



The International Arms Trade and Its Impact on Health

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Editor's Note: The following article, developed by Medicine and Global Survival for the British Medical Journal, originally appeared in the BMJ on 23 December, 1995. It is republished here as part of a cooperative arrangement with the BMJ. Since the time the article was written, events have superseded a few of the items discussed by Dr. Sidel. In particular, the treaty on conventional weapons was amended in May 1996 to prohibit blinding laser weapons and to limit the use of antipersonnel landmines. In July 1996, the World Court ruled that the use and threatened use of nuclear weapons is illegal under international law. In September 1996, the UN General Assembly overwhelmingly approved a comprehensive nuclear test ban treaty. Dr. Sidel's overall analysis of the consequences of the international trade in weapons, however, remains sadly accurate and timely. M&GS 1996;3:A6

The second world war brought the world to an apogee of mass murder, with widespread killing of military personnel and civilians; the indiscriminate aerial bombing of cities such as London, Dresden, and Tokyo; and the detonation of single bombs over Hiroshima and Nagasaki. These nuclear bombs caused some 200,000 deaths immediately and hundreds of thousands of injuries, many resulting in death in succeeding months and in permanent physical or psychological disabilities [1,2,3]. Over

the 50 years since the end of that war, nuclear weapons and the even more destructive thermonuclear weapons developed in the 1950s [4,5] have not been used in war, although there have been threats to do so by some nations possessing them. Among the other "weapons of mass destruction," chemical weapons have been rarely used, and biological weapons, although stockpiles existed and their use has been alleged, were probably not used at all.

On the other hand, so called "conventional weapons" have, since 1945, directly caused the deaths of more than 30 million people. During this period the percentage of direct war deaths among civilians has increased steadily, and in recent years approximately nine times as many civilians as military personnel have been killed by weapons during war [6a]. Many millions more civilians have died from war related hunger and disease as their crops were

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destroyed or they were forced to flee their homes to become part of the world's growing number of refugees inside or outside their countries.

Virtually all the wars since 1945 have been fought in Third World countries, often as surrogate wars between the United States and the former Soviet Union. More recently civil wars, often based on historic ethnic enmities, opposition to oppressive governments, or arising from artificial geographic aggregations created by the colonial powers, have produced the greatest number of casualties [7].

Direct Health Consequences of Use of Weapons

The most obvious impact on health of militarization and weaponry is the use of the arms to kill and maim. Some military leaders may find it more advantageous to wound rather than to kill enemy personnel, military or civilian, since the opponents must then consume valuable resources to take care of their wounded. The vast majority of the weapons being used today are antipersonnel weapons.

Among the most pernicious of these weapons are landmines. Wounds caused by them are usually extremely difficult to treat: there is usually more than one wound, the wounds are contaminated by dirt and debris, amputations are common, and there is often massive loss of blood. According to the 1980 Convention on Conventional Weapons (the "Inhumane Weapons Convention"), minefields are supposed to be marked and are supposed to be cleared once the fighting is over. This is rarely done, and the majority of the victims are civilians who find the areas in which they live have been mined.

Landmine production has changed dramatically over the past decade. The casings and explosives are now usually made of plastic, which is not detectable by metal detectors. The mines are small, light, easy to transport, and very inexpensive; they are therefore viewed as cost effective weapons in many developing countries. Clearing mines, on the other hand, is extremely slow, laborious, dangerous, and very expensive. In Cambodia, a landmine can be bought on the black market for as little as US \$10, but it takes more than 30 times that cost to find and remove it once it has been placed [8,9,10,11].

It is estimated that worldwide there are more than 100 million mines scattered and another 100-150 million in stockpiles, ready to be scattered. More than 60 countries are known to have minefields somewhere within their territories, often covering huge tracts of land. Afghanistan, Angola, Cambodia [12,13], Iraq, Mozambique[14], and Somalia

Table 1

Health Consequences of Unused Weapons

- * Environmental consequences of weapons production, testing, and storage, and even of their abandonment or destruction
- * Social, psychological, and even physical consequences produced by threats to use the weapons
- * Cost of the weapons: the producing or purchasing nation diverting funds and skilled staff from providing needed health and other human services and from economic development.

[15] are among the countries with the largest areas affected. In Cambodia alone there are an estimated 9 million scattered landmines [6,6a,6b,7].

Another weapon that has received worldwide condemnation yet continues to be developed is the blinding laser. In the spring of 1995 China marketed a tripod mounted blinding laser at arms fairs, and in August 1995 the United States awarded a contract for the production of 75 prototypes and training units for its portable rifle mounted blinding laser, the Laser Countermeasure System. The U.S. army has stated that these lasers can burn out a human retina from a distance of 3,000 feet [16]. The United States terminated this programme in October 1995, but it is known to possess other antioptical laser weapons. Other nations believed to have pursued or to be pursuing laser weapon research and development include France, Israel, Germany, Russia, Ukraine, and Britain [17].

Indirect Health Consequences of Militarization and Weaponry

In addition to the health consequences of the direct use of arms, there are health consequences attributable to militarization and arms even if the weapons are never used (Table 1).

The environmental consequences associated with arms even before their use in war have been widely described [18,19,20], and the worldwide environmental pollution associated with nuclear weapons has been detailed in studies conducted by the International Physicians for the Prevention of Nuclear War [21,22,23]. The environmental consequences associated with other weapons may also be severe. These include the devastation caused by the bombing, mechanized land clearing, napalming, and herbicide induced defoliation during the Indo-China war and the environmental consequences of the Gulf war [24,25].

Threats to use weaponry can cause trauma even if they are not carried out. Again the best known examples are the social and psychological consequences of the nuclear threat, but the threat of use of other weapons can also produce longlasting severe prob-

The Human Development Costs of Arms Imports [6b]

Many countries continue to import expensive arms, even though they have a long list of more essential items. This is clear from the arms deliveries and orders in the categories covered by the UN's arms register. Some of the choices by developing countries in 1992:

* China -- purchased 26 combat aircraft from Russia in a deal whose total cost could have provided safe water for one year to 140 million of the 200 million people now without safe water.

* India -- ordered 20 MiG-29 fighter aircraft from Russia at a cost that could have provided basic education to all the 15 million girls out of school.

* Iran -- bought two submarines from Russia at a cost that could have provided essential medicines to the whole country many times over; 13% of Iran's population has no access to health care.

* Republic of Korea -- ordered 28 missiles from the United States for an amount that could have immunized all the 120,000 unimmunized children and provided safe water for three years to the 3-5 million people without safe water.

* Malaysia -- ordered two warships from the United Kingdom at a cost that could have provided safe water for nearly a quarter century to the five million people without safe water.

* Nigeria -- purchased 80 battle tanks from the United Kingdom at a cost that could have immunized all of the two million unimmunized children and provided family planning services to nearly 17 million of the more than 20 million couples who lack such services.

* Pakistan -- ordered 40 Mirage 2000E fighters and three Tripartite aircraft from France at a cost that could have provided safe water for two years for all 55 million people who lack safe water, family planning services for the estimated 20 million couples in need of such services, essential medicines for the nearly 13 million people without access to health care, and basic education for the 12 million children out of primary school.

lems. An example of the physical consequences of threat was seen in Israel during the Gulf war in 1991, when the threat by Iraq to use anticholinesterase nerve gas in Scud missiles led to injuries from self injection of atropine [26].

The damage to health and human services and to economic development caused by the human and economic costs of weapons are also extremely well documented. Even wealthy countries such as the United States suffer the consequences of diversion of resources to military purposes [27]. But Third World countries are the most affected, suffering delay or reversal of economic development and deprivation of essential nutrition, housing, education, and health services [28,29].

International Trade in Arms

Most of the modern weapons used in war are manufactured in industrialized countries, and many of these weapons are sold or given to Third World countries by industrialized countries. This militarization is in part

due to the view in many postcolonial countries that possession of large arsenals is an essential part of being recognized as a "developed" nation. The arms are often used to keep military dictators in power. They may also fall into the hands of those who use them for private vendettas or private gain, or even into the hands of children. In addition, some industrialized countries, including the United States, use their "foreign aid" as a method of transferring funds to their military industries, requiring the recipient governments to use the funds they receive to purchase arms from private industries in the "donor" country.

Estimates of the amount of arms traded depend on the definitions used and on adequacy of reporting, but it is clear that more than 90% of arms transferred to other countries are supplied by the five permanent members of the UN Security Council (China, France, Russia, Britain, and the United States) plus Germany, often termed the "Big Six." A 1988 study by the United Nations estimated the annual value of arms transfers between countries at \$14 billion in the early 1960s [30]. By 1994, the most recent year for which a full accounting is available, the total had risen to more than \$35 billion [31].

In the 1980s the United States sold more than \$134 billion in weapons and military services to more than 160 nations and political movements. American sales increased further during the 1990s. In 1993, the United States controlled nearly 73% of the weapons trade to the Third World [32]. A large part of American arms exports -- 85% has been estimated -- has gone to non-democratic and often brutal regimes; in Panama, Iraq, and Somalia such arms were turned against American forces. American arms also fuel conflicts and increase regional tensions. The Clinton administration has done little to curb the proliferation of arms sales, and the results of the 1994 Congressional elections have led to a diminution of efforts by some members of Congress to reduce such sales.

The United Kingdom is a major participant in the international arms trade and by some estimates has moved beyond Russia into second place. In 1993, approximately £2,000 million (\$3bn) worth of military equipment was shipped overseas and during that year new orders totalling some £6,000 million (\$9bn) were signed. Former colonial countries with enormous problems in development, such as India, are among Britain's largest customers. Britain, like the United States, sells military equipment to countries that use the arms to violate the human rights of its citizens -- for example, Indonesia; South Africa in the period before the end of

apartheid; Uganda under Idi Amin; and Nigeria with its military government that recently drew international criticism for its political executions of Ken Saro-Wiwa and eight other Nigerian environmentalists.

France also seems to be increasing its involvement in the international arms trade. In 1994 France negotiated \$11.4 billion in new arms sales agreements with Third World nations, compared with American contracts valued at \$6.1 billion [33]. This comparison is misleading because the bulk of France's sales came from three exceptional multibillion dollar sales of a kind that are not likely to be repeated, and because the figures fail to reflect a number of deals negotiated directly by American industry with foreign purchasers.

Efforts to End the International Arms Trade

In 1991 the UN General Assembly adopted a resolution on "transparency in armaments" that established a voluntary register of conventional arms transfers. Its purpose is to create transparency, thereby reducing misperceptions, building trust, and creating a base for early warning of arms buildups. Only 42% of United Nations member states submitted reports in 1993, the most recent year for which data are available, but the states that cooperated included all the major exporters, including the Big Six but not North Korea or South Africa.

The U.S. Congress initiated efforts in 1994 for the adoption of a code of conduct on arms transfers. This measure would ban the transfer by the United States to nations that abuse the human rights of their people; deny democratic rights; attack their neighbors or their own people; or fail to participate in the UN arms register. Physicians for Social Responsibility, the American affiliate of International Physicians for the Prevention of Nuclear War, has been active in coalitions to reduce American arms sales and to support the adoption of the code of conduct.

Control of conventional weapons in Europe is based on the Treaty on Conventional Forces in Europe, which came into force in 1992. The treaty covers 30 states from NATO and the former Warsaw Treaty Organization. It puts limits on major conventional weapons and contains ground breaking monitoring provisions, such as on site inspections, challenge inspections, information exchanges, and on site monitoring of weapons destruction [34]. Effective implementation, however, will depend on the stability and the resources of the countries of the former Soviet Union.

The Conference on Security and Cooperation in Europe is developing a code

of conduct that will make arms transfers conditional on progress in areas such as arms limitations and human rights. In addition, several countries have in recent years made their national export control regulations more restrictive. With regard to landmines, in March 1995 the Belgian parliament unanimously voted for a complete ban on production, use, and export of mines. Belgium is currently the only country with a complete ban on mines. The Norwegian parliament unanimously adopted a resolution requesting the government to work for a total prohibition of production, stockpiling, purchase, sale, and use of antipersonnel mines. Twenty six countries, including the United States and countries forming the European Union, have passed export moratoriums on antipersonnel landmines [35]. In the United Kingdom, efforts to control Britain's part in the international arms trade are being led by the UK Working Group on Landmines, a coalition of groups and individuals that includes Medical Action for Global Security, the British affiliate of International Physicians for the Prevention of Nuclear War.

A conference was convened in Vienna in September 1995 to review the 1980 Convention on Conventional Weapons (the "Inhumane Weapons Convention"). It failed to agree on measures to tighten the Convention to protect civilians from mines. A new protocol banning the use and transfer of blinding laser weapons was added to the convention, but the protocol fails to ban production of this weapon and provides a loophole for the use of blinding laser weapons that target optical systems.

The strongest proposal to end the international arms trade, developed by the International Association of Lawyers Against Nuclear Arms, is a draft convention on the monitoring and reduction of arms transfers, stockpiling, and production. The convention incorporates the concepts of territorial ("non-provocative" or "confidence building") defence, economic conversion, and alternative security. It moves beyond the current system of voluntary registration of arms transfers to mandatory registration, bans offensive military capacity, and lays the foundation for an international system for global security. The current U.S. Secretary of Defense, William J Perry, in 1994 called for an international cooperative security system based on territorial defence that would sharply curtail military forces around the world, including those of the United States [36].

The World Summit for Social Development, held in Copenhagen in March 1995 and attended by representatives of governments throughout the world, adopted Commitment 9, which called for "appropriate

reduction in excessive military expenditures and investments for arms production and acquisition, consistent with national security requirements, in order to increase resources for social and economic development." A proposal to devote 3% of money saved on military cuts was discussed, but it was ultimately tabled [37]. [See sidebar]

One of the major reasons for the reluctance of many nations to agree to limitations on conventional arms is the unwillingness of the nuclear powers to take significant steps for the abolition of nuclear weapons. Chemical and biological weapons have been considered by some poor nations as a substitute for nuclear weapons, but the Chemical Weapons Convention (1993) and the Biological Weapons Convention (1972) have outlawed these weapons. The relation between the arms race in nuclear weapons and the continued arms race in conventional weapons has been recognized in article VI of the Nuclear Non-Proliferation Treaty, which calls for progress toward the abolition of nuclear weapons and links it to "general and complete disarmament." International Physicians for the Prevention of Nuclear War and its affiliates have initiated Abolition 2000, an effort to convince all nations to pledge themselves to complete negotiations by the year 2000 so as to enter the new millennium with a treaty in place committing the world to a firm timetable for the permanent elimination of nuclear weapons.

Despite recent reductions, the destructive equivalent of over 10 billion tons of TNT still exists in the nuclear stockpiles of eight nations that admit to having nuclear weapons and at least three more that are believed to have them. This is equivalent to more than one million of the weapons that demolished Hiroshima and Nagasaki and amounts to two tons of TNT for every person on earth. Even if START I and START II were to be fully implemented (and START II has not yet been ratified by the American Senate), the world's nuclear stockpiles would be reduced to one ton of TNT equivalent for every inhabitant of our planet.

The International Court of Justice (World Court), responding to requests by the World Health Organization and the United Nations General Assembly, has asked the world's nations for submissions on the question of the legality of the use or threat of use of nuclear weapons under international law [38]. This matter, still pending before the court, could lead to additional legal and moral pressures on states that possess nuclear weapons.

Doctors and other health professionals have a special responsibility to participate in these efforts. We have special knowledge of

the nature of the health consequences of militarism and of weaponry and special responsibility for the prevention of their proliferation and use. In 1981 the World Health Assembly adopted resolution 34.38: "The role of physicians and other health workers in the preservation and promotion of peace is the most significant factor for attainment of health for all." This role should include documentation of the impact of the arms trade on health, education of health professionals, policymakers and the public on the arms trade and its consequences and advocacy for measures to end the arms trade, to abolish nuclear weapons, and to move toward general disarmament. Failure to accept this responsibility is a failure to live up to the trust our patients and our communities have placed in U.S.

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