THE EFFECT OF WAR ON CHILDREN

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Abstract—The objective of this paper is to provide an overview of the effects of war on children during the 20th century. It is argued that wars have both direct and indirect effects on the population. It also is noted that wars have changed from being "conventional" to being of "low intensity." Under these latter circumstances civilians, including children, as well as the infrastructure of the society become targets whereas in the past, the targets were usually only military ones. The effects of the strategy used in "low intensity" conflicts is the disruption of the medical, social, educational, and public services of a country and the terrorization of the population. Under these circumstances children suffer inordinately. Their homes are destroyed, their families disrupted, and their chances of becoming mature productive members of society are compromised.

Key Words—Children, Conventional war, Low-intensity war, Refugees. Effects of war.

INTRODUCTION

"WAR IS NOT good for children and other living things," was often heard during the 1960s, yet man has been committing violence and waging war against his fellow man for millennia and continues in 1996 as evidenced by the ongoing conflicts in Europe and Africa. However, the character of war has changed. In ancient times, it was fought with stones and clubs and then advanced to spears and bows and arrows. We then "progressed" to guns and on to bombs, mines, and other armaments that enabled us not only to kill other combatants but also to wreak havoc on civilians and the environment (Dudley, Knight, McNeur, & Rosengarten, 1968). Man has finally achieved, with the development of nuclear weapons, the capacity to destroy entire populations and with even more advanced technology to "surgically" deliver devastating firepower to very specific targets, as was demonstrated during the Gulf War in 1990.

What are the effects of war? Human casualties are the most immediate effect of armed conflict. Prior to the 20th century, the major casualties were soldiers who died both from war injuries and infection. If one examines the average annual number of deaths/million population from wars in the past, it ranges from 19.0 in the 17th century to 10.8 in the 19th century. This increases drastically in the 20th century to 183.2 deaths/million (Garfield & Neugot, 1991) with a significant increase in deaths among the civilian population. In World War I, 19% of the deaths occurred among civilians. During the Spanish Civil War, World War II, and the Korean and Vietnam Wars, 50%, 48%, 34%, and 48% of the deaths respectively, occurred among civilians (Sivard, 1985). In the 1980s, 85% of war deaths were civilians (Sivard, 1987).

However, it can be argued that the longterm effects of war are probably more devastating than the immediate effects. This is particularly true for children. Sidel (1987) points out that in 1985, over 940 billion dollars were spent world-wide on armaments. He noted that it would...
cost only 1 hour of the world arms spending to eradicate smallpox, that the annual budget of the World Health Organization costs about 3 hours of arms spending, and that the cost to immunize the world’s children against common infectious diseases would cost less than one day’s expenditures on arms. One year’s spending on Star Wars research could provide an elementary school education for 1.4 million Latin American children and the cost of one Trident submarine could fund a 5-year program for universal immunization against six major deadly diseases. These figures do not even consider some of the other sequela of war such as the effect of refugees on already stressed host countries, destroyed health facilities and schools, malnutrition, increased infant mortality and childhood morbidity, and the disruption of families.

This article will discuss the physical effects of war and political violence on children. These effects can be divided into two categories: direct effects, that is the mortality and morbidity associated with armed conflict, and indirect effects which include what occur as a consequence of the physical conflict; the disruption of health care and education with resulting infection, malnutrition and the displacement of families. This paper will review these issues from a historical perspective starting with conflicts during the early part of this century and ending with the 1990 Gulf War.

**World War II**

Prior to World War I, there were virtually no meaningful data on civilian war casualties. Sivard (1985) reported that during the First World War, over 10 million noncombatants died. During World War II, 33 million civilians died but the number of children are not specifically identified (Sivard, 1986). However, there are data describing the indirect effects of World War II on children in three different settings: Leningrad, Malta, and Holland. Antonov (1947) described the effect of the German siege of Leningrad from August 1941 to January 1943. As a result of the siege which included incessant bombing, homes were unheated, there was no transportation, and food was insufficient. Drawing on the records from the Department for the Newborn of the Leningrad State Pediatric Institute, Antonov found that during 1942 there were a total of 468 live births, 166 (35.5%) of which were premature. There were 25 stillbirths, 22 (7.3%) neonatal deaths, and 39% of the infants born prematurely died. During the first half of 1942, there were a total of 414 births whereas in the second half of the year, the number of births fell dramatically to only 79. This was probably the result of inadequate maternal nutrition which lead to amenorrhea and infertility among many Leningrad women.

Antonov also reported that there was a fall in the average birth weight during 1942 and that children born in late 1941 and early 1942 had weight loss in the perinatal period which lasted for 6 days instead of the usual 3 days. The infants were described as being lethargic, as sucking poorly, and as having difficulty maintaining their temperature. Among the factors Antonov suggested as contributing to poor weight was the decrease in the quantity of breast milk, the decreased duration of lactation, inadequate heat in the pediatric institute and the stress of living under the siege. During 1942, 18.6% of the infants died in the neonatal period: 7.3% of term infants and 39% of preterm infants succumbed. These deaths were associated with scleredema, pneumonia, intracranial hemorrhage, prematurity, and congenital debility.

Turning now to the Maltese Islands, Savona-Ventura (1990) described the reproductive patterns on Malta and Gozo, during World War II. Although the islands were not invaded, they nevertheless sustained heavy bombing from June 1940 until November 1942. As a result food, water, soap, and fuel had to be rationed.

During the war, the birth rate on both islands fell markedly. In 1940, the birth rate on both islands was about 32.53/1,000 people. In 1941, the birth rate on Malta fell to 27.39/1,000
and on Gozo to 25.02/1,000 and continued to fall in 1942. This birth rate pattern was attributed to the disruption in family life, such as the need for communal living and by the need for families to live in shelters to avoid the bombings as well as poor nutrition. Also, male conscription may have contributed to the lowered birthrate. Although the marriage rate was higher during the war than during the prewar years, there seemed to have been a reluctance to conceive during the war. The birth rate increased with the cessation of hostilities.

Perinatal and infant mortality were also significantly affected by the hostilities. Prior to the war, there had been a gradual decline in infant mortality, associated with the improved organization of health care on the islands which had led to the prevention and management of diarrheal diseases, a major cause of death. Also, the government provided support for needy mothers and to post-partum mothers which, along with home nursing visits, lead to a decrease in neonatal mortality. Despite these prewar measures, diarrheal diseases increased with the onset of the war, as did the prematurity rate and neonatal mortality. With the cessation of hostilities, the neonatal mortality rate fell, as did deaths from infectious diseases. These positive effects were the direct result of post-war improvements in the standard of living and an increase in marriages and in births.

Stein, Susser, Saenger, and Marolla (1975) addressed another aspect of war when they asked, "Does extreme starvation affect the mental competence of adults?" Their hypothesis was that war leads to famine and societal disorganization which affects brain development and subsequently results in decreased mental competence. Because of the organization of the Dutch health system in the 1930s and 1940s, the authors were able to gather extensive data on the degree of malnutrition that existed during the Dutch hunger winter of 1944–1945. Although they did not demonstrate any cognitive impairment among the young adult men who survived that famine, they did uncover some striking effects on infants and young children born and living during the year of the famine.

They found that despite rationing, particularly in the western part of the country and in urban settings, some groups had less food than others. This was reflected in increased numbers of deaths from malnutrition among adults in the lower classes. Among women of the laboring classes and older multiparous women, there was evidence for ovarian dysfunction demonstrated by increased menstrual irregularities, retarded menarche, and amenorrhea and decreased fertility. Among men, there was a decrease in libido, potency and sexual activity. These data suggest that the link between fertility and famine was both psychological and physiological as well as economic.

The effects of the famine on the fetus during the first to third trimesters included an increase in stillbirths, probably associated with maternal undernutrition, as well as infection, and an increase in abnormalities of the central nervous system. There was also an increase in retarded placental growth, low birth weight, prematurity, and intrauterine growth retardation which were associated with increased neonatal mortality. These disturbances were also associated with an increase in the death rate up to 90 days after delivery and were usually linked to gastrointestinal and respiratory infections.

In the introduction to this paper, it was noted that there were numerous civilian casualties during World War II, many of whom were undoubtedly children. The studies just presented demonstrate the indirect effects of war: famine, disruption of the social fabric, inadequate health care and services, decreased fertility, and increased perinatal morbidity and mortality.

**Post-World War II Conflicts**

Since World War II, there have been numerous regional conflicts, some of which have involved all-out war, such as the Korean and Vietnam Wars, while others have involved internal conflicts such as those in Nicaragua and Eritrea.
Southeast Asia

The war in Vietnam serves as a prototype of the direct and indirect effects on civilians. Vastyan (1971) reported on civilian war casualties and medical care in South Vietnam. He noted that the death rate for combatants in Vietnam had fallen since World War II from 4.8% to 1%. However, the number of civilian casualties increased. Before 1967, there were no reliable statistics regarding civilian casualties. Between 1967 and 1969, with improved data collection, it was reported that there were approximately one million civilian casualties, 100,000–300,000 of whom were killed or wounded each year. Of these, an estimated 25% were killed outright or died seeking medical care.

Dudley and colleagues (1968) reported on the civilian battle casualties treated in the Bien Hoa Provincial Hospital from January 1966 to March 1967. One hundred and thirty-seven civilians underwent surgical procedures to treat war inflicted injuries, 46% of whom were between the ages of 0 and 19 years. Twelve percent of these casualties were between the ages of 0 and 9 years. Thirty-one patients sustained a variety of injuries to the thorax and/or abdomen. Thirteen patients were younger than 19 years of age; 12 of these young people survived the surgery. Thus, during this brief period in this “limited” war, 10% of the civilian casualties were children.

One of the most significant consequences of war is the number of refugees. In Vietnam, there were an estimated 2,114,200 refugees who moved from the north to the south. This mass movement of displaced persons placed an enormous burden on the already inadequate health facilities. Prior to the war, the Vietnamese medical system had been developed by the French to meet only the needs of the colonial power. For the rest of the population medical equipment was sparse, the maintenance capability was inadequate, and there were only 150 Vietnamese physicians available to care for 15 million civilians as all other physicians were either in the armed forces or treated only paying patients. As a result, life expectancy was approximately 35 years, half the children born died before their fifth birthday, and the infant mortality was estimated to be 225 per 1,000 live births. Infectious diseases were rampant. The government response to these pre-existing medical problems was to contain rather than eradicate disease and to provide essential care only to the acutely ill and injured. Thus, in a country with an archaic medical system, the war took a direct toll on the civilian population. It also took an indirect toll in the form of persistent infectious diseases, a high infant mortality rate, and resulted in the displacement of more than 2 million persons from the north.

With the termination of hostilities in Vietnam, there emerged the horror of Cambodia, with the death of more than 2 million people under the regime of Pol Pot. Levy (1981) reported on his experiences in 1980 in a refugee camp for Cambodians in Thailand. There were over 120,000 refugees in the camp among whom were 1,200 children living in camp orphanages, with many more being cared for by relatives and friends. Prior to February 1980, 15% of the children were malnourished; this number fell to only 1% at the time of Levy’s arrival. Nevertheless, chronic undernutrition persisted. A ward was established at the camp where 80 to 100 children were seen per day. Over three-fourths of the patients had infectious diseases, the most common of which were respiratory and gastrointestinal. There was also an outbreak of measles with 500 children requiring hospitalization. The team also saw numerous cases of meningococcal meningitis, malaria, intestinal worms, and an average of two new cases of tuberculosis per day. The effect of the aide provided by the team, in conjunction with Cambodian workers, was to decrease deaths in the camp. Nevertheless, two or three patients (mostly children) died each day of pneumonia, malaria, diarrhea, or other preventable infectious diseases.
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East Asia

The report by Bhatnagar and Smith (1989) on trauma during the Afghan guerrilla war is instructive regarding what may occur to civilians exposed to the direct conflict. They reviewed 1,373 patients admitted to a Pakistani border hospital from 1985 to 1987. Of the total number admitted, 1,411 injuries were directly related to the war. The casualties ranged in age from 2 to 74 years with 3.6% being 1 to 9 years, and another 16.2% 10 to 19 years. Among the civilian population admitted to the hospital (younger than 15 years or older than 50 years), the predominant injuries were caused by fragmentation weapons and burns that commonly involved the extremities and thorax (75% occurred in children less than 15 years). The clustering of these injuries in the civilian population reflects this group’s “casual involvement” in the hostilities as they are the result of the bombing of civilian villages and the subsequent fires and flying fragments.

In contrast to the direct effects of war, Mackay (1974) provides a striking description of the indirect effect of war on a total population during the civil war in Bangladesh. The Hindus who worked for the Consolidated Tea and Lands Company in the Baliera Valley had lived there four generations. In April, 1971 with the onset of hostilities, out of a population of 40,402, 8,441 individuals went to India where 529 refugees died of malnutrition and diarrhea, including 264 children.

Among those families who remained during the war, the overall death rate rose by 45.3% over the previous 5-year average. The causes for this increase in deaths were gastrointestinal disorders, pneumonia, tuberculosis, malnutrition, anemia, and cardiovascular disease which most likely included many children. It was also reported that even without birth control, the birthrate fell. There was also a marked increase in the rate of stillbirths in 1972. Neonatal mortality rose from the average in 1966-1970 of 27.5/1,000 to 43.2/1,000 in 1972. Post-neonatal mortality rose from 21.8 to 47.1. Infant mortality rose from 49.2 to 90.3 and perinatal mortality rose from 74.7 to 95.6. “Toddler” mortality rose from 27.4 to 105 which was contributed to by a striking increase in malnutrition. There were also some increases in the attack rates of tuberculosis and dysentery during 1972. Curlin, Chen, and Hussan (1976) reported very similar findings in a different rural area in Bangladesh. Thus, in contrast to the Afghan population, the effect of the war on the tea garden and other rural populations not exposed to direct fighting, was the rise in significant morbidity and mortality resulting from the breakdown in the medical and social systems and the displacement of persons as refugees.

Africa

Africa is a continent that has experienced conflict since the beginning of the 20th century (UNICEF, 1989). Conflicts have existed between countries and within countries and have included civil wars, peasant uprisings, labor unrest, and student strikes (Ityavyar & Ogba, 1989). Moreover, these conflicts have taken place in an area of the world that is economically, technologically, and medically underdeveloped and has been subject to the whims of nature, including severe droughts. These conflicts have had a significant impact on health care and consequently on the lives of children. With the advent of war, health policies become narrow and unidimensional, focusing on the war effort and the maintenance of health services for combatants rather than on public health, preventive medicine, education, health programs, food, housing, water, and so on (Ityavyar & Ogba, 1989). The maintenance of child and welfare clinics and immunization programs are compromised with horrendous outcomes for women, children, and other noncombatants. Malnutrition, vitamin deficiencies, dysentery which
have existed throughout Africa even without war, become exacerbated under war conditions with resulting increased mortality and morbidity.

Hughes (1969) described the work of a medical team organized to treat malnutrition in a bush area during the Nigerian Civil War in 1968–1969. When the team arrived, 43% of the Ibo patients, mainly old men and young children, suffered from malnutrition. With the institution of appropriate therapy and measles immunizations, many were saved and rehabilitated. Odling-Smee (1970) described the work of a team sent to reopen a regional hospital that also served Ibo civilians. As in the case of Afghani causalities, civilians were frequently innocent bystanders after being fired on by opposition soldiers. The team cared for 338 casualties, 54 (16%) of whom were children. Of the 22 deaths, four were children.

The scenarios described in Bangladesh and Nigeria are similarly played out in other parts of Africa such as Eritrea (Sabo & Kibirige, 1989). The Eritrean People’s Liberation Front (EPLF) after the overthrow of Haile Selassie in 1975 was confronted with a country rife with infectious diseases, anemia, vitamin deficiencies, and malnutrition. In the lowland areas, 34% of the children had marasmus, 6% had kwashiorkor, and 520/1,000 (or 52%) died before the age of 5. When Selassie was replaced by Mengistu Haile Miram, the attempt to annex Eritrea continued and resulted in war.

Another major problem in Africa, as well as other war-torn regions, has been the large number of refugees (Toole & Waldman, 1990). In eastern Sudan in 1985, the mortality rate for Ethiopian refugee children under 5 years of age was 66/100 or 2.6 times greater than the mortality rate for children aged 5 through 14 years, and 7.6 times the mortality rate for persons 15 through 44 years. Within the 0 to 5 year range, children under 1 year had a much higher rate than the 1 through 4 year group. The causes for mortality included measles, diarrheal diseases, acute respiratory infections, malaria, and other infectious diseases.

In the Ogaden, a much disputed border area between Somalia and Ethiopia, the civilian population fled to Somali refugee camps or Ethiopian shelters. In response to this influx of refugees, both countries developed selective feeding programs, primary health care including immunizations, and preventive health measures such as waste disposal and a clean water supply. Programs for disease prevention, malaria control, the provision of appropriate and adequate drugs, and the establishment of a health information system were instituted (Henderson & Biellik, 1983).

Central America

Conflicts have existed in El Salvador, Guatemala, and Nicaragua for some time. Chelala (1990) reports that independent of war, of 850,000 children born every year in Central America, 100,000 will be low birthweight babies, and 100,000 will die before the age of 5. As in Africa and Asia, the major causes of infant mortality are intestinal and respiratory infections.

Turning then to the armed conflict in El Salvador, Garfield and Rodriguez (1985) noted that with the onset of war, life expectancy among men fell and civil strife had become the most common cause of death in this country. The Salvadoran medical system was inadequate, partially as a result of the inequality of the distribution of wealth, and because of the various conflicts, embargoes, and the need to direct resources toward the war effort. Moreover, Geiger and colleagues (1989) reported that civilians became the target of the Salvadoran armed forces who believed that the population supported and maintained the guerrillas. As of 1989, the Civil War had caused nearly 70,000 deaths, and 27% of the children were malnourished (Geiger et al., 1989). Thus, among the effects of the war were the killing and maiming of thousands of noncombatants with thousands of children being orphaned and malnourished.

The war in Nicaragua has been a prototype for other “low-intensity” wars in the region as
The effect of war on children well as other parts of the world. Low intensity wars . . . refers to conflicts short of a conventional war, which intentionally subject the civilian population to a combination of psychological, economic, and military pressure to promote the adoption of the desired social system by the civilian population” (Nicaragua Health Study Collaborative Harvard, CIES & UNAN, 1989). Among the tactics used in “low intensity” war is torture, which seeks not only to eliminate certain individuals but also to “. . . activate intense fear responses and disruption of the mental processes in the pueblo in order to bring compliance with the strictures of the state” (Bendfeldt-Zachrisson, 1988, p. 303).

Since 1979, after the overthrow of the Somoza regime, there was a dramatic improvement in health care in Nicaragua (Braveman & Siegel, 1987). Health and education had been neglected by Somoza such that health services were not coordinated and 50% of the population was illiterate. The 1977 infant mortality was 121/1,000 live births. The Sandinistas organized an integrated system with an increased budget which resulted in decreased infant mortality, increased life expectancy, increased immunizations, and the establishment of preventive health programs. With the onset of the contra attacks, much of this changed (Garfield, 1989). Health facilities and personnel became the targets of attacks with the idea of destabilizing the Sandinista regime. By 1987, 47 salaried health care workers had been killed by the contras. 31 were kidnapped, and 25 were reported to have been wounded. During the first 2 years of the revolution, approximately 500 doctors left the country. From 1983-1985, another 1,000 health workers left the country, one-half of whom were doctors.

By the end of 1986, a total of 5,714 war-related deaths were reported in Nicaragua, a third of which occurred among civilians. These deaths included 331 children under the age of 15. Along with the deaths associated with fighting was the increase in infectious diseases emerging out of the disruption of preventive health programs, of which malaria was the most serious and widespread. Additionally, there was a measles epidemic in two war zones which lasted from late 1985 through 1986.

An excellent example of the effect of the war was reported by the Nicaragua Health Study Collaborative at Harvard, CIES, and UNAN (1989). Two rural communities were studied, one of which was directly in the war zone while the other was isolated from contra attacks. The study revealed that food production, food availability, and nutrition were worse in the war zone, as was the prevalence of undernutrition in children 24 to 71 months of age. Forty-four percent of the children were undernourished in the war zone as compared to 19% in the isolated zone. Furthermore, the disruption of vaccination and malaria campaigns was associated with an outbreak in measles and a reported increase in the incidence of malaria. In the country as a whole, of the 4,429 war-related deaths on the Nicaraguan side, one-third were civilian noncombatants including 210 children under 12 years of age. Finally, the war resulted in the displacement of about 250,000 Nicaraguans, severely straining the health and social infrastructure of the country.

Since the Korean conflict, wars have taken on a different complexion. The difference between a “low intensity” war and the more conventional wars of the past appear to be not in the numbers killed or geography captured, but in the focus on political objectives. This kind of war may be far more destructive than conventional wars, as it focuses not on military objectives, but rather on the civilian population and the disruption of the social and economic infrastructure of the country.

The Middle East

The Gulf War is the latest conflict on which there are data on the effects of war. Hostilities started on August 2, 1990 when Iraq invaded Kuwait. The conflict raged for 6 weeks and
included massive bombings of Iraq which ultimately led to its capitulation. This defeat led to a widespread civil revolt which was suppressed in March and April 1991, but led to the displacement of about 2 million people. The Harvard Study Team (1991) reported on the consequences of this devastating conflict on the health and health care of Iraqi civilians, particularly children under the age of 5. Prior to the war, Iraq was an industrializing nation that had become increasingly urbanized and electrified. Improvements had been made in the health infrastructure with the majority of the people having access to safe drinking water. Free primary health care was available to 93% of the population and infant mortality had been reduced from that in the past. At the end of the Gulf crisis, the entire water purification system had come to a standstill and the sewage treatment system had been severely compromised. This affected not only the urban centers but also the drinking water in southern Iraq. As a result of the destruction of the electricity dependent infrastructure, there was a marked increase in the incidence of water-borne diseases such as cholera, typhoid, and gastroenteritis, as well as associated malnutrition, particularly in the pediatric population. The high cost of foods and the decrease in breast-feeding combined with a shortage of formulas may also have contributed to this malnutrition. In a number of hospitals, the rates of gastroenteritis among pediatric patients ranged from 38 to 91%, which had been unheard of in the recent past. There was also a decrease in hospital admissions, probably as a result of the breakdown in transportation services. On the other hand, there was a marked increase in the total number of deaths and a two- to three-fold rise in hospital deaths. Outpatient facilities were inundated with children with gastroenteritis and Iraqi physicians reported that there were even higher pediatric death rates in the community than were seen in the hospitals.

Other effects of the war included the destruction of a number of health centers around the country. Those that were not destroyed were not functioning adequately to meet the population's needs. Furthermore, there were grave shortages of personnel, laboratory, and radiology services, as well as major drugs.

The combination of the military action, the United Nations sanctions, the civilian uprisings, and the suppression of the uprisings led to the destruction of the health and social infrastructure of Iraq. This, in reality, has been more devastating to the country and, in particular, the health infrastructure than the actual direct damage to the population. Within this context, the group that has suffered the most are the children, who are dying of preventable diseases and starvation.

DISCUSSION

War is one of the four horsemen of the apocalypse—war, pestilence, famine, and death (Lambert, 1991). Pestilence, famine, and death occur without war, yet as has been described in this paper, war in and of itself leads to pestilence, famine, and death. The nature of warfare has changed over the centuries from what is described as conventional wars, which were global yet focused on military objectives, to "low intensity" wars, which focus on the political, economic, social, and psychological disruption of a country. Both kinds of wars have direct and indirect effects on the population, particularly the children. For the purposes of this discussion, direct effects are those injuries and deaths that result from the actual fighting, such as bombing, mining of roads, and direct gun-fire. Indirect effects are those such as increased infant mortality resulting from inadequate hospitals and health care, malnutrition, and infectious diseases.

The direct effects of war are that children are maimed and killed. Their injuries are no different from those of adults and are the result of the weapons used. For example, during the Vietnam and Afghan wars, children sustained severe burns and fragmentation injuries which were consistent with the use of bombs, mines, defoliation, and the burning of villages. Children
were injured when they were caught in the cross-fire between adversaries in Africa and Central America. For the injured or disfigured survivors, there will be ongoing need for rehabilitative services. These may be provided within or outside the country as occurred with the transfer to the United States after the Vietnam War of burned children or those who had lost limbs for rehabilitative services. Under these circumstances, families are further disrupted, which places even more psychological stress on the children as well as their families and communities.

When the indirect effects of war are considered, there are some striking commonalities among warring countries. Under virtually every circumstance, there has been severe undernutrition, if not outright famine for the adult population, including women of child bearing age, and for infants and children. Associated with profound undernutrition is an increased childhood mortality from infectious diseases that under other conditions might not have resulted in increased mortality. Furthermore, in every conflict described in this paper for which epidemiological data was available, there was a decrease in the birth rate, and increases in the number of stillborns, the number of low birth weight infants, and the incidence of prenatal and neonatal mortality. Thus, while killing and maiming children outright war also results in reproductive casualties.

War disrupts societies. This has been particularly true of low intensity conflicts of the middle and latter part of this century. These wars have significantly disrupted the social, medical, economic, agricultural, and psychological infrastructure of the country. As a result, the maintenance of hospitals and outpatient clinics and of maternal and child health programs have been compromised or discontinued, as have immunization programs, public education, and public health programs. Consequently, even when famine has not been a major issue, preventable infectious diseases have become rampant with increases in childhood morbidity and mortality.

Moreover, there are those children who survive in countries where schools are closed, food is inadequate, and medical care may be nonexistent. What is to be the sequelae of these conditions? In the study by Stein and colleagues (1975), there were no adverse cognitive sequelae of the famine. However, after the war, Holland recovered and the famine conditions no longer existed. This is certainly not the case in the countries of Asia, Africa, and Central America. One wonders what the loss of human potential as a result of war is in these countries. Those data are not available and probably are not even being collected. Nevertheless, growing up under conditions of deprivation cannot lead to the achievement of the child’s greatest potential in these disrupted societies.

Since World War II, new strategies of warfare have been developed. What seems to be most striking in the current era is the use of food and medical supports as weapons of war. Whereas in the past, wars were fought between combatants, they are now waged in the civilian arena. Children, as innocent bystanders, become the victims. Adversaries now use food restriction, terrorization of the civilian population, and the destruction of medical facilities and societal infrastructures to achieve their goals. Consequently, civilians, particularly children, become the most affected as they are the most vulnerable members of society. This was true during the Vietnam War and continues to the present in Latin America, Africa, and Asia. It was also the case in Iraq, where the “simple” planned destruction of the country’s power system resulted in the profound disruption of every aspect of the society’s ability to meet its people’s needs.

Finally, there is the displacement of persons within the countries where hostilities are occurring, as well as outside of the country. In many parts of the world where societies function on a marginal basis, the introduction of large numbers of homeless and impoverished people wreaks havoc on the existing fragile systems. Again, it is the children who suffer the most. They have the greatest morbidity and mortality, their schooling is terminated, their parents may be dead, and their prospects for a meaningful life become compromised.
SUMMARY

What has been attempted in this paper has been to describe the physical effects of war on children. They include not only injury and death from weapons, but also the effect of the disruption of the basic infrastructures of the country; public health, medicine, education, and social services. Furthermore, as a result of war, families are disrupted, children are orphaned, and people are forced to become refugees both within and without their countries.

What has also been identified is that warfare has changed from being a battle between soldiers to being a battle that includes and focuses on civilians. The strategies of war have changed such that the goals are different and the sequelae even more destructive than they were in the past. Is this acceptable as we approach the 21st century? Is it acceptable to let the world’s children and most valuable resource continue to suffer as they do because of war?

REFERENCES


Résumé—Le but de cet article est de traiter des effets de la guerre sur les enfants au cours du vingtième siècle. Il est dit que la guerre a eu des effets directs et indirects sur la population et que les guerres étaient autrefois “conventionnelles” alors qu’aujourd’hui elles sont de “faible intensité”. Il en résulte que les civils, y compris les enfants, ainsi que l’infrastructure même de la société deviennent des cibles tandis que dans le passé, les cibles étaient de nature militaire. Cette stratégie de guerre dite “à faible intensité” apporte des interruptions médicales, sociales et éducatives et bouscule les services sociaux du pays sans compter qu’elle terrorise ses habitants. Dans de telles circonstances, les enfants souffrent tragiquement. Leurs foyers sont détruits, leurs familles chavirées et leurs chances de contribuer à la société sont compromises.

Resumen—El objetivo de este artículo es ofrecer una revisión de los efectos de la guerra en los niños durante el siglo 20. Se discute el que las guerras tienen efectos directos e indirectos en la población. También se ha destacado que las guerras han cambiado de ser “convencionales” a ser de “baja intensidad”. Bajo estas últimas circunstancias los civiles, incluyendo los niños, así como la infraestructura social, se convirtieron en blancos, mientras que en el pasado, los blancos eran usualmente solo militares. Los efectos de la estrategia usada en los conflictos de “baja intensidad” son la interrupción de los servicios médicos, sociales, educacionales, y públicos del país y el asfixiar a la población. Bajo estas circunstancias los niños sufren inmensamente. Sus casas se destruyen, sus familias se alteran, y se comprometen sus posibilidades de ser miembros productivos y maduros de la sociedad.