The United Nations Decade for Women ended in July 1985. The occasion was marked by a conference in Nairobi, at which the accomplishments of the decade were assessed and strategies for the future planned. A review of health trends among women was part of that assessment. This review raises many questions of interest to epidemiologists, such as: how do the differences between the sexes (biological or social, separate or interacting) affect the health status of women and men in different parts of the world? Are these effects changing over time? Is all equality beneficial?

These are very complex questions, and there is a large literature dealing with them. We shall discuss only a few striking items. Consider two different kinds of comparisons. The first kind involves comparisons between women in one setting and women in another setting. Variations in reproductive mortality associated with socioeconomic development exemplify this kind of comparison. The second kind involves comparisons between women and men in similar settings. These comparisons serve to elucidate the ways in which culturally determined sex roles affect health—for example, through patterns of exposure to hazards such as cigarette smoking.

WOMEN COMPARED TO WOMEN: REPRODUCTIVE MORTALITY

Reproductive mortality includes both deaths resulting from pregnancy and those due to the side effects of preventing conception. We begin with maternal deaths.

Maternal deaths are regularly underreported, all over the world. However, when in-depth studies are done in poor countries—such as Bangladesh, Egypt, India, and Indonesia—complications of pregnancy and childbirth are the first or second leading cause of death among women aged 15–44. In some countries, in this age group there are higher overall death rates for women than for men, the excess being entirely due to maternal mortality.

The main causes of maternal deaths are the same in developing countries today as they were in the west 50 years ago—haemorrhage, infection and toxaemia. Complications of illicit induced abortion are also an important factor, though systematically underreported. For example, abortion is one of the three leading causes of maternal deaths in countries as diverse as Colombia, Cuba, Ethiopia, India and Portugal.

In developing countries today, the vast majority of reproductive deaths are related to pregnancy, delivery and their management (including induced abortion), rather than to contraception. The reasons are twofold. First, the risks associated with pregnancy are high, as Table 1 shows. Second, prevalence of modern contraceptive use is relatively low. According to the World Fertility Survey, which has data from 41 developing countries, only a quarter of married women of reproductive age in these countries are using contraception.

The independent effects of the risks of pregnancy and of its frequency are neatly illustrated by a study of reproductive mortality in Egypt and Indonesia, during 1980–1983. In Indonesia, there were 718 maternal deaths per 100000 live births, compared to 190 in Egypt, an excess of 280%. In part, this difference reflects overall levels of socioeconomic development. However, when expressed as deaths per 100000 married women of reproductive age, the difference was greatly reduced: Egypt, 46; Indonesia, 70; an excess of only 50%. The reason that the excess of risk in Indonesia is greatly reduced when the denominator for maternal deaths is fertile women rather than births is that the birth rate in Indonesia is much lower than in Egypt, due to the use of modern contraceptives so that far fewer women are at risk. By coincidence, the attributable risk of maternal mortality to total mortality among women aged 15 to 44 is identical, 23% in both countries (see Table 1).

In contrast to pregnancy-related deaths, deaths from side effects of contraception are apparently rare in developing countries. They constituted only 1–2% of reproductive deaths in Egypt and Indonesia. In industrialized countries, the importance of reproductive mortality has been drastically reduced (Table 1). Among US women aged 15–44 years, less than 2% of deaths in 1975 could be attributed to pregnancy and contraception. Contraceptive hazards—pelvic infection with IUD's, thrombo-embolic
episodes with oral contraceptive use, etc.—are now estimated to make up almost half of deaths related to reproduction. Contraception, like immunization, does occasionally have serious side effects. Like immunization, too, the more effective the method and the more widespread its use, the higher will be the ratio of deaths related to the preventive method compared to deaths related to the condition being prevented. It is still important to document and to reduce serious side effects of contraceptives. Nevertheless, women in industrialized countries, when compared to women in developing countries, or even to their own grandmothers, can celebrate the virtual disappearance of mortality associated with reproduction.

There is therefore an inescapable social context for reproductive mortality, which probably includes not only the economy but also a woman's status, as reflected in her age at marriage, her education and her access to family planning and maternity services. The technology to avoid unwanted pregnancies and almost all deaths at childbirth has been available for decades. To be sure, the extent to which deaths from pregnancy, childbirth and illicit abortion continue highlights the scarcity of resources in developing countries. Nevertheless, as the contrast between Indonesia and Egypt illustrates, even with scarce resources there are choices to be made.

The value the society places on the health of women influences these choices. As a Nigerian obstetrician pointed out at a recent WHO meeting, it may be that 'in the Third World, with the best intent in the world, nothing will really change as far as maternal health is concerned until attitudes towards women change. . .' .

WOMEN AND MEN: FOR BETTER OR FOR WORSE?
Material prepared for the Nairobi conference leaves little doubt that the social inequalities between the sexes, for instance in education, roles within the family and the public domain, and job opportunities, are still prominent in most developing countries. Parents will generally express a preference for a male infant compared to female. An extreme manifestation of the consequences of this preference is the fact that in parts of South East Asia the mortality rates for female infants and young children are higher than those for males. Since in most other regions of the world the reverse is true and male deaths predominate, this excess loss of female infants is thought to be due to a relative neglect of the undervalued sex. For example, in Matlab, Bangladesh, where free health services were provided, ill female children were less likely to be brought for care than were ill males.

With the changing social conditions in developing countries, women now face new hazards to their health. For example, in some countries industries are being established that depend primarily on female labour. Few of these work settings are regulated, and their potential hazards are still unstudied. Here, as in the developed world, changes in social roles that seem to make women more 'equal' may also add new health risks to their lot.

In industrialized countries, women have a decided advantage over men in mortality at all ages. A 'masculine' lifestyle has long been associated with suicide, homicide, accidents, drug use and drinking. Trends over the past decade show, however, that for some of these, the gap is closing between men and women, as discrimination recedes.

The most dramatic instance of this trend is connected with cigarette smoking, and mortality due to lung cancer continues to rise in women. Whatever individual idiosyncracies have been postulated for susceptibility to lung cancer, they seem not to be related to sex. In fact, women who acquire the habit seem actually to be at some disadvantage, for there is evidence that smoking cessation programmes are less effective for women.

There remains for discussion a third more difficult set of health outcomes for which the data emerge mostly from developed countries, so that they lend themselves of necessity to women versus men comparisons, although the concept of sex-neutral susceptibility is by no means secure. The recent male epidemic of cardiovascular disease is one such example. Their pre-menopausal hormonal profile seems to have protected women from this epidemic, even while they have become more like men in some of the risk factors, like cigarette smoking, behavioural patterns and life experiences. A less discussed but quite remarkable phenomenon of the past few decades in developed

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**TABLE 1** Reproductive mortality in Egypt, Indonesia and the US.

<table>
<thead>
<tr>
<th></th>
<th>Egypt 1981-3</th>
<th>Indonesia 1980-1</th>
<th>US 1975</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reproductive deaths per 100000 women aged 15-44</td>
<td>46*</td>
<td>70*</td>
<td>2</td>
</tr>
<tr>
<td>Per cent of all deaths of women aged 15-44</td>
<td>23</td>
<td>23</td>
<td>2</td>
</tr>
<tr>
<td>Maternal deaths per 100000 live births</td>
<td>190</td>
<td>718</td>
<td>13</td>
</tr>
<tr>
<td>Per cent of reproductive deaths due to contraception</td>
<td>2</td>
<td>1</td>
<td>47</td>
</tr>
</tbody>
</table>

* Married women only.

Sources: Adapted from Fortney et al., Sachs et al., United Nations.
countries is the extent to which women, as opposed to men, now live on into the eighth or ninth decades of life (Table 2). Invalidism, dementia, social isolation, poverty, and malnutrition contribute to the decline in quality of life experienced at these ages, and women comprise the majority of the dependent among the elderly. Here is a paradox of our time to consider: While at age 65 and over, the expectation of years to be lived is greater for women than for men, yet the expectation of active years to be lived is very similar. Can we expect this to change?

CONCLUSION

An underlying assumption of the UN Decade of Women is that the improvement of women’s lot is an accepted goal and that an end to sex discrimination is a step in that direction. The ‘Convention on the Elimination of All Forms of Discrimination Against Women’, signed by more than 90 countries, defines discrimination as ‘any distinction, exclusion or restriction made on the basis of sex which has the effect or purpose of impairing or nullifying the recognition, enjoyment or exercise by women, irrespective of their marital status, on a basis of equality of men and women, of human rights and fundamental freedoms in the political, economic, social, cultural, civil or any other field.’

Returning now to a question we raised at the start: is all equality progress? First, it seems that discrimination against women remains a potent force in developing countries, and its effects certainly penalize women of reproductive age, and (in some areas) probably young children too. More equality for women should benefit their health. In developed countries, sex discrimination is far less marked, and its adverse effects on women’s mortality seem minor. Now, however, as women adopt lifestyles more like those of men, particularly smoking, their mortality from these causes is undoubtedly rising. The right to ‘self-destruct’ with cigarette smoking will take its toll. Clearly, we need not expect to see a linear trend between decline in sex discrimination and the mortality of women!

As even this brief review shows, despite residual discrimination in developed countries, the nature, the scale and the health impact of sex inequalities in the Third World is of a different order. Until reproductive mortality and morbidity have been effectively controlled, the struggle must go on.

REFERENCES