

# Mortality

Mortality effects and influences both fertility as well as birth rate. It is one factor which is responsible for influencing the health of the mothers and puts a strain on the national medical and sanitary resources. There are in turn, many factors which influence mortality rate. But how to find out mortality rate is one problem. For this there are many methods of analysis. Like fertility rate, there are different methods of finding out mortality rate as well. In every society, it is always interesting to find out the causes of death, which of course cannot be the same all over the world.

In the past mortality rate used to be very high because the people were not much conscious about their health and secondly medical aid was not readily available. Moreover, medical science had not much advanced. These days situation has already much changed and even in developing countries medical facilities have much increased and there is sufficient control over mortality. Even many fatal diseases are today under control. This has much increased birth rate in our modern times.

**Brief Historical Background.** When in the beginning, the practice of collecting data about deaths started, nothing could be said with certainty about the accuracy of data and extent of its reliability. But it is almost certain that the practice is very old. To begin with the purpose of collecting such information partly would have been religious and partly economic. It appears that the Romans used to collect such information in third century. In ancient Italy this type of practice also prevailed as early as in the fourth century. Such an information was collected by church fathers in the past. Gradually the practice became quite common in whole of Europe. In England in 1558, Thomas Cromwell, under Henry VIII ordered collection of data about deaths. When diseases spread, then also information was provided about the deceased and, therefore, that was invariably collected and sometimes published as well. J. Grount can be characterised as pioneer in the field. He began to collect, analyse as well as classify information and data about deaths. He brought out a book in 1662, entitled, "*Natural and Political Observations Mentioned in the Following Index and Made upon the Bills of Mortality.*" In 1755-57, on the basis of death information, in Sweden, life tables began to be prepared. Such a Table was based on the basis of information collected throughout the country and information

was also included about age and sex. In Sweden law was passed in 1748, under which it was made obligatory for the people to register all cases of deaths and thus she became the first country in this regard.

But other countries of the world did not make much progress in this regard. Gradually and slowly however, more and more attention began to be paid in this regard, when figures began to be collected about trade, commerce, diseases, living standard of the people and so on and census operation started from time to time. In 1837, in England, William Farr was made responsible for the collection of vital statistics. He began collecting information about the causes of deaths. Commenting on the contribution of his work Hauser and Duncan have said that, "*Most of our knowledge of differential mortality by occupation and social class has been obtained from this series of studies initiated by William Farr.*" In so far as the USA is concerned the work in this field rather started late. By the beginning of 20th century of the 48 states, the work regarding registration started in 14 states only. It was in 1902 that in the USA Census Bureau was made a permanent organisation. It was however only in 1933 that information about deaths and births for the whole country began to be collected in that country.

What is Mortality? Before we actually start with mortality, it is essential to understand as to what is death? Usually it is believed that end of life is death. But what is live birth is another problem. In some countries including Spain and Cuba, a child who expires within 24 hours of his birth is not considered a live birth but is included in abortion. In other words he is not included in the category of death either. In some countries only such children are considered as live ones who are alive on the day of their registration and not others and in these countries registration of children is permissible even many days after the birth of the child. According to World Health Organisation live birth may conveniently be defined by saying that, "*Live birth is the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy, which after such separation, breathes or shows any other evidence of life, such as beating of the heart, pulsation of the umbilical cord, or definite movement of voluntary muscles, whether or not the umbilical cord has been cut or the placenta is attached; each product of such a birth is considered live born.*" Based on this the World Health Organisation has defined death by saying, "*All live born infants should be registered and counted as such irrespective of the period of gestation and if they die at any time following birth they should also be registered and counted as deaths*". But all the countries of the world have not accepted this definition of death, due to one reason or the other. Hauser and Duncan have defined death by saying, "*Death prior to complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of pregnancy; the death is indicated by the fact that after such separation the foetus does not breathe*

*or show any other evidence of life, such as beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles."*

World Health Organisation is of the view that all such deaths where the child has remained in the womb of mother for 28 weeks should also be registered.

**Limitations of Mortality Data.** It has been realised all along that it is essential that mortality data should be collected. It is however, unfortunate that in countries where death rate is high, data about mortality is very undependable. Today there are many limitations in so far as mortality data is concerned. In many cases, there is no information about the age of the deceased, his caste occupation and cause of death etc. available. From U.N. Demographic Year Book it appears that only 1/4 of the world is keeping proper record about deaths. Not only this, but we find that there are no uniform definitions and in many cases those who supply information do not provide any correct and dependable information. The method of collecting and analysing data also very frequently changes which also creates problems for collection of data about deaths. Not only this, but one also finds that the whole system of data collection is very rigid and does not change with the changing situation. Many states do not quickly pass laws or amend the existing ones about deaths.

In some areas, particularly in the rural areas, there are no arrangements for registering deaths on the spot with the result that the near ones or the deceased do not take the trouble of going to some distant place for getting the death registered, unless death certificate is needed for settlement of property or any other dispute.

Still another difficulty is that many people do not at all know that registration of death is their legal obligation. Thus even if they have a desire, they take the things easy and sometime forget.

Another limitation is that since those who do not get deaths registered are not punished in any way and thus the others also donot take the trouble of going to the registration centre and complete formalities about registration of death.

**Why Mortality Data?** A very pertinent question which arises is as to why at all mortality data should be collected? UNO observed as early as in 1954 that, "*With 20% or more of all fertilisation lost before birth and 15 to 20% of the live births dying by the fifth year of age, it appears on a conservative estimate that 1/3 or more of each generation is wasted in the initial stages of its formation.*" This in itself indicates the need and necessity of collecting mortality data. Mortality data is today collected due to many reasons which effect our economic, social and political life. Some of the important causes responsible for this are as follows :

1. It is with the help of this data that it becomes possible to study the problems of widowhood and orphans and the extent to which such problems need the attention of the society.

2. These figures help in finding out how far the society is healthy and the causes of mortality reveal the direction in which society is moving e.g. how far social evils, economic strains, negligence, providing of adequate facilities etc. been responsible for the occurrence of death.

3. Available data helps in finding out the extent to which medical facilities need geared up and the nature of diseases which take the lives of the people.

4. The data helps in projecting future population of the country, which is very important these days.

5. It is with the help of available data that it becomes possible to have comparisons with past and vision for the future.

6. In the words of Barclay, "*The most successful efforts of demographic measurement have been made in the study of mortality. This was the first subject brought under rigorous analysis and has found commercial applications in the field of insurance.*"

7. In countries where death rates are high, the people on the whole care more for their present rather than the future. They then do not wish to invest in saving schemes and for them investing in the education of their children, insurance policies etc. have no attraction. Thus national economy is very much effected by this indifferent attitude.

8. In countries which have high mortality rate attitude towards such social institutions as marriage etc. changes. In such countries, it is usually observed that the people prefer arranged over love marriages, because it is believed that the sorrow for arranged marriages after death is much less, as compared with the love marriage.

9. Then another social influence is that in societies where death rate is high respect for elders and parents is usually high because it is believed that any curse from the parents as well as the elders can result in death.

10. When mortality rate is high then the parents do not pin high hopes in their children. They neither themselves become ambitious, nor are their children very ambitious. The result is that a negative rather than positive attitude prevails in the whole society.

11. It has also been observed that in societies where death rate is high usually joint family system is allowed to exist. On the other hand, societies with low birth rate, prefer to have single family system.

12. Any death event can shake the very confidence and faith of the person concerned, particularly when the death of a near relative occurs. In case frequent deaths occur then he even begins to hate many worldly things. He adopts very indifferent attitude towards life. He begins to feel that nature is very strong and that he is a very insignificant creature before mighty nature. In many cases he even becomes shaky in so far as his faith in God is concerned. Thus his values and approaches towards social, economic and political problems very rapidly and drastically changes.

13. This data very much helps planners because in the absence of mortality data either they shall give either over or under estimated plan, as they shall not have broad idea about population for which they are to plan.

14. Again this data is useful for knowing the types or diseases which take human life in a society and how to combat these and type of drugs should be manufactured, what type of doctors should be appointed and the way in which these should be trained and so on.

### ANALYSIS OF MORTALITY STATISTICS

In every country it is fully well realised that there is dire need and necessity for the analysis of mortality statistics, which are collected with great labour. It is considered essential that all data should be classified keeping in view sex, age and place of death. W.H.O. has collected mortality data in respect of many countries of the world and has also classified that according to causes of death. The organisation has also tried to lay down broad principles for classification of the data. The demographers have also prepared both life and death tables to analyse data collected about deaths. It is with the help of this data that it becomes possible to find out with some approximation expected death rate in the near future and what can be possible number of widows and orphans. There are different methods of finding out death rates. Some such rates are :

- (i) Crude Death Rate.
- (ii) Age Specific Death Rate.
- (iii) Standard or Adjusted Death Rate.
- (iv) Infant Death Rate.

All mortality rates are however, measured to find out the pressure of death on population. These rates are found out to find out the pressure of death on two situations namely two areas, or cities or countries or times. We shall now discuss each method of finding out rate with some details.

1. **Crude Death Rate.** David-M-Heer in his 'Society and Population' has said that "Crude Death Rate may be defined as the ratio of the number of deaths which occur within a given population