

Chapter 1

Introduction

Introduction and Definitions

A person killing another is one of the most serious of all social interactions. The interest in killings has been a major focus of many disciplines, including law, politics, entertainment, criminal justice, criminology, and public health. The passionate and often controversial discourse on this topic often strays from objective scientific evidence to realms of firmly held beliefs and myths. To better understand such a misidentified yet important topic, it is best to start with a review of the data sources that provide a starting point for rigorous scientific discussion. This work will focus on describing American data sources. International data sources are discussed as well, but not those of individual other countries, only worldwide ones. Data sources that collect for non-national areas within the United States (such specific cities) are not covered. Tables are presented to illustrate some examples of the data the sources provide. The focus of the book is not to discuss the meaning of the data, but rather the availability of the information each source provides.

The focus of this work is to describe the data sources that detail interpersonal individual-level killings. These are primarily criminal killings, although some non-criminal events (such as self-defense) are covered by some of the data sources discussed. Self-directed fatal violence, suicide, is not covered. Collective fatal violence, such as warfare related deaths, is also excluded, although a brief discussion of an international source that provides data on deaths from terrorism is included in Chap. 5.

The generic definitions of the topic covered by these data sources include:

Homicide: The killing of a person by another person. There can be multiple decedents and killers, but as noted above, collective events such as warfare are not covered in this work. Homicides may be criminal or not; intentional or accidental; and may cover deaths that occur as a result of injuries sustained from encounters that precede death by long stretches of time.

Justifiable homicide: This is a killing in self-defense; by police/military in the line of duty; or a state-sanctioned execution.

Murder: A murder is a criminal homicide that incorporates a measure of intent.

There are other categories of killings covered by some of the data sources, but these are the primary ones.

Resulting from the widespread interest in interpersonal fatal violence, there are more sources of data available and of better quality than for any other crime. This is not to say that they are flawless data sources, far from it in some cases. But due to the serious nature of homicide, and the almost certain physical manifestation that it occurred (i.e., there is a body), much effort is made to have quality data estimates. As such, there are multiple high-quality sources available to the researcher. Understanding where the numbers that are used to create the discussions, tables, charts, and graphs about homicide come from will greatly expand the understanding of what those discussions, tables, charts, and graphs really mean.

Rates

Before specific data sources can be described, a very useful analytical tool must be presented (see Anderson & Rosenberg, 1998; Elandt-Johnson, 1975). If the consumers of homicide data take only the numbers of events into account, they are falling into a common and regrettable mistake. Numbers of events are only a part of the picture. If one were to take two cities, say a crude estimation of New York City in 1990 and a crude estimation of Washington, DC in 1990, which city appears to be more dangerous? New York City had about 2250 (this is a crude rounded estimation for discussion, not an accurate data point) murders and Washington, DC had roughly 475. So it appears that New York was almost five times as murderous as Washington, DC. Not quite. New York had a much larger population. It would be expected to have more murders with more people available. Again, using smoothed numbers for ease of illustration, let's say New York had a population of 7.3 million people, and Washington, DC had 600,000. Clearly New York was much larger than Washington, DC (about 12 times larger). So which city was more dangerous? To make that determination, we need to calculate a *rate*. Rates are an extremely powerful device for comparing event risks across many attributes, and will be used extensively in useful discussions about homicide, so the method of calculation will be shown soon. Again, this is a very important and useful tool, it allows for the comparison of areas with different-sized populations (such as New York City to Washington, DC; Florida to Maryland; the US to Canada; etc.), or across time (a city in 2014 as compared to 1990 as compared to 1980, and so on), across demographic groups (males compared to females; blacks compared to whites; males above 65 to females 19–24; etc.), or across any number of situations. To only present the numbers of events in these conditions is extremely misleading, and is flat out incorrect given the wide range of population differences.

Numerically speaking, murders are rare events. Because of this, the rates calculated are most often given per 100,000 population, although for some categories that are even more rare (such as children killed during their first year of life, see Table 3.4), a rate per 100,000 is complex and difficult to read, so it would be presented per million. But overall, the standard format for homicide rates is per 100,000. The reason for this will be made clearer when the numerical calculations are shown later.

To calculate a rate, three pieces of information are needed:

1. The number of events
2. The population at risk
3. The standardizing factor

The number of events will be the number of criminal homicides that occur for the time, place, and population that we are interested in (such as all of New York City in 1990). The population at risk is the population of concern, not the total population. For the example we are using it is the total population of New York City in 1990, not the entire United States, or the world. It could be the population of males above 15 in a certain neighborhood; it just depends on what data point you are interested in. And the standardizing factor is 100,000. The formula is:

$$\frac{\text{Number of events}}{\text{Population at risk}} \times \text{Standardizing factor}$$

So if we put in our data from above:

New York City

$$\frac{2,250}{7,300,000} \times 100,000 = .0003082 \times 100,000$$

What does that mean? It means that each person in New York City (each of the 7.3 million people) has a .0003082 of a chance of being a victim of a criminal homicide that year. That is very difficult to interpret in a meaningful way, hence the multiplication by the standardizing factor, 100,000.

$$.0003082 \times 100,000 = 30.82$$

This is much easier to interpret. It means that for every 100,000 residents of New York City in 1990, just about 31 of them would be killed.

And now let's plug in the numbers for the Washington DC example above:

$$\frac{475}{600,000} \times 100,000 = 79.16$$

Or, out of 100,000 residents of Washington, DC, about 79 would be killed in 1990. So, at first glance of the numbers of murders it appears that residents of New York City are 12 times more likely to be killed (2250 vs. 475), but when population sizes are taken into consideration, residents of Washington DC are actually 2.5 times more likely to be killed (79.1 vs. 30.82).

It must be noted that there are two ways to increase a rate: increase the numerator (more murders) or decrease the denominator (fewer population at risk). Some of the largest increases in murder rates are actually due to populations decreasing (middle-class exodus from inner cities, such as what happened in Washington, DC in the late 1980s–early 1990s fueled the increase in the murder rate as much as the increase in the numbers of murders did).

The final issue of rates is a bit esoteric. The risk of death by specific causes will change with the changing demographic makeup of a population (Anderson & Rosenberg, 1998). For example, if a population has a lot of people over 75 years of age, there would be an increased risk within the population of death from cardiac disease and certain cancers. The risk amount is a function of the population characteristics. If a population has a huge increase in births, the number of fatalities from SIDS would be expected to rise as well. It would be a mistake to attribute the rise in fatalities to anything other than the changes in the age distribution in the population. The risk of dying from murder is not evenly distributed within a population. Following the previous example, if there were a large baby boom, then 16–24 years later, there would be an expected increase in the numbers of murders, simply as a function of the increased number of at-risk people. None of the sources of data, save one (the CDC data) take the impact of the changes in age distributions on the homicide rates into account. This will be discussed in Chap. 3.

References

- Anderson, R. N., & Rosenberg, H. M. (1998). Age standardization of death rates: Implementation of the year 2000 standard. *National Vital Statistics Reports*, 47(3), 1–17.
- Elandt-Johnson, R. C. (1975). Definition of rates: Some remarks on their use and misuse. *American Journal of Epidemiology*, 102, 267–271.

Homicide Data Sources

An Interdisciplinary Overview for Researchers

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