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**RISKS OLD AND NEW:
A GLOBAL CONSULTATION ON HEALTH**

**The Carter Center of Emory University
Atlanta, Georgia
April 1986**

Background Papers

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Note: Provisional data. Background papers are provided in advance of global health consultation for use by working group participants. These drafts are intended to stimulate further inquiry and discussion, and should not be distributed or reproduced further without permission of the authors and the Carter Center of Emory University.

FOREWORD

The Carter Center of Emory University is pleased to expand its health policy activities to full scale with its first consultation on global health, April 27 - May 1, 1986, in Atlanta, Georgia. Entitled "Risks Old and New," the consultation is patterned after the domestic study, "Closing the Gap," which was reported in the Journal of the American Medical Association, September 13, 1986.

The anticipated outcome of this consultation is a clearer understanding of current needs and opportunities in global health, as well as specific interventions which could be implemented on a pilot basis in selected countries.

This consultation will bring together ministers of health and technical consultants from Africa, Asia, and Latin America, with key individuals from the U.S.S.R. and leading global health agencies. Special presentations will be provided on key global health topics, such as the biological revolution in public health, the "United Nations Decade of the Woman," social mobilization for health, and an update on the "Water Decade."

Central to this consultation are six workshops that will address the traditional enemies to health in developing countries (malnutrition, infectious diseases, and reproductive health problems) as well as the newer health risks associated with economic development (tobacco, alcohol, occupational and environmental hazards, violence and other injury risks).

This booklet contains information prepared for the workshops in advance of the consultation. Available data on each topic were extracted and encapsulated in Background Papers for the participants. Each document includes a bibliography for those who wish to probe more deeply. Additional material will be distributed during the consultation.

An overview of this information is provided. The Carter Center welcomes your interest in this consultation on global health.

BACKGROUND OF THE GLOBAL HEALTH CONSULTATION

Goals of the Consultation

To identify methods to reduce health risks old and new,
and to initiate a consensus for action.

Key Results

1. Estimate the current and future impact of each health problem
 - a. Exposure rates
 - b. Health, economic and social effects
2. Examine the barriers to improvement
 - a. What are they?
 - b. How can they be overcome?
 - c. Who can help?
3. Reach a tentative agreement on tasks and responsibilities
 - a. Global and regional plans for action
 - b. Multilateral commitments
4. Monitor implementation and evaluate the process

OVERVIEW: RISKS OLD AND NEW

EXISTING AND EMERGING GLOBAL HEALTH PROBLEMS

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EXISTING AND EMERGING GLOBAL HEALTH PROBLEMS

This global consultation on health incorporates data, analyses, and interventions for the six important groups of health problems addressed by the workshop participants. Included are workshops on the traditional enemies to health in developing countries as well as the newer, emerging health risks associated with economic development.

Each of the following Background Papers provides an overview of an important traditional or emerging health problem following the same format:

1. The scope of the problem
2. Present actions
3. Barriers to progress
4. Opportunities for more action

This report summarizes the information contained in the Background Papers. Additional references are provided in the bibliographies for readers who wish to explore the topics more thoroughly. Readers who wish additional information beyond that covered in the bibliographies should refer to the individual authors.

Scope of the Problem

Throughout the world, the magnitude of these health problems is increasing. Tobacco products and alcohol are widely used. Although tobacco use varies from country to country, it accounts for nearly 2.5 million deaths worldwide each year, and over 1,000 deaths in the United States every day.^{1,2} Numerous countries have lost forests to tobacco cultivation and curing, leaving arid areas and inadequate land for food production.² Cirrhosis of the liver, associated with alcohol consumption, ranks among the five leading causes of death among males aged 25 to 64 years.³ Drunk driving is a major cause of motor vehicle fatalities. The social costs of alcohol include lost productivity, worksite injuries and disruption of the family unit.³

Nearly half of the world's population lives in malaria endemic areas.⁴ Schistosomiasis infects about 200 million persons worldwide and three times that number are at risk.⁴ Three and a half million children die each year from vaccine-preventable diseases.⁴ Infant and maternal mortality rates are still high in most developing countries -- nearly 20 times worse than the best rate in highly industrialized nations such as Sweden.⁵ The principle causes of infant mortality are premature birth and unintended pregnancy.

Other emerging health problems include occupational and environmental hazards, injury and violence. Occupational and environmental health problems are growing because over half of the world's workers work under conditions that do not meet internationally recommended standards.⁶ Many industries lack adequate management of dangerous waste products affecting both workers and residents of the surrounding community.⁶ Motor vehicle crashes, on the other hand, are the chief cause of injury in most countries.⁷ Homicide, whether resulting from interpersonal or political conflicts, is also increasing throughout the world.⁷

Present Actions

Activities to address the studied health problems vary considerably between different health problems and different countries. In general, most countries have programs that address health problems of long-recognized significance. Such programs are often consonant with regional or global initiatives of the World Health Organization, such as Health for All by the Year 2000 and the Expanded Programme for Immunizations (EPI).

For example, EPI is helping countries raise children's immunization levels worldwide. Child mortality rates from vaccine-preventable diseases have declined 30% in the past two years.⁸ Improved oral rehydration salts are now in use and countries are working to improve sanitary conditions and primary health care.⁴ WHO is strengthening occupational health services in many countries.⁶ Many governments are actively engaged in family planning programs and voluntary sterilization.⁵ Surveillance and epidemiologic support are also expanding and the search is on for additional cost-effective technology transfers.⁴

Present actions to address the newer, emerging health problems are fewer in number and confined to fewer countries. Most developing countries do not currently have extensive programs to attack such problems as injury and tobacco-related disease.^{2,7} In most developing countries, work-injury compensation is largely the employer's liability through direct provision of benefits or insurance premiums.⁶

Nevertheless, some actions are being taken and there is growing interest in averting the health problems that now afflict most industrialized nations. Some developing countries already limit the use of alcohol in government facilities and many countries prohibit alcohol consumption while driving.³ A few countries have restricted advertising of alcohol or tobacco products, or both.^{2,3}

Barriers to Progress

There are many barriers that hamper efforts to achieve successful prevention. For example, primary health care is often not available to people who live in rural areas, and is often under-utilized when available. Family planning services currently do not reach the majority of couples who are likely to have a high risk pregnancy, especially those in rural areas.⁵ In many countries the level of illiteracy among women is still high.⁵ In some countries, social and legal attitudes are formidable obstacles to progress in population issues.⁵

High rates of morbidity and mortality still persist in certain areas because vaccines and oral rehydration salts, which are well developed and highly effective, are not fully used.⁴

Inadequate resources, coupled with and possibly resulting from lack of an essential element -- political will -- often impede successful programs. For example, aggressive advertising campaigns for tobacco products neutralize public education efforts.² This barrier is compounded by the economic dependence of many developing countries on tobacco products and alcoholic beverages for revenue and employment.² For example, the tobacco industry in

Zimbabwe is the largest employer in the country.² The production and consumption of alcohol also provide economic benefits to developing countries, as well as serious health, economic, and social costs.³ It is unfortunate that tax revenues, tourism, and employment are more visible and quantifiable than these costs.

Attitudes of people and governments also can play an important role in perpetuating problems. Occupational and environmental health hazards, although highly visible concerns in industrialized countries, are only now emerging in the public consciousness in developing countries.⁶ The health services designed to deal with those problems are often inadequate and fragmented.⁶ Another commonly held attitude is that injury is "a fact of life" and must be tolerated.⁷

Opportunity for More Action

The scope of the health problems covered in this Global Consultation on Health is substantial, and present actions and barriers are highly variable for different health problems from country to country. Nevertheless, it is noteworthy that the consultants have identified significant opportunities for more action for every health problem studied.

This is certainly the case for traditional, well-studied problems such as infectious diseases, where expanded immunization activities hold imminent promise of substantial disease reductions and even eradication, and where work is continuing to develop new vaccines.⁴

This is also the case for emerging and potentially catastrophic problems such as use of tobacco products. The adverse health outcomes have not yet occurred in most developing countries to the same extent as in the industrialized countries, but are certain to attain that level in the absence of swift avertive measures.² Fortunately, effective options are already known and generally accepted as feasible.

The opportunities for action listed in each Background Paper can be a useful starting point for workshop participants who will probably wish to review the stated options, explore/invent new options, select the best options and recommend a working plan.

Summary

The principal existing and emerging health problems of developing countries have been reviewed in advance of the Global Consultation on Health. Although present remedial actions vary greatly around the world, numerous opportunities exist for further progress with technology available today. The potential dividends in life, health, and economic savings, are substantial.

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3. The Emerging Problem of Alcohol in Developing Countries: Background Paper contained in this book.
4. Infectious Diseases and Malnutrition: Background Paper contained in this book.
5. Reproductive Health in Developing Countries: Background Paper contained in this book.
6. Occupational and Environmental Hazards in Developing Countries: Background Paper contained in this book.
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THE EMERGING PROBLEM OF ALCOHOL IN DEVELOPING COUNTRIES

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THE EMERGING PROBLEM OF ALCOHOL IN DEVELOPING COUNTRIES

Alcohol is the oldest and most widely used intoxicating substance known to man. Its importance as part of rituals, both religious and secular, indicates that alcohol has long had a special role to play in society. The post-World War II years have witnessed unprecedented growth in the production of alcohol. Between 1965 and 1980, global commercial production of alcoholic beverages rose by almost 50 percent.

In industrialized countries, use of alcohol rivals the use of tobacco products as the number one health problem. In developing countries the "old" problems of infectious diseases, malnutrition and population growth are still the major public health issues. But data collected over the last 20 years have shown that alcohol is a growing problem in many developing countries, and will take on greater significance as the "old" problems come under control.

We are at a point where aggressive and innovative actions, integrated with other public health programs, can have a major impact on this emerging problem. Many developing countries have a unique opportunity to address this complex health issue early in its development.

This paper will summarize the type and extent of alcohol-related problems in developing countries, measures now being taken to control them, and barriers to success, and actions still needed.

Scope of the Problem

Alcohol misuse is a complicated problem involving a complex interaction between the agent (alcohol), the host (drinker) and the environment (home, worksite, community). Alcohol problems affect not only the drinker, but also his family, friends, and community. These problems may be the result of chronic alcoholism (alcohol dependence syndrome) or of acute episodes of heavy drinking (drunkenness). The effects of alcohol are not necessarily linked with dependence on alcohol; they may result from drinking at inappropriate times, such as before driving an automobile.

Most data on the effects of alcohol misuse on individuals, and their families and communities, are from developed countries, and those data are limited in quantity and quality. Most surveillance activities and special studies have focused on consumption and production and not on health outcomes. These have been useful in following trends, but have had limited utility in measuring the absolute effects of alcohol misuse on the community and in comparing the magnitude of alcohol problems to other health problems, such as tobacco-related diseases, that are competing for limited resources.

Types and Extent of Alcohol-related Problems:

Cirrhosis of the liver - Deaths from cirrhosis are often used as an index of the magnitude of alcohol problems in a population. Of 49 countries for which cirrhosis mortality rates were available in 1974, the rates per 100,000 total

population were below 5 in 8 countries and above 25 in another 8 (Moser). Between 1955 and 1977, most countries showed increasing rates for both sexes, and in most countries for which valid data can be obtained, cirrhosis ranks among the 5 leading causes of death among males aged 25 to 64 years. Cirrhosis mortality estimates vary as much as ten fold from country to country (Table 1). We believe these rates are higher now, but we were unable to readily find more recent data.

Injuries - Motor vehicle fatalities are a major problem in many developing countries with alcohol becoming an increasingly important factor in their causation. In Papua, New Guinea in 1979, there were 67 deaths per 10,000 registered vehicles, one of the world's highest death rates for motor vehicle accidents; a large proportion of these were attributed to drunk driving. Alcohol is also a factor in many other non-automobile associated injuries (e.g., aircraft, drowning, and fires).

Occupational problems - It has been estimated in one large industrialized country that more than 5 percent of the labor force suffered from alcoholism, with productivity lowered about 25 percent.

Cancer - There is an increased risk of developing cancer of the liver, larynx, pharynx, mouth and esophagus. Alcohol acts synergistically with tobacco use in many cancers.

Other problems include cardiovascular disorders, nutritional deficiency, fetal alcohol syndrome, upper gastrointestinal problems, osteoporosis, brain damage and dysfunction, alcohol psychosis, depression, alcohol poisoning, public intoxication, crime, and family problems.

Alcohol dependence syndrome or addiction to alcohol itself, apart from the secondary consequences mentioned above, also results in a heavy burden on health services. In some countries, patients with a primary or secondary diagnosis of alcoholism or alcoholic psychosis account for over 20% of all first admissions to psychiatric hospitals.

Life expectancy for alcoholics is also greatly reduced. Each alcohol-related death results on average in 12 years of potential life lost (YPLL) before age 65. This compares with 4 years of YPLL on the average for each cardiovascular disease death.

Economic and Social Costs of Alcohol-Related Problems:

In the United States the estimated cost of alcohol-related problems in 1983 was in excess of 116 billion US dollars (Table 2). The social costs of alcohol primarily occur in four categories:

1. Excess mortality and excess utilization of health care services
2. Lost productivity through absenteeism, industrial injuries, and inefficiency
3. Damage to the life and property of others
4. Welfare programs for alcohol abusers and their families

The range and severity of alcohol-related problems vary considerably from country to country as well as within countries. While documentation of these problems is best for developed countries with long traditions of alcohol production and consumption, reports are being received of increasing problems in developing countries as well. Table 3 provides some estimates of changes in per capita alcohol production for several regions of the world. The rates of beer production showed the highest increases in Africa, Asia, and Oceania, regions which include many developing countries. Increases exceeded 400 percent in each of these regions (Table 2). Per capita, consumption rates followed the same trends.

Present Actions

Most governments recognize the serious consequences of increased use of alcohol and some have established policies and implemented programs to control the problem. In reviewing these activities several things become clear. First, often there is little coordination among the different government agencies with programs involved with alcohol misuse or the problems resulting from alcohol abuse. Second, it is unusual for the control program or intervention to be evaluated; therefore, it is difficult to determine the most effective approaches. Finally, although countries may have many things in common with each other, alcohol control activities must be tailored to the culture and religion of the persons affected in order to be effective.

Some countries, such as Guatemala, Ecuador, Venezuela, and Canada are trying to reduce the demand for alcohol through educational efforts. Other countries, such as the Soviet Union, are limiting the use of alcohol beverages at state functions. Also, since 1973 Costa Rica has prohibited use of alcoholic beverages in offices of the Central Government. Many industrialized countries have established minimum drinking ages.

A major focus in several countries has been the prevention of alcohol-related injuries on highways. Many countries prohibit alcohol consumption while driving. Sweden and Australia have passed strict penalties for driving while intoxicated. Venezuela prohibits sale of alcohol along main roads and Germany is examining its legislation regarding automatic vending machines for alcoholic beverages along highways.

Another focus is on the general control of production and distribution of alcoholic beverages. Senegal has raised taxes on alcoholic beverages. Romania and Switzerland regulate the number of licensed establishments according to population. Canada regulates price and licensing of sale outlets. France and Costa Rica limit advertising. The Soviet Union has restricted the hours of sale and raised the prices of alcoholic beverages.

Finally, many industrialized countries are also focusing on the treatment of chronic alcoholics.

Barriers to Progress

Economic Barriers:

The alcoholic beverage industry is an effective lobby for itself and emphasizes the economic and social benefits of alcohol. The possible benefits of alcohol include employment of persons in the production and distribution of alcoholic beverages, tourism, and tax revenues.

Because we do not have estimates of the economic disadvantages (costs to society) of alcohol, except from the United States and a few other countries, policymakers often only see the advantages and make their decisions accordingly. The short-term economic gain is often much more visible than the long-term public health consequences and associated societal costs.

Cultural and Social Barriers:

Alcohol use is deeply rooted in custom and religion in many cultures and even if it is not, many cultures regard freedom of consumption as a right. Also, for some persons, alcohol use and abuse may be a coping response to other personal and social problems. Therefore, meeting the basic health, housing, educational, occupational and safety needs of individuals and their families may be a necessary concomitant to alcohol control activities.

Operational Barriers:

These stem from the multifaceted nature of alcohol problems. Alcohol misuse has its own special effect on the drinker, the family, and the community. It is impossible for one agency to design and manage a program that will address all of these facets at the same time; interventions must be coordinated among multiple agencies.

Opportunities for More Action

There is tremendous opportunity for countries to address this problem in a coherent and integrated fashion.

Integrated Approach:

Activities to control alcohol-related problems should be coordinated across government agencies. Waste through duplication of effort, actions at cross purposes and omission of necessary activities must be avoided. Public health should be included as an essential part of any rational consideration of the role of alcohol in society. We should press for inclusion of health policies and programs in national health and economic planning.

Determine Extent of the Problem:

Much can be done to determine the extent of the problem in individual

countries so that appropriate resources can be allocated most usefully and outcomes of intervention can be evaluated. Estimates of alcohol production and consumption have been useful in monitoring trends but are of no use in defining the population subgroups at risk and in measuring specific health outcomes.

We must search for reliable indicators of rates of alcohol-related problems. We must be imaginative in searching out sources of data such as hospital admissions, loss of productivity, and injuries related to alcohol.

Implementation and Evaluation of Specific Control Measures:

We must commit ourselves to the implementation and evaluation of measures to control the problem. We must not get discouraged if positive results are not seen immediately. It is also important that we share the results of our efforts with other countries who are addressing the same issues and could learn from our successes and our mistakes.

Types of Interventions:

There are two major approaches to the problem of alcohol misuse -- limit availability and reduce demand.

Limiting availability can take the form of controlling production, importation, distribution, and price of sales of alcoholic beverages, and usually requires a combination of such controls.

Reducing demand can take three main directions. First, we can enlarge the public's understanding about the nature of alcohol and its harmful effects. Second, we can influence attitudes about the appropriate way to use alcohol; for example, we can control advertising and promotion efforts. And, finally, we can change the social and life circumstances that may give rise to the demand for alcohol.

Summary

Alcohol misuse is one of the most important emerging problems of the developing world. To solve it we must first measure the magnitude of the problem to provide policymakers with knowledge of its true cost to society. Then we must design and implement comprehensive, integrated control programs that do not sacrifice long-term public health goals for short-term economic gain. Finally, we must continue to evaluate and modify these programs to maximize their effectiveness. Now is the time for action.

Table 1: MORTALITY FROM CIRRHOSIS OF THE LIVER, RATE PER 100,000 POPULATION, TOTAL, AND BY SEX, AND PERCENTAGE OF ALL CAUSES OF DEATH, 1974 (OR 1975)

Country	Rate per 100,000 Population	Percentage of All Causes of Death
Belgium	14.4	1.21
Canada	11.6	1.57
Chile	27.0	3.48
Costa Rica	5.8	1.17
Cuba	5.6	0.96
France	32.8	3.13
German Dem. Rep. (1975)	12.5	0.87
German Fed. Rep.	26.9	2.30
Greece	16.2	1.35
Italy	31.9	3.33
Japan	13.4	2.06
Poland (1975)	10.1	1.17
Mexico	19.3	2.6
Philippines	6.4	1.22
Spain	22.5	2.65
Sweden	10.5	1.0
Thailand (1975)	3.2	0.54
Yugoslavia	13.3	1.58
United States	15.8	1.72

Source: World Health Organization (1977) Wld. Hlth. Stat. Ann. 1, Geneva

Table 2. ESTIMATED COSTS TO SOCIETY OF ALCOHOL ABUSE PROBLEMS IN THE UNITED STATES OF AMERICA (1983)

<u>Category</u>	<u>Estimated cost (U.S.\$)</u>
Core Costs	
Direct	
Treatment and Support	14,865,000,000
Indirect	
Mortality	18,151,000,000
Reduced Productivity	65,582,000,000
Lost Employment	5,323,000,000
Other Related Costs	
Direct	
Motor Vehicle Crashes	2,667,000,000
Crime	2,607,000,000
Social Welfare Programs	49,000,000
Other	3,673,000,000
Indirect	
Victims of Crime	192,000,000
Incarceration	2,979,000,000
Motor Vehicle Crash (time loss)	583,000,000
<hr/> Total	<hr/> 116,674,000,000

Source: Economic Costs to Society of Alcohol and Drug Abuse and Mental Illness: 1980. Research Triangle Institute, June 1984.

Table 3. PERCENTAGE CHANGE IN PER CAPITA PRODUCTION (IN LITERS) OF BEER (1960 AND 1980), WINE (1965 AND 1980), AND SPIRITS (1965 AND 1980) IN DIFFERENT REGIONS OF THE WORLD

Region	Beer	Wine	Spirits
Africa	417	-69	0
Asia (excluding Japan)	4,900	0	200
Australia and New Zealand	27	100	-69
Canada and USA	65	86	76
Europe (excluding USSR)	64	6	83
Japan	291		90
Oceania (excluding Australia and New Zealand)	*		
South America	70	-11	-43
USSR	97	109	4
World Total	51	8	27

* Oceania went from zero liters in 1960 to 32.0 liters in 1980.

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INFECTIOUS DISEASES AND MALNUTRITION IN DEVELOPING COUNTRIES

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INFECTIOUS DISEASES AND MALNUTRITION IN DEVELOPING COUNTRIES

For much of its history, the story of public health has been the story of malnutrition and infectious diseases. Before nutrition became a science, diet was used in the treatment of illness. The disease scurvy is an example. The realization that sanitary measures could interrupt the transmission of disease antedates the germ theory and the development of antibiotics.

While science adds daily to our knowledge of these historic scourges, malnutrition and infectious diseases remain important world problems. The knowledge and tools needed to control these problems are largely known. Cultural, socioeconomic and political obstacles frustrate attempts to free millions of people from the constraints of hunger and infection.

Scope of the Problem

While malnutrition and infectious diseases affect all ages, it is the very young who suffer most. Perinatal mortality is closely related to birth weight, which is affected by maternal health. Maternal malnutrition and infectious diseases can compromise the health not only of the immediate offspring, but of the next generation as well. 1

The interaction of malnutrition and infections is well established, but its exact nature is unclear. The impact of poor nutrition on the severity of disease has received little attention in clinical studies and is confused by a body of conflicting data. Underfed children from different regions may respond to disease with quite different mortality rates. Death from cerebral malaria is rare in severely malnourished children while the incidence of this infection may rise once re-feeding has begun.² Measles has more complications and a longer duration, without increased incidence, in the mild to moderately undernourished child. Severe malnutrition is associated with higher incidence of measles and the diarrheal illnesses.² Cell mediated immunity and the complement system are depressed in severe malnutrition, while for unknown reasons humoral immunity remains active, allowing for effective immunization.

Ready access to effective treatment has not always diminished the reservoirs of disease. Tuberculosis has yielded little ground within the developing world, with no epidemiologic evidence for a decline in prevalence during the past several decades. Marked success in some areas has been offset by discouraging impasse elsewhere. Many patients are lost to follow-up. Partial compliance may increase the shedding of bacilli in persons who now live longer but remain infectious.³

Effective measures may become obsolete as organisms adapt. For example, technological problems persist and new ones arise in the battle against malaria. Almost half (48%) of the world's population live in malaria endemic areas. About 8% reside in areas where antimalaria efforts have yet to be introduced. The parasite has spread into areas previously free of the

disease. More anopheline vectors, some with multiple resistance, are becoming resistant to pesticides. Since 1978, chloroquine resistance has appeared in 13 African countries and resistance to sulfadoxine/pyrimethamine is encountered more frequently in South America, Eastern Asia and East Africa.⁴

Inability to use resources known to be effective prevents elimination or control of infections for which simple and economic treatment exists. For example, schistosomiasis infects about 200 million persons world wide and threatens three times that number; 60% to 70% of those infected are between five and fourteen years of age. Opportunities for infection have spread following the development of agricultural and industrial water projects. Although eradication programs have largely failed, improvements in diagnosis and economical, single-dose treatment make significant reductions in severity and prevalence a reachable alternative goal.⁵

Present Actions

A growing recognition of the importance of health care at the community level has resulted in a greater emphasis on primary health care organized around the resources of the local community. Training programs for managers and primary health care workers are being introduced in more areas. Simple yet effective technologies are being emphasized. The appropriate use of low-cost medications including oral rehydration salts, antibiotics, and antimalarials have been shown to markedly reduce the mortality from diarrhea, measles and pneumonia, even in the presence of severe protein-energy malnutrition.² More stable oral rehydration salts have been tested and put into use.⁶ Immunization programs work well; they are being strongly promoted as one of the best means to reduce infant morbidity and mortality.

Surveillance and epidemiological services are expanding. There is improvement in the coordination of laboratory services in the support of public health and clinical programs. There are exciting prospects for improved or new tools from research. Examples include still better oral rehydration salts and vaccines that may prove to be safer, cheaper and more effective. More research is needed, especially applied research to find cost-effective ways to transfer simple technologies where it is necessary.

Barriers to Progress

The barriers to progress are all too numerous. Some of these are of our own making. Limited resources, the distraction of sophisticated and visible, yet cost ineffective technology, travel and communication barriers and inflexible planning stand in the way. There is much we do not know and much we do not have to enable us to cope with these global problems. Perhaps the greatest obstacle of all may be a failure of will to use the knowledge we have and the resources we possess to widen the impact already made.

We are reminded of the dramatic progress made in disease control in some countries with limited resources and of diverse political persuasions. Certainly, new tools are needed and research should be supported to develop

those tools. Programs already in place, such as those to control diarrheal diseases, prevent diseases easily controlled by vaccines, and improve sanitation and provide water, need to be expanded and strengthened. At the same time, however, a greater commitment may be needed to mobilize those generic resources known to work well. The workshop will examine new and old strategies to ascertain how best to "close the gap."

Opportunities for More Action

Perhaps the greatest challenge for the future is the creative use of technologies now at hand. Malnutrition will be eliminated only when the infectious diseases burden is lifted and the problems of food production and distribution are solved. The need for inexpensive, yet effective primary health care can only grow and will require continued national commitment.

There is growing conviction that the world is ready for the challenge of global immunization. Twenty years ago, eradicating smallpox was but a proposal at the World Health Assembly. By 1977, the commitment of an international coalition had made it a reality. Subsequently, the World Health Organization announced its objective that immunizations be available to all the children of the world by 1990.

In May 1985, the Pan-American Health Organization (PAHO) declared a goal to eradicate polio from the Western Hemisphere by 1990. Also, the Task Force for Child Survival was formed in 1984 by the World Health Organization, UNICEF, the World Bank, the United Nations Development Programme, and the Rockefeller Foundation. The Task Force assists these agencies in accelerating global immunization efforts.

Improvements in surveillance and data collection will be needed to identify risk groups and changing patterns of disease, allowing for faster response and better allocation of limited resources. Epidemiologic studies enhanced by the field use of microcomputers may result in greater cost-effectiveness as more information can be collected, analyzed and distributed in a fraction of the time required by conventional methods.⁷

Continued research in development of new vaccines is very encouraging. Recombinant DNA techniques promise to offer more and safer vaccines at a fraction of the cost, providing a wider spectrum of immunity and broader coverage.⁸

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INJURY AND VIOLENCE IN DEVELOPING COUNTRIES

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INJURY AND VIOLENCE IN DEVELOPING COUNTRIES

Injury is the hurt, loss or damage resulting from exposure to physical or chemical agents. The three major categories of injury are intentional, unintentional, and occupational (Figure 1).

Scope of the Problem

In industrialized countries, where data is more detailed, the magnitude of the injury problem is known to be enormous. In the United States, for example, injury is the last major plague of the young.¹ Injury is the leading cause of death up to the age of 44 years, causes the loss of more working years of life than all forms of cancer and heart disease combined (Figure 2), and accounts for 75 to 100 billion US dollars every year in medical and indirect costs.

In developing countries, injury is generally the leading cause of death from age four to 44 years.² Homicide, whether resulting from interpersonal conflicts or political strife, is a large problem in many developing countries (Table 1).³ Suicide rates reported for some developing countries are comparable to those for developed countries (Table 2).

Motor vehicle collisions may result in injuries to drivers, passengers, pedestrians or persons in other vehicles. These injuries have grown disproportionately in developing countries and are now the most common cause of reported unintentional injuries. For example, in North Yemen, motor vehicle-related injuries are the most common cause of trauma admission, in Kuwait they are the leading cause of death and disability, and in Nigeria they are the leading cause of death and disability among persons aged 15 to 44 years.⁴ In Thailand motor vehicle crash-related fatalities increased almost 30 percent each year during the late 1970's.

Home injuries, including falls, burns, poisoning and drowning, are a common group of unintentional injuries in developing countries. These problems have received particular attention because they affect young children and the elderly. Occupational injuries are a large and growing problem as industrialization proceeds in developing countries. Industrial equipment and plants often do not include current safety technology, work practices do not emphasize safety, and management attention to safety issues is often rudimentary. (See accompanying report on Occupational and Environmental Health Problems)

Present Actions

Injury control is feasible.⁵ Actions to prevent motor vehicle injuries have been taken by many developing countries and emphasize vehicle safety standards, safety belt use in automobiles, use of helmets by persons riding motorcycles, and attention to road safety regulations. As examples, the City of New Delhi has highlighted buses with yellow stripes and Kenya and other

countries have used zebra-striped crossings in an effort to protect pedestrians. Residential fires have been limited in Sri Lanka using locally-appropriate lamp holders.

Caretakers of young children can be taught to recognize and avoid hazards. Such efforts may include "child-to-child" education programs and focus on prevention of drowning, poisoning and fires. Occupational injuries can be prevented through the development of machine guarding, plant design, and attention to safety by management and workers. These efforts would be enhanced if financial institutions required their industrial clients to adopt safety standards and work practices. (See accompanying report on Occupational and Environmental Health Problems)

The types of actions that can prevent homicide include limiting the availability and use of lethal agents such as firearms and machetes, especially in settings where alcohol is consumed; encouraging non-violent conflict resolution and providing support and opportunities for non-violent responses to high levels of community, family, and individual stress; coordinating the responses of health, social service, and criminal justice systems to provide comprehensive identification and follow-up services for victims and perpetrators of non-fatal assaults; and implementing environmental changes such as improved lighting and protective barriers for store clerks or drivers at high risk of robbery and assault.

Actions to prevent suicide may include improving recognition and treatment of depression, counselling for high risk groups, limiting access to lethal suicide means (e.g. firearms, poisons and drugs), and increasing public knowledge.

Barriers to Progress

Injury is frequently perceived as a "fact of life," not as a health problem that can be solved. However, like infantile diarrhea or polio -- which also were viewed as "facts of life" at one time -- injury can be prevented.

Injury control is often neglected by public health officials. Consequently, there is often no focus for coordinating and planning injury control efforts. Such a focus is critical because agencies outside the health sector (i.e. criminal justice, transportation, education, and labor) must all be involved in control efforts.

The magnitude and distribution of injury are inadequately defined, as are the groups of people who are affected. Because injury often is not perceived as a health problem, existing vital statistics and other data relevant to injury are not examined. When health surveys are conducted questions about injury generally are not included. Conversely, data collected by non-health agencies (listed above) are often unknown to the health sector.

Economic and financial barriers are also important. Funding for injury control is nonexistent or vastly disproportionate to the total economic burden imposed on society by injury. Funds that are available are often spent

inefficiently or for tertiary treatment rather than prevention. Finally, there is an erroneous perception of a "trade-off" between economic growth and safety. Safety features for industrial plants, vehicles, or roads are seen as economically disadvantageous. If the long-term cost savings from safety features were calculated, the "cheaper" products would be seen as much more expensive to consumers.

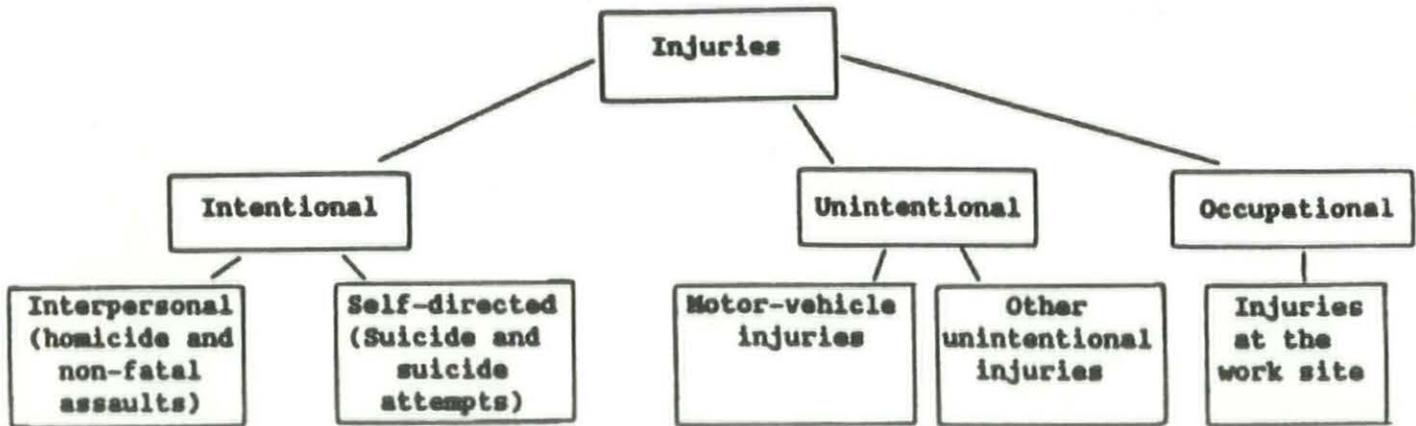
Opportunity for More Action

The types of injuries, their causes, and the solutions that are feasible vary greatly between countries. Therefore, analysis of the problem and identification of high priority interventions are crucial early steps. A public awareness campaign may then be needed to mobilize community support. Attention should be given to all control opportunities, including prevention, acute care and rehabilitation. Prevention activities are often more effective when based on environmental, legislative or regulatory changes rather than solely on education or persuasion.

The public health sector should coordinate development of injury control methods, implement intervention programs, develop support from other sectors and establish a focus for the interventions identified. Development and careful evaluation of demonstration projects' effectiveness will be important for program success. Such projects can generate interest in and support for further expansion of injury control.

Summary

Injury is one of the leading causes of death and disability, particularly in children and young adults throughout the world, yet it receives scant attention compared with other leading health problems. Injury control is feasible but requires leadership and coordination to define the problem, establish priorities, mobilize many sectors of society and develop intervention demonstrations. Demonstration projects which are carefully evaluated will be powerful evidence that injury control is feasible in developing countries and will lead to further injury control efforts worldwide.



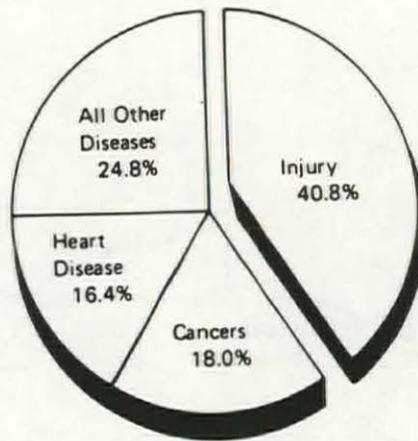


Figure 2: Percentage of years of potential life lost to injury, cancer, heart disease, and other diseases before age 65. Modified from Centers for Disease Control.

Source: Injury in America. A Continuing Public Health Problem. National Academy Press, Washington, D.C., 1985.

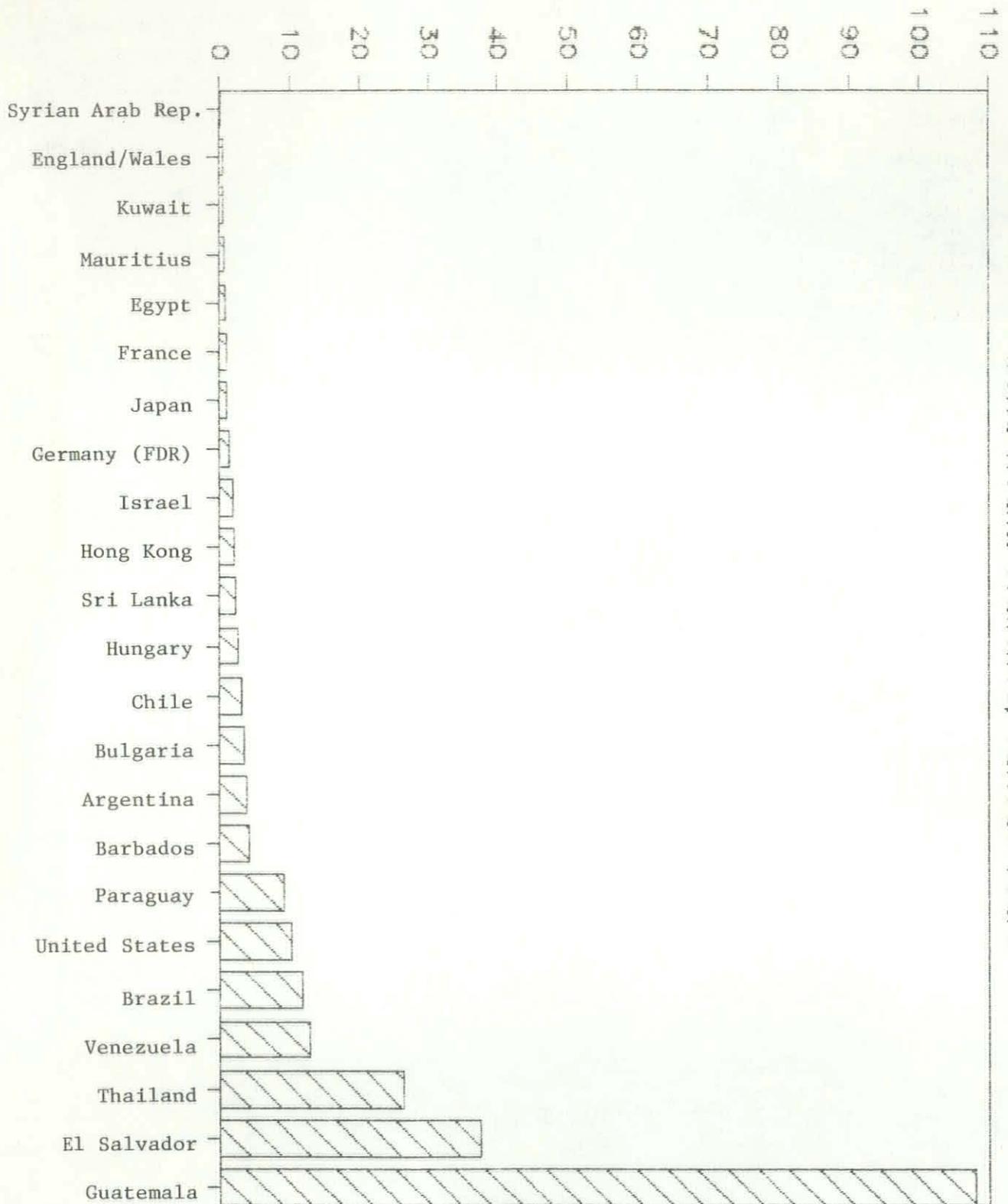
Table 1: Homicide Numbers and Rates for Selected Countries

Country	Year	Homicide Rate	Number of Homicides	% of All Deaths	All Deaths
Syrian Arab Rep.	1981	0.1	7	0.02%	34346
England/Wales	1981	0.4	175	0.03%	577890
Kuwait	1982	0.4	7	0.14%	4992
Mauritius	1981	0.7	7	0.11%	6404
Egypt	1979	0.8	324	0.07%	444753
France	1981	1	546	0.10%	554823
Japan	1981	1	1153	0.16%	720262
Germany (FDR)	1981	1.3	782	0.11%	722192
Israel	1981	1.9	75	0.29%	25941
Hong Kong	1981	2	104	0.42%	24971
Sri Lanka	1980	2.3	338	0.37%	91020
Hungary	1981	2.5	272	0.19%	144757
Chile	1981	3.1	345	0.49%	69871
Bulgaria	1981	3.4	302	0.32%	95441
Argentina	1981	3.8	1102	0.46%	241904
Barbados	1981	4.1	11	0.59%	1878
Paraguay	1980	9.1	159	1.22%	13059
United States	1981	10.2	23361	1.18%	1977981
Brazil	1980	11.7	13887	1.85%	749644
Venezuela	1980	12.7	1763	2.29%	76834
Thailand	1981	26.3	12476	5.21%	239423
El Salvador	1981	37.6	1881	5.02%	37483
Guatemala	1981	108	8079	11.26%	71748

Table 2: Suicide Numbers and Rates for Selected Countries

Country	Year	Suicide Rate	Number of Suicides	% of All Deaths	All Deaths
Kuwait	1982	0.1	2	0.04%	4992
Egypt	1979	0.2	65	0.01%	444753
Syrian Arab Rep.	1981	0.3	31	0.09%	34346
Guatemala	1981	0.5	39	0.05%	71748
Mauritius	1981	2	19	0.30%	6404
Barbados	1981	2.6	7	0.37%	1878
Paraguay	1980	3.1	54	0.41%	13059
Brazil	1980	3.3	3894	0.52%	749644
Venezuela	1980	5.2	721	0.94%	76834
Israel	1981	5.3	210	0.81%	25941
Chile	1981	5.8	651	0.93%	69871
Thailand	1981	7.3	3458	1.44%	239423
Argentina	1981	7.7	2217	0.92%	241904
England/Wales	1981	8.9	4419	0.76%	577890
El Salvador	1981	9.7	484	1.29%	37483
Hong Kong	1981	10.1	519	2.08%	24971
United States	1981	12	27596	1.40%	1977981
Bulgaria	1981	13.6	1209	1.27%	95441
Japan	1981	17	20096	2.79%	720262
France	1981	19.6	10586	1.91%	554823
Germany (FDR)	1981	21.7	13379	1.85%	722192
Sri Lanka	1980	29	4272	4.69%	91020
Hungary	1981	45.6	4880	3.37%	144757

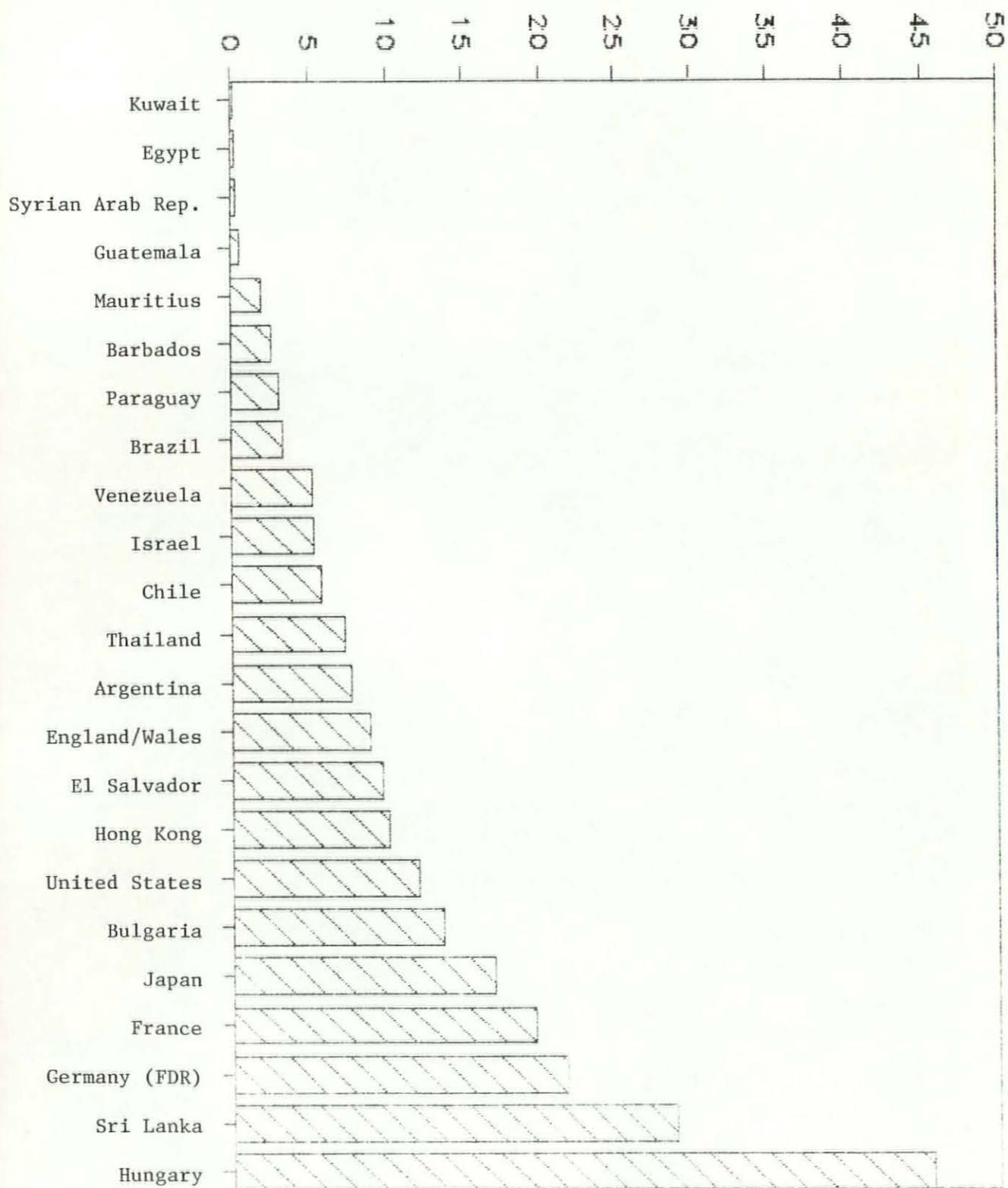
Rate per 100,000



Homicide Rates for Selected Countries

World Health Statistics, Various Years

Rate per 100,000



Suicide Rates for Selected Countries
World Health Statistics, Various Years

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OCCUPATIONAL AND ENVIRONMENTAL HAZARDS IN DEVELOPING COUNTRIES

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OCCUPATIONAL AND ENVIRONMENTAL HAZARDS IN DEVELOPING COUNTRIES

This review focuses on the environmental health problems encountered by developing countries, particularly as related to the activity of work.

Many developing countries are now experiencing risks associated with development patterns that are faster and more difficult than occurred in the highly industrialized countries. The types of work, the economic structures and the structure of the labour force vary markedly from one developing country to another (Table 1). The introduction of mechanized farming, industrialization, rapid urbanization, building and construction, mining, and inherently risky sports, has brought about occupational and environmental health risks (Table 2). Yet, positive socio-economic development of these countries depends on the quality of working conditions and the health and well-being of the entire population.

The leading work-related diseases and injuries affecting workers in the United States and other industrialized nations are regularly reported in the literature. Such problems include occupational lung disease, musculoskeletal injuries, occupational cancer, severe occupational traumatic injuries, occupational cardiovascular disease, reproductive problems, neurotoxic illness, noise-induced loss of hearing, dermatologic conditions, and psychologic disorders.¹

Although some studies have concentrated on major environmental consequences of human activity², little is known about the many health problems affecting the active working populations in most developing countries. In addition, most developing countries are inadequately prepared to deal with disastrous events when they occur. Illustrations of this are the accidental release of methyl isocyanate in Bhopal, India; the inadvertent exposure to radioactive cobalt that occurred in Juarez, Mexico; the recent earthquake in Mexico City, Mexico; and the volcanic eruption in Colombia.

The appropriate technologies, skills, knowledge and experiences needed to prevent these health problems are available. Occupational health and safety programs provide important and needed parameters for the protection of the health of the working populations.

It has been recognized that changes in working and living conditions have occurred following industrialization. Many human afflictions that are common today result from poor adaptations to significant environmental changes. Evidence is mounting that shows an increasing prevalence in developing countries of non-communicable diseases that previously were seen only in industrialized countries.³ It is estimated that several hundred thousand reported cases of occupational diseases and tens of millions of occupational injuries take place each year.⁴

Scope of the Problem

In most developing countries, 3 of every 4 workers are working under conditions that do not meet the standards recommended by the International Labour Organization (ILO).⁴ Most agricultural workers in these countries live in the traditional economic sector. They are also exposed to several environmental risks and occupational hazards resulting from poor sanitation, work mechanization, agricultural chemicals, airborne pollutants, noise, and vibrations that cause diseases and injuries. Some of these diseases are caused by specific occupational exposures, some of non-occupational origin may be aggravated by occupational exposure, and some may have multiple etiology, both occupational and non-occupational.⁵

Exposure to metal fumes and dusts, excessive noise, and poor thermal environment have been found in many large industries.⁵ Other risk factors include exposure to cotton and other organic dusts, occupational injury and hazardous waste spills. Occupational injury is the chief cause of death and temporary or permanent disabilities that occur in work areas.⁶ In mining areas, silicosis, pneumoconiosis and other lung conditions are being recognized for what they really are -- work-related diseases.

The true figures of labour injuries and occupational diseases in developing countries are under-reported. In Tanzania, all injuries are not reported, and actual injuries are estimated to be 5 to 20 times greater than those reported.⁷ For example, the number of pesticide poisonings is estimated to be about 500,000 cases per year by WHO. In Sri Lanka it is six times higher (2.9 million). Only 24 of about 100 developing countries reported their labour injuries to ILO.⁸

Undoubtedly the number of fatal and nonfatal occupational injuries is increasing beyond the effect of improved reporting, because of the expanding mechanization. For example, the most common type of injury seen in Tanzania's textile mills is mechanical, i.e., injuries caused by moving machine parts. Other injuries result from splash or spillage of toxic chemicals (e.g., sodium hydroxide and hydrogen peroxide), burns, and electric shock (Table 3).⁹

Poor waste disposal affects not only the workers but also the surrounding community. In Tanzania, contaminated water from industries flow through small furrows for several miles before entering a river which finally empties into the sea. Children playing in water in the furrows are at risk of contracting water-borne or other diseases resulting from the toxic effects of the industrial chemicals present in water.

Mass migration resulting from fear of political persecution often poses health risks to migrant workers because of the potential hazards associated with uprooting. For instance, language barriers, lack of contact with family and fellow countrymen, and discriminatory employment policies compound stressful psychosocial factors among migrants throughout the world.⁷ (See accompanying report on Reproductive Health).

Alcoholic employees have a greater number of days off work for sickness and injuries than non-alcoholics. Alcohol abuse, although information is limited

on the extent, increases illness, diminishes productivity, and increases worksite interpersonal conflicts.⁷ (See accompanying report on Alcohol).

In summary, nearly 40 percent of the world's 4.6 billion people are economically active.¹⁰ Three-fourths of the world population live in developing countries, and 70 percent of the labour force is located there. More than one-half of the world's workers still work in conditions below standards recommended by the ILO. The same proportion of workers live without the full basic human rights as defined by ILO.⁵

Present Actions

The purpose of occupational health is two-fold:

1. To protect the health and safety of workers against diseases and injuries resulting from the work environment.
2. To provide the necessary welfare services (e.g., social security services) for workers at their work places, and where possible, outside their work places as well.

Though difficult to say what mode is most effective, many countries have work-injury programmes providing compensation for work-related injuries and occupational illness¹¹. In most developing countries work-injury compensation is largely the employer's liability through direct-provision of benefits or insurance premiums. For instance, in Kenya and Uganda, there is no source of funds directly allotted by governments to compensate workers.

In most countries, no minimum qualification period of insurance or employment is required for entitlement to work-injury benefits. Benefits for injured workers under work-injury programmes are classified as cash benefits and medical benefits. The cash benefit is subdivided into temporary disability, permanent total disability, and permanent partial disability. In India, the national government has been paying work-injury benefits in this manner.¹¹

In Tanzania, the government in collaboration with international agencies, is carrying out surveys of the working environment in various work places and giving advice on protecting and maintaining the workers' health and safety. The government has prepared guidelines aimed at streamlining occupational health services in Tanzania, with strong emphasis on the prevention of occupational health hazards.

The World Health Organization(WHO), is extending assistance in expertise, finance, equipment, and training of occupational health staff locally and overseas to strengthen occupational health services in developing nations. Other actions include dust control, environmental monitoring, medical surveillance, use of respirators, improving the working conditions by improving ventilation (in Tanzania), displaying warning signs, preparing educational programmes, and stressing the observation of safety regulations.

Barriers to Progress

There are various problems that hinder the opportunity to use some of the preventive measures described above. Modern textile machines are not designed to cope with washed cotton. To steam the cotton in ginneries and then dry it before baling would mean an increase in the overall production costs, thereby jeopardizing the competitive ability of the cotton-made article on the market.⁷

Warning signs, workers' education, use of personal protective equipment, and observation of safety regulations play a great part in the prevention of health problems, especially injuries. This calls for cooperation of all parties concerned and continuing educational programmes are important. However, it is difficult for the employee to cooperate fully, especially when the protective device provided is viewed as cumbersome, uncomfortable or difficult to handle.

Prevention of the auditory problems depends largely on engineering techniques aimed at noise reduction, e.g., mounting machines on resilient springs or rubber cushions, enclosing the operator or the machine in soundproof compartments, or supplying the workers with sound-proof protective ear covers. The engineering techniques are complex and expensive and the world wide inflation does not favour such an approach for an existing industry. A more effective answer may lie in the development of new techniques, such as the production of sound-proof ear covers that are disposable and the provision of greater size ranges of personal protective equipment for added comfort. It is difficult to get the correct size for every worker, particularly where a large work force is involved.⁷

Occupational and environmental health services in many developing countries are separate and apart from public health services. Hence there are problems in the dissemination of information to and from the public health services. This situation is causing ineffective use of resources through poor coordination or duplicate work. Important information is lost and the comprehensive approach to workers' health becomes difficult. Thus, functional coordination and integration are important elements between occupational and environmental health services and public health services in each country. In many worksites health care is carried out by a physician and one to three nurses, which results in a huge case load. Many countries still exclude small industries and the self-employed from health care delivery. Yet these are the ones in urgent need of that service.

The resources needed for the occupational health problems are not evenly distributed throughout the world. More than 90 percent of occupational health medical doctors and nurses are employed in industrialized nations. For instance, only 77 of 1,402 participants (4.5 percent) registered in the XXI International Congress on Occupational Health, which was held in Dublin, Ireland, in 1984, came from developing countries, and an even greater proportion of the Congress reports dealt with research done in developed countries.⁷

Opportunity for More Action

In spite of the obstacles that are hindering the present modes of action, there are opportunities for further action. The elimination or substitution of the harmful substances could be strengthened in many developing countries. Medical surveillance of the employees could be expanded and incorporated with other primary health care programmes.

Occupational safety and health could be strengthened and expanded to both small, medium, and large sized factories and industries, and to farmers in the rural areas. Workers and farmers could be taught about the imminent change resulting from agrichemicals and other forms of mechanization. Conditions for workers could be extensively improved in rural and urban areas.

Sanitation at the traditional levels could be improved through education of the people and self-help programmes. Government and other concerned agencies could pool their funds to meet the needs of occupational and environmental health measures in developing countries.

Manpower resources are important in solving this problem. The trained personnel could provide the methods and knowledge on occupational and environmental health for actions directed at the improvement of working conditions and workers' health. The competence of health workers could be broad and partly nonmedical. Industrial hygienists, ergonomists, psychologists, and physiotherapists could be part of the needed staff in the delivery of health care services. Where primary health care networks are inadequate, occupational health staff could provide primary health services to workers and their families, and to nearby communities. It would be necessary to set priority on occupational health tasks to facilitate the functions and effectiveness of occupational and environmental health. Of course, each country could evaluate what kind of health services produce the maximum long-term protection of its workers' health.

Summary

There is a global need for occupational and environmental health to protect and promote the health and well-being of workers throughout the world, especially those in developing nations.

Occupational and environmental health problems in developing countries are among the major public health problems emerging in developing nations. The need for improvement is vital in developing countries, where 3 of every 4 workers in the world are working under conditions below recommended ILO standards, and where housing and other environmental factors leave much to be desired. The safety of people in their everyday work and surrounding environment increases their motivation and productivity.

The attainment of these standards is not a matter of hope but requires full commitment, common efforts, and readiness of each government to cooperate with WHO, ILO, and other agencies concerned about the welfare of people.

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Table 1. Percentage of the labor force

	INDUSTRIALIZED COUNTRIES	DEVELOPING COUNTRIES
Agriculture & forestry	5 - 10	65 - 90
Manufacturing industry	30 - 50	5 - 10
Building and construction	5 - 8	6 - 10
Trade	12 - 20	10 - 20
Community & social services	15 - 30	1 - 18

Distribution of the economically active populations (in per cent) in a small European and a small African country

Activity	Finland (1980)	Mali (1976)
Agriculture & forestry	12.6	82.2
Mining & quarrying	0.4	0.3
Manufacturing	24.8	0.8
Electricity, gas & water works	1.1	0.1
Construction	7.0	0.3
Trade, restaurants, hotels	13.8	2.0
Transport & communication	8.0	0.5
Finance & insurance	5.3	-
Public services	24.7	7.7
Unemployed	-*	3.2
Undefined	2.3	2.9
Total	100.0	100.0

* not included in the total

Table 2. Number of workers exposed to scored hazards, according to hazard group

Scoring Hazard group	0.1 probable exposure	1 less than the TLV level	2 substantial, the TLV level	3 unacceptable, above the TLV level	Total	%
1. Inorganic gases		32	4	-	36	0.6
2. Acids and alkalis		44	56	-	100	1.6
3. Organic vapours		93	43	-	136	2.2
4. Nuisance dusts and mists		1 550	223	35	1 808	29.3
5. Harmful organic dusts		1 107	1 607	629	3 343	54.2
6. Harmful inorganic dusts			10	151	161	2.6
7. Metal fumes			55	6	66	1.1
8. Allergens	163	22	-	-	185	3.0
9. Carcinogens	209	120	-	-	329	5.3
Total	372	3 033	2 090	669	6 164	
%	6.0	49.2	33.9	10.9		100

YEAR	CAUSES OF ACCIDENTS				Total
	Moving machine parts	Electric faults	Hot water or steam	Splash or chemical spillage	
1979	42	6	8	4	60
1980	35	5	6	3	49
1981	21	3	5	3	32
1982	18	3	2	2	25
1983	15	2	1	0	18
TOTAL	131	19	22	12	184

Total machine units throughout the period = 1870
 Population at risk throughout the period = 4124

N/B: I have considered it an accident worth counting if the injury sustained completely incapacitates the employee for three or more working days.

REPRODUCTIVE HEALTH IN DEVELOPING COUNTRIES

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REPRODUCTIVE HEALTH IN DEVELOPING COUNTRIES

Population growth has been a recurrent topic of discussion on the agenda of many global conferences on health. It has remained a disturbing feature of human history since the time of Malthus. Fertility rates and the global migration of categorized persons - refugees and migrants - continue to cause genuine international concerns in the field of health care, human rights, politics and population policies, religion, and socioeconomic development. Today, nations of the world and numerous international organizations are still hard at work, trying to bring population growth in balance with the existing national resources and to meet the minimal health and social service needs of refugees and migrants.

Scope of the Problem

Although fertility rates are declining in many nations of the world, some developing countries still have high fertility. Women of child-bearing age are still having large families in those developing countries where fertility had fallen. For instance, in Latin America and the Caribbean, the total fertility rate ranges from 2.4 to 6.5. In Asia it ranges from 2.6 to 6.3, while in the Middle East and North Africa, fertility rates range from 5.3 to 8.5. In Sub-Saharan Africa, fertility rates range from 5.3 to 8.3 [Tables 1 and 2].¹

Infant and maternal mortality rates are still high in most nations of the world. In Africa, for example, infant mortality averages 149 per 1,000 live births. Maternal mortality is estimated to be between 110 and 649 deaths per 100,000 live births. The average life expectancy at birth is 49 years [see Figures: 1, 2, 3, and Table 3].² Children under five and women of child-bearing age are the highest risk groups. The risk of maternal or infant illness and death throughout the world has been associated with four specific types of high risk pregnancy:³

- (i) Too early: among women under age 18 years
- (ii) Too late: among women over age 35 years
- (iii) Too close: less than two years interval
- (iv) Too many: among women with more than four living children

In many developing countries, older women have more children. This practice puts the women's pregnancies into two high risk categories. Women with large

¹ London, Kathy, A; Cushing, Jeanne; Rutstein, Shea O; Anderson, John E; Morris, Leo; Morris, Sidney; and Cleland, John; Fertility and Family Planning Surveys: An Update; Population Reports Series M, No. 8, Sept-Oct 1985, pp. M-318-M-329.

² Ibid., pp. M-323-M-326.

³ Singh, Kuldeep; Viegas, Osborne; Ratnam, S; Family Planning on the Health and Welfare of Mother and Children in the Developing World with Special Reference to Singapore; Singapore, 1985, pp. 1-3.

families also tend to have frequent births. Women who marry very young may have several closely spaced births before they reach 20 years of age.⁴

The extra risk in the above types of pregnancies are related to both biological and socio-cultural factors. Birth interval, number of children, and age affect the mother's ability to carry a pregnancy safely and to provide optimal biological conditions for the developing fetus. Once the child is born these same factors influence the family's ability to feed and care for the new child and also to care for the older children.⁵

Because children under five and women of child-bearing age are the highest risk groups, whatever health professionals do in the area of family health should strongly emphasize the problems of maternal and child health. The most common cause of morbidity and mortality in newborns is prematurity; the percentage of low birth weight babies has been found to be as high as 73% in some African communities. It is also clear that maternal and infant mortality rates increase as a result of unwanted and poorly spaced pregnancies. According to the WHO Technical Report Series No. 442: between 10% and 50% of pregnancies are unplanned. Abortion undertaken outside the medical authority results in high maternal mortality and morbidity rates. While maternal mortality risk is slightly lower with second and third pregnancies than with the first, it rises with each pregnancy beyond the third and increases significantly with each pregnancy beyond the fifth. [See accompanying Figures 4-7]⁶

Present Actions

Many government leaders of the world have viewed and accepted family planning as a vital part of socioeconomic development. Many developing countries are establishing different forms of family planning programmes which include voluntary sterilization. Some countries are trying to translate family planning into appropriate education, information and public services which meet the basic needs of men and women of those nations. For instance, the government of Trinidad and Tobago has extended its efforts to serve young women with high pregnancy rates. Similarly, El Salvador, Honduras, and Panama increased efforts to reach rural areas where family planning services are lower.⁷

Knowledge of contraceptive methods among married women ages 15-44 is gaining good ground in most countries, especially among modern educated women and men.⁸ For instance, 96% of females in the Republic of Korea know about voluntary sterilization, while 93% of males in Thailand know about the method. Certainly voluntary sterilization has become, in many countries,

4 Ibid.

5 Ibid.

6 Hatcher, Robert A; Dalmat, Michael E; Delano, Grace E; Fadhel, Samiha B; et al; Family Planning Methods and Practice: Africa; Christian Medical Society, Richardson, Texas 1984, pp. 3-14.

7 See footnote 1: above, pp. M-324-M-330.

8 Ibid.

an accepted method of family planning for those who have reached the desired number of children. The USA, UK, and the Scandinavian countries have regulated voluntary sterilization by statutes which recognize the procedure as a means of family planning. In these countries government supported family planning and medical services include contraceptive sterilization. Also, countries such as Bangladesh, China, El Salvador, India, and Panama have made voluntary sterilization into law.

Industrialized and developing countries are emphasizing formal and informal education in order to achieve basic literacy. In many countries people are marrying later to allow time for more education or to be sure of an income before marriage.⁹ As a result, fertility among young persons in developing countries has fallen over the last 20 years. In addition, the majority of young married couples do not use family planning until they have at least one child.

There has been a positive change both in thinking and in action in the field of population. Most governments of the world have established national programmes to allow couples to control their fertility, plus measures that help them overcome unintended infertility. This change of attitude is embodied in the Alma Alta Declaration of the 1978 International Conference on Primary Health Care organized by the World Health Organization and UNICEF. Family planning was declared an integral part of health care and social development and it was unanimously endorsed in 1979 by the 156 member states of the World Health Organization.

Barriers to Progress

There are many barriers that hamper our progress in population control and family planning programmes. Family planning services do not at this time reach the majority of couples who are at high risk of unintended pregnancy, especially those in rural areas. There is still a high level of illiteracy among women. Many girls stay at school for only a few years which tends to limit their opportunities on numerous levels. In short, social and legal constraints, as well as lack of committed resources, contribute to slow progress.

Incorporating family planning into expanded and integrated family health services may expand the opportunities for couples to have access to family planning services, but multiple strategies for education, promotion and delivering services are needed.

Opportunity for More Action

Noting that most government leaders of the world are willing to establish national family planning programmes, family planning services could be strengthened and expanded to the rural areas. The programmes could include public and private sectors for males and females. There should be continued sales, distribution and advertisements of all forms of contraception before they reach the age of marriage (or union). Programmes aimed at improving

9 Ibid.

female literacy and employment of young people might be strengthened. National governments might expand options for surgical contraception, particularly for those couples who already have children. Also, national governments and agencies might strengthen research aimed at improving the acceptability, effectiveness and safety of methods of contraception. Improved prenatal health care and obstetric management of pregnancies will enhance survival of mothers and infants. Other actions that can be considered are to relax legal restrictions on sales of contraceptives; improve the management of complications from pregnancy termination; increase incentives to delay first marriage or first birth, or both; and promote civil order, voluntary family planning, and national political stability.

Table 1. Total Fertility Rate, Wanted Total Fertility Rate, and Average Desired Family Size, World Fertility Survey, 1974-1982

Region, Country & Year	Total Fertility Rate ^a	Wanted Total Fertility Rate ^b	Average Desired Family Size ^c			Region, Country & Year	Total Fertility Rate ^a	Wanted Total Fertility Rate ^b	Average Desired Family Size ^c		
			All Women	Women 15-19	Women 45-49				All Women	Women 15-19	Women 45-49
AFRICA						LATIN AMERICA & CARIBBEAN					
Benin 1981-82	7.1	6.9	7.6	7.2	8.0	Colombia 1976	4.7	2.6	4.0	2.7	5.7
Cameroon 1978	6.4	6.1	8.0	6.5	8.6	Costa Rica 1976	3.3	2.6	4.7	d	6.1
Ghana 1979-80	6.5	5.6	6.0	5.2	7.3	Dominican Republic 1975	5.7	3.0	4.7	3.4	6.0
Ivory Coast 1980-81	7.4	7.0	8.4	7.5	9.6	Ecuador 1979	5.3	3.1	4.1	3.1	5.6
Kenya 1977-78	8.3	6.9	7.2	6.6	8.7	Guyana 1975	5.0	2.8	4.6	3.4	5.9
Lesotho 1977	5.8	5.3	6.0	5.6	7.3	Haiti 1977	5.5	3.8	3.6	2.8	4.3
Mauritania 1981	6.3	6.8	8.8	8.3	9.4	Jamaica 1975-76	5.0	2.3	4.1	3.3	4.8
Nigeria 1981-82	6.3	5.4				Mexico 1976-77	*6.2	3.6	4.4	3.8	5.8
Senegal 1978	7.2	6.7	8.3	8.3	8.4	Panama 1976	3.8	2.7	4.3	d	5.1
Sudan (north) 1978-79	6.0	4.8	6.4	5.4	6.5	Paraguay 1979	5.0	4.2	5.2	3.7	7.1
ASIA & PACIFIC						Peru 1977-78	5.6	2.6	3.8	3.1	4.6
Bangladesh 1975-76	6.1	3.1	4.1	3.7	5.0	Trinidad & Tobago 1977	3.3	2.4	3.8	3.2	4.8
Fiji 1974	4.2	3.6	4.2	2.7	6.1	Venezuela 1977	4.5	2.9	4.3	3.0	d
Indonesia (Java & Bali) 1976	4.7	3.6	4.2	3.3	5.4	MIDDLE EAST & NORTH AFRICA					
Korea, Rep. of 1974	4.3	2.5	3.1	2.7	3.8	Egypt 1980	5.3	3.1	4.1	4.2	4.7
Malaysia (peninsular) 1974	4.7	3.1	4.3	3.9	4.5	Jordan 1976	7.5	5.1	6.2	4.9	7.5
Nepal 1976	6.2	4.5	3.9	3.6	4.3	Morocco 1979-80	5.9	3.7	4.9	4.3	6.6
Pakistan 1975	6.3	3.9	4.2	4.0	4.5	Syria 1978	7.5	5.6	6.1	5.0	7.1
Philippines 1978	5.2	3.6	4.3	3.0	5.6	Tunisia 1978	5.9	3.6	4.1	3.7	4.4
Sri Lanka 1975	3.8	2.2	3.7	2.6	4.8	Turkey 1978	4.5	2.4	3.0	2.8	3.1
Thailand 1975	4.6	2.6	3.6	2.9	4.4	Yemen Arab Rep. 1979	8.5	7.4	5.5	4.5	6.9

^aThe number of children a woman would bear if she passed through her life bearing children at the same rate as are currently being born by women in each 5-year age group. Based on births in the 5-year period before the survey.

^bThe number of wanted births a woman would have if she passed through her life having, in each 5-year period, only the number of wanted births

that women in each 5-year age group are currently having. Based on wanted births in the 5 years preceding the survey.

^cEach woman's desired family size was measured by asking her how many children she wanted: "If you could choose exactly the number of children to have in your whole life, how many would that be?"

^dNo women in category were included in survey.

Source: For columns 1 and 2, World Fertility Survey (140); for columns 3-5, Lightbourne (580)

Table 2. Average Number of Children Ever Born (CEB) to Women Age 40-44 and Current Total Fertility Rate (TFR), Contraceptive Prevalence Surveys and World Fertility Survey, 1974-1984

Region, Country & Year	Total		Urban		Rural		Region, Country & Year	Total		Urban		Rural	
	CEB to Women Age 40-44	TFR	CEB to Women Age 40-44	TFR	CEB to Women Age 40-44	TFR		CEB to Women Age 40-44	TFR	CEB to Women Age 40-44	TFR	CEB to Women Age 40-44	TFR
AFRICA							Northeast region 1980	7.1	5.4	6.3	4.6	8.3	6.8
Benin 1981-82	6.1	7.1	6.0	NA	6.1	NA	Piauí 1979	6.7	5.9	7.3	3.5	7.7	6.8
Botswana 1984	6.3	6.5	5.8	NA	6.4	NA	Piauí 1982	6.6	5.1	5.3	3.7	6.9	5.3
Cameroon 1978	5.2	6.4	4.5	NA	5.3	NA	São Paulo 1978	4.0	2.8	3.7	2.6	5.5	4.2
Ghana 1979-80	6.1	6.5	5.7	NA	6.3	NA	Southern region 1981	4.6	3.6	4.1	3.3	5.8	5.3
Ivory Coast 1980-81	6.7	7.4	6.6	NA	6.8	NA	Colombia 1976	6.1	4.7	5.5	NA	7.2	NA
Kenya 1977-78	7.6	8.3	7.4	NA	7.6	NA	Colombia 1978	6.0	3.8	5.2	3.1	7.4	5.4
Lesotho 1977	5.1	5.8	4.7	NA	5.2	NA	Colombia 1980	5.5	3.6	4.9	3.0	7.3	5.1
Mauritania 1981	6.0	6.3	5.7	NA	6.2	NA	Costa Rica 1976	6.1	3.3	4.6	NA	7.7	NA
Nigeria 1981-82	5.1	6.3	4.6	NA	5.3	NA	Costa Rica 1978	5.5	4.1	NA	NA	NA	NA
Senegal 1978	6.8	7.2	6.5	NA	6.8	NA	Costa Rica 1981	5.3	3.6	NA	NA	NA	NA
Senegal (Sine-Saloum) (rural) 1982					7.1	6.4	Dominican Rep. 1975	6.4	5.7	5.1	NA	8.0	NA
Sudan (north) 1978-79	6.0	6.0	6.1	NA	6.0	NA	Dominican Rep. 1983	6.2	4.1	5.3	3.6	7.0	4.9
Zimbabwe 1984	7.0	6.5	5.3	NA	7.8	NA	Ecuador 1979	6.4	5.3	5.4	NA	7.2	NA
ASIA & PACIFIC							El Salvador 1978	6.1	6.3	4.7	3.3	7.0	8.4
Bangladesh 1975-76	7.1	6.1	6.7	NA	7.1	NA	Guatemala 1978	6.5	6.1	5.8	4.1	6.6	6.6
Bangladesh 1979-80 ^a	6.5	6.2	6.3	6.1	6.5	6.2	Guatemala 1983	6.3	5.8	4.7	4.2	6.8	6.3
Fiji 1974	6.2	4.2	5.5	NA	6.6	NA	Guyana 1975	6.3	5.0	5.0	NA	6.9	NA
Indonesia (Java & Bali) 1976	5.3	4.7	5.6	NA	5.3	NA	Haiti 1977	5.6	5.5	4.6	NA	6.0	NA
Indonesia (urban) 1983							Haiti 1983	5.6	5.9	4.2	NA	5.9	NA
Jakarta ^b			5.9	6.4			Honduras 1981	7.0	6.5	5.4	4.1	7.9	8.2
Medan ^b			6.6	7.5			Jamaica 1975-76	5.4	5.0	4.4	NA	6.0	NA
Semarang ^b			4.6	5.0			Jamaica 1983	5.4	3.5	5.3	NA	5.6	NA
Surabaya ^b			5.0	6.4			Mexico 1976-77	6.6	6.2	6.0	NA	7.6	NA
Ujung Pandang ^b			6.7	7.7			Mexico 1978	6.4	5.2	NA	NA	NA	NA
Korea, Rep. of 1974	5.1	4.3	4.5	NA	5.9	NA	Mexico 1979	6.4	4.6	NA	NA	NA	NA
Korea, Rep. of 1979	4.5 ^a	2.6	3.9 ^a	2.4	5.1 ^a	3.1	Panama 1976	5.6	3.8	4.6	NA	7.2	NA
Malaysia (peninsular) 1974	6.1	4.7	5.6	NA	6.4	NA	Panama 1979-80	5.8	3.9	4.8	2.7	6.4	5.2
Nepal 1976	5.6	6.2	4.7	NA	5.6	NA	Paraguay 1977	7.0	6.8	3.2	2.7	7.8	8.5
Nepal 1981 ^b	5.5	5.9	NA	NA	NA	NA	Paraguay 1979	5.8	5.0	4.3	NA	7.1	NA
Pakistan 1975	7.0	6.3	6.9	NA	7.0	NA	Peru 1977-78	6.6	5.6	6.1	NA	7.4	NA
Philippines 1978	6.7	5.2	5.9	NA	7.1	NA	Peru 1981	6.1	5.2	NA	NA	NA	NA
Sri Lanka 1975	5.5	3.8	4.9	NA	5.6	NA	Trinidad & Tobago 1977	5.2	3.3	4.8	NA	5.8	NA
Sri Lanka 1982	4.7 ^a	3.7	NA	NA	NA	NA	Venezuela 1977	6.1	4.5	5.8	NA	7.8	NA
Thailand 1975	6.1	4.6	5.0	NA	6.3	NA	MIDDLE EAST & NORTH AFRICA						
Thailand 1978	5.9	3.7	NA	NA	NA	NA	Egypt 1980	6.5	5.3	5.8	NA	7.0	NA
Thailand 1981	5.3 ^a	3.9	NA	NA	NA	NA	Jordan 1976	8.6	7.5	8.5	NA	8.7	NA
LATIN AMERICA & CARIBBEAN							Jordan 1983	7.5	6.6	7.2	6.1	7.4	7.9
Barbados 1980-81 ^c	4.3	2.4					Morocco 1979-80	7.1	5.9	6.1	NA	7.8	NA
Bolivia 1983 ^a	6.4	8.6	5.5	NA	7.1	NA	Syria 1978	7.5	7.5	7.2	NA	7.8	NA
Brazil							Tunisia 1978	6.6	5.9	6.4	NA	6.8	NA
Amazonas (urban) 1982			4.9	3.6			Tunisia 1983 ^a	6.5	7.0	6.0	NA	7.0	NA
							Yemen Arab Rep. 1979	6.6	8.5	5.8	NA	6.7	NA

NA=Not available

†Question not asked

^aBased on ever-married women; higher than TFR based on all women.

^bBased on women in union; higher than TFR based on all women.

^cSample is combined rural/urban; no breakdown is available.

Table 3 Estimated Current Death Rates Among Infants, Toddlers, and Children, and Trends in Estimated Death Rates Among Infants Born to Women Age 20-29 at Time of Delivery, World Fertility Survey, Selected Countries, 1974-1982

Country, Region & Year	Current Death Rate ^a Among:			Infant Deaths per 1,000 Live Births to Women Age 20-29 at Delivery	
	In- fants ^b	Tod- dlers ^c	Chil- dren ^d	0-4	15-19
				Years Before Survey	Years Before Survey
AFRICA					
Benin 1981-82	108	37	74	102	156
Cameroon 1978	105	40	59	95	150
Ghana 1979-80	73	25	34	65	78
Ivory Coast 1980-81	113	17	38	101	170
Kenya 1977-78	87	28	33	83	121
Lesotho 1977	126	29	27	122	115
Mauritania 1981	90	45	74	82	112
Senegal 1978	112	74	103	120	106
Sudan (north) 1978-79	79	38	43	67	49
ASIA & PACIFIC					
Bangladesh 1975-76	135	35	68	117	140
Fiji 1974	47	5	7	42	59
Indonesia (Java & Bali) 1976	95	26	45	88	117
Korea, Rep. of 1974	42	7	8	35	64
Malaysia (peninsular) 1974	36	6	9	36	72
Nepal 1976	142	54	57	142	172
Pakistan 1975	139	33	48	132	156
Philippines 1978	58	16	22	52	55
Sri Lanka 1975	60	8	20	58	61
Thailand 1975	65	9	19	57	95
LATIN AMERICA & CARIBBEAN					
Colombia 1976	70	19	23	57	84
Costa Rica 1976	53	4	5	44	60
Dominican Republic 1975	89	25	19	81	72
Ecuador 1979	76	25	21	69	107
Guyana 1975	58	12	9	54	67
Haiti 1977	123	30	50	124	143
Jamaica 1975-76	43	8	5	39	79
Mexico 1976-77	72	13	14	60	86
Panama 1976	33	6	8	27	60
Paraguay 1979	61	15	10	52	43
Peru 1977-78	97	31	28	89	122
Trinidad & Tobago 1977	41	3	5	33	54
Venezuela 1977	53	6	6	45	45
MIDDLE EAST & NORTH AFRICA					
Egypt 1980	132	37	31	124	139
Jordan 1976	66	9	6	66	111
Morocco 1979-80	91	30	26	84	103
Syria 1978	65	12	11	63	86
Tunisia 1978	80	16	14	74	106
Turkey 1978	133	23	16	119	176
Yemen Arab Rep. 1979	162	42	50	163	237*

*Current rates are based on deaths in the 5-year period before the survey.

^bDeaths in the first year of life per 1,000 live births

^cDeaths in the second year of life per 1,000 age one

^dDeaths 2-5 years following birth per 1,000 age 2-5

*Based on small sample

Source: Chidambaram et al. (507)

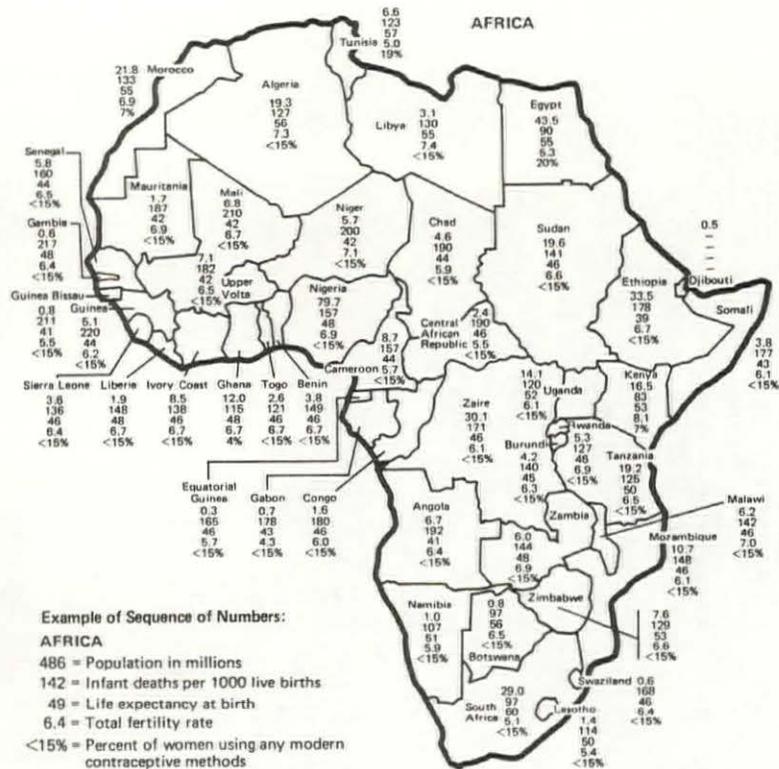


FIGURE 1.1 Population, infant mortality, life expectancy, fertility, and contraceptive use in Africa. (1,2)

Source: Family Planning Methods and Practice: Africa, Christian Medical Society, 1984

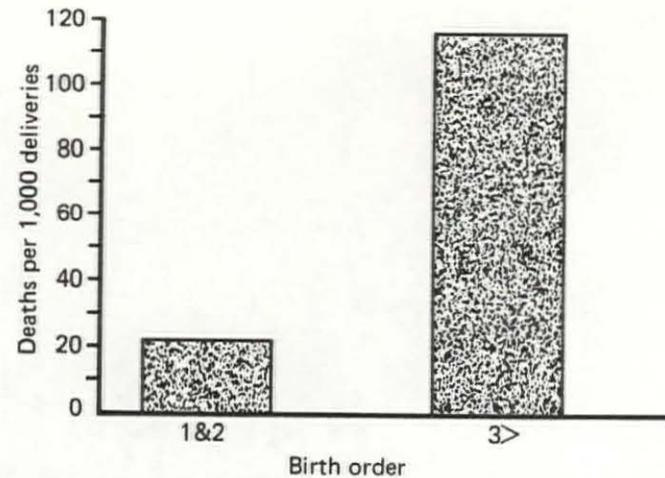


FIGURE 1.2 Fetal deaths during the last 2 months of pregnancy and deaths during the first week of life, by birth order. Tientsin, China, 1978.

4

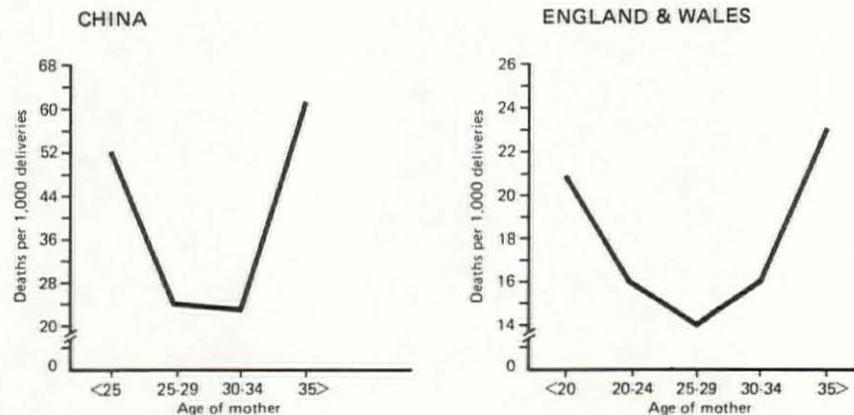


FIGURE 1.3 Fetal deaths during the last 2 months of pregnancy and deaths during the first week of life, by age of mother. Tientsin, China, 1978, and England and Wales, 1977.

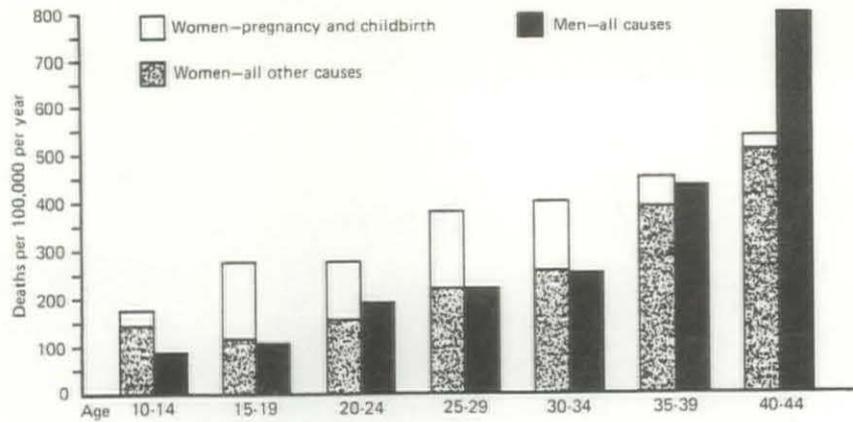


FIGURE 1.12 Deaths among women from pregnancy and childbirth and from all other causes, and deaths among men from all causes, by age, Matlab, Bangladesh, 1968-1970.

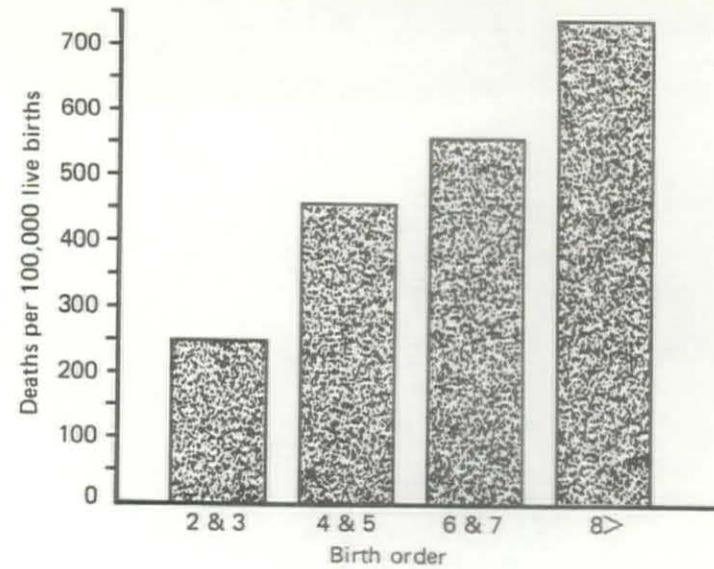


FIGURE 1.13 Maternal deaths, by birth order, Matlab, Bangladesh, 1968-1970.

57

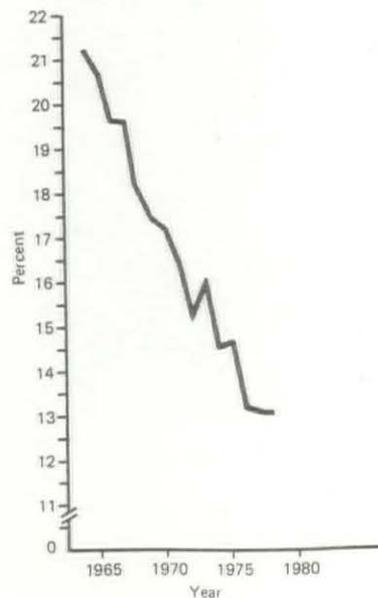


FIGURE 1.15 Maternal deaths due to abortion, Chile, 1964-1979.

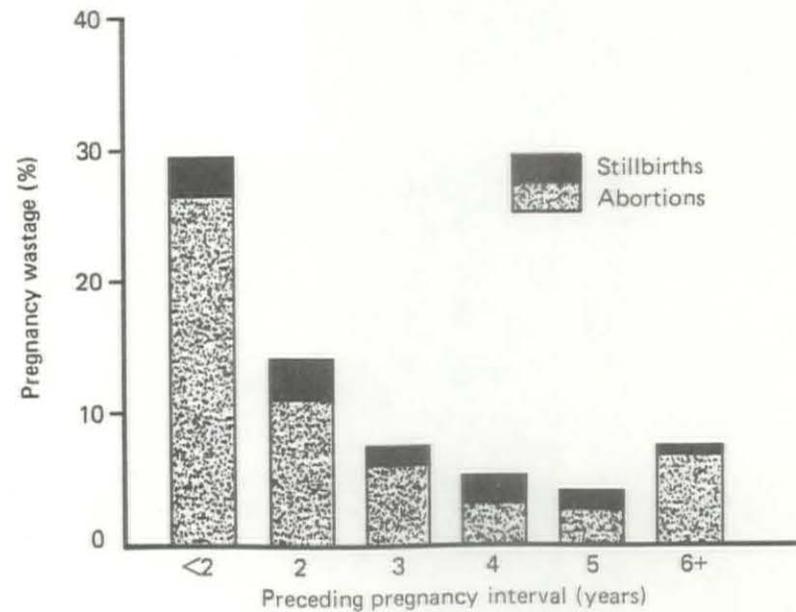


FIGURE 1.6 Pregnancy wastage by duration of preceding pregnancy interval. Assiut District and industrial Alexandria, Egypt, 1975.

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TOBACCO PRODUCTS OR HEALTH IN DEVELOPING COUNTRIES

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TOBACCO PRODUCTS OR HEALTH IN DEVELOPING COUNTRIES

Introduction

Tobacco use is a major health and economic issue in economically developed and developing countries alike. It is conclusively found to be one of the chief avoidable causes of death around the world. It has become a major public health problem that compounds the existing grim health problems resulting from transmissible diseases and malnutrition. It is probable that current trends in tobacco use could further increase the magnitude of the existing gap in levels of health between the developed and developing nations.

The massive advertising expenditure of multinational tobacco companies can only worsen the trend. Tobacco companies spend large sums of money advertising and promoting cigarette smoking.¹ These advertisements promote tobacco use by representing smoking in a very positive way--implying that people who smoke are glamorous or sophisticated. Although hard to measure, tobacco advertisements influence young people's choices about smoking. In fact, tobacco use is increasing among young people throughout the world.²

Forms of Tobacco Use

Although cigarette smoking and tobacco chewing are the familiar forms of tobacco use around the world, there are other forms of tobacco use that are indigenous and traditional to certain developing countries (Diagram 1). These forms of tobacco use need to be considered when assessing the total health risks associated with tobacco habits.

Scope of the Problem

The Prevalence of Tobacco Use

There is little doubt that tobacco use has increased throughout the world. Tobacco use, especially smoking, is increasing among young people -- specifically among young women and among boys and girls aged 10 to 14.³ Some western countries have recently shown decreases in tobacco use. For example, in the United States, per capita annual cigarette consumption, which increased from 610 in 1920 to 3,850 in 1973, is down to 2,678. However, the increase in smoking and other forms of tobacco use in developing countries show no sign of abating.⁴

In most developing countries from which data are available, about 50 percent of adult men are dependent on some form of tobacco use.⁵ Smoking is the preferred habit in men. Less than 5 percent of women are smokers, except in certain areas of Bangladesh, India, Nepal, and Thailand, where a higher number of women are engaged in the traditional forms of tobacco use (Diagram 1). For example, in India and Afghanistan, tobacco chewing is prevalent among women.⁵

In Africa, many women retain tobacco in the mouth. In Kenya and Gabon, for example, adult women in rural areas put dried tobacco mixed with wood ash under the tongue.⁵ In parts of India and Latin America, Chutta is smoked with the burning end inside the mouth.

In China, about 25 percent of the men are addicted to tobacco smoking before they reach age 18. In India, about one-third of tobacco users are addicted before reaching the age of 20 years, even though there is a considerable regional variation.⁵ In Egypt, fewer than 1 percent of males and females under 14 years of age are smokers. However, the proportion increases with age, to 14 percent in urban males and 31 percent in rural males over the age of 40 years.⁵

Thus, the frequency of smoking varies from country to country. In developing countries many young people smoke or use tobacco. In most countries about 20 percent of young men smoke regularly. For example, in Chile and Uruguay about 50 percent or more of 15-year-old girls and boys smoke. In Senegal, 70 percent of school-boys smoke. In China and Indonesia, over 30 percent smoke. Smoking, however, remains less common among young women.⁶

Health Risks of Tobacco Use

The health risks resulting from forms of tobacco use, especially smoking, have been proved. The serious risks include lung cancer, oral cancer, chronic lung diseases such as emphysema and bronchitis, cardiovascular diseases, and infant mortality. Smokers have more sickness and hospitalization and shorter life expectancies than nonsmokers.⁷ It is estimated that tobacco use accounts for almost 2.5 million deaths worldwide each year. The Worldwatch Paper 68, Banishing Tobacco estimated that 800,000 tobacco-related deaths occurred in just 10 western countries.⁸

Smoking poses a special risk for women and their children. Women who both smoke and use oral contraceptives (OCs) face a much greater risk of circulatory system disease than if they use OCs but do not smoke.⁹ Furthermore, smoking during pregnancy is related to low birth weight, shortened gestation, higher perinatal mortality, higher rates of spontaneous abortion, and more frequent complications of labor and delivery.² In addition, infants who live with smokers face greater risk of bronchitis, pneumonia, asthma, and otitis media.⁶ In one study in India, the stillbirth rate among tobacco chewers was 50 per 1,000 births compared with 17 in nonchewers.

Ecological Problems Associated with Tobacco

Apart from health risks resulting from tobacco use, there are important environmental problems associated with growing tobacco. Every harvested tobacco crop hanging inside the barn needs to be cured; the leaves are cured by exposing them to a constant temperature of 160 degrees for about a week. In Brazil, about 150 large trees are needed to cure just one acre of tobacco. In 1 year, 100,000 tobacco farmers need the wood of 60 million trees or nearly 1.5 million acres of forest.⁵ In short, large areas of developing countries where tobacco is grown are being stripped of their forests to provide energy to cure tobacco. If these activities continue, arid areas may be created where forests once stood.⁷

Another ecological problem is the clouds of black smoke that drift across the horizon, contributing additional pollutants to the surrounding air. Also in the process of curing tobacco numerous people may get injured--e.g., fire burns and falling logs.

In Kenya, one company has planted about 10 million trees and encourages each of its growers to try to become self-sufficient by planting 1,000 fast-growing eucalyptus trees for 3 consecutive years. However, not all farmers have enough land to plant 3,000 trees, grow tobacco, and produce enough food to eat.¹

Present Actions

In many developing countries, antitobacco actions appear to be minimal or nonexistent. Tobacco use continues to increase without abatement in the absence of effective national and international tobacco control programs. However, the World Health Organization (WHO) believes there is still time to take action to prevent the new epidemic.⁵ For instance, in developing countries where smoking is not very widespread, the major goal is primary prevention. Reducing current smoking and tobacco use rates will also help to prevent more people from taking up the habit, especially young people. This mode of action is a positive example for others not to start smoking.

Although in some developing countries--e.g., Brazil, clinics and hospitals post signs warning of risks of smoking-related disease, most developing countries do not have health warnings on cigarette packets. However, in developed countries where smoking is already widespread, successful programs concentrating on helping smokers to give up the habit are being expanded. In the United States, for example, "no smoking" signs are posted in many public places.

Barriers to Progress

Many developing countries are economically dependent on tobacco revenue. Governments in developing countries are often dependent on tobacco for employment, tax revenue, exports, foreign exchange, education, training, and economic prosperity. In some economies, government is the owner of tobacco monopoly.

In Zimbabwe, the tobacco industry is the largest employer, and supports about 17,000 tobacco farmers. In Malawi, 100,000 families rely on cash income from tobacco, and in Tanzania tobacco cultivation generates the income of about 370,000 people, or 2 percent of the population. In Brazil, about 650,000 people are directly dependent on tobacco. In the Indian State of Andhra Pradesh, tobacco provides a living for 75,000 farmers and about 2 million workers engaged in the curing, packing, and processing.⁵

Governments in developing countries continue to encourage tobacco cultivation and manufacture. Farmers as well continue to have strong incentives, such as development loans to produce tobacco. Nevertheless, despite these economic arguments, the magnitude of the health risks justify vigorous action. However, in general, most developing countries have taken little action in preventing tobacco use.

Perhaps the most disturbing barrier is the massive advertising by multinational tobacco companies. These companies spend huge sums of money advertising and promoting cigarette smoking; few would deny that this encourages young people to begin smoking and adult smokers to continue.

Parents also influence whether their children smoke. For instance, in the United States, about 14 percent of boys aged 12 to 18 whose parents both smoke also smoked cigarettes; 9 percent of boys from homes with one parent smoking have taken up the habit of smoking. Only about 6 percent of boys with nonsmoking parents smoked.¹⁰ Few countries restrict sales of cigarettes to minors or have smoking prevention programs.⁵

Opportunities for More Action

Many health practitioners in developing countries are becoming aware of and concerned about the trend of increasing death and disability resulting from tobacco use. However, it is still difficult to adopt practical remedies that are acceptable to the people in developing countries. Even if some theoretical remedies are put forward, it may be difficult to ensure that these remedies are put into practice. However, a report by an expert committee of WHO provides the basis for recommending more concerted actions.⁵

The measures proposed by the WHO Committee are already accepted by numerous international bodies. The report suggests that each country should set up a smoking control program with the following objectives:

1. To prevent people from starting to smoke.
2. To reduce the present smoking rates in the population.
3. To establish a social climate favorable to nonsmoking.
4. To illustrate the case for smoking control action.⁵

Attaining these goals will depend on launching major efforts to face, counter, and outflank the formidable and well-financed activities of national and international tobacco industries. There are ample opportunities for developed nations, international agencies, professionals involved in international health, and the governmental and nongovernmental institutions to collaborate in stopping the epidemic of tobacco use.

Ideally, an effective national strategy would be a concerted effort involving multiple strategies. There are at least seven broad strategy elements that can be adopted into any country's approach:¹¹

1. Public Information. A steady drumbeat of information helps to create the necessary community awareness, receptivity, knowledge, and supportive climate for public policy measures.
2. Education. Health education provides the necessary understanding and skills to make an informed decision about tobacco use. As former President Carter wrote recently, "There is still time to prevent countless tragedies if physicians and others work to educate patients so they can make informed, healthful choices."¹² Health education of children in schools is especially critical to choices about tobacco.
3. Smoking Cessation Services. Cigarette smoking is a powerful addiction. Even if smokers want to quit, they often need help to accomplish this.
4. Counteradvertising. The sophisticated marketing expertise used to promote tobacco can often be combatted effectively by relatively modest but aggressive use of counteradvertising.
5. Public Policy Measures. Societies have powerful tools available in selected public policies that can significantly affect tobacco use. These include restriction or abolition of tobacco advertising and other promotions; taxation to raise revenues and to make tobacco products costly; not permitting smoking in places used by the public--starting with government buildings.
6. Research. More knowledge is needed. The universities and the ministries have a major role to play, both in improving our ability to reduce tobacco use and in assisting farmers and other workers to make a fair transition to nontobacco sources of income.
7. The "Exemplar" Role: Leadership is needed from national leaders, health workers, and educators. All need to set an example by not using tobacco and by urging key colleagues not to do so as well.

Unless actions of these sorts are effectively and widely taken, the world cannot seriously hope to make adequate progress towards the goal, "Health for all by the year 2000."

Diagram 1: Forms of Tobacco Use Prevalent
in Developed and Developing Countries

TOBACCO USE

INDIGENOUS
&
TRADITIONAL

CHEWING

SMOKE
CONSTITUENTS

Tobacco Chewing:
(Global)

Bidi: Sun-dried and
cured tobacco
(India, Nepal, Thailand)

Cigarettes:
High tar and nicotine
tobacco.
(Global)

Chutta: Cigar made from tobacco
leaves rolled and wrapped
in a dried tobacco or
jackfruit leaf and
smoked with the burning
end inside the mouth.
(India, Peru, Kenya, Uganda)

Bidi: Delivers high
tar and nicotine
(India)

Chilum & Sulpa: Clay pipes in
which tobacco is smoked.
(India, Nepal, Uganda)

PIPE & CIGAR SMOKING
WESTERN STYLE

Hookah, Goza and Hubble-bubble:
Tobacco mixed with molasses,
burnt and smoke passed
through water before
inhalation.
(Bangladesh, India, Nepal,
Pakistan, Egypt)

Hookah:
Yielded 9.1 mg of
total (dry) par-
ticulate matter
and 0.55 mg
nicotine within
35 minutes of
smoking. [WHO
Expert Committee
Report]
(Bangladesh, India)

Snuff: Powered tobacco inhaled
through the nostrils or
placed between the lower
lip and gum.
(USA, England, India)

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