

INTRODUCTION

SINCE THE END OF WORLD WAR II, there have been numerous interstate and intrastate conflicts resulting in millions of deaths and billions of dollars' worth of destruction. Yet scholars have paid very little attention to the consequences of conflict, in particular to its social consequences. The World Health Organization's (WHO) 2002 *World Report on Violence and Health* revealed that 1.6 million people die each year due to violence, including collective violence such as conflicts within or between states, and a large number of the people who lose their lives due to militarized conflict are noncombatants. The 25 largest instances of conflict in the twentieth century led to the deaths of approximately 191 million people, and 60 percent of those fatalities occurred among people who were not engaged in fighting (World Health Organization 2002a). One of the most significant effects of war is the toll it takes on the health and well-being of a population beyond the immediate casualties of combat. In this book, I assess the costs of armed conflict by explaining the relationship between armed conflict and public health.

War leads to direct casualties and deaths during combat; violent conflict also results in widespread death and disability among the civilian populations that are affected either as collateral damage or as deliberate targets. For instance, Russia lost 10.1 percent of its population during World War II,

Korea lost 10 percent of its population during the Korean War, and Vietnam lost 13 percent of its population during the Vietnam War (Garfield and Neugut 1997). In addition to direct deaths and injuries caused by combat among the military and civilian populations, conflict results in conditions that contribute to the spread of disease and retardation of health care systems, such as the influenza outbreak during World War I, which killed more people than combat-related deaths. The disease and disability during and after armed conflict is often accompanied by states' inability to meet the public health needs of their populations if their health care infrastructure has been damaged or destroyed. Moreover, wars are associated with the creation of suboptimal health conditions that result in hazards such as famine, epidemics, weapons-induced pollution, lack of clean water, poor sanitation, and general indigence. Consequently, the population is exposed to new health threats without access to proper health care.

Studying the relationship between conflict and health is particularly important in light of the nature of conflicts in the current international system. Most of the recent and ongoing conflicts in the world are civil or intrastate wars that lead to large-scale devastation of a state's infrastructure since all the fighting occurs on the territory of one state. This amplifies the conditions that deteriorate the health of societies. Civil conflict is also highly likely to result in displacement of people as refugees or internally displaced persons, exposing communities to health menaces. The crisis in Liberia effectively demonstrates the suffering civil war can inflict on a population. In June 2003, as the Liberian capital of Monrovia was engulfed in violence, the city experienced an outbreak of cholera, and within three months, 6,353 cases of cholera had been reported (World Health Organization 2003). The civil war made it impossible for either Liberian authorities or international agencies to carry out the extensive process of water chlorination that could halt further spread of the disease. Moreover, afflicted people were unable to access medical facilities due to the security situation. In September 2003, the WHO reported that only 32 percent of the Liberian population had access to clean water, no more than 30 percent of the population had access to latrines, and there had been no regular garbage collection in Monrovia since 1996. The SKD Stadium, the largest camp for internally displaced

people in Monrovia, housed about 45,000 people who “cook and sleep in any sheltered spot they can find, in hallways and in tiny slots under the stadium seats,” with six nurses in the health center for 400 daily patients (World Health Organization 2003). After the civil war, the life expectancy in Liberia remains 41 years.

Examples of devastating effects of violent conflict on public health abound in recent decades. In the Sudan, prolonged conflict has exposed the population to diseases such as yellow fever, malnutrition, displacement of large groups, poverty, and famine. The Iraqi society experienced near destruction of their health care system, previously one of the best in the Middle East, during the first Gulf War. Public health in Iraq continued on a path of steady decline for a decade of international sanctions and internal repression, after which the general and health infrastructures were subjected to a second war. In 1993, Iraq’s water supply was estimated at 50 percent of prewar levels (Hoskins 1997) and war-related postwar civilian deaths numbered about 100,000 (Garfield and Neugut 1997). In 2006, approximately 2 million people were internally displaced in Iraq (United Nations High Commissioner for Refugees 2007).

For every interstate or civil war, populations of states suffer short-term and long-term effects on their health and well-being. To understand the real cost of violent conflict, it is necessary to take into account the *human* cost of war. Violent conflict can have economic, social, political, and environmental consequences; yet, while a large number of conflict studies focus on causes of conflict, the literature about the consequences of conflict—and in particular the health consequences—remains relatively scarce. While scholars have examined some aspects of the economic and political consequences of conflict, far less work has been done on the manner in which conflict undermines public health. The effects of conflict on a society continue long after the actual fighting has ceased, and understanding the social consequences of war is integral to estimating the true cost of conflict.

The effect of war on population well-being is closely associated with national and global security. The traditional approaches to studying security focus primarily on state-level factors. The idea of security is generally considered synonymous with protecting the territory and national interests

of a state from external aggression or unwelcome interference. Once a state is able to safeguard its military, territorial, and political interests from outside threats, it is perceived to have attained national security. Particularly during the Cold War era, realist notions of security dictated that foreign policy and state leaders remain unrelentingly occupied with the pursuit of military superiority. The emphasis of neorealist theory on states as the single most important entity in the international system led to the deprecation of the interests of sub-state actors. Entities without sovereignty did not warrant attention at the international level, and what occurred within the borders of a sovereign state was to be addressed at the domestic level. Only threats to the security and existence of states were considered detrimental to global security and thus worthy of international attention and action.

In stark contrast to this conventional perspective, the emerging notion of *human security* considers first and foremost the security of state populations; this perspective asserts that the factors that engender insecurity among the people living within states are not limited to perpetuation of the state. Instead, the security of people is inextricably bound up with their quality of life and, therefore, threats to their security include a range of social and economic issues beyond the territorial integrity of their states. Elements of human security include economic security, political security, access to food and health care, personal and community security, and environmental security (United Nations Development Programme 1994). The occurrence of violent international conflict can adversely affect any or all of these factors and amplify the insecurity of people in the affected state. However, the absence of militarized conflict does not guarantee the elimination of these threats to human security. In order to gain an adequate understanding of whether people—and not merely states—are secure, the various components of human security must be addressed rather than conflating the security of people with the security of their state. The shift from state security to human security is necessitated by the salience and the global nature of the issues that threaten the security of populations. Problems like environmental degradation and disease proliferation do not just threaten the security of people in a single state; these problems can easily reach global magnitude.

Although the literature on the concept of human security offers varying definitions of what constitutes the security of people, there is a clear agreement that health is an important component of security. Human security entails the ability of people to maintain a quality of life that does not fall below the level at which they feel secure. Adequate provision of public health is important in enabling people to achieve a secure quality of life and to be functional enough to maintain their lifestyle. It is the security of populations, rather than states, that makes the world secure. State security is important in that people cannot be secure if the existence of the states in which they live is threatened. However, students of security must go beyond state security to understand the true nature of human security. Violent conflict is accepted as a major threat to the security of states; it is also a formidable threat to the security of state populations. One way in which conflict decreases the security of people is by causing a decline in provision of public health. Since the health of a population is an integral component of the security of communities and individuals, studying the effect of conflict on health is an important contribution to the understanding of human security. And human security, due to its focus on the well-being of populations, is a better framework within which to assess international security than the traditional approach of viewing the security of states as the best indicator of global security.

Studying the relationship between conflict and public health is valuable for scholars, policy makers, practitioners, and the general population. Understanding this relationship adds to the scholarly literature about the consequences of conflict by focusing attention on its effects on public health. A rigorous social scientific exploration of this topic provides policy makers with relevant information for decisions regarding public health, including but not limited to allocation of resources for health purposes. Moreover, a wider knowledge base on this topic would enable health care workers and public health practitioners to develop a clearer understanding of a significant influence on the health of a society and, therefore, to better perform their duties.

The implications of this project have broad relevance due to the interconnectedness of the issues involved in the relationship between conflict

and health. The ideas of human security have already become an important force in foreign and domestic policy making. Canada, Japan, Norway, and a number of other states are members of the Human Security Network and are actively incorporating considerations of human security into their policy decisions. An understanding of the effect of war on health would inform the security policies of states as the costs of war become clearer. Just as the financial cost of waging war is taken into consideration before embarking on military action, the health cost—if properly understood—would also be a factor in the decision to go to war. Further, an emphasis on human security and health is likely to influence budgetary trade-offs between defense and social spending. In addition to policy makers at the national level, this study holds relevance for practitioners and international organizations in the realms of security, development, health, and human rights. Health care is closely related to broader issues of development and the effect of conflict on health calls for active participation by humanitarian agencies. Understanding how conflict affects public health serves two chief purposes in the policy/practice arena. First, it enables policy makers and practitioners in national governments and international governmental and nongovernmental organizations to formulate more effective strategies for dealing with humanitarian emergencies as well as long-term health issues, such as disabilities and preventive health care. Second, it illuminates a significant social cost of conflict, making violent conflict less attractive. The higher the projected cost of violent conflict, the more likely states and groups are to seek nonviolent means of conflict resolution. Most important, this study is relevant to the people whose security it addresses. An important element of human security is the empowerment of people to enhance their own security. Comprehending the costs of war influences the perception of war among populations and affects public opinion and decisions regarding political participation.

The academic audience for this study is also wide and diverse. The examination of the effect of conflict on health draws on, and contributes to, the fields of conflict processes, development, economics, and public health. The range of sociopolitical and economic factors involved in assessing the costs and consequences of war reflects the interconnectedness of various

academic disciplines in social scientific work. Conflict and security scholars maintain a profound interest in the causes and consequences of war; this study examines an important impact of conflict within a broader framework of security than has been employed in previous work. The close relationships among poverty, development, war, economics, and health extend the scope of this project to development economists and public health scholars. Studying the security of people rather than the security of states calls for an integrative approach in scholarship. Issues of military security of states could be delegated to scholars of war, but the broad and complex nature of human security warrants a multidisciplinary approach. Since this study is based in the human security framework and contributes to the understanding of human security, it holds relevance for scholars in any discipline that deals with issues that influence the quality of life of populations.

The impact of violent conflict on public health disrupts the lives of populations in the immediate and short term by causing death and destruction, and in the medium and long term due to the inability of communities to meet their possibly escalated health care needs. War results in large numbers of deaths among combatants as well as the civilian populations and destroys many aspects of community life that are necessary to meet the health care needs of people. The violence and devastation of war results in destruction of important elements of the infrastructure, as well as in diversion of scarce resources from social and health spending to military expenditures. As violence pervades the society, it becomes an accepted means of resolving issues and leads to domestic violence and increased crime (Levy and Sidel 1997). Hence violent conflict has serious and lasting effects on public health, and this book explores questions regarding the way in which these negative effects occur. Conflict adversely affects public health and the exploration of this relationship in this book makes theoretical and conceptual, as well as methodological, contributions to the disciplines of political science and public health. The question of how conflict affects public health holds interest for both scholars and policy makers, and this work is an attempt to offer a social scientific analysis of the issue.

The main argument in this book is that violent conflict has serious direct and indirect effects on the health of a society and that war undermines

the well-being of populations through a range of mechanisms. Militarized violence obviously has a negative effect on the well-being of a society due to death and injury; but war also results in indirect effects on health through decreased efficiency of health care systems, prevalent disabilities among the population, and the spread of disease. History reveals that more soldiers lose their lives due to infectious diseases than through direct armed conflict (Foege 1997). In this book, I explore the multiple dimensions of the war and health relationship and analyze the linkages among armed conflict, political and socioeconomic influences, societal capacities, and population well-being. Below I present an overview of the organization of the book.

As mentioned above, this study is motivated by the human security framework. In Chapter 2, I discuss the concept of human security and argue that this perspective offers a more appropriate approach to the evaluation of global security than the state-centric extant theoretical frameworks employed in the study of international security. I describe the guiding principles behind the concept of human security and propose it as a new paradigm for studying international politics. I discuss the broad and integrative nature of this concept, some definitional and epistemological issues that pose a challenge to social scientific studies of human security, and the implications of this approach for global security. I present health as a core component of human security and provide a discussion of the linkages among human security, war, and public health.

Building on the discussion of human security, I present my conceptual and theoretical framework for studying the relationship between war and public health in Chapter 3. I present a brief overview of the literature on the consequences of conflict and point out the need for more comprehensive analyses of the effect of violent conflict on population well-being. Although significant scholarly efforts have been made to study the effects of conflict on states' political institutions and economic factors, far less has been done to understand the social consequences of conflict and the manner in which war can undermine the health of populations. I outline the key determinants of societies' health achievement, discuss my expectations for the direct and indirect ways in which conflict affects health, and explain the hypotheses that are tested in the empirical analyses in subsequent chapters. The chief

influences on health examined in this book include violent international and internal conflict, general and health care infrastructure, economic resources, and forced migration.

Chapter 4 presents the first empirical analysis of the arguments made in Chapters 2 and 3. Specifically, it evaluates the effect of armed conflict on overall levels of health achievement in light of relevant political and economic factors. In this chapter, I address the questions of how levels of public health decline due to conflict in the short term and the long run, how national wealth affects health outputs, and how democracy is associated with population well-being. One important task at this stage is to appropriately define and measure public health. To this end, I rely heavily on the scholarship and methods of the discipline of public health. Most studies of population health use summary measures of public health that combine information on mortality and nonfatal health outcomes to express the health of a population as a single number, which includes inputs such as age-specific mortality and the epidemiology of nonfatal health outcomes. Murray et al. (2000) discuss these summary measures and claim that these measures are useful for comparing the health of different populations, comparing the health of the same population over time, and assessing the effects of nonfatal health outcomes on population health. I consult evaluations of summary health measures by public health scholars and choose Health-Adjusted Life Expectancy (HALE) as the most appropriate measure for the empirical analyses in this chapter. The statistical models demonstrate how conflict and other hypothesized influences affect overall health achievement in a universal sample of states from 1999 to 2002.

The summary measure of public health used in Chapter 4 is only available for the years 1999 to 2002. In Chapter 5, I extend the examination of the war-and-health relationship to a longer time period (from 1960 to 1999) using disaggregated measures of health achievement. These measures include male and female life expectancy, infant mortality rates, and fertility rates. I argue that conflict results in a deterioration of public health as measured by these indicators. Specifically, I expect that fertility rates and infant mortality rates to increase and life expectancies to decrease due to conflict, particularly as conflict duration increases. I also assess the effects of

democracy, national income, trade openness, and population size on health indicators, and I evaluate regional differences in the relationship between war and health.

In Chapter 6, I examine one of the most important indirect mechanisms through which war undermines the well-being of populations: the destruction of key elements of societal infrastructure. I argue that both general infrastructure (such as transportation and power) and health care infrastructure (including hospitals and clinical facilities) are integral to the provision of adequate health care. Violent conflict has a direct and negative effect on all aspects of infrastructure, which in turn leads to a decline in health outputs. The empirical analysis focuses on the indirect effect of conflict—through infrastructure—on life expectancy, infant mortality, and fertility rates for the period from 1960 to 1999; the findings demonstrate strong linkages among war, infrastructure, and health.

I assess the relationship between the economic effect of war and health in Chapter 7. Here I examine the question of how the economic consequences of conflict affect public health and how resource allocation decisions during and after conflict have a detrimental effect on public health through budgetary trade-offs. States that become embroiled in conflict are often compelled to divert resources away from health expenditures (Mintz 1989) to meet the heightened needs for defense spending. War often results in economic decline and a decrease in overall resources available to a state, making it even more likely that fewer resources would be allocated to public health (Ward and Davis 1992). Discerning the effect of budgetary trade-offs on public health is crucial in evaluating the relationship between violence and health since violence can cause short- and long-term economic issues. I analyze empirically the relationships among war, national income, government spending, and public health for the period from 1970 to 2000; the analysis yields strong evidence for a negative effect of war on public health through economic decline and resource diversion.

Wars and violent conflicts often result in the generation of large refugee flows, and Chapter 8 explores the effect of forced migration on health achievement. Most of the direct and indirect effects of war on public health occur within the states in which the fighting takes place. The negative effects

of refugee flows on health, however, are felt in the states to which these groups migrate. A large influx of refugees can lead to significant strains on a society's resources—including the health care system—and may, therefore, decrease a state's ability to meet the public health needs of its population. I argue that states that host large numbers of refugees will experience a decline in their health achievement, and I evaluate the linkages among war, forced migration, and health outputs for the period from 1965 to 1995.

Chapter 9 concludes the book with a discussion of the implications of my analyses of the relationship between war and health. I reiterate the importance of human security as a framework for understanding global security, the significance of health as an international issue, and the role of violent conflict as a determinant of national public health levels. I also discuss the importance of global involvement in conflict prevention and offer some future directions for research on the effect of violent conflict on health.