

Tuberculosis Mortality in Karnataka

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Summary

An analysis was carried out to assess the position of Tuberculosis (TB) among all the causes of death. The report “Medical Certification on Cause of Death 2006” was utilized for this analysis. There were 5384 institutional TB category deaths occurred in 10 hospitals out of 94193 deaths in 1055 hospitals during 2006 in Karnataka. That is, the proportionate mortality rate due to TB works out to be 5.7 %. Respiratory TB stands at fourth place under the principal individual cause of death. Deaths among male were significantly high by this cause.

Key words: Respiratory TB, Cause of death, International Classification of Diseases

Introduction

This article attempts to analyse the mortality statistics due to the TB disease from the report ‘Medical Certification of Cause of Death 2006’¹. The report is based on the survey conducted by the Chief Registrar of Births and Deaths and Directorate of Economics and Statistics, Bangalore. The mortality statistics are based on the registration of deaths occurred in institutions only. Under the survey, the cause of death is classified by the National list for tabulation of Morbidity and Mortality, which is based on International Classification of Diseases (ICD) - tenth revision. There are three levels of classification. They are groups, categories and sub-categories. A group consists of categories and a category consists of sub-categories. The individual causes of death are termed as sub-categories. Nineteen groups, 69 categories and 193 sub-categories of causes have been considered for classification of deaths from the National list. TB is one among the 69 categories. Under this category, there are three sub-categories, viz., Respiratory TB (Pulmonary TB), TB of Nervous System and TB of other organs and Miliary TB. The group “Certain Infectious and Parasitic Diseases” (CIPD) in the National List consists of the TB category. The article analyses the mortality statistics from micro level i.e., deaths under the sub-category Respiratory TB, category TB and Group (CIPD) having TB disease.

Methods

The No. of TB and other Hospital statistics were analysed according to bed strength. The number of deaths were analysed according to age group wise, sex wise, Group wise, TB category, Respiratory TB sub-category wise.

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Results and Discussion

Under the study, 1055 hospitals have been covered in the state. Of which 10, (less than 1 percent) were TB hospitals. The distribution of these hospitals by bed-strength is given in Table 1. There were four TB hospitals having 51-100 bed strength, three having 201-300, two having 401-500 and 1 hospital has 101-200 bed strength.

Table 1: Distribution of TB hospitals and Total hospitals covered

Sl No.	Bed-strength	No. of TB hospitals	Total No. of Hospitals	Percentage of TB Hospitals (%)
1	Less than 25	0	456	0.0
2	25-50	0	273	0.0
3	51-100	4	121	3.3
4	101-200	1	39	2.6
5	201-300	3	21	14.3
6	301-400	0	10	0.0
7	401-500	2	5	40.0
8	More than 500	0	21	0.0
9	Not stated	0	109	0.0
10	Total	10	1055	0.9

The total number of registered deaths in these 1055 hospitals by all causes under the survey was 94193 during 2006. Of which, 59508 (63.2%) were males and 34685 (36.8%) were females.

Respiratory TB is the most prominent sub-category under the TB category as the number of fatality under this was 4412. Of which, 72.8% were male. The age and gender wise distribution of the registered deaths under this sub-category is shown in Table 2. The maximum number of deaths occurred in the age group 45-54 years. The deaths due to respiratory TB was increasing as the age increases up to the age 45-54 years and then it was decreasing up to 65-69 years and increased in the age group 'more than 70' years. The maximum number of deaths occurred in the age group 45-54 years for males and 25-34 years for females. Though the percentage of deaths of female to total was 27.2%, the number of female deaths was higher in the age group 15-24.

Table 2: Age and gender wise distribution of deaths due to Respiratory Tuberculosis sub category

Age group (in years)	No. of deaths		
	Male	Female	Total
Less than 1	11	3	14
1-4	6	7	13
5-14	17	7	24
15-24	130	168	298
25-34	500	225	725
35-44	638	197	835

45-54	709	168	877
55-64	532	143	675
65-69	192	66	258
More than 70	346	171	517
Not stated	133	43	176
Total	2764	1198	4412

TB category consists of three sub-categories, viz., Respiratory TB, TB of Nervous System and TB of other organs and Miliary TB. The number of deaths under the TB category was 5384. The Respiratory TB is leading in the category under which 81.9% of deaths have been occurred. The table 3 depicts the gender wise distribution of deaths by TB category, group containing TB and all causes along with percentage.

Table 3: Gender wise distribution of deaths under TB category, Group and Total

Gender	No. of deaths in TB category	Total No. of deaths in the group containing TB	Total No. of registered deaths in all the groups
Male	3811 (70.8 %)	7531 (66.5%)	59508 (63.2 %)
Female	1573 (29.2 %)	3801 (33.5%)	34685 (36.8 %)
Total	5384	11332	94193

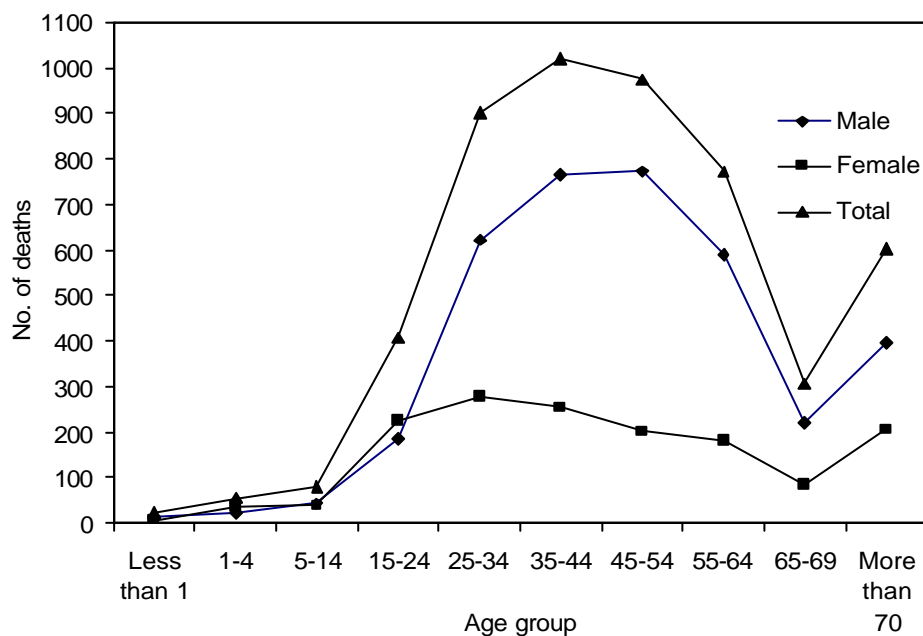
It can be seen that there were 5384 TB category deaths occurred out of 94193 deaths during 2006. That is, 5.7% of deaths due to TB category have occurred. It may be seen that the percentage of deaths among male due to TB (70.8%) category was higher than that of the deaths (66.5%) in the group CIPD as well as by all causes (63.2%) taken together. The deaths among male due to TB category was more than 2.4 times that of female.

The age and gender wise distribution of the number of deaths registered under the TB category is shown in Table 4. The number of deaths was increasing with respect to age group till the age group 35-44 years and then decreasing up to the age group 65-69 years. There was an increase in the age group 'more than 70'. This is graphically depicted in figure 1. Among the deaths of male, there was an increasing trend up to 45-54 age groups and then it decreased. The deaths of female gender, the trend increased till 25-34, decreased upto 65-69 years and then there was an increase in the age group 'more than 70', coinciding with the pattern of total number of deaths. Besides, the number of deaths of females was more than that of males in the age group 1-4 years and 15-24 years. The mode age groups of death were 45-54 years and 25-34 years for males and females respectively. The age was not reported during the survey for 229 deaths and hence the same is not depicted in the figure.

Table 4: Age group and gender wise distribution of number of deaths under TB category

Age group (in years)	No. of deaths under Tuberculosis Category		
	Male	Female	Total
Less than 1	16	8	24
1-4	23	35	58
5-14	43	39	82
15-24	185	225	410
25-34	622	281	903
35-44	766	255	1021
45-54	771	204	975
55-64	592	180	772
65-69	223	84	307
More than 70	398	205	603
Not stated	172	57	229
Total	3811	1573	5384

Figure 1: Gender wise No. of deaths due to TB category



The cause group “Certain Infectious Parasitic Diseases” contains TB category as one of the diseases. It stands at second place in the killer list, having 12.0% of all the registered deaths. Out

of the 19 groups under the survey “Diseases of Circulatory System” group leads, with 27.5%. The table 5 shows the leading five groups of causes of death along with their percentage.

Table 5: Percentage of deaths according to the groups

Sl. No	Groups	Percentage
1.	Diseases of circulatory System	27.5
2.	Certain Infectious Parasitic Diseases	12.0
3.	Injury, Poisoning & Certain other consequences of external causes	10.2
4.	Endocrine, Nutritional and Metabolic Diseases	8.1
5.	Certain conditions originating in the Perinatal period	7.7

The CIPD group consists of 7 categories comprising of 39 sub categories. The gender wise number of deaths due to TB category against the CIPD group is shown in table 6. It can be seen from table that Tuberculosis is prominent one as its percentage within the group was significantly high.

Table 6: Gender wise distribution of deaths under TB category and Certain Infectious and Parasitic Diseases Group

Sl No.	Group/Category of death	No. of deaths		
		Male	Female	Total
1	No. of deaths under the Group (CPID)	7531	3801	11332
2	No. of deaths in the TB category	3811 (50.6 %)	1573 (41.4%)	5384 (47.5%)

The percentage of deaths due to TB category, within the group of CIPD having 7 categories, was 47.5%. The percentage of deaths among male and female under the category of the group was 50.6% and 41.4% respectively. Besides, the number of deaths of male during the year was about 2 times to the deaths of female under the group.

The CIPD group stands at second place at the group level. Similarly, principal individual cause of death on sub-category wise analysis was done. Among the registered deaths, the principal cause of death was ranked among the all 193 subcategories. Under this, Respiratory TB stands in the fourth place, having 4.68 % of the total deaths of all causes. The first three causes were Acute Myocardial Infarction (7.86 %), Diabetes Mellitus (7.37 %) and Cerebrovascular Diseases (5.41 %).

Conclusion

Under the survey on “Medical Certification of Cause of Death” in 2006, the percentage of TB deaths to total was 5.7 %. The number of deaths due to Respiratory TB sub-category, TB category, Group containing TB and all diseases were 4412, 5384, 11332 and 94193 respectively. The deaths among male due to Respiratory TB sub-category and TB category were twice more than that of females. The mode age groups of death were 45-54 years and 25-34 years for males and females respectively. The group CIPD containing TB stands at second place in killer list

among all the groups whereas the Respiratory TB sub-category was fourth in the principal individual cause.

References: 1. Chief Registrar of Births & Deaths and Directorate of Economics & Statistics, Bangalore; Report on Medical Certification of Cause of Death – 2006 DES No. 9 of 2008.