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WHO Special Programme of Research, Development and Research Training in Human Reproduction

Launched by the World Health Organization in 1972, the Special Programme of Research, Development and Research Training in Human Reproduction is a global programme of technical cooperation. It promotes, coordinates, supports, conducts, and evaluates research on human reproduction, with particular reference to the needs of developing countries. In May 1988 UNDP, UNFPA, the World Bank, and WHO became joint co-sponsors of the Programme.

The Programme celebrates 20th anniversary

The year 1992 marks the 20th anniversary of the Programme. To celebrate the occasion, among other things, the Programme has published its Biennial Report 1990–1991 as a special 20th anniversary issue. Entitled *Reproductive health: a key to a brighter future*, it was launched in conjunction with the meeting of the Programme's Policy and Coordination Committee on 22 June 1992. The report contains a special section on the current status of reproductive health in the world. This issue of *Progress* presents a summary of that section.

The Programme was established in 1972 with the objective of mobilizing the world's scientific health community in a partnership to help developing countries meet the reproductive health needs of their populations. Referring to the contribution and role of the Programme in global reproductive health, Dr Fathalla, Director of the Programme, says, "Over the past two decades, the Programme has evolved to respond to changing needs and scientific opportunities, capitalizing on its comparative advantages. Tremendous progress has been made but major challenges still lie ahead."

Contraceptive boom points to breakthrough in reproductive health

Contraceptive use in the world has reached an all time high. There are now some 380 million users in the developing countries alone, and access to new and safer contraceptive technology is rising. In 1965–70 only 9% of the married couples in developing countries were using any form of contraception. But by 1985–90 this figure had risen to 50%, and it is expected to rise further to 59% by the year 2000.

Decline in world fertility rate

The average fertility rate in the developing world has dropped from 6.1 children per woman to 3.9 over the past two decades. However, there remain wide regional variations in this decline, with the largest fall occurring in East Asia and the smallest in Africa. Interestingly, the rate of decline in fertility has been more rapid in developing countries compared to the more developed ones. For example, in the United States of America it took 58 years for the fertility rate to fall from 6.5 to 3.5. The same decline took 27 years in Indonesia, 15 years in Colombia, eight years in Thailand, and just seven years in China.

More East Asian couples (mainly Chinese) use contraception than couples in developed countries. Data show that contraceptive users increased from 18 million users between 1965 and 1970 to 217 million between 1985 and 1990. East Asia, in particular China, has also taken the

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Women still bearing the blows in reproductive health

The burden of ill health associated with reproduction is divided very unequally between the two sexes, with women bearing the brunt of most problems. For instance, women alone face the health hazards of pregnancy and childbirth and they make a much larger contribution to the survival, growth, and development of their offspring. Most sexually transmitted diseases have far more serious consequences in women than in men. Contraceptive use worldwide is three times greater among women than men, even though the methods used by women carry more potential health hazards. Infertility can affect both partners but in most societies women suffer the social and psychological consequences much more than men. In fact, even the burden related to the management of infertility (diagnosis and treatment) is much more on women.

Furthermore, in most parts of the world women lag behind men with respect to virtually every indicator of social and economic status. For example, even though research has consistently shown that more educated women use health care services (including family planning) much more than less educated women, female literacy rates in developing countries are still only two-thirds that of males.

The level of socioeconomic development of a country predetermines the health and reproductive performance of women and their daughters. Women face educational, nutritional and social disadvantages from early life, and these have considerable adverse effects on their health and well being. Women also face inequality in sexuality. The practice of female genital mutilation, the main aim of which is to prevent women from enjoying sex, is a stark reminder of continuing sexual discrimination against women in certain societies.

Over the last two decades, traditional and social restraints have become less effective. These have led, in some countries, to an increase in premarital sex and adolescent pregnancy, increasing further the burden on women. For example, in Argentina, a study of fertility and sexuality found higher than average fertility rates (most of which was unwanted) for women under the age of 18 years, in particular those from rural areas and with low levels of education. The study also found that the adolescent's knowledge of reproductive processes was particularly poor, and younger women had inaccurate perceptions of the function of menstruation, although they had a relatively high knowledge of contraceptive methods. But, only 40% of the sexually active teenagers studied had ever used contraception. And young males believed that it was the woman's responsibility to worry about the risk of pregnancy.

Women's status and reproductive health

A woman's status in society and her reproductive health are intricately intertwined in a two-way relationship. Overall, reproductive health, particularly the ability to regulate and control fertility, has an impact on the status of a woman and vice versa. The International Women's Decade 1976–1985 highlighted the need to raise the status of women. Much progress was

Fetal tobacco syndrome

Changes in lifestyle over the last twenty years have also brought greater reproductive health risks, particularly for women. For example, there has been an increase in smoking in developing countries, particularly among young women. Tobacco consumption per adult has increased by 7.1% and risks to reproductive health from tobacco use are becoming more evident. The **fetal tobacco syndrome** is now a recognized clinical condition in which the fetus actually becomes a captive passive smoker.

made during the decade but inequalities still exist and female–male gaps are more marked in certain regions than in others.

Fertility regulation

Fertility regulation enables women to control and take charge of their lives and helps improve a woman's status in society. A woman with no control over her fertility cannot complete her education, maintain gainful employment or make independent marital decisions. In societies where a woman's value is based on the number of children she has, her ability to regulate and control her fertility will be limited. Research has consistently shown that a woman's education is strongly linked to better reproductive health.

Female genital mutilation: extreme form of sexual discrimination

The physical and psychological consequences of female genital mutilation are generally devastating.

Frequently referred to as "female circumcision", female genital mutilation (FGM) is actually closer to castration in terms of its physical damage. This harmful traditional practice affects some 84 million women worldwide. In its extreme form it involves the removal of all external genitalia and the stitching up of the vulva, leaving only a tiny opening for the passage of urine and menstrual blood. The physical and psychological consequences of this excision are generally devastating. Infertility, pelvic infection, frigidity and the collection of menstrual blood in the abdomen are just a few of the reproductive health problems which arise.

Although some countries have passed laws to forbid the procedure, it continues to exist in about 40 countries worldwide. FGM is practised mainly in East and West Africa but it is also prevalent in parts of the Arabian Peninsula, Asia and Latin America. In recent years FGM has surfaced in Canada, Finland, France, Germany, Holland, Italy, the United Kingdom and the USA, among immigrant populations from the affected regions.

The lucky one in eight

A baby girl born in one of the richest countries in 1990 can expect to live to the age of 81, five years longer than a baby boy born in that country the same year. As she grows up she is assured of adequate nutrition, hygienic living conditions, adequate schooling, and advanced medical care. She will probably not marry until she reaches her twenties and will then have one or two children, properly spaced, delivered in hospital after regular prenatal checkups. The greatest dangers to her health in her middle years will be the risk of an accident at home or while she is out driving, or a particularly violent influenza epidemic. As she enters old age she will be liable to develop cardiovascular disease or cancer, but will survive the first attacks of these with little disability because of excellent medical care and rehabilitation services. She will receive good institutional care in her old age. She will spend on average, including government assistance, the equivalent of US$ 1000 on her health every year.

The unlucky one in seven

A baby girl born on the same day in the most disadvantaged of the least developed countries can expect to live barely 43 years, three years more than a baby boy born the same year. She has a one-in-four chance of being underweight, a greater chance of dying in infancy than a baby boy, and a high probability of being malnourished throughout childhood. She has a one-in-five chance of dying before her first birthday and a one-in-three chance of dying before her fifth birthday. She will have a less than one-in-four chance of ever getting enough schooling to learn how to read and write. She may suffer genital mutilation at puberty, with consequent effects on her life as a woman and a mother. She will marry in her teens and may have 10 or more children, close together, unless she dies in childbirth before that. Three or four of her children will die before the age of five.

She will be in constant danger of contracting infectious disease. She will be chronically anaemic from poor nutrition, malaria, and intestinal parasites. If she survives into old age she will suffer the same afflictions as women in the rich countries: cardiovascular disease and cancer. To these she will succumb quickly, because she has no access to proper medical care. Her country has less than US$ 1 a year to spend on her health; she cannot afford to pay anything herself.

Source: Implementation of the global strategy for health for all by the year 2000. Second evaluation and eighth report on the world health situation. Geneva, World Health Organization, 1992.

Some 300 million couples in the world who do not want more children are still not using any form of contraception.

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lead in the use of modern methods. Whereas 71% of contraceptive users in China use modern methods (only 1% rely on traditional methods such as herbal remedies and withdrawal), in the developed world only 47% use modern methods, with 24% using a traditional form of contraception (withdrawal, rhythm, etc.).

But in spite of the striking progress made over the last 20 years, some 300 million couples in the world who do not want more children are still not using any form of contraception. About half of the 910 000 conceptions which occur every day are still unplanned and 25% are definitely unwanted. Each day there are 150 000 induced abortions. A third of these are performed under unsafe conditions, and result in 500 deaths. Unsafe abortion remains one of the great neglected problems in health care in developing countries. Contrary to common belief, most women seeking abortion are married, or living in stable unions, and already have several children.

The availability of family planning services also varies widely between regions, from 95% in East Asia, 57% in South-east Asia and Latin America, 54% in South Asia, to only 9% in sub-Saharan Africa. WHO estimates that, overall, only 60% of the people in developing countries have easy access to at least one safe, effective, and acceptable method of family planning.

Thus the agenda for action remains unfinished. The world population will keep growing for some time yet. And, even if couples decided at this very moment to have no more than two children, world population would continue rising until the year 2050, because of the number of women in the reproductive age.

Reproductive health in the world: bare facts

Over 100 million acts of sexual intercourse take place each day. These result in 910 000 conceptions and 356 000 sexually transmitted bacterial and viral infections. About 50% of the conceptions are unplanned, and about 25% are definitely unwanted.

About 150 000 unwanted pregnancies are terminated every day by induced abortion. One-third of these abortions are performed under unsafe conditions and in an adverse social and legal climate, resulting in some 500 deaths every day.

1370 women die every day in the course of their physiological and social duty of pregnancy and childbirth, and many times more this number have a narrow escape, though not without significant physical and psychological injuries.

Some 25 000 infants and 14 000 children aged 1-4 years die each day. One in 12 infants born this year will not see his/her first birthday, and one in eight will not see the fifth birthday.

Family planning not only prevents births, it also saves the lives of women and children. 300 million couples do not have access to family planning services.

International cooperation to conquer global inequities in reproductive health

Global collaboration to improve reproductive health is urgently needed for three reasons. First, the impact of the rise in population extends beyond national boundaries. Second, action is urgently needed now to curb rapid population growth as there will be a heavy penalty for inaction or delayed action. Third, there is gross inequity in reproductive health between developed and developing countries and between men and women which must be eliminated for the benefit of all.

The impact of reproductive health is not just limited to the individual. The inability of a person or couples in developing countries to regulate and control their fertility affects not only the health and welfare of the individuals immediately concerned, but also has implications for global stability and for the balance between population and natural resources.

The urgency about the need for immediate action is so great that the 1990s may turn out to be one of the most decisive decades in the history of mankind. Action or inaction over the next ten years will decide the final number of people on earth and their fate. The United Nations has made two projections for the world population. The difference between them is almost the size of the current world population. If appropriate action is not taken now, the larger estimate will prevail. Furthermore, about 90% of this increase will take place in developing countries, which are least equipped to cope with these large populations.

The gross inequity in reproductive health status between developing and developed countries is the third compelling reason for international cooperation. There is no area of health in which imbalances are as striking as they are in reproductive health. Although mortality rates show a crude death rate of about 10% more in less developed regions, the infant mortality rate is almost six times higher, the child mortality rate is seven times higher, and the maternal mortality rate is fifteen times higher. Furthermore, these differences in mortality do not reflect the full impact of inequity. Differences between individual countries are much more striking and can also be seen within countries, particularly between urban and rural areas.

International cooperation to improve reproductive health should focus on: (*a*) the mobilization of necessary resources; and (*b*) the generation of the necessary knowledge. Together with national commitment, they will enable scientists and scientific institutions in both developed and developing countries to work together to change the outlook for reproductive health in the world.

Resources at the international level

At the global level the world has the resources to implement the necessary strategies, but it is a question of their rational allocation and effective use. More than US$ 50 000 million are available in the world each year as official development assistance (ODA). The United Nations Population Fund estimates that, al-

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though in 1985 there was a rise of about 1.7% in the proportion of the total ODA available for population related projects, in the next two years the level of funding for these activities fell to just below 1.1% of the total ODA. Overall, the total population assistance has remained disappointingly stable in constant dollar terms since 1972, hovering below US$ 500 million. Even a small percentage increase in ODA could dramatically increase the available resources for reproductive health.

Peace efforts, through international cooperation, would build up trust between nations, lessening the need for high levels of military expenditure.

Resources at the national level

International cooperation can also play a role in increasing the availability of resources at the national level, particularly by reducing the debt burden of developing countries. The current debt situation and the decline in development assistance has caused the flow of resources from North to South to be reversed. According to a United Nations study, a sample of 98 developing countries transferred a net amount of US$ 115 000 million to developed countries between 1983 and 1988. Financial difficulties in developing countries have led to cutbacks that are particularly noticeable in the health sector and the continuous flight of large sums of money has made the situation much worse.

Despite the debts, military expenditure in the Third World is estimated at almost US$ 200 000 million. Although more than 800 million people in South Asia and sub-Saharan Africa are suffering in absolute poverty, South Asia spends US$ 10 thousand million a year on defence and sub-Saharan Africa US$ 5 thousand million. Peace efforts, through international cooperation, would build up trust between nations, lessening the need for these high levels of military expenditure. This would then free a significant proportion of funds to be re-allocated to other social sectors such as reproductive health care.

Sexually transmitted diseases and reproductive health

Sexually transmitted diseases (STDs) remain a serious threat to reproductive health. They have now become the most common group of notifiable diseases in most countries, particularly in the age group of 15–50 years, and they continue to occur at unacceptably high levels. Each day there occur about 356 000 cases of sexually transmitted bacterial and viral infections.

During the past few decades, the burden of a number of traditional venereal diseases like gonorrhoea, syphilis, and chancroid has declined, particularly in the industrialized countries, but they have been amply replaced by new bacterial and viral syndromes associated with *Chlamydia trachomatis*, human herpes virus, human papillomavirus, and the human immunodeficiency virus (HIV). These agents, regarded as the second generation of sexually transmitted organisms, are frequently more difficult to identify, treat, and control. Moreover, they can cause serious complications, which can result in chronic ill health, disability, and death. Both groups of STDs (the first and second generations) remain major health problems in most developing countries.

The reasons for the high incidence of STDs, especially in the developing countries, should be sought in a number of variables, in particular urbanization, unemployment, economic hardship, and a relaxation of traditional restraints on sexual activity, as well as the emergence of antibiotic-resistant strains of microorganisms. In addition, the population distribution by age in developing countries is such that there are large numbers of people in the age group which is sexually most active.

Reliable data on the worldwide incidence of STDs are not available.

The following are WHO estimates of the minimum yearly number of new cases of major bacterial STDs.

Gonorrhoea	25 million
Genital chlamydial infections	50 million
Infectious syphilis	3.5 million
Chancroid	2 million

The incidence of viral STDs is even more difficult to estimate since many cases remain asymptomatic. The following are some rough estimates by WHO:

Genital herpes	20 million
Genital human papillomavirus infection	30 million

Trichomoniasis, which is of much less public health importance than the bacterial and viral STDs, has an estimated annual incidence rate of 120 million cases. No estimates are available to WHO for other STDs.

STDs are now hyperendemic in many developing countries, including the rural areas where the facilities for diagnosis and treatment are usually inadequate.

By definition, STDs affect both men and women. However, as is generally the case with reproductive health, STDs have more serious sequelae in women than in men. For example, early detection and hence early treatment of STDs is easier in the male. In women, the lesions often occur in the inner genitalia and are thus hidden and quite often remain asymptomatic. Moreover, chronic ascending infection in women has much more serious consequences and is more likely to lead to pelvic inflammatory disease, higher risk of ectopic pregnancy, and permanent infertility. Even cancer of the cervix can be a late sequela. Another consideration is the transmission to the fetus of several pathogens of STDs. It is also not widely appreciated that the risk of transmission of STDs is much greater from man to woman than the other way round. Finally, as to means of protection against STDs, the most effective method available—the condom—is for men. Very recently, a new "condom" for women has become available in some countries.

The worldwide spread of sexually transmitted diseases has been one of the major disappointments in public health in the past two decades.

Reproductive health: the concept

Health aspects of human reproduction have been traditionally dealt with through the public health approach of "Maternal and Child Health" (MCH). But important sociodemographic changes have taken place over the past two decades which have rendered the MCH approach too narrow to meet all the current concerns in this area of health. For instance, family planning is fast becoming a way of life, with pregnancies fewer and farther between. Women are claiming the right to have their health needs addressed as individuals and not merely as mothers. Adolescents—a rapidly growing population group—have distinctive reproductive health needs requiring special attention. Sexually transmitted bacterial and viral infections have assumed epidemic proportions. Finally, the reproductive health needs of men also need to be considered, particularly as more and more men are now willing to share the responsibility for fertility regulation.

Health is defined in the WHO Constitution as "a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity". In the context of this positive definition, reproductive health is not merely the absence of disease or disorders of the reproductive process, but it is a condition in which reproduction is accomplished in a state of complete physical, mental and social well-being. This implies that people have the ability to reproduce, that women can go through pregnancy and childbirth safely, and that infants survive and grow up healthy. It implies further that people are able to regulate their fertility without risks to their health and that they are safe in having sex.

New Publications

Reproductive health: a key to a brighter future

Biennial Report
1990–1991
(Special 20th anniversary issue)
Geneva, WHO, 1992

Issued as a special volume to mark the 20th anniversary of the Programme, this report contains a special section on the status of reproductive health in the world. This section explains the concept of reproductive health and describes its indicators. Other sections include a historical description of the establishment and development of the Programme and highlights of the Programme's work during the biennium.

Oral contraceptives and neoplasia

Report of a WHO Scientific Group
WHO Technical Report Series, No. 817, 1992

Reports the conclusions of a WHO Study Group convened to evaluate the strength of evidence linking use of combined oral contraceptives to the risk of neoplasia in women. The group, which included fifteen specialists in cancer research, epidemiology, and obstetrics and gynaecology was specifically concerned with the need to resolve several inconsistencies in reported findings that have created confusion about the safety of oral contraceptives. The possibility that studies conducted in industrialized countries may not be relevant to conditions in the developing world was also of central concern. Close to 200 studies, including a WHO collaborative study conducted in eight developing and three developed countries, were critically assessed.

Annual Technical Report 1991

(WHO/HRP/ATR/91/92)

A detailed description of the ongoing and planned scientific activities of the Programme during 1991. Addressed to scientists engaged in research on reproductive health, the report explains the objectives of the Programme and shows how they are being met through a broad range of studies concerned with the development, assessment, introduction, and transfer of fertility-regulating technologies.

Recent advances in medically assisted conception

Report of a WHO Scientific Group
WHO Technical Report Series, No. 820, 1992

This report examines the development of medically assisted conception, including artificial insemination, in-vitro fertilization and related techniques, and discusses both medical indications for their use and recent technical advances in methodology. In reviewing the results of these methods of infertility treatment, the report identifies requirements for personnel, equipment, and quality assurance, as well as for future research in such areas as sperm abnormalities, oocyte quality, embryo culture and cryopreser-vation.

A limited number of copies of these publications are available free of charge, mainly for readers in developing countries. Write to:

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