



**TRENDS OF MORTALITY RATE IN INDIA, MAHARASHTRA AND SATARA
DISTRICT: A GEOGRAPHICAL ANALYSIS**

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Abstract

The trends of mortality reflect on the economic as well as socio-cultural set up of a region and spatial organization of a society. Actually, a close relationship between the socio-economic development and trends of mortality rate. The rough growth and distribution of population is based on the rate of mortality in the region. Therefore, the present analysis is attempted to the trends of mortality with comparison between India, Maharashtra and Satara district in the total, urban and rural mortality rate.

Key Words: Socio-Economic Facilities, *mortality rate*, *socio-economic development*

Introduction

The population of any particular area can merely change through three processes viz. birth, death and migration. Therefore, the fertility, mortality and migration are known as important components of population changes in any region. Decreasing mortality is the fundamental cause of present growth of world population because, if the mortality rate is high with fertility is bound to be higher because, after the death of a child, family will like to add one, so that there should be surviving children in the family.

In order to have the most dependable estimate of population, it is most essential to have information on fertility, mortality and migration of the population concerned. The estimation of the population depends upon 'increase' and 'change' population. The first one very much related to fertility and mortality. In this research paper, an attempt is made to discuss on the trends of mortality in India, Maharashtra and Satara district.

Aim and Objectives:

The research work is carried out of the following specific objectives of the study:

- To examine the trends of fertility rate in the different levels such as India, Maharashtra and Satara district.
- To analyze the fertility rate in the such different levels.

Database and Methodology:

This research paper is based on the secondary sources of data. This secondary has been collected from district census handbook, socio-economic abstract, Registration System Bulletin and Registrar General of India, New Delhi and National Family Health Survey-5.

The collected data about the mortality rate is tabulated, arranged in proper format and different statistical methods are applied to obtain the desired results.

Mortality Rate

Mortality rate is measured in items of deaths per 1000 individuals per year. This technique is typically utilized by the demographers to demonstrate the aggregate passing rates in the enduring population. It is expressed as following formula:

$$\text{Mortality Rate} = \frac{\text{Total number of deaths in a given year}}{\text{Total Population of Mid year}} \times 1000$$

Trends of Mortality Rate in India, Maharashtra and Satara District

According to the United Nations mortality is the percentage of death in the population. Death has been defined by the World Health Organisation as, “Death is the permanent disappearance of all evidence of life at any time after birth has taken place cessation of vital functions without the capacity of resuscitation.

Trends of Mortality rate in India

The table 1 shows that the total mortality rate of India is unceasingly declined 16.2 to 7.3 during the period of 1961 to 2021. Table 1 displays that the total mortality rate of India was 16.2 in 1961 it was decreased up to 12.5 in 1981, because of growing literacy rate, improved medical facilities and development of standard living in India, the people do not get their deaths registered which is ultimate leads to the low death rate. In 1991, the total mortality rate is 9.8; it is also declined up to 7.3 in during 2021.

The mortality rate varies in the rural and urban areas of India during the period of 1961 to 2021. It is observed that the mortality rate is less in urban areas than rural areas. In urban areas the mortality rate was 11.1 in 1961; it is declined up to 5.1 persons per 1000 population in 2021.

Table 1
India: Trend of Mortality Rate from 1961 to 2011

Sr. No.	Year	Total	Decadal Change	Urban	Decadal Change	Rural	Decadal Change
1	1961	16.2	-	11.1	-	17.9	-
2	1971	14.9	-1.3	9.7	-1.4	16.4	-1.5
3	1981	12.5	-2.4	7.8	-1.9	13.7	-2.7
4	1991	9.8	-2.7	7.1	-0.7	10.6	-3.1
5	2001	8.6	-1.4	6.3	-0.8	9.1	-1.5
6	2011	7.5	-1.3	5.7	-0.6	7.6	-1.5
7	2021	7.3	-0.2	5.1	-0.6	8.2	+0.6

Source: Sample Registration System Bulletin and Registrar General of India, New Delhi, and National Family Health Survey.

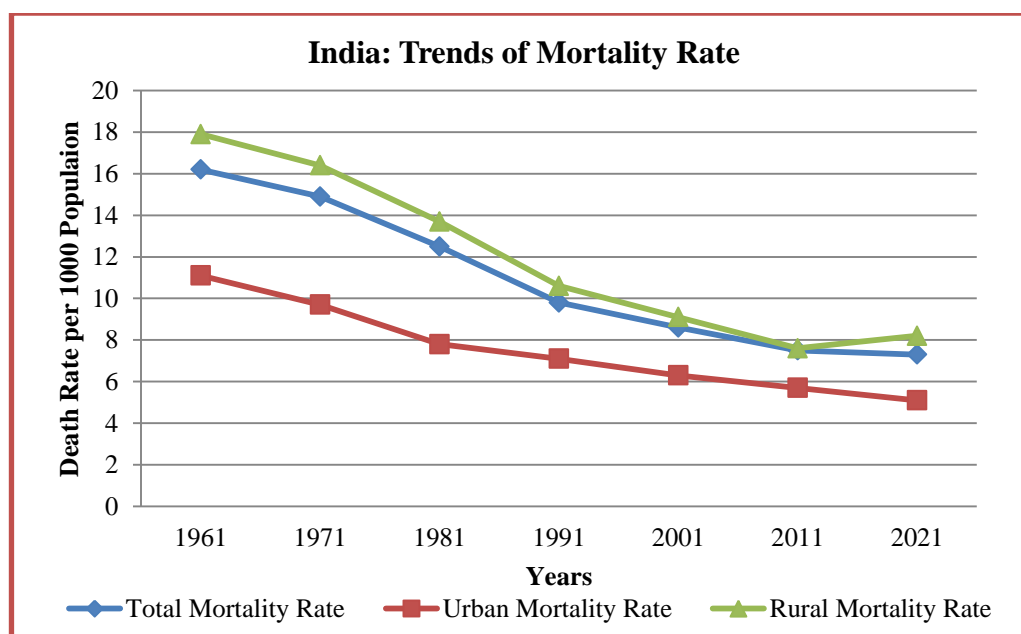


Fig. 1

The mortality rates of urban areas are continuously decreased during the period of 1961 to 2021. Because improved the availability of medical facilities and increased standard of living as well as the people do not register deaths in the family, so ultimately leads to a low death rate. One of the general causes of the recent stagnation of the trends of death rate is improved living conditions of the majority of the population, the giving knowledge of proper hygiene and health care, low productive work such as agriculture. In general, the nutritional level of the people is also increased, housing is inadequate, it has a high priority in development programmes, medical facilities such as the hospital, beds, physicians, etc. are sufficient and the majority of the population is literate in the urban areas.

The mortality rate of rural areas is high as comparatively urban areas during the period of 1961 to 2021. The mortality rate of rural was 16.6 persons per 1000 population in 1961 and it is reached up to 8.2 persons per 1000 population in 2021. The mortality is high in rural areas due to the inadequate medical facilities and high percentage of illiterate people as well as low per capita income resulted in poor the standard of living in the rural areas therefore high death rate in the rural areas compared to urban areas.

Trends of Mortality rate in Maharashtra

Table 2 indicates that there is a decreasing trend of total mortality in Maharashtra during the period of investigation i.e. it was 13.4 in 1961 and decreased up to 5.5 deaths per 1000 inhabitants in 2021.

Table 2
Maharashtra: Trend of Mortality Rate from 1961 to 2011

Sr. No.	Year	Total	Decadal Change	Urban	Decadal Change	Rural	Decadal Change
1	1961	13.4	-	12.2	-	16.6	-
2	1971	12.3	-1.1	9.7	-2.5	13.5	-3.1
3	1981	9.6	-2.7	7.4	-2.3	10.6	-2.9
4	1991	8.2	-1.4	6.2	-1.2	9.3	-1.3
5	2001	7.5	-0.7	5.9	-0.3	8.5	-0.8
6	2011	6.3	-1.2	5.1	-0.8	7.3	-1.2
	2021	5.5	-0.8	4.7	-0.4	6.2	-1.1

Source: Sample Registration System Bulletin and Registrar General of India, New Delhi, and National Family Health Survey.

In 1981, the mortality rate was 9.6 and decrease up to 8.2 in 1991. In 2001, the total mortality rate was 7.5 which are declined up to 6.3 in 2011 and 5.5 in 2021. It is clear that the mortality rate of Maharashtra was decreased in the last six decades. The mortality rate of Maharashtra is declined tremendously. The main cause is increases in the level of literacy, availability of medical facilities, improve the status of women in the society, religious background, prejudices against the female mobility and education, general value system and public policies, etc.

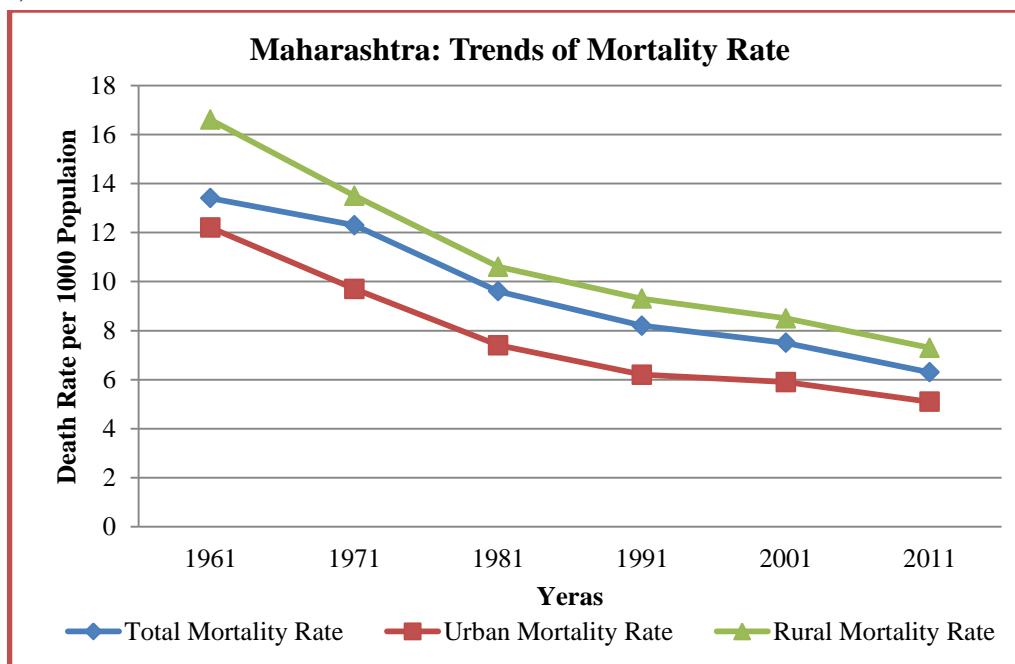


Fig. 2

The mortality varies from urban and rural areas during the period of 1961 to 2021 in Maharashtra. In both areas, the mortality rate is continuously declined from 1961 to 2021. But the rate of decreasing mortality is uneven during the period of investigation in the both areas. The urban mortality rate was 12.2 in 1961, whereas, in rural areas, the mortality rate was 16.6. In 1961, the mortality rate was higher in rural areas than the urban areas, but after that the mortality rate is continuously declined in both areas but the higher decrease in the rural areas due to development of medical facilities and increase in literacy. This is given in table 2. As per the census of 1971, the mortality rate of urban areas was 9.7 and that of rural area is 13.5. In 1981, the urban death rate of Maharashtra was 7.4 and rural death rate was 10.6. The rural-urban variation in mortality rate in the state is due to variations in medical facilities in urban areas and rural areas. In 1991, the urban mortality rate was 6.2 that of the rural area were 9.3.

In 2001, the urban death rate state was 5.9, whereas the rural death rate was 8.5. It means that rural death rate was highly decreased as compare to the urban death rate. In 2011, the mortality rate in urban areas is 5.1; while in rural death rate are 7.3 and 4.7 and 6.2 persons per 1000 inhabitants due to the development of medical facilities in the rural area. Because of

Government policies, development in transportation and communication, improvement in educational attainment and medical facilities.

Trends of Mortality rate in Satara District

The mortality rate of Satara district during the period of 1961 to 2021 has been given in table 3. Table 3 exhibits that the mortality rate of Satara district was 14.2 in 1961 and this was steadily decreased up to 6.9 in 2021. The trend of mortality is tilted in Satara district during the period of study. The mortality rate was 14.2 in 1961; it was declined up to 11.5 in 1971. As related to 1971, the mortality rate was 10.2 in 1981 and 9.1 in 1991, it was 6.9 in 2021. It means the mortality rate in Satara district is continuously decreased since 1961, due to the increasing urbanization, increasing accessibility of road network, and better medical facilities, improved educational facilities; and develop the status of women in the society. The mortality rate differs both in the urban and rural area of Satara district during the period of 1961 to 2021. In 1961, the mortality rate of rural areas was 14.5, while in urban areas it was 12.2 persons per 1000 inhabitants. The mortality rate was continuously declined in both areas of Satara district during the period of examination, due to the improved the living conditions of the common people.

Table 3
Satara District: Trend of Mortality Rate from 1961 to 2021

Sr. No.	Year	Total	Decadal Change	Urban	Decadal Change	Rural	Decadal Change
1	1961	14.2	-	12.2	-	14.5	-
2	1971	11.5	-2.7	10.2	-2	13.3	-1.2
3	1981	10.2	-1.3	9.2	-1	11.2	-2.1
4	1991	9.1	-1.1	8.7	-0.5	9.5	-1.7
5	2001	8.9	-0.2	7.4	-1.3	8.8	-0.7
6	2011	7.7	-1.2	5.5	-1.9	7.9	-0.9
7	2021	6.9	-0.8	5.4	-0.1	7.1	-0.8

Source: District Census of Handbook of Satara district and National Family Health Survey.

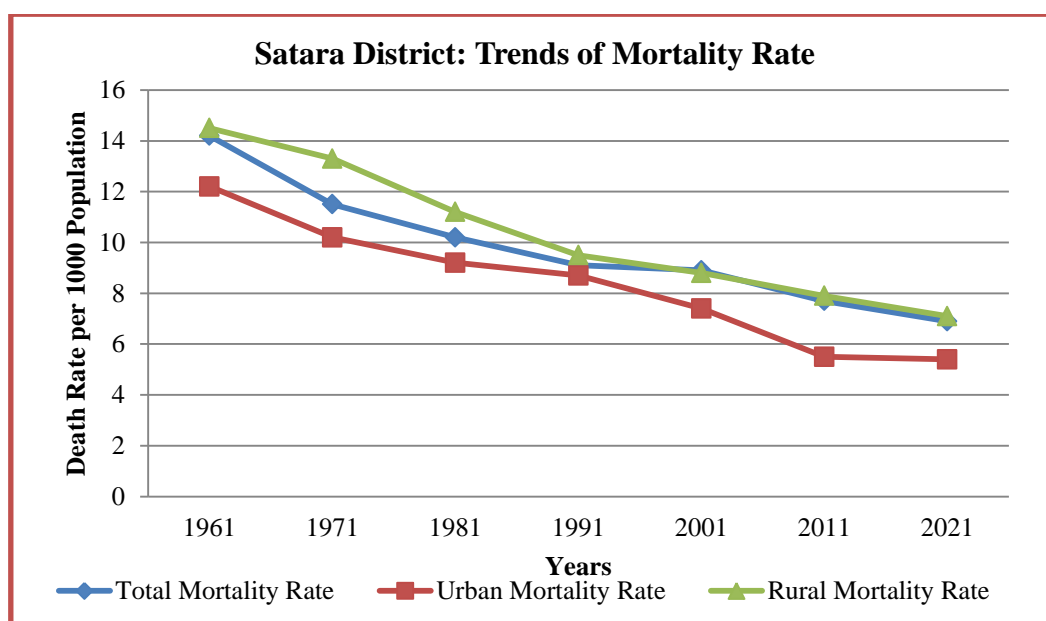


Fig. 3

In 1971, the mortality rate was 13.3 in the rural area that of urban areas was 10.2. It is higher in the rural area because of low medical facilities; lower the connectivity and low standard of living, which ultimately leads to a high death rate in rural areas and vice-versa. In 1981, the rural mortality rate was 11.2, whereas urban mortality rate was 9.2. In 1991, the rural mortality rate is 9.5 and of urban area were 8.7 in Satara district.

In 2011, the rural death rate was 5.5 and urban death rate was 7.9. As per the census of 2021, the mortality rate of the urban area was 5.4, whereas rural death rate was 7.1. The rural-urban variation in death rate in the district is due to the variation in medical facilities. The size of the villages is very small in the district. Therefore, it is not easy to provide medical facilities all over the district in a rural area as well as during the period of feminizes of COVID 19 as resulted slightly reduced mortality rate as compared to the mortality rate in the previous decade.

Comparison of Mortality Rate in India, Maharashtra and Satara District during the period of 1961 to 2021

In 1961, total death rate of India was 16.2 higher as compared to Maharashtra state was 13.4 and of Satara district was 14.2. The urban death rate of India was 11.1, it is lower than the Maharashtra state was 12.2 and of Satara district was 12.2. The rural death rate of India was 17.9, Maharashtra State was 16.6 and Satara district was 14.5. It is indicates that mortality rate of study region is lower than the state.

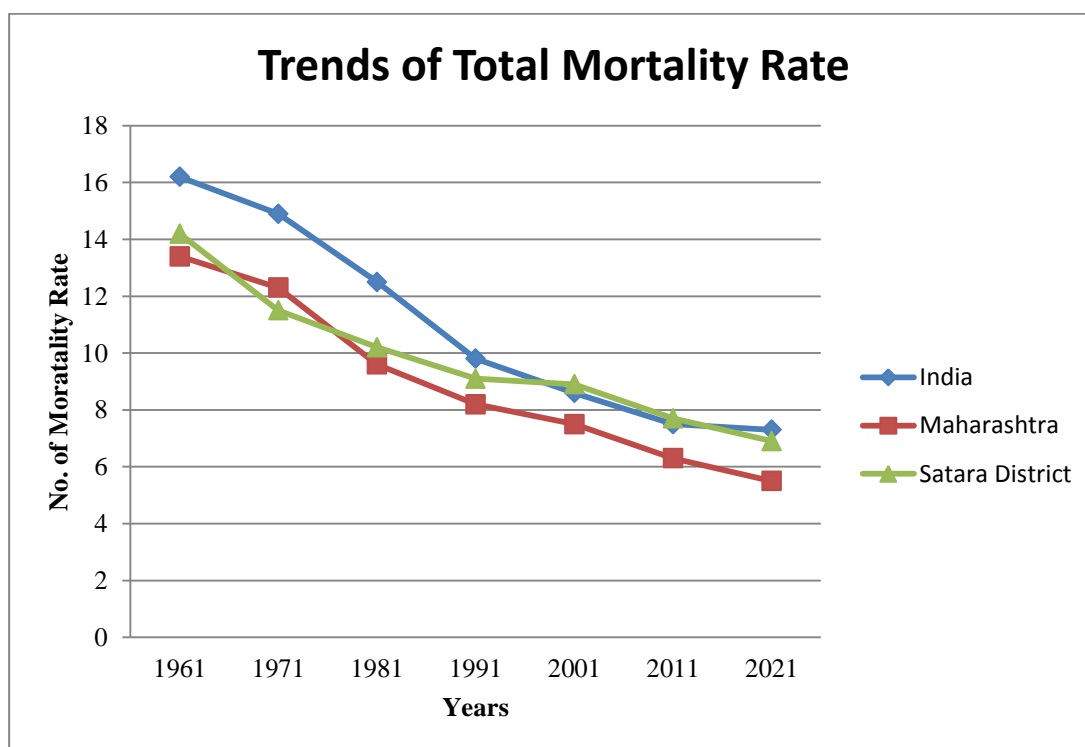


Fig. 4

In 2021, the total death rate of India was 7.3, it is also higher than the Maharashtra state was 5.5 and Satara district was 6.9. In urban death rate in India were 5.1, in Maharashtra was 4.7 and in Satara district was 5.4. In the rural area the death rate of India was 8.2, in Maharashtra were 6.2 and in Satara district were 7.1. In 2021, the urban death rate remained

lower than the rural death rate throughout the period of study due the development of medical facilities and literacy rate.

In short, it is remarkable that the mortality rate in the all levels such as central, state and district the mortality rate is significantly declined from 1961 to 2021 due the improvement of the food production, medical facilities, educational facilities a resulted awareness in the society leads to decline the death rate.

Conclusion

It has been experimental that the mortality rate declined from 1961 to 2021 in India, Maharashtra and Satara district, because improve the transportation facilities as resulted provide the quality food throughout the region, improved medical facilities, improve the status of women in society as resulted decline the mortality rate of women. Therefore all over the levels mortality rate has been declined continuously throughout the India.

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