CRITICAL ANALYSIS OF EGYPTIAN CAUSES OF DEATH STATISTICS

MOHAMED H. HUSEIN

Introduction:

Births, deaths and migration are the three main flows that govern the structure and change of any population. Efforts were mostly directed towards mortality studies, as a result a rapied decline in mortality levels was marked all ever world. In most of the developing countries this drop in mortality was not accompanied by a similar drop in fertility, which resulted in population increase in these areas of the world. The concerned governments are now encouraging more efforts to be directed towards lowering of fertility to resume the balance of their population and to keep the rate of natural increase to a minimum. Of course no one will feel unhappy with further drop in mortality, after all mortality rate is only a mirror that reflects the state of health in any community.

The Life Tables

One important demographic tool in mortality studies is the life table which is a cohort discription of mortality experience of a specific population at a specific time. To construct a life table we need the age specific death rate and preferably the sex-specific death rate. These

specific rates are not always available as complete and accurate data. To facilitate more understanding of this fragmentry type of data, model life tables are used. A model life table system is a simplified discription of mortality patterns with a limited number of modes of variation. The pioneer model of mortality description was that of the United Nations, but as a result of the development and sophistication of demographic methods we are now confronted with a number of these models.

The age pattern of mortality varies widely especially amoung the developing countries. Also, the age incedince of mortality varies with caues. These two pieces of evidence suggest that cause of death structure and age patterns of mortality are directly related to one another. A simple mathematical relation was formulated by Brass to explain the influence of causes of death structure on age pattern of mertality. Using this relation with the best available cause of death statistics a model life table system by cause of death was developed. According to this model any cause of death groups. Two parameters are used in this model system, one of which changes with the mortality level and is called "alpha". The other parameter explaine the mix of causes of death and we called it "K_i" for the ith cause group. This system has get an average model with a reference mix of the cause of death groups. And any deviations in the structure of the causes of death means a change of the mix parameter which will be known as"K_i^*" to differentiate it from the K_i of the reference mix. This model therefore has the advantage of explaining the age pattern of mortality if we

know the cause of dealth structure and vice versa. In ether words, this approach is helpfull in both the demographic and modical researchs.

Egyptian Mortality

With the help of the model system by cause two sets of the Egyptian death statistics by cause were studied. These are the published cause, age and sex specific deaths for the years 1962 and 1971 in the " World Health Statistics Annual" of the WHO. For each sex and year an obridged multidecrement life table was constructed with the aid of the mid-year population as estimated and published by the WHO. The calculated male and female life expectations at birth according to these tables were 45 and 47 years in 1962 and 54 and 58 years in 1971. These values of life expectation at birth were taken as indicaters of the level of mortality. A reference model at the same level of mortality was then compared to each one of the four constructed life tables for Egypt and accordingly we found:

i) The mortality rates for Egypt in several cause categeries were notably lower than of the reference mix. The figures consistently show that for either sex or year the Egyptian mortality mix has relatively small respiratory tuberculosis, respiratory system diseases and violence compenents. In addition, maternal mortality in both years is lower than that of the reference mix.

ii) In 1962 the data indicate a relatively small other infectious and parasitic component. However, in 1971 the K_i^* values showed a considerable increase. This was found to be due to the inclusion of the categery "A89" (acute respiratory infections). If this category is to be exeluded, then the calculated K_i^*'s are much more similar to those of 1962.

iii) In 1962 the K_i^* values for the diarrhoeal and infancy group are both higher than the K_i values, and this is much as we would expect. However, in 1971 the K_i^* values are consistantly lower than the K_i values.

iv) In 1962 the K_i^* values for the other and unknown group are generally below the average K_i values. But in 1971 the K_i^*'s are very much higher than the K_i values of the reference mix.

Then we used this knowledge of the mix difference in Egypt to estimate models for Egyptian mortality. The models for 1962 were broadly successfull in reproducing the distinctive age patterns of mortality. Relative to the reference mix the fitted model showed a high infant and child mortality and low rates at later ages. On the other hand, the estimated models for 1971 did not fit the original erratic age pattern of mortality in this year. It also failed to show the relative high ingant and child mortality.

Conclusions

The better fit of the model to the mortality statistics in 1972 implies the more accurate and complete cause of death data in this year. Many reasons are responsible for the less convenient fit of the model to 1971 cause of death statistics. Firstly, the family of the deceased must report the death in the first 24 hours of its occure nce. It is then the responsibility of the doctor or the health officer in the "local health bureau" to fill in a statistical abstract. This abstract includes amoungest others some data on cause of death. The abstracts are then processed centrally to be published annually in tables by age and sex according to the WHO I.C.D. list. The used 1962 statistics were only for deaths that occured in the areas with local health bureaum, while deaths for the whole country formed the basis of 1971 statistics. The deaths that occure outside the area of the health bureau are collected by an unmedically qualified person and this most certainly results in loss of valuable informations about the cause of death. This is confirmed by the relatively high component of cause unknown group. It is hoped that in the near future this is not going to be the problem as every part in the country will be covered by a local health bureau. In 1964 the number of the local health bureaus was 1168, this was almost deubled to 2208 bureaus in 1971.

Secondly, a different classification of causes of death was used in listing the causes of death in 1971. This new classification was introduced without a proper explanation to the users. This has most probably resulted in missasignment of the cause of death.

Lastly, the estimate of the mid-year population for 1962 is more accurate than that for 1971 as they were both estimats based on the 1960 census data.

Therefore one can say that a better cause of death data can be obtained by the following:

1) The death should be notified only directly to the local physician. The notification to the Omda or any other person should stop to minimise the loss of valuable information.

2) The physician must be well acquainted with the different lists of cause of death classification and their common principle. This will minimise the within the observer error.

3) Also the physician must be always up to date with the used list of classification. This is going to minimise the in between the observer error.