Mortality & GENDER*

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Dans les sociétés occidentales telles que le Canada, l'écart entre l'espérance de vie des hommes et des femmes augmente : au Canada, en 1931, l'espérance de vie d'une femme était de deux années supérieure à celle des hommes : elle l'est maintenant de huit années : cette augmentation peut contribuer au changement du rôle des femmes dans la société. Cet article analyse la différenciation sexuelle dans l'espérance de vie au Canada pendant ces 20 dernières années, et les facteurs qui y contribuent. Quelles sont les tendances pour l'avenir? Les changements dans les rôles sexuels ont des conséquences sur la mortalité : puisque les femmes, en effet, font de plus en plus d'activités qui mettent leur vie en danger (boire, fumer, conduire), et semblent adopter des comportements masculins, la mortalité féminine risque d'augmenter au point d'égaler celle des hommes. Mais la supériorité biologique de la femme devrait continuer à lui assurer une espérance de vie supérieure à celle des hommes.

Three well-established facts exist on the subject of sex differences in mortality: (1) it is almost universally found that women live longer than men; (2) there are substantial differences across societies in the degree to which women live longer than men; and (3) in developed countries, there has been a substantial increase in the sex differential that favours women throughout the twentieth century. For example, in 1931, Canadian women experienced a life expectancy at birth that was two years more than men; at the present time, the difference approaches eight years.

Such a large difference in the longevity of men and women has important social implications. One set of implications concerns the structuring of role obligations for women. The average women of today can expect to live thirty-seven years after childrearing duties are over (assuming these duties are basically over when her last child reaches the

age of eighteen) and to live sixteen years as a widow. In contrast, her counterpart at the turn of the twentieth century would die after approximately four years of widowhood and before her youngest child left home. The major point here is that marriage and childcare — the fundamentals of women's role as traditionally defined — are taking a smaller and smaller portion of a woman's life. It can reasonably be argued that changes such as the increased gap in the life expectancy of men and women is one set of factors contributing to the changing role of women in society.

A second set of implications concerns population aging. It has long been established that the major factor accounting for population aging is reduced fertility. In other words, the increasing proportion of the population that is aged is a direct by-product of the decreasing proportion of children. However, it has recently been demonstrated that the role of fertility in determining population aging becomes less important when a population reaches a life expectancy of seventy years and fertility is low. When these conditions are met, as they are in Canada, mortality plays a greater role in determining population aging. In other words, what the future holds in terms of population aging in societies like Canada is going to be determined, in large part, by what happens in terms of mortality (assuming no major upswing in fertility). For instance, if the mortality gap between men and women narrows, this will have a great impact on the aging of the Canadian population. Of course, *how* the gap narrows will be a major consequence. If the gap narrows because male mortality more closely approximates female mortality, our population will age more quickly. On the other hand, if a narrowing of the gap is accomplished by female mortality levels more closely approximating male levels, our population will age more slowly.

Given the social importance of sex differentials in mortality, it is crucial

that we come to some understanding of the mechanisms involved. This article reports the findings of an analysis of the increasing sex mortality differential in Canada for the period from 1961 to 1980.

In 1961 in Canada, the age-adjusted death rate per 100,000 population was 1062.1 for males, compared to 725.0 for females. The sex mortality ratio (SMR), which is simply the male rate divided by the female rate, was 1.46. By 1980, the rates for males and females were 925.3 and 544.5, respectively, with a consequent increase in the SMR to 1.70.

Not all age groups, however, contributed equally to the increasing sex mortality differential. Three age groups can be singled out as experiencing the greatest increases in the SMR for this period: young adults aged 25–34 (who experienced an increase in the SMR of .42 points); persons aged 65–74 (experiencing an increase of .35 points); and persons aged 75–84 (.34 points).

Turning first to young adults (whose SMR increased over this period, with the result that the death rate for young men is nearly two and one-half times that of young women at the present time), we can examine which causes of death are responsible for the widening SMR. The most important cause of death accounting for the widening SMR is maternal mortality. More than half of the increase in the SMR for this age group was the result of declining rates of childbirth-related deaths. Falling rates of cardiovascular disease showed greater gains for women and rank second in importance. Trends in death due to suicide were third. In this case, both male and female death rates increased over the period, but the increase was substantially larger for men.

Counterbalancing these advantages for young women were changes in their involvement in accidents. For men, death rates due to accidents generally declined over the period, but death rates for women increased. As a result, trends in death rates due to accidents operated to narrow the widening SMR.

For the two older age groups, a virtually identical picture emerges; thus they will be discussed together. Among older persons, there has been a significant decline in mortality, reflecting improvements in medical technology and in access to medical resources. However, these improvements have had more impact on women's rather than men's rates. For example, among persons aged 65–74, male deaths due to circulatory disease fell by 26 per cent during this period, whereas female deaths declined by 42 per cent. In fact, the greater female decrease in deaths due to circulatory disease was the major factor contributing to the widening SMR for older persons. For both groups of older persons, it accounts for about two-thirds of the accelerating SMR.

In contrast to the overall picture of declining mortality rates for older persons are death rates for cancer, which increased for older men over this period. This trend of increasing cancer death rates for men in conjunction with slight declines for older women accounts for about 20 per cent of the increases in the SMR.

With these data as background, it is possible to make some speculation about the causes of the sex mortality differential. Usually, discussion about the sex difference in mortality takes a nature-nurture bent, with some arguing for biological causes and others arguing in favour of socio/psychological causes. These Canadian data suggest that *different* answers hold for different age groups.

In the past, a major factor contributing to the demise of young women was the peril associated with pregnancy and childbearing. During the last several decades, control of these hazards has significantly improved women's longevity. Excluding dangers from reproduction, young women seem to have a biological advantage over young men and have achieved greater declines in deaths due to heart disease and other degenerative diseases. However, these degenerative diseases are not major killers of the young. The prognosis in terms of violent deaths, however, is quite different.

Among young adults, the largest single cause of death is motor-vehicle accidents. The rates for men are much higher than for women. A 1962 article reported that in the United States death due to motor-vehicle accidents made an important contribution in the widening of the sex mortality differential at the young ages. Since that time, however, the trend has been reversed, and motor fatalities now serve to narrow the gap in mortality level by sex. Changes in gender roles have made driving less exclusively a male activity. More women are now learning to drive; among women in their thirties, the proportion licensed is approximately equal to that among men. Although women are driving greater distances than they did, they still drive only about half as many miles as men do. Controlling for miles driven, they have approximately the same number of accidents as men but are less likely to have fatal accidents. Nevertheless, as women take to the roads, their mortality from accidents increases. In 1961, the sex ratio for traffic-accident mortality among persons 25–34 was 5.04; by 1980 this ratio had declined to 3.57.

In addition to fatal motor-vehicle accidents, men are consistently more involved in other fatal accidents than are women. In 1961, among young adults, the ratio of male accidental-death rates to female rates was 7.81. By 1980, this ratio was reduced to 3.77, a significant reduction but one still leaving a substantial discrepancy between the risks to men and to women. Presumably these circumstances relate directly to the aggressive and risk-taking components of the male role. As gender roles begin to change in many areas of life, including attitudes toward dangerous activities, it is likely that women's involvement in accidents will continue to increase.

Among older persons, there is clear evidence that the medical advances that benefit the old have had a more salutary effect for women than they have had for men. For all major causes of death, except cancer, the death rates for both sexes declined: however, they declined more precipitously for women than for men, lending support for the hypothesis that women have a relatively superior constitution. The increase in cancer among the total population is in part due to the increase in carcinogenic agents in the environment, a circumstance that affects everyone

but which women may be able to resist more effectively.

A major source in the sex discrepancy in mortality rates appears to be related to the use of tobacco, especially as it pertains to respiratory cancer and to other associated pathologies such as cardiovascular disease. One study estimates that approximately 75 per cent of the increase in the male-female differential in life expectancy (between the ages of thirty-seven and eighty-seven) over the period from 1910 to 1962 in the United States can be accounted for by the effects of smoking.

Traditionally, our society has accepted cigarette smoking for men and discouraged it for women. While smoking has never been culturally prescribed as part of the male gender role, the differential use of cigarettes by men and women is, nevertheless, related to our system of gender roles and its resulting double standard. Older women in 1980 enjoyed a mortality rate favourable to older men in part because most of them had not smoked or had not smoked heavily. However, the proportion of young women who smoke cigarettes has increased in recent years, and as this occurs it seems likely that the rate of tobacco-related pathologies of women will increase as women who smoke reach midlife.

What can be said regarding the future? A narrowing of the sex gap in mortality can be expected, although it is doubtful that unity will ever be achieved. A narrowing can be expected on the following grounds.

One, in the last decade, the increase in the sex mortality differential has slowed down in pace. Two, reductions in maternal mortality have played an important role in the past, but further reductions will be minimal given current low rates. Three, women are engaging in more activities that were previously reserved for men and that have life-threatening qualities.

Four activities can be singled out in this regard. One is driving cars. As we have already seen, among young persons, deaths due to motor-vehicle accidents is one area where the sex mortality differential is narrowing. And still, women drive 50 per cent fewer miles annually than men. There is plenty of room for women to "catch up." Another is cigarette smoking. Even if women smoke differently (i.e., inhale less deeply, smoke lighter tar/nicotine cigarettes) and even if there is some protective mechanism within women, if enough women smoke long enough, there is bound to be a mortality effect.

Another activity is alcohol consumption. There is evidence which suggests that women are drinking more. There is also some speculation that women's bodies (particularly their livers) are less able to handle alcohol than are men's. If this is so, the implications for the sex mortality differential are clear. A fourth activity surrounds women climbing the career ladder. As more and more women enter the executive and professional ranks, the coronary-prone Type-A personality type may become more common among women.

At the present time, gender roles are changing. It seems that women are taking on men's behaviours, rather than the reverse. To the degree that this happens, women's mortality will more closely approximate that of men's. However, women's biological superiority will probably ensure that women's longevity will continue to be greater than that of men's.

Further Reading:

Robert D. Retherford, *The Changing Sex Differential in Mortality.* Westport, Conn.: Greenwood, 1975.

Jean Veevers and Ellen Gee, "Women Drivers/Men Drivers: A Synthesis of Empirical Research on Sex Differences in Driving," *Population Research and Policy Review* (forthcoming).

Lois M. Verbrugge, "Recent Trends in Sex Mortality Differentials in the United States," *Women and Health,* Vol. 5, No. 3 (1980), pp. 17–37.

*For the full text of this article, see Jean Veevers and Ellen Gee, "Accelerating Sex Mortality Differentials in Canada: An Analysis of Contributing Factors," *Social Biology* (forthcoming).

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