II

Measuring the Sex Mortality Differential

"Some of my colleagues at the Department of Sociology in Helsinki wonder whether it is meaningful to study mortality differences. After all, the death rate is the same for everyone: one death per person" (Valkonem 1993).

There is no one perfect measure of the sex mortality differential. A common measurement is the difference or ratio in the expectation of life as of a given age, usually at birth, between females and males. The expectation of life, or life expectancy, which is the average future lifetime in years, has the advantage of considering all future ages and is meaningful since it is measured in years. (In the monograph, cross-sectional, rather than generational, life expectancy is generally used.) Unfortunately, the expectation of life has its disadvantages. It tends to overemphasize deaths in the earlier ages, since these deaths cause the losses of larger expected future lifetimes. Opposite trends in mortality at different ages, such as greater female mortality at some ages but greater male mortality at other ages, can cancel each other out, and thus are not necessarily reflected in life expectancy measurement. The expectation of life is also difficult to use when studying a single cause of death.

Other typical ways of measuring the mortality differential involve death (or mortality) rates at a given age. In measuring the sex mortality differential, both the difference between the female mortality rate and the male mortality rate, and the ratio of the male mortality rate to the female mortality rate are used. These measures have the advantage in that they can be applied to overall rates, age-specific rates or cause-specific rates, rates for a particular age group, or age-adjusted rates. Age-adjusted death rates are used to compare relative mortality risk across groups, over time, and by cause of death. They are weighted averages of the age-specific death rates, where the weights represent the fixed population proportions by age. These rates are computed by applying the age-specific death rates for a given cause of death to a standard population.

Occasionally the average age at death is used in studying mortality based on skeletons or epitaphs. The average at death is not the expectation of life at birth of the group, as the skeletons and epitaphs do not represent a complete closed cohort of births.

These measures typically give similar results regarding trends between populations and over time. Each of these measures is useful in certain circumstances and is used in this paper, where appropriate. The data given in this paper are for the United States only, unless specified otherwise. Trends tend to be quite similar for most developed countries, although specifics do vary.