

# Determinants of Age-sex Mortality Pattern in Korea, 1970-2005

- An analysis of causes-of-death by socio-economic characteristics -

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Korean population is aging the fastest among OECD countries. In Korea, it takes only 26 years to change from aging to super aged society. The main reasons are extremely low fertility and fast mortality decline.

Mortality decline is different according to demographic and socio-economic characteristics. The changes of mortality pattern by age and sex are affected by cause-of-death. The cause-of-death is affected by demographic and socioeconomic characteristics.

The purpose of this study is to discuss the changing determinants of the age-sex mortality pattern during the fast mortality decline in Korea. It is possible from the analysis of cause-of-death affected by personal characteristics.

The data used in this study are the estimated registration data for 10 years from 1971 to 1980 and the registration raw data for 25 years from 1983 to 2007.

The age-sex mortality pattern by 1980 had been affected by fertility decline and gender equality (T.H. Kim, 1990). In this study, we first find out the effects that the socio-economic characteristics affect the cause-of-death by age and sex. And then we explain that the age-sex mortality pattern is decided by causes-of-death by age and sex.

The main findings in the first draft are as follows:

1. The mortality differentials by age and sex are affected by fertility decline. With the fertility decline, the mortality rates for young women aged 20s and 30s decreased so rapidly, which is found generally in developing countries. This phenomenon appeared in Korea up until around 1980 as well (T.H. Kim).

2. The mortality rates by cause-of-death are affected by socio-economic determinants. When educational level is high and occupation is professional, mortality by malignant neoplasm and cerebrovascular diseases are clearly low. The never married people with high educational level experience high mortality by suicide. Farmers who live in rural areas are exposed to chronic liver diseases and cirrhosis and other main diseases which lead them to death. While the educational level becomes higher and personal health is concerned, the mortality level for young people declines continuously.

3. The sex ratio difference of mortality rate was the biggest at around 60 years of age in the 1970s. The age becomes younger up to around 40 years of age in 1990. The mortality differentials by sex among young people became higher because of the cause-of-death by sex. The phenomena were found when there were no dangerous factors such as child bearing after 40 years of age for women and the males' mortality by chronic liver diseases and cirrhosis and traffic accidents became higher.

4. The age group which the sex ratio of mortality rate was the highest moved to higher ages after 1990. The age group of 40 years, which mortality differentials by sex were highest in 1990, increased up to age 55 years in 2005. While the average mortality differentials by age become smaller, the highest sex ratio of mortality rate by age became higher and reached to over 300 in 2000 and then is declining. These phenomena were found while educational level becomes higher and occupation changes among young age groups, and the highest sex ratio is predicted to decline when the educated people become older.

5. The sex ratio of mortality for the 20s continues to stay relatively low compared to the 10s and the 30s and higher. Among the 20s, because the fertility becomes extremely low and there is no gender inequality any more, there is no reason the sex ratio becomes lower. However, among the young age groups, the mortality rate by suicide increased rapidly while the average mortality rate is decreasing. While male' mortality by traffic accidents becomes smaller, female's mortality by suicide becomes bigger. Even in this case, the sex ratio of mortality rate among young age groups is still lower than other age groups. Moreover, if we are considering that marital status affects mortality strongly, we can explain that young female mortality rates are increasing because their never married ratio is increasing rapidly.