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Research Article

Understanding epidemiological transition in urban population of Maharashtra

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ABSTRACT

Background: Change in causes of death pattern is a reflection of epidemiological transition in which infectious and parasitic diseases shift to chronic and degenerative diseases of adulthood. Cause of death trend and pattern is important for future health policy planning.
Methods: This study attempts to measure mortality trends by different causes of death for urban Maharashtra by using MCCD data for 1990-2010 by calculating proportion of major cause of death to total deaths by age and sex for all these years.
Results: Results reveal that there has been shift in the structure of mortality by cause. Diseases of circulatory system were the leading causes of death accounting for about 31% share of all medically certified deaths which is well above the national average of about 30%. Similarly, the proportion of deaths due to certain conditions originating in the perinatal period appears to be low in the state (3.9%) compared to national average (7%). The proportions of deaths due to certain infectious and parasitic diseases and disease of the respiratory system appear to be very high (15.7% and 12.1% respectively) compared to national average (13.1% and 9.5% respectively).
Conclusions: It was found that socio-economically developed and demographically advanced urban Maharashtra bears the double burden of disease specific mortality.

Keywords: Causes of death, Mortality, Leading cause, MCCD, Epidemiological transition

INTRODUCTION

The study of frequency, distribution and determinants of health-related events (including diseases) and its application in the control of diseases and other health problems is called epidemiology.[1] Changes in the pattern of causes of death is a reflection of epidemiological transition which is characterized by the shift from the predominance of infectious and parasitic to that of chronic and degenerative diseases into four stages: first stage being the stage of pestilence and famine, followed by the stage of receding pandemics; third is the stage of degenerative and manmade disease, and finally, the stage of delayed degenerative diseases.[2,3]

Demographic transition, health transition, nutritional transition and epidemiological transition overlap and it is difficult to affirm which one precedes the others. All these transitions are the product of socio-economic development and modernization.[4] Demographic and epidemiologic changes are characterized by growth of middle-aged and elderly persons and diseases that occur in these age groups. The transition is the result of an increase in life expectancy, improved maternal and child health, reduction in fertility and maternal and infant mortality.

Out of six global deaths in a year one is from India which equals to 9.5 million deaths.[5] Presently, India is experiencing epidemiological transition and changes in the mortality pattern as a result of its socioeconomic and

demographic changes.[6-8] The crude death rate (CDR) in India was 14.9 in 1971, which was declined to 7.1 in 2010. During the same period, the crude birth rate (CBR) fell from 36.9 to 22.1. In Maharashtra, CDR declined from 12.3 in 1971 to 6.5 in 2010 and CBR from 32.2 to 17.1[9-10]. Over the last century, life expectancy in India has increased by almost threefold, rising from 23 years in 1901 to 67.5 years in 2009-13. In Maharashtra, life expectancy was only 53.8 years in 1973 for both males and females; however, it has increased to 71.6 years for males and 74.8 years for females in 2009-13 in urban Maharashtra.[4,8,11,12]

Cause of death statistics by age, sex and other socio-economic characteristics are essential inputs to understand the magnitude and distribution of the health problem in any society. The pattern of cause of death has been well documented in developed countries. Information on causes of death is of key importance in understanding the determinants of health and mortality [13]. The information on trends and patterns of causes of death is important in order to caution against potential future health policy challenges.

India does not have good quality data on health situation of its population particularly the rural population where three-fourth of its total population lives. Reddy[14] pointed out that cause of death information from hospital based data suffer from several types of selection biases and do not provide a true picture of the population. In India, reliable standardized cause-specific mortality rates are not computed because of unsatisfactory death certification even for the urban population.[15,16] Though Medical Certification of Cause of Death (MCCD) scheme is an important mechanism for obtaining authentic and scientific information regarding causes of mortality, but this is limited to urban population only. In this study, an attempt has been made to measure the trends in mortality by different causes of death between 1990 and 2010 and their relative contributions among different age groups stratified by sex for urban population of Maharashtra.

METHODS

Medical Certification of Cause of Death data for the years 1990 to 2010 have been used in the study. Under the Registration of Births & Deaths Act, 1969, the MCCD scheme, an integral part of the Vital Statistics System, aims at providing a reliable database for generating cause-specific mortality statistics on a regular basis.[17,18] The Office of the Registrar General, India (ORGI) obtains data on cause of death from the Chief Registrar of Births and Deaths of different States and Union Territories. The MCCD under Civil Registration System has been implemented in the States/UTs in a phased manner to provide data on cause of death. However, it has so far been implemented in only certain hospitals, generally in urban areas which are selected by the Chief Registrar of Births & Deaths. Thus, the scheme covers mostly those deaths which occur in medical institutions located in urban areas. The coverage under the scheme in terms of percentage level of medical certification as well as the type of hospitals covered has not been uniform across the States/UTs. Some of the States have notified only teaching and specialized hospitals under it, whereas in others, only district hospitals and Primary Health Centres (PHCs) have been brought under its ambit. The MCCD scheme was introduced in early 1970s to ensure that all deaths had a medical certificate stating the cause of death. ORGI supervises the MCCD scheme through which data about causes of death are collected and compiled on a regular basis in urban India. Information regarding hospital deaths is collected on Form 4, and data for non-institutional deaths is recorded on Form 4A. Data derived from Medically Certified Cause of Death is tabulated in conformity with the International Classification of Diseases (ICD) - Tenth Revision (1993). It has been adopted in the ORGI for classification of causes of death since 1999 Report on MCCD. The statistics on medically certified causes of deaths is being tabulated as per the National List (ICD –10, modified according to Indian conditions). The underlying cause of death is taken into account while tabulating the cause-specific mortality[19]. RGI presents MCCD data as per the National List based on 10th revision of International Classification of Diseases to facilitate meaningful comparison and drawing valid conclusions thereon.

To understand the pattern of causes of death, data have been recompiled from reports of MCCD for urban Maharashtra for the period from 1990 to 2010 to incorporate the international classification of diseases. It was observed that there were a large number of deaths under the head ‘NS’ (Age Not Stated). After reviewing literature and doing a series of exercises, it was thought appropriate to distribute these deaths in all stated age groups in proportion to total deaths at those age groups. This is done for all the years for all causes of deaths by age and sex. MCCD data by age and sex segregation are clubbed into the age groups 0-1 year, 1-4 years, 5-14 years, 15-24 years, 25-64 years, 65 years and above. These ICD codes are grouped into 9 major causes of death as indicated in ICD-10 classification. Proportion of major cause of death to total deaths by age and sex is calculated and presented in Tables 1 to 6.

RESULTS

The leading causes of death by different age groups are calculated and presented in the tables 1 to 6. Tables 1 and 2 present the main causes of infant and child deaths in urban Maharashtra during 1990 to 2010.

The results indicate that “certain conditions originating in the prenatal period” contributed to 45.6% share of infant deaths in 1990 which rose to 53.4% in 2010. The second leading cause of infant deaths was “symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified” contributing to 12.7% share in 1990 and

declined to 3.5% in 2010. The results show a similar pattern of contribution of major causes of death in case of female infants (Table 1).

"Certain conditions originating in the perinatal period" showed a remarkable increase in the share of death of both male and female infants in the year 1998. "Congenital malformations, deformations and chromosomal abnormalities" was the second leading cause of death with 15.8% share in 2002 in male infants and third leading cause of death with 15.8% share in female infants (Table 1).

Table 1: Percentage contribution of major causes of death among infants in the age group 0-1 year in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Certain conditions originating in the perinatal period	45.6	48.5	72.5	54.1	52.8	53.4	42.2	45.1	70.7	49.5	50.1	51.2
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	12.7	16.6	9.6	2.7	6.4	3.5	13	16.4	11.1	3.5	7.6	3.5
Diseases of the respiratory system	12.5	12.5	3.1	12.1	14.2	15.4	14.7	14.8	4.2	16.9	16.4	17
Certain infectious and parasitic diseases	11.6	12.4	8	8	10.6	13.4	13.7	13.1	7.7	7.6	10.8	13.2
Injury, poisoning and certain other consequences of external causes	7.6	0.7	0.3	2	1.4	1	6	0.7	0.3	1.8	1.4	0.9
Diseases of the circulatory system	2.4	1.4	1.1	1.2	3.5	4.9	2.2	1.8	1	1	2.9	5.3
Congenital malformations, deformations and chromosomal abnormalities	2.2	2.5	2.8	15.8	5.1	4.7	2.2	2.1	2	15.8	4.9	5.3
Diseases of the nervous system	2	1.9	1.1	2.3	2.6	1.5	2.3	2.1	1	1.7	2.6	1.6
Others	3.4	3.5	1.5	1.8	3.4	2.2	3.7	3.9	2	2.2	3.3	2
Total	100	100	100	100	100	100	100	100	100	100	100	100

"Certain infectious and parasitic diseases" contributed to 31.2% share of children deaths in the age group 1-4 years in 1990 and declined to 23% in 2010. "Diseases of the respiratory system" contributed to 21.5% share in 1990 and increased to 25.8% in 2010. The results show a similar pattern of contribution of major causes of death in case of female children (Table 2).

"Injury, poisoning and certain other consequences of external causes" was the third leading cause of male children deaths whereas "symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified" was the third leading cause of female children deaths in 1990. In the year 2010, "diseases of the respiratory system" emerged as the leading cause of death of both male and female children followed by "certain infectious and parasitic diseases" and "diseases of the circulatory system" (Table 2).

In children in the age group 5-14 years, the leading cause of death was "injury, poisoning and certain other consequences of external causes" which contributed to 27.5% share in 1990 and decreased to 14.4% in 2010. "Certain infectious and parasitic diseases" contributed to 20.2% share in 1990 and increased to 21.1% in 2010. The results show a similar pattern of contribution of major causes of death in female children (Table 3). "Certain infectious and parasitic diseases" emerged as the leading cause of death of both male and female children in the year 2010. "Diseases of the circulatory system" and "diseases of the respiratory system" were second and third leading cause of death in male children. "Diseases of the respiratory system" and "diseases of the circulatory system" were second and third leading cause of death in female children (Table 3).

In youth population in the age group 15-24 years, the leading cause of death was "injury, poisoning and certain other consequences of external causes" which contributed to 40.8% share in 1990 and declined to 32% in 2010. The second leading cause of death was "certain infectious and parasitic diseases" which contributed to 18.5% share in 1990 and declined to 18.3% in 2010 after showing upward and downward trend during the period. The results show a similar pattern of contribution of major causes of death in female youth (Table 4).

Table 2: Percentage contribution of major causes of death among children in the age group 1-4 years in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Certain infectious and parasitic diseases	31.2	27.5	24.6	20.8	24	23	33.5	24.4	26.8	22.9	24.2	26.4
Diseases of the respiratory system	21.5	23.8	24.2	27.5	25.3	25.8	23.5	27.9	20.5	30.9	26.7	27.2
Injury, poisoning and certain other consequences of external causes	16.5	6.7	6.8	13.5	9	9.2	11.2	6.3	6.6	9.4	8.5	7.6
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	12.7	14.6	17.4	8.7	7.3	9.9	15.6	16.4	16.4	5	8.8	8.3
Diseases of the nervous system	4.5	8.9	8.1	6.3	9	5.4	4	5.4	9.3	5.8	8.5	4.9
Endocrine, nutritional and metabolic diseases	3.7	3.9	2	1.3	1.2	1.2	4.3	5.8	2.6	1.6	1.7	1.2
Diseases of the circulatory system	3.2	3.2	7.6	7.6	9.8	11.9	2	3.5	7.3	12.6	9.4	13.3
Diseases of the digestive system	2.3	4.5	3.3	3.5	2.9	2.4	2.1	3.4	4.2	2.3	2.4	1.5
Others	4.4	6.9	6	10.8	11.5	11.2	3.8	6.9	6.3	9.5	9.8	9.6
Total	100	100	100	100	100	100	100	100	100	100	100	100

"Injury, poisoning and certain other consequences of external causes" retained the first position of leading cause of death of both male and female youth in 2010. "Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified" was the second leading cause of male youth whereas "certain infectious and parasitic diseases" was the second leading cause of death in female youth in 2010.

Table 5 illustrates the main causes of death among adults in the age group 25-64 years during 1990 to 2010. "Diseases of the circulatory system" contributed to 25.4% share in 1990 and increased to 27.9% in 2010. The second leading cause of death was "certain infectious and parasitic disease" which contributed to 19.3% share in 1990 and rose to 20% in 2010. "Injury, poisoning and certain other consequences of external causes" contributed to 18.3% share of adult deaths in 1990 and decreased to 11.2% in 2010.

In female adult population, "injury, poisoning and certain other consequences of external causes" was the leading cause of death with 25.7% share in 1990 and declined to 8.8% in 2010. The second leading cause of death was "diseases of the circulatory system" with 21.8% share in 1990 and rose to 27.2% in 2010. "Certain infectious and parasitic disease" emerged as the second leading cause of death in 2010 with 21.1% share from 13.5% in 1990 (Table 5).

"Diseases of the circulatory system" was the leading cause of death of both male and female adults followed by "certain infectious and parasitic disease" in 2010 (Table 5).

The results shows that in elderly population in the age group 65 years and above the leading cause of death was "disease of the circulatory system" with 35.1% share in 1990 and rose to 43.3% in 2010. The second leading cause of death was "symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified" with 25% share in 1990 which declined to 11% in 2010. The results show a similar pattern of contribution of major causes of death in elderly female (Table 6).

"Diseases of the circulatory system" retained the first position of leading cause of death of both male and female elderly population followed by "diseases of the respiratory system" in 2010 (Table 6).

Table 3: Percentage contribution of major causes of death among children in the age group 5-14 years in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Injury, poisoning and certain other consequences of external causes	27.5	12.9	14.9	24.8	17.4	14.4	29.1	14.2	14.1	19.7	14.4	12.7
Certain infectious and parasitic diseases	20.2	18.5	26.1	18.7	22.5	21.1	27.1	19.3	27.6	21.4	27.2	29.6
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	19.7	31.9	12.5	6.9	9.7	11.6	10.8	27.1	12.8	6.6	8.8	9
Diseases of the respiratory system	8.2	9.9	13.7	12.5	13.4	15.7	10.1	11.8	13.1	13	14.3	15.2
Diseases of the circulatory system	7	5.9	10.2	10.3	12.1	16.2	6.1	5.7	10.5	13.4	11.2	13.7
Diseases of the nervous system	5.5	7.7	8.7	7	8.9	5.5	5.6	7.6	9.2	6.8	8.9	4.9
Diseases of the digestive system	3.6	3.7	4.1	5.1	2.4	2.5	3.1	4	3.6	5.2	2.9	2.7
Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism	2.8	3.3	4	2.6	4	3	2.8	4.5	4.2	2.9	3.8	2.6
Others	5.5	6.2	5.8	12.1	9.6	10	5.3	5.8	4.9	11	8.5	9.6
Total	100	100	100	100	100	100	100	100	100	100	100	100

DISCUSSION

The analysis of MCCD data in the study provided key insights in terms of epidemiological transition in urban population of Maharashtra. Deaths due to "certain conditions originating in the perinatal period" were the main cause of infant deaths. "Certain infectious and parasitic diseases" were the main cause of childhood deaths in 1990. However, "diseases of the respiratory system" emerged as the leading cause of death in 2010. "Injury, poisoning and certain other consequences of external causes" were the main cause of children deaths in 1990. However, "certain infectious and parasitic diseases" emerged as the leading cause of death in 2010. In youth, the leading cause of death was "injury, poisoning and certain other consequences of external causes" from 1990 to 2010 in both male and female. In adult population, "diseases of the circulatory system" was the leading cause of adult male deaths in 1990, whereas "injury, poisoning and certain other consequences of external causes" was the main cause of adult female deaths in 1990. However, in the year 2010, "diseases of the circulatory system" emerged as the leading cause of death of both male and female adult population. In the elderly population, "disease of the circulatory system" was the leading cause of death of both male and female from 1990 to 2010. Similar findings were reported by an earlier study.[20]

There has been shift in the structure of mortality by cause. The following causes of death have shown decline in the percentage share to total medically certified deaths during 1990-2010 –

1. Diseases of blood and blood forming organs and certain disorders involving the immune mechanism (1.8% in 1990, 0.9% in 2010);
2. Mental disorders (0.1% in 1990, 0.04% in 2010);
3. Diseases of the nervous system (2.2% in 1990, 1.8% in 2010);
4. Pregnancy, childbirth and the puerperium (0.7% in 1990, 0.2% in 2010);
5. Certain conditions originating in the perinatal period (6.4% in 1990, 3.9% in 2010);
6. Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified (16% in 1990, 10.7% in 2010);

7. Injury, poisoning and certain other consequences of external causes (15.5% in 1990, 7.3% in 2010).

Table 4: Percentage contribution of major causes of death among youth in the age group 15-24 years in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Injury, poisoning and certain other consequences of external causes	40.8	28.2	30	43.5	34.8	32	45.1	39.2	36.1	30.8	31.8	23.7
Certain infectious and parasitic diseases	18.5	23.2	21.1	18.2	22.2	18.3	16.7	17.3	21.9	21.4	25.2	23.6
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	14.2	21.4	15.9	9.3	14.1	18.5	7.9	17.9	13.6	9.7	12.7	17.1
Diseases of the circulatory system	8.1	6.3	14.1	10	7.9	10.8	6.2	5.2	9.8	16.5	8.3	11.7
Diseases of the respiratory system	4.7	5.3	6	8	8.1	8.4	4.3	3.6	4.1	7.2	6.5	9.7
Diseases of the digestive system	3.8	3.7	3.6	2.8	2.6	2.9	3.3	2.7	2.6	2.7	2.5	2.4
Diseases of the nervous system	3.1	4	3.2	2.8	2.8	2.4	2.3	2.6	2.5	2.8	2.9	1.8
Neoplasms	2.5	2.7	2.2	2	2.7	2.1	2.2	1.5	1.2	1.9	1.8	1.8
Others	4.3	5.2	3.9	3.4	4.8	4.6	12	10	8.2	7	8.3	8.2
Total	100	100	100	100	100	100	100	100	100	100	100	100

The following causes of death have shown rise in the percentage share to total medically certified deaths during 1990-2010–

1. Certain infectious and parasitic diseases (15% in 1990, 15.7% in 2010);
2. Neoplasms (4.2% in 1990, 5.2% in 2010);
3. Endocrine, nutritional and metabolic diseases (2.2% in 1990, 3.3% in 2010);
4. Diseases of the circulatory system (21.1% in 1990, 31% in 2010);
5. Diseases of the respiratory system (10% in 1990, 12.1% in 2010);
6. Diseases of the digestive system (3.7% in 1990, 4.1% in 2010);
7. Diseases of the genitourinary system (0.8% in 1990, 3.4% in 2010).

In the year 2010, every seventh reported medically certified death is of infants (age 0-1 year). About 52% of infant deaths have been caused by "certain conditions originating in the perinatal period". "Certain infectious and parasitic diseases" have taken the toll of 25% in children of age groups 1-4 and 5-14 years each. In children in the age group 15-24 years, "injury, poisoning and certain other consequences of external causes" is the leading cause of death contributing around 29% share. It implies that this age group of children is more vulnerable to injuries and poisoning related deaths. In adult in the age group 25-64 years, the first two leading causes of death viz., "diseases of the circulatory system" and "certain infectious and parasitic diseases" have contribution of 28% and 20% share respectively. In elderly in the age group 65 years and above, "diseases of the circulatory system" is the leading cause of death with 44% share. The contributions of male and female deaths in the total medically certified cases have been reported to be 61.1% and 38.9% respectively.

The percentage of medically certified deaths to total registered deaths in Maharashtra was 34.4% in 2010. The classification of medically certified deaths by the causes of death indicates that the "diseases of circulatory system" were the leading causes of death in the state accounting for about 31% of all medically certified deaths which is well above the national average of about 30%. The proportion of deaths due to "certain conditions originating in the perinatal period" appears to be low in the state (3.9%) compared to the national average (7%). Similarly, the proportion of deaths due to "certain infectious and parasitic diseases" and "diseases of the respiratory system" are very high in the state (15.7% and 12.1% respectively) as compared to the national average (13.1% and 9.5% respectively).

Table 5: Percentage contribution of major causes of death among adults in the age group 25-64 years in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Diseases of the circulatory system	25.4	25.1	26.2	26	23.8	27.9	21.8	22.3	26.2	29.9	24.3	27.2
Certain infectious and parasitic diseases	19.3	22.9	23	21.7	22.8	20	13.5	15.6	18.6	17.4	20.5	21.1
Injury, poisoning and certain other consequences of external causes	18.3	12.9	12.4	17.7	14.3	11.2	25.7	15.8	15.7	13.8	12.7	8.8
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	10.7	12.8	12.8	5.6	8.3	10.5	10.2	16.8	12.1	4.8	6.5	8.7
Diseases of the digestive system	7.2	7.5	8.3	8.1	8	8.7	3.8	4	4	3.4	3.4	2.7
Diseases of the respiratory system	6.7	5.8	6.6	10.3	9.5	8.8	6.4	6.6	6.7	11.3	10.6	10
Neoplasms	5.3	4.7	3.2	3.7	5	4.3	7.9	7.8	6.4	8.1	10.3	10
Diseases of the nervous system	2	1.6	1.7	2	2.1	1.5	1.7	1.6	1.8	2	2.2	1.5
Others	5.1	6.7	5.8	4.9	6.2	7.1	9	9.5	8.5	9.3	9.5	10
Total	100	100	100	100	100	100	100	100	100	100	100	100

Table 6: Percentage contribution of major causes of death among elderly in the age group 65 years and above in urban Maharashtra (1990-2010).

Causes of death	Male						Female					
	1990	1994	1998	2002	2006	2010	1990	1994	1998	2002	2006	2010
Diseases of the circulatory system	35.1	37.3	41.3	42.8	39.3	43.3	33.8	38	42.5	40.6	40.7	44.1
Symptoms, signs and abnormal clinical and laboratory findings not elsewhere classified	25	21.2	16.5	10.3	11.4	11	30.2	22.4	20.3	13.8	14.5	13.1
Diseases of the respiratory system	12.6	11	12.5	17.1	15.4	14.8	13.3	12.7	11.7	19.2	14.1	14.1
Neoplasms	5.1	4.8	3.6	5.2	5.7	5.8	4.1	4.5	3.7	4.9	5.8	5.9
Injury, poisoning and certain other consequences of external causes	4	3.7	2.5	3.4	2.3	1.9	3.6	3.5	1.6	3	2.6	1.4
Endocrine, nutritional and metabolic diseases	2.8	5.1	4.2	3.8	4.4	4.6	3.5	5.7	4.7	4.3	4.6	5
Diseases of the digestive system	2.3	2.7	3.8	2.8	2.7	2.4	1.4	1.8	2.6	1.6	1.6	1.2
Diseases of the nervous system	1.8	1.5	1.5	2.1	2.4	1.8	1.8	1.4	1.5	1.9	2	1.6
Others	11.3	12.7	14.1	12.5	16.4	14.4	8.3	10	11.4	10.7	14.1	13.6
Total	100	100	100	100	100	100	100	100	100	100	100	100

The analysis of the cause of death for all age group population indicate that urban Maharashtra is experiencing the onset of third stage of epidemiological transition but disaggregated analyses by age-groups indicate a different picture. The unique feature of

epidemiological transition in urban Maharashtra is that though communicable disease deaths are decreasing over time, they are still predominant in infants, children, youth, and adult population. Even though urban Maharashtra is socio-economically advanced and demographically developed state in India it bears the double burden of disease specific mortality. The results also align with the findings of other studies in developing countries.[21-24]

CONCLUSION

Health seeking behavior of people is dependent on the perception of people regarding the quality of health care services in health centers. The perception of the people has to be changed to attract them more to government hospitals and health centers. It can be done through improving the quality of care, proper maintenance of facilities and also by inculcating a caring and sympathetic attitude in health professionals while dealing the patients.

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