated individuals, especially in the United States, surveying these individuals and capturing victimizations among those who cycle through the criminal justice system is important.

Other Hard-to-Reach or Underrepresented Subpopulations and Victim Types

The above were just three examples of efforts to reach marginalized victim populations. There are a number of other subpopulations that are also thought to be at higher risk for victimization; for some, little is known about their victimization costs and more research is needed. These include people experiencing homelessness (Lee & Schreck, 2005; Morgan & Kena, 2017; Gelberg, Andersen, & Leake, 2000), individuals that identify as Lesbian, Gay, Bisexual, Transgender or Queer (LGBTQ) (Robinson & Espelage, 2011; Office for Victims of Crime, 2017; Stotzer, 2012; Robinson & Espelage, 2011; LaSala et al., 2008; Haas et al., 2010); individuals with immigrant status (Jaycox et al., 2002; Kercher & Kuo, 2008; Davis & Erez, 1998); adults with dementia (Burgess & Phillips, 2006; James, Boyle, & Bennett, 2014; Gamble et al, 2014); people with disabilities (Harrell, 2011; Rand & Harrell, 2009; Khalifeh et al., 2013); individuals living on American Indian reservations (Manson et al., 2005; Greenfeld & Smith, 1999); hidden victims including those from human trafficking (Clawson & Dutch, 2008; Owens et al., 2014; Polaris Project, 2015) child pornography victims (Cassell, Marsh & Christiansen, 2013; Pruitt, 2013), and others. Several of these marginalized groups and their associated data gaps are identified, and their specific concerns are further detailed, in Volume III's recommendations for future research.

Summary

The three examples above illustrate several methods that can be used to access more difficult-to-reach subpopulations to learn more about their victimization experiences, as well as the costs they personally experience. First, from the public housing residents example, it was shown that stronger efforts to build trust with community members prior to conducting survey or other research is necessary among groups that experience higher victimization rates and have lower trust in authority than may be required with more general population surveys. Offering multiple ways to respond (in-person, by phone, by mail, or via Internet) is also important among communities that may have less access to one or more of these forms of communication. From

the example of sexual assault victims, it can be seen that trust is a factor here as well: lack of trust can impede the willingness to report victimization.

Further, victims may not see themselves as victims of crime, or they may believe they are not victims of the particular crime named in the survey question. Thus, the use of behavioral questions rather than crime-specific questions can help improve disclosure rates. The ability to access sexual assault victims for victimization survey purposes can also be improved by providing a safe environment for participation, such as setting up a safe word for telephone interviews that can be used if the victim's abuser enters the room, including a "safe" button allowing a victim to quickly exit a website and be taken to another webpage, and so forth.

In the example of persons with mental illness, it is shown that there is a need to collect more data on the victimization of individuals living in congregate facilities such as residential care facilities and jails and prisons though the inability of individuals with severe levels of mental illness to answer survey questions will always be a limitation. Given their high rates of victimization, it is important also to cross reference those results with public health data and emergency room data.

Technical Issues Affecting Estimates

Shifting from presenting data sources and accessing valid data for special populations in the previous two segments, this section presents some of the technical issues that affect the calculation of accurate victimization estimates. Some of these issues apply to many or most of the data sources above, while others are specific to victimization surveys. Some of these issues are extremely complex and technical. A detailed discussion is beyond the scope of this presentation, which is intended for both practitioner and academic audiences. The project team intends to simply introduce the reader to these issues and how they can affect victimization prevalence and cost estimates.

Unit of Analysis

Lauritsen and Rezey (2013) note that estimates of a population's risk for criminal victimization for a given period can be examined using victimization rates, incident rates, or prevalence rates. As noted previously, summary UCR data measures only incident rates; multiple victims within a single incident cannot be counted. NIBRS allows for estimates of the number of incidents and of the number of victims, as well as the number of offenses. The NCVS provides estimates of victimization: that is, the extent to which victimizations occur in a certain population over a particular time period (Lauritsen & Rezey, 2013). A victimization rate is calculated by dividing the number of victimizations by the population at risk for those victimizations. Prevalence rates, which can also be calculated from the NCVS, substitute number of victims for number of victimizations in the numerator and represent the risk for an individual of experiencing at least one crime in a given period. Prevalence rates thus ignore the number of victimizations each victim experiences (Lauritsen & Rezey, 2013).

The above distinctions are important because different data sources may produce different estimates, making it difficult to compare across sources or use different sources to triangulate estimates of victimization. Understanding the unit of analysis (incidents, victimizations, or victims) is important in assessing the utility of a particular data source.

Further, considering the unit analysis important when thinking about the emerging crime types discussed above. For example, does the Deepwater Horizon disaster count as one incident, or 12 – one for each individual killed and society as the victim of environmental damage? This example illustrates the challenge of determining what to include and determining who (or what) is classified as a victim in each case. Solving these unit of analysis challenges is part of what makes studying these victimizations so difficult, and why fewer studies have been done about them considering the amount of harm that occurs.

Repeat and Series Victimizations

Repeat victimization is another issue that poses challenges. Repeat victimization, also called multiple victimization, refers to experiencing more than one victimization within a given time period. (Sparks, 1981). The term “multiple victimization” may be used more often if the incidents are unrelated, while repeat victimization implies that the incidents are connected whether the crime types are the same or different (for example, an assault and a theft both occurring in a domestic violence situation). Within the realm of repeat victimization are “series incidents,” which refer to incidents experienced with such frequency that the victim has trouble differentiating between them.⁷¹ As of the 2016 redesign, the NCVS counts up to ten victimizations in a six-month period individually – up from five or fewer previously – if the respondent can differentiate between them (Rand & Rennison, 2005). After that, they are classified as a series. Between 2005 and 2014, 19 percent of victims experienced repeat violent victimization, defined in Oudekerk and Truman’s 2017 report as two or more violent victimizations during the previous year. Five percent of victims experienced six or more violent victimizations during the year. This latter group accounted for 27 percent of total violent victimizations (Oudekerk & Truman, 2017).

Hope, Bryan, Trickett, and Osborn (2001) posited that there are “three basic elements which comprise an explanation of multiple victimization: repetition – whether events occur in some ordered sequence over time; specificity – what extent events in an ordered sequence are of a similar nature; and risk transmission – the nature of the ‘mechanism’ which links the events together” (p. 596). They found that a significant positive association between being a victim of property crime and becoming a victim of personal crime, and that prior victimization seems to affect present victimization risk not only within but also between crime types. Testing the idea of event dependency, or the idea that present victimization risk is higher for those previously victimized, they also found that repeated experience of victimization over time can become a defining part of someone’s life. It can lead to additional related costs, including avoidance

⁷¹ <https://www.bjs.gov/content/pub/pdf/rvv0514.pdf>

expenses like relocation or difficulty leaving a harmful situation, such as a domestic abuse relationship, unassisted (Hope et al., 2001, p. 602).

The notion that multiple victimizations may be related has important implications for the interpretation of data that either includes or excludes these incidents. It also suggests that crime is not randomly distributed throughout the population – an idea affecting the interpretation of victimization estimates.

There has been controversy concerning how to count these series victimizations in the NCVS and in other surveys, such as the NVAWS. Early NCVS reports excluded series incidents entirely because it is not clear how to relate them to other incidents reported separately for the six-month period (Rand & Rennison, 2005). Alternatively, the NVAWS counted lifetime prevalence estimates for rape and physical assault, as well as counting how many different offenders were involved in the adult victimizations. Then, for each offender counted, victims were asked how many times violence occurred with that offender during the previous 12 months. Incidence estimates were calculated by multiplying the number of victims by the number of victimization events reported during the previous 12 months (Rand & Rennison, 2005).

This procedure introduces new difficulties to the estimation process. As the authors note, weighting estimates by the number of times victimized will result in a situation in which “repeat victimization accounts for more than half of both the NVAWS and recalibrated NCVS estimates of rape, physical assault, and intimate partner violence” (Rand & Rennison, 2005, p. 287). In addition, there can be some bias involved with this type of weighting, since the effects of an outlier who experienced a high number of repeat incidents can be greatly magnified when estimating rates in the larger population.

Additionally, the inclusion of series incidents introduces significant incidence estimate instability (Planty & Strom, 2007). Depending on the method used to count these potentially non-discrete events, incidence rates and conclusions drawn from them can fluctuate wildly. For example, examining NCVS data from 1993, taking into account series incidents would have increased the annual victimization estimate from about 11.4 million to about 27.4 million victimizations in the United States (Planty & Strom, 2007, Table 2). Presenting prevalence rates alongside incidence rates for a more complete picture of victimization is one solution to this problem.⁷² “Victimizations are not evenly distributed...and in some populations, repeat victimization is prevalent” (Planty & Strom, 2007, p. 181).

Planty and Strom (2007) also demonstrated that victimizations for certain demographic groups are disproportionately undercounted due to the exclusion of series incidents. For example, “when series incidents are excluded, blacks consistently have the highest [victimization] rate, followed by Hispanics and then whites... With high-volume, repeat victims included... Hispanics have the highest rate... followed by whites and then blacks” (Planty & Strom, 2007, p. 192). These are the classic repeat victims, like battered women or bullied children who suffer from chronic threats and assaults (Planty & Strom, 2007, p. 193), for whom the nature of the

⁷² See Rand and Rennison (2005).

victimization itself is not discrete; these should be included because they entail real and long-term costs and consequences.

The problem of accurately capturing repeat victimization is often compounded by sample attrition and associated non-response in surveys like the NCVS. Ybarra and Lohr (2002), for example, noting that data on repeat victimization is often missing in successive NCVS waves, examine algorithms that use responses from earlier waves to impute partial data for subsequent waves. They compare these results against rates calculated, assuming zero victimization occurred where none is noted (a function of nonresponse bias). They conclude that, based on the differences between the estimates calculated in these models, “attrition in the NCVS may have a large effect on estimates of repeat violent victimizations, particularly for crimes such as domestic violence” (Ybarra & Lohr, 2002, p. 19). Counting methods, missing data imputation methods to correct for nonresponse bias, and the pairing of incident rates with prevalence and concentration estimates (defined as the number of victimizations per victim) are important in understanding victimization rates and patterns more accurately, and thus their impacts on costs.

Distribution of Crime and Over-dispersion

The probability that any given person has the same risk of victimization as any other person is a fallacy (Planty & Strom, 2007; Sparks, 1981), as is the notion that the risk of victimization is evenly distributed throughout the population. Even if prevalence rates for a crime remain constant, shifts in concentration or dispersion may still be occurring so that prevalence rates alone may mask important patterns and shifts. Changes in crime distribution or concentration may have major, substantive impacts on policy and on who bears the costs associated with those victimizations (Hope, 1995; Trickett, Osborn, Seymour, & Pease, 1992).

Hope and colleagues have done quite a bit of modeling on this issue of variance in victimization risks using the BCS to describe the patterns; these methods can be extrapolated to the U.S. context. Also referred to as “over-dispersion,” this is where the variance for any particular response variable, such as a specific victimization type, exceeds its mean (Hope & Norris, 2013). Now known as the Crime Survey of England and Wales (CSEW), the BCS/CSEW has some methodological differences from the NCVS, but it is comparable in overall data structure and content (see Tilley & Tseloni, 2016 for detail). “There are two possible reasons for over-dispersion: ...[an] ‘excessive’ proportion of zeros... at the ‘left-hand tail’... (showing that the majority of the sample do not report incidents over the recall period), ...[or] the ‘thickness’ of its ‘right-hand tail’, produced by an excessive prevalence of cases with higher frequencies of victimization incidents” (Hope & Norris, 2013, p. 544). Support was found for four related patterns over time: tendency toward non-victimization generally; tendency for non-victims to continue to avoid victimization; tendency for high-level victims to retain their high-frequency state; and tendency for low-level victims to revert a non-victimization state (Hope & Norris, 2013, p. 547). Latent class analysis, used to replicate the observed distributions, was part of the procedure leading to these conclusions.

As early as 1995, Hope deconstructed the components of the crime rate (incidents/people = prevalence, with adjustments for multi-victimization and an element of geolocation) into interesting and meaningful indicators. “The incidence rate is the multiplicand of prevalence and concentration... Thus, the conventional crime rate might be reconstructed as the outcome of an interaction between victim prevalence and victimization concentration,” or as Barr and Pease (1992) called it, “crime flux” (Hope, 1995, p. 329). This approach articulates the victimization rate as a “dynamic quantity” that can shift when a larger proportion of the population is victimized (change in concentration), when the victimization rate changes, or a combination of the two (Hope, 1995, p. 329). This conceptualization captures the relational quality and inequality of harm distribution among the population.

The conclusion is that over-dispersion is a result of the uneven distribution of reported crime, which is in turn a function of the two extremes of the distribution: many people reporting zero crimes and a few people reporting many crimes (Hope, 2015). This heterogeneity⁷³ can be considered the product of two probability distributions: victim-prevalence, where zero-inflation predominates, and victimization-frequency models that describe the long-tail consisting of the small proportion of people that have high victimization frequencies (Hope, 2015). This two-part conceptualization may help in understanding the distribution of crime victimization among citizens, and thus variation in potential cost impacts at the community or sub-community level.

Imputation and Weighting (Missing Data)

Most data sources, regardless of how the data are collected, are incomplete. For example, the UCR, as noted previously, is a voluntary reporting system. Some law enforcement agencies do not report data, some do not report certain types of data (i.e., certain offenses), and some do not report consistently (i.e., every month). Moreover, this inconsistency varies over time: an agency might report complete data one year and incomplete (or no) data the next year. For surveys such as the NCVS, missing data is caused by a variety of conditions, such as refusal to respond, death, inability to locate respondent, no response despite repeated contacts, and refusal to answer specific questions.

The FBI’s method for imputing missing data in SRS statistics depends on the amount of data missing. For agencies missing one to nine months of data, the annual crime total is estimated by multiplying the total number of crimes for the year by 12, then dividing by the number of months for which crimes were reported. For agencies missing 10 to 12 months of data, the annual crime total is estimated by multiplying the agency’s population by the crime rate for the agency’s population group divided by 100,000 (Maltz, 1997). Maltz argues that some of these imputation procedures may serve to overestimate the amount of crime that actually occurred. Other procedures have other effects. For example, when reports from a zero-population agency (e.g., agencies with statewide jurisdiction, campus police, or cities with very small populations) are missing, no estimates are made to compensate for the missing reports. Thus, the

⁷³ Heterogeneity is the variability in risk for victimization between individuals.

effect of this policy may be to underestimate crime and arrest rates for counties and rural areas (Maltz, 1997).

Also, as noted previously, the NCVS is affected by non-response at the household, person, and item levels. According to the BJS website, in 2015 the response rate was 82% for households and 86% for eligible individuals. Response rates are highly correlated with age, with younger individuals less likely to respond than older ones (BJS, 2014). The NCVS does not impute victimization rates for missing data; they account for it using weighting procedures.

Weighting

Weighting is used in surveys to account for differences between the sample collected and the target population on selected characteristics. Such differences may result from non-response bias and other aspects of the sample design. According to the BJS website, NCVS data files include both person and household weights. Person weights provide an estimate of the population size represented by each person in the sample (i.e., Person X's patterns are representative of 1,250 similar people in the general population), while household weights provide an estimate of the number of U.S. households represented by each household in the sample. After adjustment, both household and person weights are also typically used to form the denominator in calculations of victimization rates. Adjustments are made to account for non-interviews and to correct for differences between the distribution of the sample by age, sex, and race and the distribution of the population by these characteristics (BJS, 2014).

Particular weighting procedures used with prevalence and incidence data can obviously affect victimization estimates. Lohr and Liu (1994) gave detailed descriptions of different weighting techniques, advising that use of weighted variables is most reliable for prevalence estimates, but not necessary for causal analyses using these data for other research questions. Lohr and Brick (2012) also discussed concerns with weighting procedures when combining multiple datasets together, noting that using weighting with datasets that are biased in different ways may result in larger standard errors for incidence and prevalence estimates. Sources of bias may include non-sampling error; nonresponse varying by type of crime, noncontact, or refusals; survey mode; question wording; and interviewer effects. Methods for combining both biased (additive or multiplicative bias) and unbiased surveys are provided in the article. These questions of how to deal with biases across datasets arose for the authors during the process of trying to generate small domain estimates for rare events, when the sample size needed to be increased to generate a more precise number (Lohr & Brick, 2012).

Question Wording and Ordering

As alluded to above, question wording and question order can also impact the results of victimization surveys. Krebs (2014) describes how behaviorally descriptive questions in the NISVS, combined with a one-stage survey structure that asked questions about many acts without initial screener questions, delivered higher reporting rates than the two-stage structure used in the NCVS. This suggests that screener questions might actually result in fewer disclosures than the one-stage format. Further, the NISVS was self-administered rather than

interviewer-facilitated, which may have made respondents more comfortable in answering sensitive questions. Huang and Cornell (2015) also found that asking more behaviorally specific questions generated higher reporting rates. For example, “I have been verbally bullied at school” generated reporting rates 29-76 percent higher than more generic questions like “I have been bullied.”

Yang and Wyckoff (2010) conducted randomized experiments with question order, noting that asking a warm-up question, about fear and crime, for example, increased reporting rates on later questions. This seems to contradict Krebs, above, suggesting that perhaps the self-administration method was more predictive of disclosure rates than the question structure. Other question-order effects noted by Yang and Wyckoff, besides the effect of the priming function, included question redundancy, consistency, and respondent fatigue. However, Hart, Rennison, and Gibson (2005) found that, after controlling for relevant individual characteristics, respondent fatigue was responsible for surprisingly little attrition in follow-up NCVS interviews. This, too, was contrary to conclusions in earlier literature. Findings did demonstrate significant effects of survey mode (i.e., interviewer-facilitated vs. self-administered), as hypothesized by Yang and Wyckoff, and several respondent characteristics on subsequent survey nonparticipation.

Methods Summary

While these items are a bit more technical, they are important methodological considerations when trying to understand the prevalence, incidence, and concentration of victimization. In approaches to estimating victimization costs that multiply costs by victimization numbers, not accounting for these methodological issues can throw such estimates off, sometimes to a large order of magnitude. The first is the unit of analysis—whether that refers to individuals or groups victimized, or to whether the victimization was a one-time event or an ongoing pattern. An important question here is whether the nature of harms and costs to victims of series or multiple victimizations are captured by summing the impacts of individual events, as might be the temptation when calculating cost estimates. It can be hypothesized instead that the level of harm is cumulative, with each subsequent incident being worsened by the last, but the impact of this on cost estimates is understudied in terms of quantifying the degree. An effort to do this might look at total impact of ongoing victimizations vs. single victimizations, the marginal effect of each additional victimization event or month of victimization, or any number of configurations. This problem is also impacted by sample attrition in longer studies—people surveyed one time might not be available for the next wave.

The third point covered was accounting for over-dispersion in the distribution of victimization survey data—a small number of people experience a large portion of victimization—and the same is true among geographic areas. Prevalence numbers may also remain the same while the locus of concentration moves over time—this is important to understanding patterns of victimization and to inform effective delivery of police and victim services to those that most need them. Lastly, survey considerations such as the handling of missing data, weighting, and question order and wording can impact the results and levels of victimization disclosure.

What's Missing? Recommendations for Future Work

Limitations to this Review

This review focuses on several key data and methodological issues related to estimating the incidence, prevalence, and concentration of crime victimization generally and within several specific crime types. While it is a broad survey in the attempt to cover a wide range of the main issues, it is not a comprehensive review. For reasons of space, it does not cover every topic that may come up. Other issues that should be considered with crime victimization estimates, depending on area of interest, include differential rates of gender victimization and reporting (Andersen Clark, Biddle, & Martin, 2002; Kothari et al., 2015; Lauritsen & Heimer, 2008; Pereda et al., 2014; Sacco et al., 1993), LGBT victimization and reporting (Cramer, McNeil, Holley, Shumway, & Boccellari, 2012; Walters et al., 2013), and elder victimization rates and reporting. Unless there was something in those literatures that impacted research design considerations—i.e., a different way to access to institutionalized populations or increase response rates from groups hesitant to disclose victimizations—inclusion of those additional topic areas was beyond the scope of this review. So were studies intended to predict likelihood of current and future victimization—where victimization was a dependent variable but where calculation of population rates was not attempted—and the wider literature on willingness to report crime.

Opportunities for Continued Improvement in Prevalence Data and Methods

Victimization surveys in the United States, the United Kingdom, and elsewhere are constantly being refined and revised as new crimes emerge, needs for victimization data change, and methods advance. Tilley and Tseloni (2016), after providing a thorough history of the BCS/CSEW and other UK crime and victimization surveys, had several recommendations for victimization surveys. First, they recommended that the sample size be large enough to be representative at the Police Force Area level. This would be equivalent to ensuring there is a large enough sample size to calculate small domain estimates in the United States, whether via boosting the NCVS, or more robust and consistent resourcing and execution of victimization surveys at the state level. They also recommended incorporating a panel of respondents who can be surveyed across different years, thus following the person/family rather than the address for this group; linking responses across comparable surveys to incorporate other datasets; including more precise social capital measurements in addition to the few ad hoc measures related to guardianship currently used in the UK; including more data on place or location use (residential or mixed-use, distance from city center, etc.) to better explain victimization from a routine-activities perspective; making the wording in fear-of-crime questions more exact; being consistent in questions asked over time; adding new crimes in a way that does not limit time-series analysis of existing crimes; analyzing income data as quartiles rather than absolute amounts; and defining series incidents in a theoretical way, beyond simply establishing a counting rule.

Lauritsen (2015) similarly described general lessons from 15 years using NCVS data. She concluded that these data have great utility thus far, but certain methodological features can have important impacts on substantive findings. A suggestion that is not duplicative of any described by Tilley and Tseloni above, for example, regards respondents who reported victimizations that happened to acquaintances. These were often proven wrong when reverse record checks or confirmation interviews with the named persons led to denial that the victimization happened. It is important to note these limitations, in order to make analyses replicable.

Lauritsen and Cork (2016) also recommended consistently using behavioral-based or attribute-based definitions across crime and victimization data collections, so as to avoid trouble with variation in penal codes between jurisdictions (see also Huang & Cornell, 2015; Krebs, 2014; Walters et al., 2013; Wiseman, 2015, above). Lauritsen and Cork also recommended these be designed in such a way that mutually exclusive categories are possible, although this becomes difficult when an incident may be composed of multiple crimes or a repeat or multiple victimization become involved. Fedina et al. (2016) and others mentioned previously also pointed out the need for conceptual agreement on definitions behind different crime types and components of those crimes, in order to facilitate comparisons between studies or the blending of multiple data sets. To help with this, Lauritsen and Cork also said these should be accompanied by detailed information on the incident itself, perpetrators, victims, and their relationships where available, in order to supplement behavioral descriptions versus simply asking about a crime type that might have multiple definitions. However, from the practical side, statutorily mandating new questions, data collections, or analyses, without providing additional funds, may be compensated for by reducing sample size (Lauritsen, 2005), potentially placing limitations on the ability to conduct small domain estimations that require larger sample sizes. As always, there are trade-offs when setting priorities for data collection.

Literature Reviews: Conclusion

Drawing on the literature reviews in this volume, as well as information from the focus groups, surveys, and Advisory Board expert meetings described in Volume I, Volume III makes recommendations for additional research that could advance the field. How to prioritize different ways of expanding and refining current cost estimates can depend heavily on the policy uses of those estimates. Some of those policy questions were discussed briefly in the introduction to this volume (see Table 1).

Direct Victims and Others Who Bear the Costs of Crime

Some policy questions specifically concern direct victims of crime (e.g., how much to spend on victim compensation, or on victim services), while other policy questions do not prioritize costs borne by a direct victim over those borne by other parties. Even though as a first matter tangible costs are usually borne by direct victims, in practice third parties such as insurers and employers often bear many of these costs. They may have considerable interest in understanding the financial costs of victimization.

Generally, the scope of the cost of victimization literature has become more extensive over time and has also expanded cost estimates to include additional parties and their costs. Categorizing the parties involved is done in different ways. In the introduction to this volume, victims, potential victims, businesses/employers, government, and society are mentioned. In another recent review of the literature on costs of crime, GAO (2017) distinguished costs borne by eight groups: victims, potential victims, victim's family, society, business/employer, innocent individual (e.g., someone caught up in an attempt to crack down on crime), offender, and offender's family. More expansive approaches that include more parties appear to have considerable merit for policy purposes that draw on aggregate costs at the societal level, but those approaches may come with a loss of focus on individual victims and their families *per se*.

Recent discussions regarding how to advance the literature (see also GAO, 2017) have included deliberations on whether to include costs to offenders themselves. These costs can be considerable if offenders are caught, lose jobs and future job opportunities, and bear other costs because of their offending. While these are societal costs of crime, it would sound odd to talk about the costs to offenders as part of the costs of *victimization* (perhaps except for offenders' costs of restitution to victims). And what about the costs of law enforcement, prosecution, and incarceration? These are surely societal costs incurred as a result of crime as well, but it is not obvious whether they should be considered in estimates of the costs of *victimization*.

As a general matter, what is included in an estimate should depend on the policy questions of interest. For questions concerning the appropriate amounts for society to use for victim compensation and victim services, the narrower conception of costs of *victimization* seems most relevant, and costs borne by other parties seem less relevant. In contrast, for policy questions concerning how much society should invest in prevention efforts, the broader conception of the

cost of *crime*, including costs to corrections departments and offenders' families, seems more relevant.

Much of the work on the costs of crime has concerned crimes with direct, individual victims, with researchers trying to assemble the tangible costs of those victimizations and monetize many intangible harms. However, policy questions concerning the total societal harm from crime might include crimes in which many people suffer small harms (e.g., fraudulent overcharging for services), crime in which victims are unaware of suffering harms (e.g., some environmental crimes), and crimes in which there are no direct victims (e.g., tax evasion). Some of these crimes may generate costs as large or larger than the costs of more traditional direct-victim crimes, and many of these costs are then passed on to consumers or taxpayers.

Therefore, for some policy purposes—comparing aggregate society-wide estimates of the harm of different type of crimes to each other or comparing the harm of crime to the costs of other social problems—may benefit from a broader conception of who is a victim rather than a narrower focus solely on directly identifiable individuals.

Which Crimes and Which Victims?

This project sought input from practitioners about how cost of victimization estimates could be made more directly useful for them, as described in Volume 1. One general theme that emerged was interest in more specificity: Which victims are we discussing? Much of the progress and future challenge in that literature concerns how to estimate the amount of victimization and the resulting costs with more specificity, including:

- The volume and costs of specific types of victimization (e.g., human trafficking, hate crimes, newer crime types such as cybercrimes, financial crimes such as fraud)
- The amount and costs of victimization experienced by specific subpopulations, especially if those subpopulations are traditionally underrepresented (e.g., tribes) or hard to reach via traditional survey methods (e.g., homeless mentally ill)
- The amount and costs of victimization that accrue in specific locations or communities (states, cities, reservations, neighborhoods)

Along similar lines, policy questions can also be posed about investments in preventing specific types of victimization, or victimization in specific subpopulations, and/or in specific places. When considering the more specific costs that accrue to different communities, important dilemmas surface concerning equity and how to relate broader, society-level estimates to more specific estimates. For example, if low-income and high-income groups both lose employment through violent victimization, and if an important cost-of-victimization component for violent crime is income loss, then those cost estimates will be higher for victims with higher incomes. For purposes of practice, such as questions of compensation, this may seem inequitable and pose a conundrum; this was an important dilemma in determining victim compensation amounts after the 2001 bombing of the World Trade Center. More generally, such issues would seem to lead to

relative undervaluing of the harm caused by crime to lower-income communities, even perhaps when those communities experience a higher volume of crime than higher-income communities.

In conclusion, the literature reviews show how researchers have attempted to estimate the costs of victimization and discuss many of the methodological approaches and developments involved. Expansion of that research may include both broadening its reach (e.g., to new and additional crime types), as well as pursuing additional narrow and more specific costs. Volume III contains a menu of suggestions for additional research and translation work to fill gaps in the field. Some of these suggestions are important for different policy purposes. How to prioritize among ideas for advancing the field will in turn depend on how one prioritizes among the policy questions that are informed by estimates of the economic cost of victimization.

Glossary

Bottom-up approach: A bottom-up approach calculates costs separately from different areas and then sums them to get the total cost.

Bounding interview: An initial interview of subjects to minimize telescoping, or reporting victimization that occurs outside of the time period of interest.

Contingent valuation or stated preference (SP): A method to estimate the value people place on a certain good by asking them, as opposed to observing market behavior.

Event dependency: When the probability of an event occurring depends on prior occurrences of that event. Event dependency of victimization assumes the probability of later victimization depends on whether or the number of times an individual was victimized before.

Hedonic: A method is used to determine the value of something which impacts the price of a good whose price is determined in a market. This method relies on the premise that the price of a good is determined by its characteristics. The method then tries to separate out the prices or values of those characteristics.

Hierarchy rule: FBI's rule requiring agencies to report only the most serious offense to the UCR when more than one offense was committed during a single crime incident.

Income effect: The impact of income on what someone is willing to pay for a good, or the amount of that good they are willing to demand. If someone has a higher income, then he or she would be willing to pay more for a good or will purchase more of that good at a given price.

Intangible costs: Costs that cannot be measured directly in dollars, such as a victim's pain and suffering. Intangible costs also include second-order costs, such as fear or avoidance of crime, to individuals who are not directly victimized.

Latent class analysis: A subset of structural equation modeling used to find groups or subtypes of cases in multivariate categorical data.

Passive-use: The utility someone receives from the existence of something, even if they do not use it directly.

Panel Survey: A survey method following a sample of persons or households over time and collecting data from a sequence of interviews.

Polyvictimization: The exposure to multiple types of violence or victimization in a given period of time.

Revealed preference: A preference that is revealed or quantified based on a real-life decision, such as purchasing a good.

Small-area estimates: Statistical model-dependent methods to produce estimates for subgroups of interest with small sample sizes from large-scale surveys developed to provide direct population estimates.

Substitution effect: The price someone is willing to pay for a good, or the amount of that good they will demand, is impacted by the price of potential substitute goods. For example, if it is difficult to procure a different good which provides the same function as the original good, then holding all else equal, the consumer would likely be willing to pay more for the original good.

Tangible costs: Costs that can be measured directly in dollars, such as a victim's medical costs and lost property.

Top-down approach: A top-down approach generates one estimate of the total cost of the victimization, and that one cost cannot be easily divided into different areas, such as long-term and short-term costs.

Wage-risk tradeoff: The amount of money a person is willing to accept in the form of a higher wage to compensate for an increased risk of injury or death while working.

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Estimating the Financial Costs of Crime Victimization

Volume III: A Roadmap for Future Research

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Introduction

After more than a year collecting information to assess the state of the field in estimating the costs of victimization through extensive literature reviews, focus groups of important stakeholders, surveys of victim service providers and crime survivors, and consultations with our project Advisory Board and sponsors at the National Institute of Justice (NIJ) and Office for Victims of Crime (OVC), the Justice Research and Statistics Association (JRSA) proposes a roadmap for a series of research studies and practitioner-friendly tools to advance the field of victimization cost estimation. JRSA's intent is to make recommendations most useful for providing the information and data most necessary for policy makers and service providers on the ground to improve recovery and resilience outcomes for crime victims in the United States.

Notably, this roadmap represents a menu of options. Each of the following proposed studies or recommendations would fill an identified gap in the field, either independently or overlapping with other proposed ideas. Funding agencies, researchers, and practitioners may choose to prioritize some parts of this work over others, according to their missions, while still substantially advancing the field. Further, there is the question of how precise an estimate is needed for varying purposes. For example, some policy decisions, such as setting legislative priorities, can be made with a simple understanding of the order of magnitude of victimization costs in relation to other problems (how many "zeroes," as it were), as opposed to others that need more exact estimates, such as assessing program effectiveness. Different stakeholders might find different options from the below menu more applicable to their needs.

This roadmap proceeds in three main categories. First are topical studies on identified areas where more information is needed. Second are studies to develop or refine the methods needed to address some of the most important issues identified, and to make estimates more precise and translatable for different policy and practice purposes. There are shorter-term and longer-term studies within those categories. Third, we propose a series of practitioner-friendly translational, technical assistance, and calculator tools to assist with use or generation of cost estimates in the field for policy and practice. Note that the ideas proposed are not mutually exclusive; some studies that might flow from this project can include both topical and methodological elements. For some of the practitioner tools, the results from the topical and methodological studies may be necessary to provide the updated data and information necessary, while others might be created now and disseminated to the field for immediate use.

Topical Studies

Proposed research on polyvictimization, understudied/hard-to-reach victim populations, and understudied/emerging crime types are described in this section. Proposed research to develop methodological advancements that cut across victim and victimization types follows in the next section.

Polyvictimization and Series Victimization

Problem or Gap in Literature

Repeat and series victimizations create unique challenges for cost researchers attempting to capture accurate information on victimization frequency (e.g., prevalence, incidence) and associated harms. Distinct incidents in a series victimization, such as long-term stalking or domestic violence situations, can be virtually impossible to differentiate when the characteristics of each are very similar and when incidents occur so frequently that they are difficult to count. Conversely, although a repeat victimization experience may be easy to distinguish from the initial victimization (e.g., when perpetrators differ), it can be challenging for researchers to accurately capture – as a cost/harm from the initial experience – survivors’ increased likelihood of a repeat victimization following the initial victimization.

Perhaps most importantly from a cost perspective, repeat and series victimizations create research challenges because often the associated physical, psychological, financial, and behavioral harms cannot be disaggregated. Rather, each subsequent victimization experience has a compounding effect on the harms from prior victimizations, such that the trauma associated with an initial victimization (or with previous victimizations) exacerbates the harms of succeeding experiences. For example, the traumatic experience of sexual assault in adulthood can recall physical and emotional trauma symptoms from childhood sexual abuse for individuals molested as children. When cost researchers try to attribute distinct harms to particular victimization experiences, the task becomes especially challenging for survivors who have been involved in multiple victimization events.

Despite these challenges, there is a limited but growing body of research on multiple victimization experiences, sometimes called “polyvictimization.” With regard to exacerbated harms, researchers have found that multiple victimizations during childhood put individuals at high risk for both short-term and long-term trauma symptoms (Finkelhor et al., 2007; Greeson et al., 2011; Cyr et al., 2014), lower academic achievement (Holt et al., 2007), substance abuse (Ford et al., 2010), suicidality (Soler et al., 2013), delinquency or justice involvement (Grasso et al., 2016), and long-term health impacts or premature death (Brown et al., 2009). Similarly, older adults who experience multiple forms of abuse are at increased risk of hospitalization (Dong & Simon, 2013), worse health outcomes (Jackson & Hafemeister, 2012), and financial and psychological harms (Ramsey-Klawnsnik, 2017).

Existing data sources measuring the frequency of repeat and series victimization, but they are subject to certain limitations. Experiences of child polyvictimization are often reported by a parent or guardian or are reported by victims many years after the crimes, which can cause inaccurate data or underreporting. The National Survey of Children’s Exposure to Violence (NatSCEV), for example, relies on parent reports of children’s experiences for youth ages 2 to 9 and on youth’s retroactive reporting for those age 10 to 17 (Finkelhor, Turner, Hamby, & Ormrod, 2011). Thorough investigation into instances of polyvictimization using different methods is necessary to understand its actual prevalence (Ford & Delker, 2018).

The National Crime Victimization Survey (NCVS) recently updated its methods to better capture repeat and series victimizations. However, to avoid inaccurate prevalence and incidence estimations, other victimization surveys fail to ask the necessary questions or analysts intentionally exclude (or singularly count) repeat/series incidents. Also unknown or unexplored are the prevalence and the consequences of multiple victimization experiences for marginalized populations (Grasso et al., 2016) and the aggregate cost and harms of various combinations of polyvictimization types (Ford & Delker, 2018; Adams et al., 2016) and forms of perpetration, such as polyvictimization committed over the Internet (Hamby et al., 2018).

Among the limited number of surveys that do capture this information, researchers may exclude these incidents due to concern that these responses will dramatically increase prevalence and incidence rates. However, failure to include them leads not only to undercounting in prevalence and incidence figures overall, but potentially misses patterns of victimization concentration – areas where higher amounts of victimization may be experienced, or individuals and groups that have greater needs than others related to victimization.

Accurate information on these patterns of concentrated incidence and the associated costs incurred is critical for first responders, service providers, and parties responsible for allocating victim compensation funds. Federal agencies like OVC and the Bureau of Justice Assistance (BJA), state administering agencies that allocate resources to service providers, local organizations, law enforcement, and advocates all need this information and data on where the greatest needs exist to perform their jobs effectively, to serve the most victims, and to serve the neediest victims. The necessity of this information includes not only capturing costs and concentration numbers, but qualitative information about how repeated victimization of the same or different types can compound trauma, needs, and costs for victims who need more specialized and long-term services to aid in their recovery.

Recommended Research

Short-term

1. *Summarize Existing Research and Data Sources.*

The cost of victimization field would benefit from a comprehensive summary of existing research and data sources on repeat and series victimization experiences, including attempts at disaggregated harms. Specifically, a summary that details how other researchers have conceptualized, attempted to measure, and/or estimated the frequency, harms, and costs associated with repeat and series victimization would capitalize on existing knowledge and data sources.

Suggested Action Steps:

- a. **Focus on recent information and sources from multiple fields.** This research effort might focus on information from the past 20 years from both traditional and previously unexplored data sources in order to deepen understanding of the nature and occurrence of series and repeat victimization across different crime types and, potentially, for marginalized populations. These sources might include national

surveys (e.g., NCVS, NatSCEV); public health data and surveys that explore victimizations likely to be experienced as repeat or series events, such as school/youth surveys that capture bullying and other victimization types; elder abuse data from various disciplines; and domestic violence surveys from potentially untapped disciplines.

- b. **Develop an annotated bibliography or database of these sources.** The resulting products might include an annotated bibliography and/or database of research studies and data sources so that information about each is synthesized in one location, for others to understand what estimation efforts have been done, and how and where to access them.
- c. **Create a conceptual model for disaggregating harms from repeat/polyvictimization.** From this summary effort, a conceptual plan for disaggregating harm could be developed based on approaches by prior researchers and an overall assessment of current knowledge on multiple victimization experiences. Researchers might attempt to define a conceptual framework for counting harms experienced as a result of repeat and series victimization experiences. While such an effort has inherent limitations, given the inability to account for the experiences of every type of repeat victim, gaining at least some capability in attributing specific harms to specific victimization types in a repeat/polyvictimization situation may inform more effective delivery of services as well as future cost estimation.

Longer-term

2. Conduct Specific Longitudinal Studies

Since series and multiple victimizations involve incidents occurring over varied lengths of time, traditional timeframe constraints like those used in survey research (e.g., victimization in the past 12 months) may not fully capture the relationship between victimization events and types of harms. Longitudinal data collection methods and measures are needed to better capture information on the nature of series and repeat victimizations in more contemporaneous and accurate ways.

Suggested Action Steps:

- a. **Focus on diverse populations and geographies.** Longitudinal studies focused on capturing experiences of multiple victimization could include individuals who exhibit diversity in race/ethnicity, sexual orientation, and urban/rural backgrounds. Special attempts could be made to include those from socially marginalized populations who are at greatest risk of experiencing repeat and series victimizations.
- b. **Extend the conceptual work above on disaggregating harms** by applying it to specific research questions. Fruits of these longitudinal research efforts might allow for population of the previously-developed framework with data for analysis. This

framework might expand upon prior research to help describe the most accurate, current estimations of harms from multiple victimization experiences for all types of populations. Examples of potential research questions related to harm disaggregation could include:

- i In what locations is the highest amount of repeat/series/polyvictimization experienced? Disaggregate these numbers by crime type and victim type. Are service providers and law enforcement resources distributed and allocated in the community in proportion to these needs, or is a reallocation of resources warranted? Compare results against previous victimization surveys and subnational estimates. This could inform resource allocation decisions at the state and local levels, as well as gaps in related services needed.
- ii What are the lifetime costs of domestic violence for a victim, disaggregated by length and frequency of abuse and by types of abuse experienced? Of what do they consist? How do the individual's family and socioeconomic circumstances prior to the abuse impact level of harm and cost of recovery? Answering these questions could inform funding decisions and resource allocations.
- iii What are the impacts on a victim of financial and/or physical elder abuse? Describe and quantify these costs and harms, disaggregated by single versus series/poly incidents and whether they were committed by family members versus paid caregivers. Answering this could inform not only resource allocation decisions, but also identify gaps in services and responses for victims of elder abuse.

Examples of other potential research questions for studies of series and repeat victimization might include:

- iv What is the time period, after a repeat, series, or polyvictimization set of experiences ends, in which the most costs for victim recovery are incurred? Disaggregate by crime type(s), victim type, and length of victimization. While each victim's experience will vary, understanding when 80% of costs will be incurred for most victim groups, and what those costs are, can help improve resource allocation and planning.
- v What costs are incurred during each interval after victimization ends (i.e., costs at 3 months, 6 months, 1 year, 2 years, 3 years, 5 years, and 10 years)? What costs are incurred at which point in time for each poly/repeat/series victimization type? Again, this is useful for resource-planning purposes. Further, it could be examined how varied cost-of-victimization estimates are when costing people versus incidents. Further, there are cumulative, multiplicative, interaction, and power function issues when examining these harms. It is important to interrogate assumptions around additivity of impacts and costs for all types of crime.

- vi *How can the costs of future victimizations be projected as a result of earlier polyvictimization experiences?* Understanding future harms and costs that may arise can also help to improve victim services and support. Incorporating what has been learned from the Adverse Childhood Experiences Survey (ACES), long-term prospective studies examining the effects of toxic stress might be part of this.

Note: Some of these may have overlap with studies including methodological developments addressing overdispersion and units of analysis noted in the literature review.

Underrepresented and Hard to Reach Subpopulations

Problem or Gap in the Literature

Several hard-to-reach subpopulations of individuals may be both disproportionately victimized and underrepresented in cost and prevalence estimates. These subpopulations include those often missed in survey research efforts – such as individuals who are homeless, incarcerated, institutionalized in behavioral or mental health facilities, deployed or housed in military bases, and located in remote rural or tribal locations – as well as individuals who may be included in research but not identified or sampled in representative ways, such as public housing residents, those belonging to Lesbian, Gay, Bisexual, Transgender, or Queer/Questioning (LGBTQ) communities, documented or undocumented immigrants, those with cognitive impairments and mental disabilities, and formerly incarcerated individuals. Many of these subpopulations are also frequently underserved victims of crime, something OVC’s National Resource Center for Reaching All Victims and other such OVC-funded efforts are working to address.

From a cost research perspective, the concern is how the absence or inadequate representation of these subpopulations in traditional research affects estimation of their victimization experiences and associated harms. Limited studies of these individuals’ experiences suggest many are at elevated risk of victimization and potentially exacerbated harms, due to their socially marginalized or under-resourced status and pre-existing mental or behavioral health conditions. However, without nationally reliable victimization prevalence and incidence estimates and an accurate understanding of these subpopulations’ victimization consequences, cost estimates for these groups remain largely unknown.

Adequate numbers of rigorous studies are lacking that gather accurate and representative information about the prevalence and incidence of victimization experiences for under-researched or specialized subpopulations. Although the NCVS, for example, provides a wealth of information about reported and unreported victimization experiences, certain groups are either excluded from the survey’s sampling recruitment (e.g., those in institutional settings, homeless individuals) or not intentionally sampled in representative ways (e.g., individuals in the military, public housing residents, immigrants). In addition, despite its previous inclusion, the most recent version of the NCVS no longer allows participants to identify as a resident living in public

housing.⁷⁴ As a result of these limitations, it is likely that information about these subpopulations included in NCVS is not representative of the larger subpopulation groups.

Other national surveying efforts have contributed to prevalence estimates for certain forms of victimization among hard-to-reach groups. For example, RAND in 2014 published an assessment of sexual assault, sexual harassment, and gender discrimination in the U.S military (Morral, Gore, & Schell, 2016). A similar assessment of intimate partner violence was conducted among Native and tribal populations (Rosay, 2016). Both national studies helped to inform the field on victimization experiences of Native American and military populations. However, unlike the NCVS, these attempts did not assess for multiple forms of victimization. Therefore, national conclusions can only be drawn about sexual violence in the case of the military and about intimate partner violence for tribal populations. The prevalence of other crimes such as property damage or theft was out of scope for these efforts.

Research is also lacking that collects accurate and representative information about the harms and consequences of victimizations. Existing work misrepresents and often excludes some subpopulations' experiences, particularly when generating estimates of the tangible and intangible costs associated with their victimizations. The research that has been done, mostly on state and local samples of these individuals, indicates that groups not included or underrepresented in national studies are likely to experience severe harms that are often complicated by their marginalized, underprivileged, and/or under-resourced status. There is also a lack of understanding of the types of specific or culturally appropriate services and programs sought by victims in these subpopulations.

Examples of opportunities for cost-focused research on underrepresented subpopulations include the following groups, among others (list is not exhaustive):

- **Individuals living in public housing.** Evidence suggests that residents of public housing, particularly African American women, are more vulnerable to and experience higher rates of crime, compared to those outside of public housing (Holzman, Hyatt, & Dempster, 2001; Holzman & Piper, 1998). In addition, those living in public housing or receiving Section 8 housing assistance may be unlikely to report victimization experiences for several reasons, including distrust of law enforcement, fear of gang retaliation, and skepticism toward strangers (Gwiasda, Taluc, & Popkin, 1997).
- **Immigrant communities.** Research shows that Hispanic and Latino immigrants, and children with immigrant status, face higher rates of victimization and exposure to violence than non-immigrants (Kercher & Kuo, 2008; Jaycox et al., 2002). However, phone surveys and law enforcement reports are often ineffective at gauging the experiences of non-native populations due to language barriers, unfamiliarity with the U.S. justice system, and fears of possible retaliation or deportation (Davis & Erez, 1998).
- **People with disabilities, severe mental illness, or dementia.** Traditional survey methods are also not fully accessible to people with disabilities, severe mental illness,

⁷⁴ Compare 2015 version of NCVS instrument with 2016 version (https://www.bjs.gov/content/pub/pdf/ncvs16_bsq.pdf).

verbal speech challenges, limited cognitive ability, and varying forms of dementia, as these conditions may distort the ability to accurately report victimization experiences (Rand & Harrell, 2009; James, Boyle, & Bennett, 2014; Gamble, Boyle, Yu, & Bennett, 2014). Some may be completely excluded if living in an institutional facility. Limited research estimates that people with disabilities may experience violent crime as much as 2.5 times more often than people without disabilities (Harrell, 2017), but there is slim literature available that monetizes the costs to victims with disabilities. An analysis of victimization among individuals with disabilities in England and Wales estimated a £1.51 billion cost of violence to this population (Khalifeh, Howard, Osborn, Moran, & Johnson, 2013). Further, those with severe mental illness may be 11 times more likely to be victimized than the general population (Teplin et al., 2005). Older adults with dementia are also known to be more prone to elder abuse (Burgess & Phillips, 2006).

- **Individuals who are homeless** often experience more victimization than those with established living arrangements (Lee & Schreck, 2005). Studies show that approximately 1.3% of all individuals over the age of 12 are victims of violent crime and less than 9% of U.S. households experience property crime (Morgan & Kena, 2017), whereas over 50% of a nationally representative sample of homeless individuals were victims of crime (Lee & Schreck, 2005). Several factors contribute to limited research on homeless individuals: higher rates of mental illness and substance abuse, competing needs, lack of an address, and other barriers to accessibility (Gelberg, Andersen, & Leake, 2000).
- **Youth who identify as LGBTQ.** Research has also shown that youth who identify as LGBTQ are at greater risk for victimization by peers (Robinson & Espelage, 2011) and for sexual assault victimization (OVC, 2017). Further, individuals with minority sexual orientation make up 3.5% of the U.S. population but are the victims of 30% of reported hate crimes (Stotzer & Hosselman, 2012). Empirical research is complicated by difficulties getting results from the intended population (Robinson & Espelage, 2011), especially if persons who identify as LGBTQ are afraid to disclose their sexual orientation (LaSala et al., 2008; Haas et al., 2010).
- **Individuals living on American Indian reservations** may experience greater trauma and victimization in comparison to the general U.S. population (Manson et al., 2005). According to Greenfeld and Smith (1999), American Indians face violence more than twice as often as the residential U.S. population, per capita. Challenges to research result from underreporting and lack of accessibility. Additionally, victims may not report crimes because they feel the incidents are private or too minor for police involvement (Greenfeld & Smith, 1999) or because they perceive justice system stemming as not being culturally sensitive or appropriate in meeting their needs.

Despite the oft-recognized higher prevalence of victimization of marginalized groups in the limited studies to date, it is difficult to identify research that directly addresses the corresponding costs of their victimization experiences. Two factors underlie the difficulty reaching such populations. First, data collection methods have not evolved to reach and validly document certain populations. For instance, understanding the victimization experiences of residents in

public housing and the LGBTQ, immigrant, and native American populations may require creative methods that foster trust and ensure confidentiality. The second concern stems from not accounting for certain demographics in measurements. These research challenges further complicate the task of fully and adequately capturing the costs of victimization borne by marginalized groups.

Recommended Research

Short-Term

1. *Synthesize existing information on costs to specific subpopulations.*

Although limited in scope and representation, researchers could capitalize on existing studies of specialized subpopulations discussed above to develop a more comprehensive understanding of their victimization costs and experiences. This work might build upon current, exploratory efforts by the National Resource Center for Reaching Victims to gather information from the field about underserved victims and the efforts of the Center for Victim Research to synthesize prevalence and harms information for certain populations (e.g., elder abuse victims). Cataloguing these particular costs, and the precise circumstances from which they emerge, is recommended for better-targeted service delivery in future.

Longer-term

2. *Modify existing data collection to be more representative of all populations.*

Future research efforts might examine and adapt existing surveys, particularly by modifying their sampling strategies and adding fields that allow respondents to identify their unique characteristics and as a result facilitate more robust subpopulation-level analysis. However, note that general population surveys will still be limited in their ability to capture meaningful detail on the experiences of subpopulations that are small in number, but purposively ensuring their inclusion may still improve estimates when combined with other studies below. For example, the NCVS currently allows individuals to identify certain demographics, such as sexuality, age, and race or ethnicity, and, as of 2016, sexual orientation and gender identity, which are measures that should be consistently retained. The survey could also return to including questions pertaining to public housing residency on an annual basis. Additionally, existing research efforts might oversample marginalized groups to derive more sound conclusions about the prevalence, incidence, and consequences of victimization in those groups.

For instance, the Violence Against American Indian and Alaska Native Women and Men report (Rosay, 2016) was made possible by the oversampling of American Indian and Alaska Native respondents in the National Intimate Partner and Sexual Violence Survey data collection. Because the national survey included a sizeable share of this population, researchers were able to conduct a secondary analysis years later, exploring in detail the interpersonal violence among an at-risk group. This over-sampling can assist others in creating generalizable victimization estimates for other groups who

are not well-represented in the NCVS. Potential research studies might accomplish the following:

- a. Develop standardized questions via experimental methods that can be incorporated into existing community-based surveys.
- b. Compare to one another the effectiveness of different existing data sources that attempt to capture this information.
- c. Add or incorporate additional existing data sources, such as surveys of military, homeless, LGBTQ, and incarcerated populations, to studies of victimization prevalence and costs for better and more complete representativeness of these subpopulations and of victimization patterns in general.

Initiatives like these would help create more accurate, immediate pictures of victimization prevalence/incidence/concentration and of the associated costs that could inform research and practice in all arenas and levels of victim services, whether the policy question is general or subpopulation-specific.

3. *Conduct Specifically Representative Studies.*

Researchers might undertake new empirical research in the form of comprehensive, representative surveys and interviews with these subpopulations to accurately estimate the prevalence, incidence, harms, costs, and services associated with their victimization experiences. Research efforts to develop new methods or data collections might involve creating standardized questions, via experimental methods, that can be incorporated into community-based surveys. Comparisons of effectiveness might also be made between different data sources that attempt to capture information on victimization in different subpopulations.

There have also been some older successful attempts to assess various forms of victimization among underrepresented populations. Using data from the National Survey of Homeless Assistance Providers and Clients (NSHAPC), researchers found that more than 50% of participants who visited homeless facilities experienced theft, physical assault, rape, or sexual assault (Lee & Schreck, 2005). This sort of research and analysis can serve as a model for producing estimates among difficult-to-reach subpopulations, such as those with cognitive and physical impairments or those living in institutions, and it can be replicated with up-to-date data collection efforts. Researchers might consider starting with the subpopulations for whom the least amount of data exists (as identified in shorter-term rapid assessments) but who are thought to have the highest prevalence of victimization experiences. American Indian and Alaska Natives, for example, may fit within this category, as would the populations that were described in greater detail previously. Specific initiatives that would help with this effort might include:

- a. **Explore methods to facilitate access to subpopulations.** Building on the listed preparatory work that uses or adapts existing data collections, future research could explore and tailor strategies for new research that improves access to subpopulations that are disproportionately affected by certain types of crimes and traditionally fail to report victimization. Several such populations

that face significant barriers and challenges to reporting and participation in primary research include people experiencing homelessness, public housing residents, and people with disabilities. Some research has been done to develop methods of accessing certain populations (see literature reviews in Volume II), but more work is needed.

Furthermore, researchers can strengthen future studies by consulting with experts experienced in researching vulnerable populations to develop ethical and transparent practices that allow vulnerable populations to feel safe during research participation. For vulnerable populations, major barriers to reporting victimization and participating in research include fear, retaliation, and not understanding the justice system (Davis & Erez, 1998; Greenfeld & Smith, 1999; LaSala et al., 2008; Haas et al., 2010). Researchers can increase transparency and communicate regularly before, during, and after research to cultivate an environment of safety and protection surround the disclosure of their experience.

- b. Compare victimization impacts across different groups.** There is significant heterogeneity in victimization harms and costs between different groups; not everyone experiences the same harms, nor do they experience them at the same levels or in the same ways. Future research might compare the costs and impacts of victimization across and between different subpopulations to create better, more effective victimization responses and prevention. For example, research could examine how socioeconomic status impacts different experiences of victimization within a subgroup. Similarly, future research could also compare children, teens, and adults to examine the short-term and long-term impacts and costs of harm at different life stages (e.g., social and brain development). People in these groups experiencing series victimizations might also be separated out.
- c. Examine service data from providers nationwide.** Future research could analyze data from victim service providers (VSPs) and assess the characteristics of the individuals that VSPs serve. The examination of VSP expenditures on services to vulnerable populations is one underutilized method of understanding victimization costs for subpopulations. Though only a small proportion of all victims of violent crime seek or access direct assistance from VSPs (Langton, 2011), the victim services, research, and fiscal management fields can benefit from a more representative breakdown of the demographics of people who report to VSPs and receive assistance.

These organizations may also collect information on the scope and cost of harms that victims experience as a means to screen for service eligibility. In a recent effort to understand the operations and demands of VSPs, the Bureau of Justice Statistics' (BJS) as part of the Victim Services Statistical Research Program (VSSRP),⁷⁵ designed a two-phased data collection to gather data from

⁷⁵ BJS, RAND, NORC, and NCVC were the coalition members for this particular initiative.

the diverse field of victim service providers, including government, nonprofit and faith-based, tribal, hospital, and campus VSPs. Informed by ongoing engagement with a range of key stakeholders from the research, policy, and practice communities, the first step to gathering nationally representative data on victim service providers was to build a roster of all agencies serving victims, and then conduct the first National Census of Victim Service Providers (NCVSP) to refine the roster and collect characteristics of the field. To date, only the findings from a pilot study of this first phase are published. In one fiscal year, among 379 VSPs surveyed, the number of victims receiving direct services ranged from 0 to 119,280 and the median number of victims served was 450 (Oudekerk et al., 2018). In the second phase of this effort, a more detailed National Survey of Victim Service Providers will be administered to a nationally representative sample of VSPs. The NSVSP will ask VSPs about the exact number of victims served and victim characteristics.

Underrepresented, Hard-to-Classify, and Emerging Victimization Types

Problem or Gap in the Literature

Emerging crimes types, like environmental crime, mass violence and terrorism, white collar crime, financial crime, cybercrime, and some property crimes, are often difficult to capture in prevalence and cost data; they go underreported. This can be due to challenges in clearly identifying an act, such as certain business practices, as criminal. Factors further exacerbating research challenges include that certain types of complaints may be handled outside the judicial system, the victim may not know to whom or what agency to report the crime, or victims may not even recognize that a crime occurred or identify themselves as victims. Furthermore, not only is it challenging to identify these types of crimes, but their capacity to impact large numbers of people, businesses, and governments also makes it difficult to clearly and efficiently identify individual victims and costs associated with a criminal event, and in some cases the victim is not an individual person but a business, the government, or a nonprofit.

Similar to hard-to-reach subpopulations, failure to include these victimization types and to find methods of accurately counting and costing them can lead to skewed cost estimates and low prevalence and concentration estimates, and to skewed understanding of who is affected by these victimizations and the nature and costs of their harms. The recent National Academies of Science report (Lauritsen & Cork, 2016) also stressed the importance of these crimes and the need to broaden victimization cost work to address them. Examples of these crimes include:

- **Environmental crime.** These crimes may involve providing falsified data to the Environmental Protection Agency or emitting gases, chemicals, and toxins that defy statutory regulations as enacted by Congress (Karpoff, Lott, & Wehrly, 2005). For example, corporations who commit environmental crimes witness decreases in their share value and may be forced to pay fines and/or compensate harmed parties (Karpoff, Lott, & Wehrly, 2005). There are several challenges to estimating the costs of environmental crimes, such as measuring the lifetime costs to victims, tracking uniform data on an offending company's share losses, and evaluating the estimated cost of each type of

environmental crime. Identifying and naming specific victims is also difficult; populations of areas affected (i.e. near a hazardous waste site) are typically not counted in a prosecution—only a named person that died as a direct result of the act (Jarrell and Ozymy, 2014).

- **Mass Violence and Terrorism.** As described in greater detail in the Volume II literature review, more research on the harms and costs of victimization related to mass violence and terrorism is needed to continually improve responses to primary victims, secondary and tertiary victims, and community-level impacts from these high-profile, traumatic events and particularly their long-term effects.
- **Financial crimes.** These consist of fraud, scams, embezzlement, employee theft, identity theft, money laundering, forgery, counterfeiting, cybercrime, insider trading, securities fraud, insurance fraud, healthcare fraud, and tax evasion. These crimes can affect entire governments or communities, or individuals, such as crimes perpetrated by an intimate partner or caregiver. The scope of harms is affected, as well as strategies to identify costs. For example, when a financial crime affects the long-term financial security of a victim (as when an elderly victim's retirement savings are stolen, or a small business is wiped out) there are also attendant mental health and even physical costs.

This large variety in financial crimes leads to different forms of victimization and costs associated with each. Further, there is a lack of unified data sources to track financial crimes, further complicated by the fact that many victims, including corporations, do not report their experience (Cliff & Wall-Parker, 2017; FTC, 2017; FINRA, 2007; AARP, 2003; Synovate, 2003). OVC has launched the Identity Theft Resource Center, but more could be done to address these other financial victimization types by various agencies within and outside the Department of Justice at the national, state, and local levels.

Some types of victimization, like domestic violence, sexual assault, human trafficking and child pornography, are often referred to as “hidden victimizations.” Similar to emerging crimes, these often go underreported due to barriers in identifying, locating, and accessing victims. Individuals may not self-identify as victims, either because of the stigma associated with these victimizations or because they do not know their experiences constitute a crime. The nature of the crimes also may keep victims isolated, dependent on the perpetrator, and/or ashamed, which can lead to delays in reporting or fear and reluctance to report. As a result, researchers must establish trust with victims in order to learn more about the harms from these victimizations.

- **Human Trafficking.** Much research exists on the scale and profit of labor and sex trafficking, but little is known about the costs to victims. Victims often experience physical injuries, mental health disorders, economic disadvantage and expenses, and social isolation (Clawson & Dutch, 2008). Their victimization is frequently correlated with other forms of criminal victimization, such as financial crime or domestic and sexual violence, which makes it difficult to attribute costs to one particular crime (Owens, Dank, Breaux, Bañuelos, Farrell, Pfeffer, Bright, et al., 2014). Further, there are questions about

restitution for lost/stolen wages, even if the forced activity was not a legal one.⁷⁶ Human trafficking also goes undercounted or undetected because of unstandardized data tracking procedures. Often, victims of human trafficking are mistaken for criminals instead of victims, particularly in sex trafficking cases where the victim is arrested for prostitution (Polaris Project, 2015), although this is improving with the spread of Safe Harbor laws throughout the states. Such misidentification can skew reported rates of victimization and should be considered when interpreting data.

- **Child pornography.** Child porn is any visual depiction of sexually explicit conduct involving a minor. Technology and digital media increase its quantity and accessibility, which subsequently amplifies the consequences incurred to victims (Pruitt, 2013). It is impossible to calculate how many times a victim's experience is viewed online; victims of child pornography are revictimized each time it happens (National Center for Missing and Exploited Children, n.d.), leading to a challenge in determining whether there is a per-victimization or per-view cost. In general, the victim suffers more harm if the number of recipients is larger, because each case revictimizes by reminding the victim the image is in circulation. Large or ongoing circulation means the victim has no idea how many people he/she comes across who may have seen the image. Courts have thus tried to figure out whether there should be a "cost" per each possessor of pornography.⁷⁷

The social costs incurred by a child pornography victim may include long-term psychological damage, disrupted sexual development, poor sexual relationships, negative self-image, and inability to build trust in future relationships (National Center for Missing and Exploited Children, n.d.). Victims of child porn are also responsible for the economic costs associated with medical treatment to cope with their trauma (Cassell, Marsh & Christiansen, 2013; Pruitt, 2013). In one groundbreaking case, "Amy" was sexually assaulted and filmed by her uncles at ages eight and nine, and the graphics were downloaded more than 35,000 times and her images showed up in over 3,200 separate child porn cases. (Cassell & Marsh, 2015). The approximate cost of her experiences totaled roughly \$3.4 million, and researchers estimate that the cost for each victim of child pornography ranges from \$25,000 to \$3 million.

Recommended Research

Short term

1. *Inventory of costs applicable to specialized crimes.*

Preparatory, rapid-assessment-style work is recommended in this area, prior to carrying out the studies described below that address methodological gaps and improvements needed and the differential impacts of various types of victimizations on population subgroups in much greater depth. One or more studies designed to catalog these particular costs and the precise circumstances in which they emerge are recommended. This preparatory work would serve three purposes:

⁷⁶ http://www.abajournal.com/news/article/courts_rarely_awarded_sex_trafficking_victims_compensation_study_finds

⁷⁷ <https://www.gpo.gov/fdsys/pkg/CHRG-114hrg93798/pdf/CHRG-114hrg93798.pdf>

- Help the victim assistance, compensation and broader service communities better prepare to serve these victims.
- Generate hypotheses and parameters for more detailed work to follow (discussed below).
- Help raise awareness about the full range of costs to address differential impacts on subpopulations and different victim types.

There are three segments to this preparatory work:

- a. Create crime-specific taxonomies of costs for the various understudied crime types mentioned above, like environmental crime, and for crimes that have been studied more but are lacking holistic victimization costs estimates, like human trafficking.
- b. Conceptual work on how to think about these crimes is important before trying to collect data. Operationalization of concepts to be measured cannot be finalized, or proper data sources identified, without a conceptual framework being developed first. This is especially true for emerging crimes, like cybercrime that affects corporations, theft of intellectual property, or crimes that affect entire communities, such as hate crimes and mass violence.
- c. Finally, data sources could be identified to assess these costs. Developing appropriate crime-specific conceptual frameworks would be enhanced by including qualitative interviews and records reviews with service providers, victim advocates, industry specialists, appropriate attorneys, advocacy organizations, victims themselves, and others, depending on crime type, for the purpose of better defining measurements and identifying needed data, whether existing or new collections. This will augment our understanding of the nature and consequences of uncommon or specialized types of victimizations that have equal if not more impact than more commonly researched areas (e.g., violent crime), and help identify conceptual gaps. Data sources identified during this third step may then, in turn, be used/tested in the more detailed topical studies described below, while the taxonomy could provide the framework for those studies. This represents Phase One of a phased approach to capturing data and generating cost estimates for underrepresented and specialized crime types. Finally, this phase might specify the very specific gaps and opportunities to be addressed in longer-term studies.

Longer term

2. *New data collections.*

Future research might develop and implement new data collections, or adapt existing ones, to address research and data gaps on hard-to-classify and underreported crime types. This would enhance the ability to estimate prevalence and costs associated with these nontraditional and underreported victimizations, and thus aid in decisions on appropriate funding and service delivery. These data collections may be new surveys, the addition of questions to existing surveys, and creative use of standard and non-standard

(for victimization research) datasets to create valid cost estimates for these crime types. Datasets could include data from other fields such as public health, financial services, transportation, or any other field that may also provide information on the noted types of crime. These studies should aim to disaggregate between immediate and long-term costs and, in many cases, also address repeat/series victimization patterns as described above. Some examples of data needs are shown below in Table 1.

Table 1: Understudied/Underreported Crime Type Data Needs

Crime Type	Existing Data	Data Missing
Environmental Crimes	EPA data involving individual victims. Local economic and business data	Detailed information on costs to communities. Health and resource impacts attributable to the incident or patterns of violation. Short-term and long-term effects/costs on individuals, businesses, communities, and systems
Financial Crimes	Identity theft data, FINCEN data, consumer complaint data, reported elder abuse complaints, reported fraud complaints, NCVS estimates, IRS data, insurance claim data.	Systematically collected cybercrime data, data on unreported fraud or other financial crimes, systematic aggregation of data on crimes against businesses or governments that is specific to their costs
Mass Violence/Terrorism	Global Terrorism Database (GTD), FBI hate crime data, UCR	Qualitative and detailed explorations of short-term and long-term victim costs, developing standard methods of counting victimizations from events that have ripple effects throughout the community
Human Trafficking	Polaris hotline, UCR, other criminal justice data, service provider data, child protective services, Department of Labor complaints (labor trafficking), Homeland Security Investigations (HSI), human trafficking task force data	Detailed qualitative and quantitative data related to short-term and long-term costs – their natures and financial estimates, and attribution/multiplicative effects related to repeat/series and polyvictimization patterns
Child Pornography	UCR, NCMEC, NCVS	Detailed qualitative and quantitative data related to short-term and long-term costs, as well as how to classify and count per-view victim impacts
Domestic Violence	UCR, NCVS, NISVS, CDC	Detailed qualitative and quantitative data related to short

		term and long-term costs – their natures and financial estimates, and attribution/multiplicative effects related to repeat/series and polyvictimization patterns
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3. *New cost-specific qualitative research.*

Future qualitative research might fill the knowledge gap regarding the *nature* of direct/indirect and short/long-term effects of nontraditional crimes, the costs associated with them, and their differential effects on different groups of people and different locales in the country (See Table 1 above). While, again, the nature of how victimization is experienced and how it impacts victims varies widely between groups, entities, and even individuals between groups—making any attempt to quantify the personal very difficult—these would inform design for potential research methods or policy programs to better serve victims that now may often fall through the cracks. This qualitative work would thus complement the quantitative data collections described above to present a fuller picture of victimization costs and harms.

Methodological Recommendations to Improve Estimates

The study possibilities discussed here concern issues of uncertainty, sensitivity, and inconsistency across different studies. While these proposals for methodological developments are placed in the current document after the topical studies, addressing these issues is mission-critical to the success and ultimate utility of the topical studies. These two categories of research must work hand-in-hand to create reliable estimates and estimation techniques that practitioners in the field can rely upon in their advocacy, research, fundraising/grant writing, and service delivery work toward improving victim outcomes.

Uncertainty and Sensitivity of Victim Cost Estimates: Sampling Error and Confidence Intervals

Problem or Gap in the Literature

Results of cost of victimization studies are often presented as point estimates, without confidence intervals or other measures of uncertainty. Results from cost-benefit analyses (CBA) studies – which combine effectiveness results with cost results – are also often presented as point estimates, even though the effectiveness results themselves generally have confidence intervals. Without some sense of the error around these cost or CBA estimates, it is difficult to know how much confidence to have in the results, or how consistent the results from different studies are.

At times there are technical challenges to producing standard confidence intervals, which are discussed in particular studies. As well, bottom-up studies of cost often draw upon a variety of data sources that may themselves lack confidence intervals. Some studies have included

confidence intervals, and there have been some attempts to incorporate uncertainty into CBA results using probability-based Monte Carlo methods, notably by the Washington State Institute for Public Policy, but these methods have not been widely adopted. These are not new issues (e.g., Cohen, 2000; Welsh & Farrington, 2000), but the complexity of the task increases as research on the cost of crime and victimization incorporates new methods and more diverse sets of data.

Of primary concern is improving communication, dissemination, or translation of results, so that consumers of results from cost of crime studies and CBA studies can appropriately understand the degree of uncertainty these findings hold. For example, if an estimate has a very wide range (confidence interval) within which the point estimate may fall, then a practitioner can know that estimate is less precise than an estimate with that falls within a narrower range (confidence interval). Guidelines and conventions for communicating confidence intervals across studies and estimates will be required, and perhaps also the development of innovative methods to estimate that uncertainty more precisely and accurately.

Recommended Research

Short-term

1. *Increase the Transparency of COV and CBA Results.*

While the best victimization cost research includes researcher-practitioner partnerships on the front end, the immediate audience for these recommendations on increasing transparency of results produced and presented is the research community. The driver and ultimate intended audience of the research results is the larger community of consumers of cost of victimization and cost-benefit analysis. Practitioners will be better able to rely on, interpret, and communicate the results of this research with these improvements in transparency of cost estimate presentations and the inherent levels of uncertainty that all estimates have.

- a. **Development of conventions for quantifying, describing, and reporting the uncertainty around estimates of the cost of victimization, especially confidence intervals and other limitations.** The adoption and use of such conventions could greatly facilitate the accurate representation of results from cost of victimization studies, and they would enhance the ability to compare the results of different studies. Developing conventions may involve activities such as commissioning a volume of technical recommendations (cf. Neumann, Sanders, Russell, Siegel, and Ganiats, 2016; National Academies of Sciences, Engineering, and Medicine, 2016 [which considers crime among other issues]; Farrow, 2018; or Gold, Siegel, Russell, & Weinstein, 1996, in health economics), or the use of expert panels focused on more intensely on crime victimization such as through the National Academies of Science.
- b. **Development of conventions for quantifying, describing and reporting the uncertainty around cost-benefit analyses of crime prevention.** This would require incorporating several different sources of ambiguity, including uncertainty around the

costs of interventions, uncertainty around the estimate of effectiveness of prevented, and uncertainty around the monetization of those crimes to be prevented.

Longer-term

2. ***Develop Methods for Assessing and Describing Uncertainty.***

Methodological research and innovation to describe uncertainty on a common basis would benefit the development of standards and conventions that can be applied to estimates that are produced via different methods and incorporate different kinds of data. These methodological innovations may perhaps incorporate simulation and Monte Carlo methods. Such innovations and development of standards will be of great benefit to researchers doing various kinds of cost of victimization studies and estimates.

Uncertainty and Sensitivity of Victim Cost Estimates: Non-Sampling Error or Variability

Problem or Gap in the Literature

There has been relatively little empirical study of the sources of non-sampling error in the estimates of victim costs or particular types of victim costs, and the sensitivity of cost estimates to different assumptions and relatively minor methodological changes. Some studies have incorporated sensitivity of results to particular assumptions (e.g., McCollister et al., 2010), but much more work is needed. Understanding such sensitivity of cost estimates could help reconcile differing estimates across studies and also allow cost estimate users to more appropriately deploy study findings.

One promising methodological innovation to willingness-to-pay (WTP) surveys is the use of “discrete choice” methods in which questions are varied in systematic ways to address both substantive questions and the sensitivity of the results to other issues. This method has potential to address some sensitivity issues in WTP estimates. No such study has yet been conducted regarding U.S. crime; one study has been conducted with Argentinian respondents (Picasso & Cohen, 2018).

Studies also differ in their basic approaches. Bottom-up approaches, which enumerate and then sum particular costs, generally produce smaller cost estimates than methods that directly produce holistic estimates of total costs, such as WTP surveys or hedonic analyses. Such holistic estimates may capture some costs that are missed in the bottom-up estimates. For example, in addition to costs borne directly by victims, insurers, and employers, WTP survey estimates may implicitly also include second-order costs, longer-term costs, community-level costs, and other indirect costs.

At the same time, some reviewers believe that intangible costs may be overestimated by each major method (e.g., Dominguez & Rafael, 2015, although see Cohen, 2016). This thinking is based on WTP survey respondents reporting willingness to spend more for crime prevention than taxpayers may actually be willing to pay; hedonic analyses over-attributing variation in market values in home prices or salaries to crime per se (versus other correlated factors); and

jury awards for pain and suffering perhaps being biased upwards because their decisions do not involve use of their own money.

Recommended Research

1. *Conduct research to test how changing assumptions affects estimates*

Conduct research to understand the degree to which the explicit and implicit assumptions differ between studies and methods, how those differences may produce systematically differing estimates, and whether any biasing factors can be countered or corrected. In addition, conduct methodological experiments to understand the sensitivity of estimates to various assumptions, sampling, definitions used, question wording, etc. (Note that sensitivity of estimates across different types of samples is different from variation in actual costs that are experienced by different types of victims.) Such research might include studies addressing questions such as the following:

- a. Do WTP respondents, jurors, and home buyers use different implicit (or explicit) assumptions about the time horizon of costs, and about the present value of future costs, from those that are used by economists conducting bottom-up studies?
- b. What costs are implicitly being captured in holistic estimates, such as WTP estimates or hedonic studies, that are missing from bottom-up estimates?
- c. How do baseline assumptions about current levels and trends in crime affect respondents' WTP for crime prevention?
- d. Do WTP estimates change when respondents are asked about individual crimes prevented, versus aggregate crime reductions?
- e. To what degree are WTP estimates for crime prevention sensitive to differences in the type of prevention intervention, even when alternative prevention efforts have equivalent preventative effects?
- f. Does expressed WTP vary by the likelihood that those surveyed would actually be paying if the prevention effort were implemented? Can any such effects be differentiated from more general effects of SES on expressed WTP?
- g. How do the various assumptions in assessing costs of victimization compare to the assumptions used when monetizing other societal problems? Can common conventions be established to allow apples- to-apples comparisons of the cost of victimization to other societal problems?
- h. How are the effects on the quality of life or victims accounted for holistic estimates? How do results compare to those produced use quality-of-life-adjusted-years (QALYs) combined with the value of statistical life (VLS)?⁷⁸

⁷⁸ See Berger, M., Blomquist, G., Kenkel, D., & Tolley, G., 1987; Brazier, Ratcliffe, Saloman and Tsuchiya, 2017; and Cutler, Jessup, Kenkel, and Starr, 2016, for example.

Training/Technical Assistance and Tools for Practitioners

A number of tutorials and/or guidelines could be developed, made available, and circulated to both researchers and practitioners to assist with a number of identified needs. Various practitioner types that the project team surveyed or spoke to in focus groups communicated data and tool needs for which academic resources may be available, but they have not been translated into plain English, compiled/built, and/or disseminated well to the users that need them. The following recommendations cover opportunities to provide guidance, synthesis, or cost calculator tools that both practitioners and researchers can use to produce more useful and comparable victim cost estimates, and to correctly interpret them for stakeholders.

Standard definitions for costs for use across studies and estimation methods

Problem or Gap

While both the volume and depth of the literature on victimization costs have expanded over the past two decades, variations across studies in the way costs are defined can make it difficult to properly interpret findings or make cross-study comparisons. This is particularly true for studies that produce cost estimates, but it also applies to a lesser extent to studies that address estimation techniques (Cohen, 2004; DeLisi et al., 2010). The theoretical and conceptual literature produced to date provides guidance on relevant constructs, including taxonomies such as those adapted for presentation in Volume I. However, while there is widespread adoption of the tangible/intangible distinction, true standardization in the way lost productivity, pain and suffering, and others various costs are defined and what is included remains elusive (Cohen, 2004; Corso et al., 2007; Cohen, 1988). While variation in the way specific costs are operationally defined can provide valuable nuance for specific cases or unique crime types, standard definitions for common cost types could help the field produce more comparable and accurate cost estimates. Our focus group discussions with State Administering Agency (SAA) and Statistical Analysis Center (SAC) directors indicate that standardization would provide end-users with more confidence in the validity of cost estimates for both absolute and comparative purposes.

Recommended Tool for Development

1. *Compilation of standard definitions for various cost types*

Building on the theoretical underpinnings that already exist in the literature, including the taxonomies adapted for presentation in Volume I, a compilation of standard definitions for common cost types could be undertaken with a relatively modest investment of resources. The work would need to address conceptual differences concerning various costs types, such as pain and suffering, lost future wages, caregiver expenses and others, followed by the development and eventual expansion of a set of definitions for specific cost types. The overall goal would be to compile a resource of standardized definitions to be used uniformly across later studies designed to produce cost estimates – as well as those focused on the development or improvement of cost-estimation methodologies – to

create an eventual body of work with comparable and replicable results. This would be particularly useful for the newer work to be done on costs associated with emerging or underrepresented victimization types, and for all studies that produce cost estimates, improve estimating methodologies, and produce information on specific topical areas. It would be particularly useful for translation and communication of results in the field by practitioners of all kinds.

Determining the best time frame for estimating victimization costs

Problem or Gap

The SAA, SAC Director, and VOCA Administrator focus group respondents expressed concern about temporal factors that can have a significant impact on the monetary value of costs associated with victimization, the calculations estimating these costs and the interpretations of these data. While the costs of some victimizations manifest in whole within a relatively short time following an incident, a significant proportion of victimizations accrue costs over time, with some costs manifesting or compounding years or even decades after the victimization. As such, not all costs will be captured within time frames useful for legislative cycles or covered in VOCA-funded services and victim compensation awards. SAC directors specifically wondered whether some determination should be made as to what time period captures the greatest proportion of costs incurred. Thus, the time horizon used when calculating victimization cost estimates is a critical variable that impacts cost-estimate values and utility; cost-study findings can radically differ when different time horizons are employed.

Cost-benefit analysis presents an analogy that can help illustrate the variable and profound impact that different time horizons can have on a given study (Cohen, 2000). When calculating cost-benefit summary statistics such as cost-benefit ratio, net present value, or return on investment for the evidence-based Nurse Family Partnership program, for example, program costs exceed benefits for several years following program delivery (Olds, 2006). Approximately four years after program delivery, however, enough benefits accrue to exceed costs, and they continue to accrue for years, so that the full value of the program is not known for decades following program delivery (Olds, 2006). If the time horizon used for the cost-benefit analysis is restricted to a few years, the program would erroneously be found to have a negative return on investment. While economists would recommend using the present value of lifetime consequences, legislatures often dictate time horizons for the analyses they desire for policy making; for example, the U.S. Congress looks at five- and ten-year non-discounted time horizons when debating returns on investment.

Recommended Tool for Development

2. *Guidance on selecting the time frame of costs to include depending on victimization type, area of country, subpopulation, and purpose for use.*

While prior research has investigated this question, practitioners are still seeking more explicit guidance in this area. Development of one or more tools to help practitioners determine the most effective timeframe to use when estimating victimization costs could provide valuable guidance to the field and help avoid substantially inaccurate production

or interpretation of estimates. Given the potential for costs to accrue differently over time for different types of victimization, tools designed to help researchers and practitioners determine the best timeframes to apply in a cost study will need to account for variations between victimization types and experiences, subpopulations, and level of financial and other forms of stability prior to victimization experiences.

Such a tool would be developed following a comprehensive review of previous literature and broader set of new focus groups comprised of a variety of potential users/consumers of the final guidelines. Some of the research, policy, and legislative questions these users might be looking for assistance with might include:

- How far out does one need to look to see if a program pays for itself?
- What long-term expenses might be prevented with more timely delivery of services?
- How many years should a program be funded, or services provided, in order to prevent costs that would accrue if it is ended too early? Disaggregate by crime type, subpopulation, socioeconomic status, etc.

Victimization Cost Calculators

A major eventual goal of this proposed body of work was to develop tools for use by practitioners in various fields related to victim services. Once several of the preceding methodological questions and topical studies have been addressed, updated materials and data will be available to develop or incorporate into several practitioner tools for creating useful estimates of the costs of victimization.

Problem or Gap

Many non-researchers have a difficult time generating victimization cost estimates and knowing how to use them appropriately for their various purposes. The Washington State Institute of Public Policy (WSIPP) and Pew Research have done some work to address this need. The most commonly stated problems noted by SAA and SAC director focus group respondents during this project was a need for updated costs data and tools with which to create localized estimates, and ways to package data to meet the needs of their stakeholders (ultimately legislators or governor's office). They need to be able to generate data that meets requests they receive and to support legislative funding requests.

Recommended Tools for Development

3. ***Tools that allow for input of tangible costs for local or population-specific estimates***
For a bottom-up approach, create tools that allow for input of tangible costs for local or population-specific estimates, such as local labor, medical, and criminal justice processing costs. Allow, as well, for regularly-updated crime frequency adjustments, both in the aggregate and by victimization or subpopulation type, that users can opt to use depending on their research question.
4. ***Calculation sub-tools that account for differences between crime types, victim groups, service delivery, and other sources of variation***

Develop different calculation tools or sub-tools, including recommendations to practitioners as to which options might be used for different policy purposes, and which account for differences between crime types, victim groups, differential impacts of service delivery, and the like. Allow for regularly-updated crime frequency adjustments for these subtools as well. These recommendations should anticipate potential misuse or misunderstanding of data and offer caution and advice to prevent such problems.

5. ***Practitioner calculator tools that incorporate explanations of uncertainty with estimates***

Develop tools that incorporate explanations of uncertainty of the estimates they generate, for use both within and across study results. The field has often recommended using ranges instead of point estimates for victimization costs. These tools could facilitate the field being able to use such ranges in a meaningful or useful way and to prevent potential misuse of point estimates.

6. ***Tools or resources that can summarize research on various topics for practitioners***

Create a meta-analysis tool to allow summaries of subsets of existing studies for particular uses. For example, one could specify particular crime-types, types of costs included (for bottom-up approaches), different cost time horizons, dollars to be converted to a constant year, etc. They could then receive a summary of research in each area for use in programmatic and policy decisions.

The uses or questions for which practitioners could employ these calculators may include the following:

- **Legislative prioritization:** What will it cost to address a victimization type versus what it will cost if left unaddressed?
- **Program planning:** Division of costs that fall on different departments or agencies, and for what activities. Delineate which costs are sunk costs and which may be interdependent or compounded by the passage of time.
- **Calculating the impact of direct victim services on preventing future levels of harm.**
- **Break-even analysis:** How effective does a program have to be before it pays for itself?
- **Program evaluation:** Ability to compare impacts of several program options.

Considerations in calculator tool development:

- Guidelines should be included with any calculators around levels of confidence 1) in the information put into tools, 2) on what information is suitable to disseminate to whom, and 3) how to interpret and translate any numbers that emerge from the calculator tool.
- Making sure all numbers included in a tool represent apples-to-apples comparisons is critical, and this includes costs and the methods by which they were generated.
- Provide guidance about different use cases – some uses require precise estimates and some uses require a simple “good enough” number – such as questions simply comparing the sizes of different problems. This guidance might include not only written guidance, but tutorials of some kind. If decisionmakers do not know what

they need for their purposes, simply providing numbers will not help. It is important to communicate this information in a useful way to lay people. Investing in research on communication methods around victimization costs may also be useful. *What methods are most effective?* Do an experiment with different communication methods for this guidance to see which most effectively and accurately communicates the appropriate instructions.

Conclusion

This suite of recommendations emerged from focus groups, surveys, literature reviews, and input from our Project Advisory Board of researchers and practitioners throughout the field of crime victimization and cost estimation research. Other initiatives might also be recommended, but these were the most immediate requisites emerging from this project. The project team believes this roadmap of research and ideas for practitioner tools, while not exhaustive, would go a long way toward advancing the field of cost of victimization research, whether adopted in whole or in part. They are presented as a menu that interested stakeholders might choose from.

Work of this type has the propensity to get highly technical and specialized very quickly, given all the methodological and data concerns involved with generating accurate and defensible cost estimates. However, it was critically important to the project team to keep victims the first and foremost thought and priority. How will work in this area enable us to better serve victims, mitigate the harms they experience, provide appropriate care in the short-term and over time, and even help people working in victimization prevention? As such, focus returned repeatedly to tools and studies that would be useful in the field and to information that would enlighten all levels of decisionmakers who assist victims in their recoveries from these events. Work that prioritized those goals was prioritized over work that was purely academic.

While crime rates are still down overall since highs in the 1990s, crime victimization and associated expenses in the United States are substantial, nuanced, and varied. Improving estimates of the scale of the associated harms and their costs would go a long way toward improving resource allocation to address these problems, to serve more victims, to more effectively mitigate the harms they suffer and foster resiliency, and to better serve the variety of crime victims in the United States.

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Estimating the Financial Cost of Victimization

Volume 1

Appendix 1: Survivor Survey Instrument

Volume I

Appendix 1: Life Experiences Survey

Start of Block: Default Question Block

Thank you for your interest in taking this short, 7 question survey. It should take less than 10 minutes to complete. Please be aware that these questions might be sensitive to you. The survey will ask about what experiences you might have had, and what, if any, effects those experiences had on your life and the lives of your family or friends. This survey is completely anonymous, no personally identifying information will be asked of you. Your participation is voluntary and you are welcome to skip any question at any time.

- ☐ Yes, I **agree** to take the survey (1)
- ☐ No, I **do not agree** to take the survey. (2)

*Skip To: End of Survey If Thank you for your interest in taking this short, 7 question survey. It should take less than 10... = No, I **do not** agree to take the survey.*

Page Break

Q2 Which of the following have you experienced in your lifetime? *Please check all that apply.*

- ☐ Something was stolen from you by force (1)
- ☐ Someone broke into or attempted to break into your home, car, or other place (38)
- ☐ You were attacked or threatened **with** a weapon (39)
- ☐ You were attacked or threatened **without** a weapon (40)
- ☐ You were forced or pressured to take part in unwanted sexual activity by someone you know or knew (41)
- ☐ You were forced or pressured to take part in unwanted sexual activity by someone you did not know (42)
- ☐ A romantic partner or former partner physically hurt you, including hitting, punching, and slapping (43)
- ☐ A romantic partner or former partner threatened to hurt you or made you feel unsafe (44)
- ☐ Someone repeatedly harassed or threatened you (45)
- ☐ Someone threatened you, or verbally or physically attacked you, **because of** your race, gender identity, sexual orientation, or some other aspect of your identity (46)
- ☐ A family member or friend, or another person you know personally, was killed (47)

☐ Someone, without your permission, ***used or attempted to use*** your financial account (such as checking account), another type of account (such as a social media account), or your personal information (such as your name or address) to ***commit fraud or a scam*** (48)

☐ A parent, relative, or other trusted adult, hurt you as a child (49)

☐ You were pressured to take part in sexual activity in exchange for necessities, such as money, shelter, or food (50)

☐ You felt pressured, were threatened, or forced to work for someone **against your will** (51)

☐ Other, please specify: (52) _____

Skip To: End of Survey If Selected Choices 0

Page Break

Carry Forward Selected Choices Entered Text from "Which of the following have you experienced in your lifetime? Please check all that apply. "



Q3 Did this experience/any of these experiences occur within the past year?

- ☐ ☒ None occurred in the past year (1)
- ☐ Something was stolen from you by force (2)
- ☐ Someone broke into or attempted to break into your home, car, or other place (3)
- ☐ You were attacked or threatened **with** a weapon (4)
- ☐ You were attacked or threatened **without** a weapon (5)
- ☐ You were forced or pressured to take part in unwanted sexual activity by someone you know or knew (6)
- ☐ You were forced or pressured to take part in unwanted sexual activity by someone you did not know (7)
- ☐ A romantic partner or former partner physically hurt you, including hitting, punching, and slapping (8)
- ☐ A romantic partner or former partner threatened to hurt you or made you feel unsafe (9)
- ☐ Someone repeatedly harassed or threatened you (10)

- ☐ Someone threatened you, or verbally or physically attacked you, ***because of*** your race, gender identity, sexual orientation, or some other aspect of your identity (11)
- ☐ A family member or friend, or another person you know personally, was killed (12)
- ☐ Someone, without your permission, ***used or attempted to use*** your financial account (such as checking account), another type of account (such as a social media account), or your personal information (such as your name or address) to ***commit fraud or a scam*** (13)
- ☐ A parent, relative, or other trusted adult, hurt you as a child (14)
- ☐ You were pressured to take part in sexual activity in exchange for necessities, such as money, shelter, or food (15)
- ☐ You felt pressured, were threatened, or forced to work for someone **against your will** (16)
- ☐ Other, please specify: (17)

Skip To: End of Survey If Did this experience/any of these experiences occur within the past year? = None occurred in the past year

Page Break

Q4 For the next questions, think about the experiences you have had in the past year.

Q5 People to whom these things have happened often suffer physical, emotional, or financial harms. Did you experience any of the harms listed below? *Please check all that apply.*

- ☐ Physical injuries requiring medical attention (1)
 - ☐ Physical injuries *not* requiring medical attention (2)
 - ☐ Emotional suffering, such as anxiety or stress (3)
 - ☐ Problems with family or friends (10)
 - ☐ Fear of crime (11)
 - ☐ *Mental* healthcare costs (5)
 - ☐ *Medical* healthcare costs (4)
 - ☐ Costs due to the legal process, including lawyers' fees (7)
 - ☐ Lost job or ended education (9)
 - ☐ Lost days at work or school (8)
 - ☐ Lost property (6)
 - ☐ Other harms, please specify: (12)
-

Skip To: Q7 If Selected Choices < 1

Page Break

Carry Forward Selected Choices Entered Text from "People to whom these things have happened often suffer physical, emotional, or financial harms. Did you experience any of the harms listed below? Please check all that apply."



Q6 If you had to select only one, which harm had the biggest impact on your life? *Please check only one.*

- ☐ Physical injuries requiring medical attention (1)
- ☐ Physical injuries *not* requiring medical attention (2)
- ☐ Emotional suffering, such as anxiety or stress (3)
- ☐ Problems with family or friends (4)
- ☐ Fear of crime (5)
- ☐ *Mental* healthcare costs (6)
- ☐ *Medical* healthcare costs (7)
- ☐ Costs due to the legal process, including lawyers' fees (8)
- ☐ Lost job or ended education (9)
- ☐ Lost days at work or school (10)
- ☐ Lost property (11)
- ☐ Other harms, please specify: (12)

Page Break

Q7 Were there any other problems or consequences in your life as a result of these experiences?
Please briefly describe below.

Q8 Did anyone else in your life suffer harms or consequences related to these things that happened to you? *Select all that apply and describe the harms they experienced below.*
Please **do not** enter anyone's names or identifying information.

☐ Friends, please describe harms: (1)

☐ Immediate family members, please describe harms: (2)

☐ Extended family members, please describe harms: (3)

☐ Co-workers, please describe harms: (4)

☐ Neighbors, please describe harms: (5)

☐ Other persons, please describe harms: (6)

Page Break

Q9 Was there anything that you, or your family or friends, did that was beneficial to your healing? *Please briefly describe below.*

End of Block: Default Question Block

Estimating the Financial Cost of Victimization Volume I

Appendix 2: Focus Group Attendees

Volume I

Appendix 2: Focus Group Attendee Lists

VOCA Administrator Group

- New York Office of Victim Services
- Massachusetts Office for Victim Assistance
- Office of Victim Services and Justice Grants, Washington, D.C.
- Office of Victim Services, Pennsylvania
- Office of Victim Services, Connecticut
- Montana Board of Crime Control
- Louisiana Commission on Law Enforcement
- Louisiana Crime Victims Reparations Program
- Crime Victims Services Office, Michigan
- Utah Office for Victims of Crime
- Crime Victim Services Commission, Michigan
- Criminal Injuries Compensation Board, Department of Public Safety and Correctional Services, Maryland
- Victims Compensation, Washington State

SAA/SAC Director Group: States Represented

- Colorado Division of Criminal Justice (3 representatives)
- Ohio Office of Criminal Justice (2 representatives)
- North Carolina State Administrative Agency (1 representative)
- Illinois Criminal Justice Information Authority's Research and Analysis Unit and Illinois Statistical Analysis Center (1 representative)
- Arizona Criminal Justice Commission (1 representative)

Civil Attorneys Group: States Represented

- | | |
|------------------|----------------|
| • Arizona | • Ohio |
| • California | • Oklahoma |
| • Georgia | • New York |
| • Illinois | • Pennsylvania |
| • Maryland | • Vermont |
| • Missouri | • Washington |
| • North Carolina | |

Estimating the Financial Cost of Victimization Volume I

Appendix 3: Service Provider Survey Instrument

Volume I

Appendix 3: Service Provider Survey

Start of Block: Consent Form

Consent

Costs of Victimization: A Survey of Service Providers

We invite you to participate in an **important survey** for a study sponsored by the National Institute of Justice and the Office for Victims of Crime, U.S. Department of Justice. Your answers will help us determine how to make **research on the harms** associated with crime victimization more relevant and useful, especially in calculating the costs of crime to victims.

We want **your** perspective on these issues.

The survey takes approximately 15 minutes to complete. Anyone in your organization can help complete this survey. You can complete the survey in more than one session if you cannot finish the survey at one time. Your answers will be saved.

Your answers are voluntary and **completely** confidential. Everyone's responses will be combined and reported in the aggregate.

By clicking "next" on this page, you are agreeing to taking this survey.

This project is funded by the National Institute of Justice and the Office for Victims of Crime, U.S. Department of Justice, and is conducted as a partnership between three non-profit organizations: the National Center for Victims of Crime, the Urban Institute, and the Justice Research and Statistics Association. For questions about the study, please contact Jennifer Yahner at jyahner@urban.org or (202)261-5996.

End of Block: Consent Form

Start of Block: Experience

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q1 How many years have you been in a position that involves working with crime victims, even if not your primary role?

- ☐ Less than a year (1)
 - ☐ 1 to 4 years (2)
 - ☐ 5 to 9 years (3)
 - ☐ 10 to 19 years (4)
 - ☐ 20 or more years (5)
 - ☐ *Don't know* (6)
-

Q2 What best describes your current position?

- ☐ Frontline Staff (e.g., advocate, nurse, case manager) (1)
- ☐ Midlevel Manager (e.g., program coordinator, staff supervisor, charge nurse) (2)
- ☐ Executive Director (e.g., of an organization) (3)
- ☐ Other, *please specify*: (4) _____
- ☐ *Don't know* (5)

End of Block: Experience

Start of Block: Organization Characteristics

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q3 Which of the following best describes your organization?

- ☐ Nonprofit organization (1)
 - ☐ Hospital or emergency department (2)
 - ☐ Physical or mental health service provider (not based in hospital) (3)
 - ☐ Justice-system based (e.g., law enforcement, courts, prosecution, corrections, etc.) (4)
 - ☐ Other government agency (5)
 - ☐ Campus organization or other educational institution (6)
 - ☐ Tribal agency or organization (7)
 - ☐ Other, *please specify*: (8) _____
 - ☐ *Don't know* (9)
-

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q4 What types of crime victims does your organization serve? *Please check all that apply.*

- ☐ Domestic abuse or dating violence (1)
- ☐ Child sexual abuse or sexual assault (2)
- ☐ Rape or sexual assault (not against children) (13)
- ☐ Child physical abuse or neglect (3)
- ☐ Stalking (4)
- ☐ Child witness of violence (5)
- ☐ Adults molested as children (6)
- ☐ Elder physical abuse (7)
- ☐ Assault (other than domestic or dating violence and child or elder abuse) (8)
- ☐ Survivors of homicide victims (9)
- ☐ Victim witness intimidation (10)
- ☐ Human sex trafficking (14)
- ☐ Human labor trafficking (24)

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

☐ Burglary (17)

☐ Robbery (15)

☐ Financial fraud and exploitation (other than identity theft) (16)

☐ Identity theft (19)

☐ DUI or DWI crashes (18)

☐ Other property crimes (20)

☐ Other violence crimes (21)

☐ Motor vehicle theft (22)

☐ Other, *please specify*: (11) _____

☐ *Don't know* (12)

Page Break

Q5 About how many paid staff does your organization have in total? *Please take your best guess.*

- ☐ Less than 10 (1)
 - ☐ 10 to 49 (2)
 - ☐ 50 to 99 (3)
 - ☐ 100 or more (4)
 - ☐ *Don't know* (5)
-

Q6 Is your organization aligned with or a member of a **state-level** or **national-level** victim services organization or association (such as a state coalition)?

- ☐ Yes (1)
- ☐ No (2)
- ☐ *Don't know* (3)

End of Block: Organization Characteristics

Start of Block: Understanding Harms

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q7 People who have been victimized by a crime often suffer physical, emotional, and/or financial harms. **For each of the harms listed below, please indicate how frequently victims you serve appear to have suffered each harm.**

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)	<i>Don't know</i> (6)
Physical injuries requiring medical attention (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Physical injuries not requiring medical attention (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Emotional suffering, such as anxiety or stress (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Mental health care costs (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lost or damaged property (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Legal costs, including lawyers' fees (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lost days at school or work (7)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Lost job or withdrew from educational program (8)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Problems
with family or
friends (9)

☐☐☐☐☐☐

Fear of
crime and/or
revictimization
(10)

☐☐☐☐☐☐

Page Break

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q8 Are there any additional harms (not listed previously) you **often** see among crime victims? *If so, please specify those harms below.*

Q9 Are there additional harms you **rarely** see, but think are **very important**? *If so, please specify those harms below.*

Page Break

Q10 In your opinion, is there a type of crime whose harms are particularly misunderstood?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Don't know (3)

Display This Question:

If In your opinion, is there a type of crime whose harms are particularly misunderstood? Yes

Q10b If yes, is there a type of crime whose harms are particularly **misunderstood**?

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q11 For victims of **violent crimes** (excluding homicide), how much do the levels of harm victims experience **differ or vary** across victims?

- ☐ Not at all (1)
 - ☐ A little (2)
 - ☐ Somewhat (3)
 - ☐ Moderately (4)
 - ☐ Very much (5)
 - ☐ *Don't know* (6)
-

Q12 For victims of **property crimes**, how much do the levels of harm victims experience **differ or vary** across victims?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ Moderately (4)
- ☐ Very much (5)
- ☐ *Don't know* (6)

End of Block: Understanding Harms

Start of Block: Reducing Harms

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q13 Based on your experience serving crime victims, please indicate how much you **agree** with the statements below about services that may **reduce or mitigate** the harms of victimization:

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	<i>Don't know</i> (6)
Victims' access to legal advocacy reduces or mitigates the harms of victimization. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' access to safety planning reduces or mitigates the harms of victimization. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' access to crisis intervention reduces or mitigates the harms of victimization. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' access to medical/health care services reduces or mitigates the harms of victimization. (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' access to counseling/mental health services reduces or mitigates the harms of victimization. (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Victims'
access to
housing/shelter
reduces or
mitigates the
harms of
victimization. (6)

☐☐☐☐☐☐

Victims'
access to **financial**
compensation that
reduces or
mitigates the
harms of
victimization. (7)

☐☐☐☐☐☐

Q14 Are there additional victim services (not listed previously) you believe **reduce or mitigate the harms** of victimization? *Please specify those services below.*

Page Break

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q15 Based on your experience serving crime victims, please indicate how much you agree with the statements below about factors that may **increase or exacerbate** the harms of victimization:

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

	Strongly disagree (1)	Disagree (2)	Neutral (3)	Agree (4)	Strongly agree (5)	<i>Don't know</i> (6)
Victim experiences with past trauma or prior victimization increase or compound the harms of victimization. (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' limited economic resources (e.g., income, education) increases or compounds the harms of victimization. (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Victims' fear of reporting the crime increases or compounds the harms of victimization. (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Victims' **fear of retaliation from the perpetrator** increases or compounds the harms of victimization.
(4)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Victims' **cultural reluctance to seek formal help** increases or compounds the harms of victimization.
(5)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Victims' **limited social support** (e.g., family, friends) increases or compounds the harms of victimization.
(6)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Victim experiences with **other types of marginalization** (e.g., discrimination due to their race or sexual orientation) increase or compound the harms of victimization.
(7)

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

Q16 Are there additional factors (not listed previously) you believe **increase or exacerbate the harms** of victimization? *Please specify those factors below.*

End of Block: Reducing Harms

Start of Block: Indirect Victimization Effects

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q17 Thinking about the victims you work with, how often are **other individuals** in their lives negatively affected by victims' own experiences?

	Never (1)	Rarely (2)	Sometimes (3)	Often (4)	Always (5)	<i>Don't know</i> (6)
How often are victims' spouses or partners negatively affected by victims' experiences? (1)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are victims' children negatively affected by victims' experiences? (2)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are victims' other family/relatives negatively affected by victims' experiences? (3)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are victims' friends negatively affected by victims' experiences? (4)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are victims' neighbors negatively affected by victims' experiences? (5)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
How often are victims' co-workers/classmates negatively affected by victims' experiences? (6)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Q18 Are there **other individuals** (not listed previously) in victims' lives who are **often** negatively affected by victims' experiences? *Please specify those individuals below.*

Q19 Are there **other individuals** (not listed previously) in victims' lives who are **rarely** **negatively** affected by victims' experiences but you think are **very important**? *If so, please specify those individuals below.*

End of Block: Indirect Victimization Effects

Start of Block: Cost of Victimization Harms

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q20 Has your organization (to the best of your knowledge) ever calculated the **financial costs** of victimization **harms**? In other words, the **costs of harms** that victims experience?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Don't know (3)

Display This Question:

If Has your organization (to the best of your knowledge) ever calculated the financial costs of vict... = Yes

Q21 What were the reason(s) **why** your organization calculated the **costs of harms** to victims?

Display This Question:

If Has your organization (to the best of your knowledge) ever calculated the financial costs of vict... = Yes

Q22 Can you describe the method(s) for **how** your organization calculated the **costs of harms** to victims?

Page Break

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q23 How **useful to your work** would it be to know the financial costs of victimization harms?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ Moderately (4)
- ☐ Very useful (5)
- ☐ *Don't know* (6)

Display This Question:

If How useful to your work would it be to know the financial costs of victimization harms? = A little

Or How useful to your work would it be to know the financial costs of victimization harms? = Somewhat

Or How useful to your work would it be to know the financial costs of victimization harms? = Moderately

Or How useful to your work would it be to know the financial costs of victimization harms? = Very useful

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q24 In what ways would the financial costs of victimization harms be useful to your work?
Please check all that apply.

- ☐ Advocate for increased resources (1)
 - ☐ Reference for grant applications (2)
 - ☐ Inform public (3)
 - ☐ Determine programming (4)
 - ☐ Determine need and allocate resources (5)
 - ☐ Inform public policy regarding victim services (6)
 - ☐ Other, *please specify*: (7) _____
 - ☐ *Don't know* (8)
-

Q25 In addition to quantifying the harms to victims in dollar terms, how else might people measure victimization harms?

Q26 Please share any concerns or comments you have about quantifying the harms to victims in dollar terms.

End of Block: Cost of Victimization Harms

Start of Block: Cost of Victim Services

Q27 Has your organization (to the best of your knowledge) ever calculated the **financial costs of victim services you provide** to crime victims? In other words, the **cost of services** that victims receive?

- ☐ Yes (1)
- ☐ No (2)
- ☐ *Don't know* (3)

Display This Question:

If Has your organization (to the best of your knowledge) ever calculated the financial costs of vict... = Yes

Q28 What were the reason(s) **why** your organization calculated the **costs of services** to victims?

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Display This Question:

If Has your organization (to the best of your knowledge) ever calculated the financial costs of vict... = Yes

Q29 Can you describe **how** your organization calculated the **costs of services** to victims (i.e., the methods used)?

Display This Question:

If Has your organization (to the best of your knowledge) ever calculated the financial costs of vict... Yes

Q30 Did your organization calculate a **per victim** cost for the services you provide?

- ☐ Yes (1)
- ☐ No (2)
- ☐ Don't know (3)

Page Break

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q31 How **useful to your work** would it be to know the financial costs of victim services?

- ☐ Not at all (1)
- ☐ A little (2)
- ☐ Somewhat (3)
- ☐ Moderately (4)
- ☐ Very useful (5)
- ☐ *Don't know* (6)

Display This Question:

If How useful to your work would it be to know the financial costs of victim services? A little

*Or How useful to your work would it be to know the financial costs of victim services?
Somewhat*

*Or How useful to your work would it be to know the financial costs of victim services?
Moderately*

*Or How useful to your work would it be to know the financial costs of victim services? Very
useful*

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Q32 In what ways would the financial costs of victim services be useful to your work? *Please check all that apply.*

- ☐ Advocate for increased resources (1)
- ☐ Reference for grant applications (2)
- ☐ Inform public (3)
- ☐ Determine programming (4)
- ☐ Determine need and allocate resources (5)
- ☐ Inform public policy regarding victim services (6)
- ☐ Other, please specify: (7) _____
- ☐ *Don't know* (8)

Q33 In addition to quantifying the costs of victim services in dollar terms, how else might people measure victim services' costs?

Q34 Please share any concerns or comments you have about quantifying the services to victims in dollar terms.

End of Block: Cost of Victim Services

Estimating the Financial Cost of Victimization Volume 1

Appendix 4: Survivor Survey Organizations

Volume I

Appendix 4: Survivor Survey Organizations

Agency/Organization	City	State
District Attorney's Office, 34th Judicial District of Texas	El Paso	TX
Oregon Department of Justice - Victim Services Division	Salem	OR
Office of the Los Angeles City Attorney	Los Angeles	CA
Texas Legal Services Center	Austin	TX
FAIR Girls	Washington	DC
HopeWorks of Howard County	Columbia	MD
Deaf Abused Women's Network	Washington	DC
Palm Beach County Victim Services, Certified Rape Crisis Center	Palm Beach	FL
Wendt Center	Washington	DC
Anti-Violence Partnership of Philadelphia	Philadelphia	PA
The Medical University of South Carolina	Charleston	SC
Baltimore Child Abuse Center	Baltimore	MD
Frontline Service	Cleveland	OH
Chicago Survivors	Chicago	IL
Office of the Bronx District Attorney Division of Victim Services	Bronx	NY
Palm Beach County Division of Victim Services	Palm Beach	FL
Rape, Abuse & Incest National Network (RAINN)	Washington	DC
Pennsylvania Victim Group	Harrisburg	PA
VictimConnect Hotline	Washington	DC
North Carolina Coalition Against Sexual Assault	Raleigh	NC
West Virginia Coalition Against Domestic Violence	Charleston	WV

Prevalence and Incidence of Victimization Literature Review

Appendix 5: Selected Victimization Data Sources

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Estimating the Financial Cost of Victimization

Literature Review: Prevalence and Incidence of Victimization

Appendix 5: Selected Victimization Data Sources⁷⁹

Data Source	Description	Coverage	Strengths	Limitations
National Crime Victimization Survey (NCVS)	National, large-scale survey. Households interviewed every six months for seven intervals.	Violent crime, property crime, with supplements for other crime types such as financial and school crime, among others.	Measures victimizations not reported to police annually. Includes sex crimes against both men and women, which UCR does not. Large, nationally representative sample. Captures in-depth detail about every incident identified by the respondent. Is being refined to better facilitate small-area estimates and rural victimization patterns. Illuminates the “dark figure of crime.”	Excludes homicide, victims under 12, and non-individual crimes such as white-collar. Homeless individuals, those living in congregate facilities, and others may also be missed. Respondents may not report victimizations they do not view as a crime. Omits crime victims under age 12. Series incidents often left out of victimization rate calculations, though work is being done on this.
State Victimization Surveys	Victimization surveys conducted via a variety of modalities *(telephone, in-person, etc.) at the state level.	Similar to NCVS, though crime types included and sampling methods can vary by state.	More precise state/local estimates possible due to ability to customize for local circumstances, but still modeled often at least partially on NCVS, facilitating some comparability.	Crime types included and sampling methods can vary by state. Published reports are inconsistent across states in level of explicitness about methods.

⁷⁹ Key sources of information, especially meta-analyses, used to build this table are given at the end of this Appendix.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
Unified Crime Reporting: Summary Reporting System (SRS)	Voluntary report crime data from local law enforcement agencies to FBI. Summary counts.	National. Offenses grouped by seriousness into Parts I and II offenses, only the most serious offense reported for each incident. While some changes have occurred over the years, general classifications unchanged since 1929. Supplemental data collections include Supplementary Homicide Reports (SHRs) and several others.	States are used to reporting SRS statistics. Gives good overall picture of crime in the U.S. SHRs capture incident level, victim-offender data. Covers most states.	Crimes reported have not changed much since 1929, while the number and nature of different criminal offenses have. Voluntary nature of reporting means that not all 18,000+ U.S. law enforcement agencies report, or do not report every month. Statistics limited to only incidents reported to police. Capturing only the most serious incidents misses other victimizations that may have also occurred (i.e. a homicide that also involved domestic violence). Can be biased based on what victimizations are both reported and recorded. Definitions of some crimes, such as sexual violence-related crimes, often hew to a narrow statutory definition and miss many harms. Does not include sex crimes against men.
Unified Crime Reporting: National Incident Based Reporting System (NIBRS)	Voluntary report crime data from local law enforcement agencies to FBI. Details on each incident.	National. Began in 1980s. Captures up to 10 offenses per incident, victim and offender characteristics, wider range of crime types.	Far more detail than SRS. About 1/3 of law enforcement agencies, representing 96 million Americans, had shifted to NIBRS reporting by 2015. Captures incident level, victim-offender data.	Still represents undercounts, since only incidents reported to police are included. Slow uptake – agencies slow to shift from SRS. Same issues with voluntary reporting as SRS. Most large cities in the U.S. still report SRS. Can be biased based on what

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
				victimizations are both reported and recorded. Definitions of some crimes, such as sexual violence-related crimes, often hew to a narrow statutory definition and miss many harms. Does not include sex crimes against men. Does not include sex crimes against men.
National Hospital Ambulatory Medical Care Survey (NHAMCS)	National sample of Emergency Departments and outpatient departments of non-institutional and short stay hospitals conducted by the Centers for Disease Control and Prevention (CDC).	Victimizations involving physical harm requiring medical attention, such as violent crimes, sex crimes, and drug crimes.	Incident-based. Conducted annually. Provides good estimates for types of violent victimizations that most often require hospital treatment. Coded using the ICD-9-CM coding system, making it compatible with other CDC datasets.	Leaves out Veterans Affairs hospitals, federal, and military cases. Misses those who see private physicians or seek no care at all. Limits on data collection make it difficult to get an accurate sense of the range of victimizations treated.
National Ambulatory and Medical Care Survey (NACMS)	National survey of a sample of private care physicians conducted by the CDC.	Victimizations involving physical harm requiring medical attention, such as violent crimes, sex crimes, and drug crimes.	Incident-based. Conducted annually. Provides good estimates for types of violent victimizations that most often require medical treatment. Coded using the ICD-9-CM coding system, making it compatible with other CDC datasets.	Misses those who seek care only in hospitals or no care at all. Captures only a sample of physicians. Limits on data collection make it difficult to get an accurate sense of the range of victimizations treated.
National Hospital Discharge Survey (NHDS)	Comprehensive surveillance data collection across systems on deaths in each locale.	Fatalities.	Incident-based. Triangulates multiple data sources, including police data, court data, the restraining order	Leaves out non-fatalities. Limits on data collection make it difficult to get an accurate sense of the range of victimizations treated.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
			registry, and medical examiner records.	
National Violent Death Reporting System (NVDRS)	Violent death data from 17 states originally, but has expanded to 40 states as of 2016; data will be available from all 50 states, D.C., and Puerto Rico as of 2018.	Violent fatalities, including suicides and child abuse cases, broken down by demographics.	Incident-based. Triangulates multiple administrative and surveillance data sources, uses standardized query elements.	Misses non-fatalities, not nationally representative.
Youth Risk Behavior Surveillance System (YRBSS) (<i>See Masho et al. 2016</i>)	National survey of high school students grades 9-12.	Physical fighting, dating violence, sexual violence, weapon possession, threatened with a weapon.	Comprehensive survey on key health issues affecting youth, incident based, detailed, generalizable (47 states), several demographic and lifestyle control variables, summary prevalence and trends at national, state, local levels.	Missing three states, level of participation may vary by state, students who miss the day of the survey may be higher risk youth.
Mortality Data	Death data from vital statistics.	Includes homicide and suicides along with causes.	Spatial and demographic analysis possible. Allows examination of all causes of death. Allows small area analysis. Can be linked to other datasets.	Only includes fatalities. Coding cause of death can be difficult. Limited to demographic control variables. Lacks contextual information.
Discipline Incidence Data	Disciplinary incidents and remedial actions recorded by schools and Departments of Education.	Rates of violent incidents including fighting, weapons possession, homicide, rape, threats, gang activity, disorderly conduct, and substance possessions. Student demographics and school characteristics.	Allows understanding of violence in schools. Can be linked to other datasets. Some neighborhood-level data can be used for spatial analysis.	Dropout and frequently truant students may not be represented, inconsistent reporting and definitions of data elements, may be affected by changes in reporting practices, lacks contextual information.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
Juvenile Justice Services Data	Individual level data on individuals referred to the juvenile justice system.	Number and proportion of youth referred for violence related activities including: fighting, weapons possession, homicide, rape, threats, gang activity, disorderly conduct, and substance possession.	Allows close examination of high-risk youth, can be linked with other datasets, some neighborhood level data available for spatial analysis.	Limited to youth referred into the juvenile justice system, inconsistent reporting and definitions of data elements may bias estimates and trends.
Emergency Department (ED Data)	Individual level data on patients treated at the ED for violence-related injuries.	Rates of assault (including child abuse, homicide, domestic violence, firearm injury, etc.), and suicide.	Commonly used data source, can be linked with other databases, allows examination of neighborhood factors for spatial analysis.	Not representative of all forms of violence: focuses on violence resulting in serious or fatal injury. Misses fatal injuries of those who die at the scene and are never taken to the ED, as well as injuries not serious enough to seek medical attention or victims who are prevented from seeking emergency attention.
Ambulance Data	Violence-related traumatic incidents that required ambulance pickup.	Rates of assault, firearm-related injuries, rape, fighting, stabbing or penetrating injuries.	Can be used to evaluate community efforts, estimate rates of violence at the community level, allows spatial analysis on locations and examination of demographic characteristics.	Omits events that do not require immediate medical attention, based on patient report and initial exam which can affect accuracy, inconsistent definitions and data collections between ambulance agencies.
Chief Medical Examiner (CME) Data	Medical examiner data on violence-related mortality.	Homicide, including child abuse fatalities, suicide, and firearm-related mortality.	Accurate, in-depth data on violence, can be linked to other databases, accurate, good for spatial analysis and case studies.	Limited to fatalities, data not available timely unless chart reviews are conducted locally.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
National Vital Statistics Program (NVSS)	Death certificates.	Homicides and suicides.	Accurate, can be linked to other databases, accurate, good for spatial analysis.	Limited to fatalities.
National Survey of Children Exposed to Violence (NatSCEV)	Sponsored by the Office of Juvenile Justice and Delinquency Programs and the Centers for Disease Control and Prevention.	Conventional crime, child maltreatment, victimization by peers and siblings, sexual victimization, witnessing and indirect victimization, school violence and threats, and internet victimization for children ages 17 and younger.	Large sample, with care taken to oversample for certain populations to enable subgroup analysis.	It is not conducted annually, and individuals are interviewed once rather than re-interviewed as in the NCVS.
National Child Abuse and Neglect Data System (NCANDS)	Child Protective Services (CPS) reports.	Child abuse, child sexual abuse, and child neglect.	Annual data published by the U.S. Department of Health and Human Services. All 50 states participate.	All incidents involve a caretaker that was reported to CPS. Incidents committed by non-caretakers may not be included. Abuse reported to law enforcement and not CPS would also not be included.
National Intimate Partner and Sexual Violence Survey (NISVS)	Regular, national large-scale telephone (landline and cell phone) survey of adult women and men that began in 2010; successor to the National Violence Against Women Survey (NVAWS) conducted in the 1990s.	Intimate partner violence, sexual violence, psychological aggression, and stalking; a comprehensive list of violent behaviors is covered.	Public health approach covering many types of violence not covered before in surveys. Estimates rates of victimization among adult women, men, and LGBT individuals. Includes non-institutionalized English and/or Spanish speaking persons. Includes a graduated, informed-consent approach and a safety protocol in case interviewee's abuser enters	Relies on self-report. Estimate generalizability was extrapolated based on census data with sensitivity testing for reliability; not all estimates were shown to be reliable during these tests.

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Data Source	Description	Coverage	Strengths	Limitations
			during the interview. Behavior- oriented questions elicited higher disclosure rates and enabled consistency in data reported across states. Collected limited information about perpetrators. Captures lifetime victimization, victimizations in the last 12 months, and information about adverse health impacts of victimization. Enables national and cross-state comparisons.	
National Electronic Injury Surveillance System—All Injury Program (NEISS-AIP)	ED data on nonfatal injuries treated.	Violence-related injuries treated in EDs.	Captures hospital data on injuries that did not lead to fatality.	Limited to those who sought treatment.
National Public Survey on White Collar Crime	Administered in 1999, 2005, and 2010.	Whitecollar crime: crime against businesses or committed by businesses (fraud, embezzlement, shoddy business practices that lead to products which injure or kill people, environmental crime, insider trading, etc.)	Tried to capture this expensive set of crime types that is often omitted from traditional victimization surveys.	Does not appear to have been conducted since 2010; may not capture incidents or ongoing victimizations that were reported to regulatory agencies instead. Can be difficult to analyze incidents at the individual victim level.
Violation Tracker	Database run by The Corporate Research Project of over 300,000 corporate violations since 2000 that have been subject to civil and criminal prosecution by over 40 government agencies and	White-collar and financial crime. Covers banking, consumer protection, false claims, environmental, wage and hour, unfair labor practice, health, safety, employment discrimination,	Searchable by industry, offense type, and several other criteria	Limited to crimes committed by businesses. Does not capture crimes committed by government, or crimes where businesses or government are the victims.

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
	the U.S. Department of Justice	price-fixing, bribery, and other cases.		
Suspicious Activity Reports (SARs)	Collected by the Financial Crimes Enforcement Network (FinCEN), these capture data on large, cross border transfers of money.	Money laundering, organized crime, terrorism.	Captures financial data on activities that may harm individuals, states, governments, or international firms. Captures patterns of illicit financial activity into and out of the United States. Adapting to new technologies used to transfer money such as bitcoin, TOR, or other dark-web tools.	Not all large transactions are criminal. May not capture transactions that occur outside of the banking system, some dark web transactions, cash that is well hidden during transport, or money that is laundered through the purchase of legitimate property overseas. Can be difficult to analyze incidents at the individual victim level.
Global Terrorism Database (GTD)	Opensource database run by the Study of Terrorism and Responses to Terrorism (START) center at University of Maryland.	Terrorist incidents throughout the United States and globally.	Good for spatial analysis, basic victimization patterns, trend analysis, and some demographic information.	Relies on open-source media reports, though several are triangulated for each incident. Can be difficult to analyze incidents at the individual victim level.
Consumer Sentinel Network	Database of financial fraud complaints maintained by the Federal Trade Commission (FTC).	Financial fraud.	Collects detailed complaint information about nature of complaint, amount of complaint, and resolution. Good for trend analysis.	Limited to complaints reported to the FTC. Can be difficult to analyze incidents at the individual victim level if multiple victims were involved.
Environmental Protection Agency (EPA) Criminal complaints	Complaints of environmental crime prosecuted in criminal court.	Environmental crime.	Records incidents of environmental crime along with prosecution outcomes.	Few cases prosecuted because few identify a specific individual victim, difficulty tracing individual or community harms to the environmental cause, can be difficult to analyze incidents

ESTIMATING THE FINANCIAL COSTS OF CRIME VICTIMIZATION

Data Source	Description	Coverage	Strengths	Limitations
				at the individual victim level, many incidents never reported.
Campus Security Data	Data from campus police departments reported to the U.S. Department of Education.	Crimes on campus.	Captures crimes occurring on college campuses.	This data may also be reported through UCR; important to avoid double counting. Not consistently reported to the Department of Education.
Internet Crime Complaint Center (IC3 or ICC3)	Central repository of reports and data collected by the FBI on internet crime complaints.	Cybercrime.	Summary statistics of cybercrime reports broken down by states and crime types, along with annual threats, published annually. Large sample size may lend itself to sound estimates.	Publicly available data is not at the incident level. Only consists of complaints reported to the FBI, leading to potential bias.

Appendix 1: Key References

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