The Impact of Health Behaviors and Life Quality on Gender Differences in Mortality

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EXTENDED ABSTRACT

Description of the topic to be studied

That women live longer than men has been known at least since the middle of the eighteenth century when the first life tables separated by sex were constructed. The finding of male excess mortality was confirmed with the start of official population statistics in all Western societies and holds until today, as can be observed in Sweden from 1751 onwards. With their continuous increase during the 20th century the survival advantages of women became one of the central subjects in mortality research. In Germany, for instance, the differences in life expectancy at birth changed from a relatively constant female survival advantage of three years before World War II to the present level of more than six years. In most other industrialized countries, the gender gap in mortality began to widen after World War I, particularly in the United States and in England and Wales. This developments coincided with an increase in mortality due to cardiovascular diseases, cancer and accidents among men and with the fall in maternal mortality and in causes of death related to pregnancy among women, but also with the change in gender roles in the societies and the subsequent increasing attention to the health status of the –until then relatively disadvantaged- female children. A detailed analysis of the recent mortality data, however, seems to indicate a change in this diverging trend. In most industrialized countries, the gender-specific mortality gap has been slowly closing since the beginning of the 1980s. Despite these findings, opinions differ regarding the expected future trends. Some demographers presume that male excess mortality will increase again, whilst others predict a further closing of the gap. However, in

order to estimate future trends in mortality differences between women and men, first of all a better knowledge of the causes of this phenomenon is required.

Theoretical focus

The different hypotheses for explaining male excess mortality can be sub-divided into two basic categories: the biological approach (focusing on biological and genetic factors, thus factors beyond human control) and the non-biological approach (focusing on behavioral and environmental factors, thus factors directly or indirectly influenced by human action). According to the biological approach, women are less prone to disease for anatomic and physiological reasons. The female survival advantage is assumed to be a consequence of the additional X chromosome and endogenous female hormones, which should protect women especially against ischemic heart disease. The main supports of the biological approach are the fact that male excess mortality also exists in most animal species, and among humans higher male mortality rates hold among children and even among infants and in the prenatal period, when the higher rates cannot be caused by gender-specific behavioral differences. Thus, the existence of at least a biological basis for the female survival advantage is undoubted.

On the other side, advocates of the behavioral hypotheses argue that society and culture influence men to lead more dangerous lifestyles (in terms of smoking habits, alcohol consumption, diet, exercise, reckless driving, and so on), that men are subjected to greater health risks at work, that environmental factors lead to survival disadvantages for men, and that men are generally more exposed to and susceptible to different kinds of social and psychological stress. More in detail, probably the largest contribution to increasing male excess mortality is made by nicotine consumption, which is expressed by the higher male mortality caused by lung cancer and heart failure. Furthermore, smoking also appears to play a considerable role in the currently observable slow closing of the sex-specific mortality gap since the share of female smokers increased considerably in the last decades. Beside this, social stress connected with the so-called "Type A behavior" is seen as a causal factor for increasing male excess mortality, above all in connection with ischemic heart disease. A survival advantage among women may additionally be conferred by the tendency for women to consult a doctor earlier and more often than men in the case of noticing symptoms of illness. This could cause the possibility to recognize serious diseases in time what enables to treat them successfully.

It has been proven impossible to explain the observed trends in mortality differences between women and men by relying solely on one of the two groups of theories: recent studies indicate that the majority of the female survival advantage can be attributed to gender behaviors while the impact of biological factors seems to be limited to 1-2 years in life expectancy at birth.

The quantitative contribution of the behavioral factor to the differences in mortality between women and men is discussed controversially; however, this is partly due to the fact that the research on the effect of behavioral impact on mortality differences suffered from the lack of suitable and specifically designed survey data. Ultimately, a more specific gender view can help understanding how the social status level, and then the lifestyles, influences sex mortality differences: in fact men and women are not equally distributed into the social classes.

The main goal of this paper is to reach a deeper quantification of the impact of specific gender differences in health behaviors and life quality (including economic and psychological factors like income, social class and the satisfaction with daily life) on mortality using new micro level data, what leads to a better and more detailed understanding of the causes of male excess mortality.

Data and research methods

In examining the impact of individual health behavior and life quality on mortality differences between women and men, the German Life Expectancy Survey (LES) is used. The LES is a panel that until now consists of two waves of interviews. The first wave, named National Health Survey, was carried out in 1984-1986 and was followed by several more surveys on this group of topics in the subsequent years. All these surveys were cross-sectional, each based on a new representative random sample, and including in some cases medical examinations as well. In 1998, the Federal Institute for Population Research (BiB) carried out a follow-up survey from the 1984-86 sample. In the second survey wave, the initial questionnaires were slightly modified because of the specific research questions of the BiB. Purely medical details were removed and replaced by questions on general living conditions and family situations. Furthermore, the number of respondents was restricted to those born in 1952 and earlier. The LES provides information about education, employment, physical activity, nutrition, smoking behavior, health and morbidity, use of public health services, former life course, future perspectives, and satisfaction with different aspects of daily life and so on for both survivors and deceased persons.

We will carry on our research on the sample consisting of 8,474 individuals living in Western Germany. Of these people, 957 died until the follow-up survey in 1998. Due to a number of additional losses because of other reasons (like emigration or refusal) the number of people interviewed in the second wave decreased to 3,939 individuals. Despite the relatively high number of censored cases, the age composition of the 1998 follow-up sample is quite similar to the age composition of the total German population with slight deviations only among the oldest cohorts. Nevertheless, the main results presented in this paper are not seriously affected by this characteristics of the LES, since almost all deaths of individuals included in the first wave are

known with exact date, and only information of the first wave are included in the multivariate analysis.

The method used to examine the impact of different lifestyles on mortality in a gender perspective is event history analysis; particularly we will include health-related behaviors (smoking habit, sport activity, diet, and so on), psychological factors (satisfaction in various aspects of life), socio-economic status variables (education and income, the last one separated for the individual and the family) and medical information.

Expected Findings

The longitudinal survival analysis of the women and men of the LES shows higher male mortality at all ages and observation times as well as clear gender differences in all health related behaviors (smoking habits, alcohol consumption, diet, etc.) and the measured factors of individual life quality. It is expected that the vast majority of the gender differences in mortality can be attributed to the health-related behaviors, while the existing gender differences in the current health status, the economic situation, the social position, and the psychological condition (measured with the self-reported satisfaction with different kinds of daily life like housing conditions, spare time, the occupational situation, the financial situation, and health in general) should have almost no direct impact on the mortality differences between women and men, but they are expected to be important determinants to explain and understand the gender differences in health-related behaviors. Moreover, given that the income of the individual can be separated from the one of the family, it is possible to estimate the effect of both this aspects on gender differences in mortality.