Chapter 8: **Conclusions and Suggestions**

8.1 Introduction
8.2 Summary
8.3 Conclusions
8.4 Suggestions
Chapter Eight

Conclusions and Suggestions

8.1 Introduction:

Urbanization is an important demographic shift worldwide. Today, nearly half the world population is urban. In India also the rate of urbanization is high in the last decade. It is a major challenge for urban health. Urbanization has been traditionally linked to development and development with health, but the face of development is the growth of slums, which are linked with poor health. This urban setting reflects that, there are some environmental, social and economic factors behind this. High population densities, limited access to health services, and proximity to pollution sources contribute to particularly high morbidity and mortality rates in urban slums. While urban living continues to offer many opportunities, these advantages, can be extremely uneven in their distribution. Many cities in developing countries suffer disproportionately from poor health and these inequities can be traced back to differences in their social and living conditions.

According to the NFHS-3 reports India’s 285.4 million population (28% of the total) live in urban areas. Out of these 80.8 million people (25.7% of the total urban) live below the poverty line. Maharashtra is the highly urbanized state in India (followed by Tamil Nadu, where urban population is 43.9%). Slum population growth will continue to outpace growth rates of India, Urban India, and mega cities. This is currently summarized as the 2-3-4-5 syndromes. In the 1991-2001 decade, as India grew at an average annual growth rate of 2 percent, urban India grew at 3 percent, mega cities at 4 percent and slum populations increased by 5 percent.

The concept of ‘Urban Health’ assumes that the urban environmental, social and economic factors affect all strata of residents, either directly or indirectly. The Urban Health sector has an important role to play in advocating for whole government approaches to health, urban policy and
planning, the promotion of healthy settings and strengthening local government responses to emerging health needs. The urban health depends on many different factors such as individual, environmental, social and economic factors. Improving the urban health status of population and reducing ill urban health pose challenges to national and local governments in multisectoral decision making. Public health policy plays a vital role in shaping the social and physical environment in ways that are conducive to better urban health. The health of people living in towns and cities is strongly determined by their living and working conditions, the quality of their physical and socio-economic environment.

There is also a perception that urban populations are better off than their rural counterpart. Development indicators, such as life expectancy and education, do tend to be better urban areas, but in many Indian cities, these urban averages obscure the realities of the urban poor. As per Census 2011, 37.7 crore people live in urban areas. The level of urbanization increased from 27.81 percent in 2001 Census to 31.16 percent in 2011 Census. The urban population is estimated to increase 43.2 crore in 2021. Urban growth has led to rapid increase in number of urban poor population, many of whom live in slums and other squatter settlements. As per Census 2001, 4.26 crore people lived in slums spread over 640 town/cities having population of fifty thousand or above. While the JNNURM is beginning to tackle the urban infrastructure issues, urban health issues need immediate attention especially in the context of the urban poor. It also needs attention from public health perspective. Despite the proximity of the urban poor to urban health facilities their access to them is severely restricted. This is because of the inadequacy of the urban public health delivery system. Ineffective outreach and weak referral system also limits the access of urban poor to health care services.

Jacques May, the father of Medical Geography, initiated the sub discipline and wrote- ‘The Ecology of Diseases’ (1985). Geography of Health (also known as Medical Geography) is a branch of geography that studies the relationship between the environment and health, life style and health, and spatial differences in health status and health care. Medical Geography includes the preparation and collection of data and to map them, to show
where a certain disease is present, and to apply objective statistical tests to the distribution to assess whether or not the pattern is likely to have occurred by chance; to measure the degree of correspondence between disease and then to apply tests to decide whether any special associations could be causative. Remarkable international scholars, who work on Medical Geography, are: Jacques May, Armstrong, McGlashan, Learmonth, Howe, Rodenwaldt, Jusatz, Heidelberg, Fonaroff’s, Brownlea, Pavlovskiy, Ignatyev, Shkurlator, Markovin, Meade, Hesterlow etc. Indian scholars who contribute in the field of Medical Geography are: Misra, Akhtar, Choubey, Jayshtee De, Deshpande Izhar, Gopalkrishnan, Hazra, Ramesh, Dutt, Pal Tiwari, Mukherjee, Pandurkar, Shaikh, Gambhire, Mulik, Mane, Hazare, Chawdhari, Pawar, Suryawanshi, Alizad, Ahirrao etc.

8.2 Summary:

The Jalgaon city has an area of 68.24 sq km and administratively it is divided into 69 wards. According to the 2011 census, the total population of Jalgaon city is about 4.60 lakh and density of population is 6748 persons per sq km. Census 2011 shows that, sex ratio of Jalgaon city is 909 and child sex ratio (0-6 years) is 806, which is alarming sign for the city. The literacy rate of Jalgaon city is 88.96 percent according to the latest census, which is quite high as compared to the home district and Maharashtra. According to the census 2001, the SC and ST population constitutes 6.00 and 4.38 percent respectively to the total population of Jalgaon city.

Urban health is controlled by many environmental factors. A total of 500 households (Household Health Survey of Jalgaon City) comprising 285 (57.00%) non slum and 215 (43.00%) slum households were surveyed from 69 wards of 5 zones. Total population of these households is 2484 persons, of whom 1330 (53.54%) are males and 1154 (46.46%) are females. The average household size is 5 members per house. Out of 500 household samples, majority of households head were found male i.e. 461 (92.20%), whereas only 39 (7.80%) households were headed by females. Out of the total sample population selected in this study is 452 are married, 45 are widows, 2 are unmarried and 1 is divorced/separated.
As many as 480 household heads (96.00%) have child, only 20 households (4.00%) do not have children.

Social determinant is also one of the important factors affecting on urban health. The incidence of communicable diseases are recorded higher among separated/divorced and unmarried persons than married and widowed. Data reveals that 169 (33.80%) household heads married below the age of 21 years. More than 70 percent of household heads have up to 3 children. But data reflects that, the trend of increasing children in slum locality is comparatively ahead of non slum locality. Majority of surveyed households 417 (83.40%) belongs to Hindu religion, followed by 53 (10.60%), 11 (2.20%), 8 (1.60%), 7 (1.40%) and 4 (0.80%) to Muslim, Christian, Jain, Parasi and Sikh respectively. Jain, Sikh and Parasi religion households are not found in slum locality. About 73.00 percent of surveyed households are non-vegetarian and only 27.00 percent of households are vegetarian.

The urban health does not depend only on environmental and social factors, but also on economic factors. Data reveals that, the incidences of communicable diseases such as common cold, diarrhea/gastroenteritis etc. in non worker household heads are recorded highest (85.00%). However, the incidence of communicable diseases such as common cold is also recorded high in government service household heads. Data reveals that out of 60 home deliveries highest 54 home deliveries are recorded in Hindus and remaining 6 in Muslims. Out of 60 home deliveries highest (44) deliveries recorded from household heads whose annual income is less than Rs.36000/-. Highest 76.53 percent private hospital deliveries recorded from household heads whose annual income is more than Rs.100000/-, whereas highest 55.17 percent of government/municipal hospitals deliveries recorded from household heads have no income. High SLI households are recorded highest 61.99 percent deliveries in private hospitals. Out of 60 home deliveries highest 54 deliveries assisted by untrained persons recorded in Hindu households. Data reveals that highest i.e. 78.20 percent of households persons preferred to go for treatment in private hospitals. In surveyed households 8 deaths in 2007, 16 deaths in 2008, 12 deaths in 2009 and 11 deaths in 2010 are recorded. In the year 2008 highest 8 deaths due to
non-communicable diseases are recorded in slum locality. In the same year highest 6 deaths due to non-communicable diseases are recorded in non slum locality.

Surveyed data reveals that, common cold is the single disease, which is recorded in all 69 wards of study area and also recorded highest i.e. 1924 (43.20%) infected persons in all diseases. The average incidence rate of common cold is 5.2 persons per thousand populations in the study area, which is also recorded highest in all diseases. Diarrhea/gastroenteritis infected persons are found 1038 (23.30%) in 66 wards. The average incidence rate of diarrhea/gastroenteritis is 2.8 persons per thousand populations. In ward no. 15 (slum) highest incidence and incidence rate of diarrhea/gastroenteritis are recorded (70 and 13.51 respectively). Both in ward no. 56 and 67 highest incidence of malaria (14) were recorded. The highest (2.70) incidence rate of malaria was found in ward no. 67 and the average incidence rate of malaria is 0.41 persons per thousand persons.

Highest incidence and incidence rate of typhoid is recorded in ward no. 67 (Samata Nagar), which is slum locality (12 and 2.31 respectively). The average incidence rate of typhoid was found 0.46 persons per thousand. In slum locality incidence rate is concentrated in Moderate (18 wards) category and High (12 wards) category. Only in 3 wards pneumonia infectious persons were recorded, 2 from slum and 1 from non slum locality. In ward no. 25 highest incidence of conjunctivitis are recorded. Highest incidence rate of conjunctivitis are found both in ward no. 25 and 33.

Both in ward no. 1 and 11 highest incidences of scabies are recorded. In surveyed households 11 hepatitis infected persons are recorded only in 11 wards. The incidence rate and spatial distribution of hepatitis are concentrated in Very High category, 6 in slum and 5 in non slum. The highest (0.58) incidence rate of tuberculosis was recorded in ward no. 2. The incidence rate of tuberculosis is concentrated High and Very High category in 14 and 15 no. wards respectively. Only in 3 wards 4 chickenpox infectious persons were recorded in surveyed households, 2 from slum and 1 from non slum. The single food poisoning case was recorded in ward no. 49 (slum). There are 12
wards, where 44 Chikungunya infectious persons were found. In ward no. 3 (slum) highest (11) incidence of chikungunya was recorded, where highest incidence rate of chikungunya also found. Out of 12 wards, 7 from non slum and 5 from slum locality and they are all concentrated in Very High incidence category. There is only 1 AIDS patient are recorded in ward no. 33 (slum).

There are 36 wards, where 92 anemia patients are recorded. In ward no. 33 highest incidence and incidence rate of anemia is recorded (9 and 1.54 respectively). In ward no. 42 (non slum) highest incidence and incidence rate of obesity is recorded (3 and 0.57 respectively). In ward no. 31 (non slum) highest incidence and incidence rate of diabetes mellitus are recorded (6 and 1.07 respectively). There are 49 wards, where 137 persons having hyper tension were found. In ward no. 33 (slum) highest incidence and incidence rate of hyper tension is recorded (8 and 1.37 respectively). Out of 49 wards majority of 33 wards from non slum locality. There are 20 wards, where 28 heart attack patients were recorded. Both in ward no. 15 (slum) and 24 (non slum) highest (3) incidence of heart attack are recorded and in ward no. 15 recorded highest incidence rate of heart attack (0.58). There are 58 wards, where 209 persons having teeth and gum diseases are recorded. Both in ward no. 31 (slum) and 56 (slum) highest (10) incidences of teeth and gum diseases are recorded. The incidence rate of teeth and gum diseases also recorded highest (1.91) in ward no. 56. There are 24 wards, where 36 cases of accidents and injuries are recorded in surveyed households. There are 18 patients, in 15 wards are suffer from mental illness recorded. There are 49 wards, where 134 persons having Other NCD were recorded. The incidence rate of Other NCD is concentrated in Moderate (12 wards), High (6 wards) and Very High (12 wards) category in non slum locality.

The incidence of Common Cold, Diarrhea/Gastroenteritis and Conjunctivitis are recorded in 100 percentages, 95.65 percentages and 91.30 percentages of total wards respectively, so that they are ranked First, Second and Third. Teeth and Gum Diseases are placed on Fourth rank, Typhoid is placed on Fifth rank.

243
There are 5 diseases are not recorded in the study area during survey (i.e. Ringworm, Dengue, Whopping Cough, Other CD and Cancer). Common Cold ranked First in 67 wards of Jalgaon City, whereas Diarrhea/Gastroenteritis is ranked First in ward no. 45-Asawa Nagar and Diabetes Mellitus is ranked First in ward no. 34-Shanti Niketan Housing Society. Among the Second ranking Diarrhea/Gastroenteritis has covered the highest i.e. 50 wards, while Conjunctivitis and Other NCD each acquired 5 wards. Typhoid ranked Second in 3 wards (ward no. 39-Nathwada, 64-Gayatri Nagar & 66-Samata Nagar N) and Common Cold and Malaria are ranked Second in 2 wards each (ward no. 56-Tambapur E & 59-Old Joshi Colony). Diabetes Mellitus (ward no. 32) and Accident and Injuries (ward no. 20) also ranked Second in single ward each. Among the Third ranking diseases Conjunctivitis (15 wards), Malaria (11 wards), Diarrhea/Gastroenteritis (10 wards) and Teeth and Gum diseases (8 wards) are more important. Other diseases namely Hyper Tension (7 wards), Typhoid (5 wards), Chikungunya and Other NCD (each 3 wards), Scabies, Anemia and Diabetes Mellitus (each 2 wards) and Chickenpox (1 ward) are also ranked Third Diseases.

Conjunctivitis is placed on Fourth rank in highest 23 wards. Then Malaria recorded in 9 wards as a Fourth ranking diseases, whereas Typhoid, Diabetes Mellitus and Teeth and Gum diseases placed Fourth ranking in 6 wards. Hyper Tension and Other NCD (each 4 wards), Diarrhea/Gastroenteritis, Anemia and Heart Attack (each 2 wards) Scabies, Tuberculosis and Obesity (each 1 ward) are also placed Fourth rank. Teeth and Gum Diseases is placed Fifth ranking diseases in 18 wards. Typhoid (9 wards), Hyper Tension (7 wards), Malaria (5 wards), Conjunctivitis (5 wards) and Other NCD (4 wards) are predominant diseases having Fifth rank. Other Fifth ranking diseases are found in less than 3 wards, these are Diarrhea/Gastroenteritis, Chikungunya, Anemia, Diabetes Mellitus, Scabies, Tuberculosis, Obesity and Heart Attack.

Under High category of disease intensity 4 wards from slum and 12 wards from non slum locality are recorded. Both in Moderate and Low
category of disease intensity only 1 ward from slum and 16 wards from non
slum locality are found.

A very significant association is seen between Common Cold with
Diarrhea/Gastroenteritis, Malaria, Typhoid, Conjunctivitis, Anemia and Teeth
and Gum Diseases. Diarrhea/Gastroenteritis closely associated with
 Conjunctivitis, Anemia and Teeth and Gum Diseases. Malaria and Typhoid
show significant association. Similarly Malaria and Teeth and Gum Diseases
are also closely associated. The Conjunctivitis with Anemia and Teeth and
Gum Diseases are found significantly associated. Scabies and Chikungunya
are also closely associated. Diabetes Mellitus and Hyper Tension only these
two non-communicable diseases where significantly associated. Scabies and
Diabetes Mellitus are found independent association with each other.

Diarrhea/Gastroenteritis and Obesity are found negative association.
Malaria with Obesity, Diabetes Mellitus, Heart Attack and Teeth and Gum
Diseases are also having negative association. Typhoid with Obesity,
Diabetes Mellitus, Hyper Tension, Accident and Injuries and Mental Illness are
insignificantly associated with each other. Scabies with Heart Attack found no
significant association. Tuberculosis with Obesity, Diabetes Mellitus and Heart
Attack found negative association. Chikungunya with Obesity and Heart
Attack found insignificant association. Obesity and Teeth and Gum Diseases
also found negative association. Diabetes Mellitus with Mental Illness, Hyper
Tension with Mental Illness recorded negative association.

8.3 Conclusions:

1. Incidence of communicable diseases are recorded 90.00 percent
in households whose location of drinking water is away, followed
by 88.22 and 80.01 percent in near premises and within premises
respectively.

2. Incidence of communicable diseases such as
diarrhea/gastroenteritis, typhoid etc. are recorded 90.91 percent in
household’s having access to drinking water from handpump/well,
followed by 88.10 and 80.05 percent in tap shared and own tap
respectively.
3. The incidence of communicable diseases in kachcha house (89.10%) is more than pucca and semi-pucca type of house.

4. The households having only one room recorded more incidences of communicable diseases (88.20%) such as common cold, conjunctivitis, scabies etc. than households having 2 or more than 2 rooms.

5. The incidence of communicable diseases such as common cold, tuberculosis etc. are recorded high i.e. 89.21 percent in houses having 1 door, while incidence of non-communicable diseases such as hyper tension etc. are found high in houses having more than 3 doors and windows.

6. The incidence of communicable diseases (malaria, typhoid etc.) is recorded high i.e. 88.92 percent in those households having no drainage system.

7. The incidence of communicable diseases such as conjunctivitis etc. is slightly less (77.46%) in households having separate room for kitchen than households having no separate kitchen (88.05%) or cooking in open place (89.15%).

8. The incidence of communicable diseases houses in slum locality is slightly higher (86.43%) than houses in non slum locality (79.04%).

9. While the incidences of non-communicable diseases houses in slum locality is slightly lower (13.57%) than houses in non slum locality (20.96%).

10. The number of graduates (82.76%) and higher educated (92.59%) household heads recorded higher in non slum than slum locality.

11. Communicable diseases such as diarrhea/gastroenteritis and malaria are recorded higher in household heads having less than 1 year and primary education.

12. The incidence of communicable diseases such as common cold, diarrhea/gastroenteritis etc. in Muslim (84.53%) and Hindu (83.40%) households are recorded higher than other religion households.
13. While the incidence of non-communicable diseases such as obesity, diabetes mellitus etc. in Parasi (58.33%), Christian (37.50%) and Jain (28.13%) households are found higher than other religion households.

14. The incidence of communicable diseases such as diarrhea/gastroenteritis etc. in ST (88.84%) and other (87.76%) category are slightly more than remaining category households, whereas the incidence of non-communicable diseases such as hyper tension, heart attack etc. in Open (20.50%) category is recorded highest.

15. Data reveals that only male household heads (38.60%) are habituated who either chew pan masala or tobacco, drink alcohol or smoke.

16. The incidence of communicable diseases such as diarrhea/gastroenteritis etc. are high (88.38%) in households they do not used any kind of purification for drinking water.

17. The incidence of communicable diseases such as diarrhea/gastroenteritis, teeth and gum diseases etc. are high in those household heads, whose annual income is less than Rs.36000/- (85.34%) and no income (85.00%), whereas the incidence of non-communicable diseases such as diabetes mellitus, hyper tension etc. are high (35.65%) in household heads annual income is more than Rs.100000/-.

18. The incidence of communicable diseases is highest (88.39%) in Low SLI of households, whereas the incidence of non-communicable diseases is highest (21.58%) in High SLI of households.

19. Data shows that 420 (87.50%) deliveries are conducted in hospitals and about 60 (12.50) are home deliveries.

20. Out of 204 deliveries from slum locality 164 (80.39%) deliveries are conducted in institutional and 40 (19.61%) deliveries are conducted at home. Whereas out of 276 deliveries from non slum locality 256 (92.76%) deliveries are conducted institutional and only 20 (7.25%) deliveries are conducted at home.
21. Out of 60 home deliveries highest 33 deliveries are recorded from illiterate household heads, whereas lowest in 4 deliveries is recorded in higher educated household heads.

22. Data shows that out of 60 home deliveries from ST and OBC categories is recorded highest (17).

23. Out of 60 home deliveries highest 50 deliveries are recorded from household heads working on daily wages.

24. Highest 55.17 percent of government/municipal hospitals deliveries are recorded from household heads have no income.

25. Highest 38.78 percent of home deliveries are recorded in Low SLI households.

26. Out of 60 home deliveries highest 38 deliveries from slum locality assisted by untrained persons.

27. People from slum locality go for treatment in government/municipal hospitals is recorded highest (62.04%).

28. Number of death from slum locality recorded highest i.e. 63.83 percent.

29. Out of 47 deaths 39 deaths due to non-communicable diseases are recorded, whereas only 8 deaths due to communicable diseases are recorded. Among communicable diseases Tuberculosis, Hepatitis, Diarrhea/Gastroenteritis, AIDS are major diseases for death causes.

30. The incidence rate of communicable diseases such as common cold, diarrhea/gastroenteritis, malaria, conjunctivitis, scabies, tuberculosis etc. are concentrated in Very High and High category in slum localities.

31. The incidence rate of non-communicable diseases such as anemia, obesity, diabetes mellitus, hyper tension, heart attack, teeth and gum diseases etc. are concentrated in Very High and High category in non slum localities.

32. Common Cold (43.20%) ranked First according to total no. of morbidity cases. Diarrhea/Gastroenteritis (23.30%) placed on Second rank. Conjunctivitis, Teeth & Gum Diseases, Typhoid, Malaria, Hyper Tension and Other Non-Communicable Diseases
are placed Third, Fourth, Fifth, Sixth, Seventh and Eighth ranked respectively.

33. Data shows that the disease intensity in 19 wards found Very High category. Out of these highest 16 wards from slum and only 3 wards from non slum locality.

34. Data reveals that, slum locality having Very High diseases intensity (68.18%), followed by High (22.72%). Whereas, in non slum locality Very High disease intensity are recorded only 8.52 percent.

8.4 Suggestions:

It is well known that half of the world population lives in urban areas – and the proportion is growing. Cities suffer from disproportionately provided health services and these inequities can be traced back to differences in their social and living conditions. Unplanned rapid urbanization can have negative consequences on urban health. Some urban health threats are well known and other remaining threats will be new for some urban areas. Local bodies need to identity and better understand the main challenges as well as their root causes and to build knowledge based on good practice and the best scientific data available in order to address them.

The data reveals that the residents of Jalgaon city suffered disproportionately from a wide range of diseases and health problems. Communicable diseases pose a major threat in study area (slums) due to overcrowding, lack of proper sanitation and public health measures. There is a paucity of data for planning urban health services. There is a limited focus on outreach services under the present system. Most hospitals and dispensaries are situated in the core of the city and the peripheries are left out. This creates a skewed pattern of health service distribution. The SC, ST and Muslim communities form a major proportion of the slums in study area. These communities are the most vulnerable units of the slums and should be given high priority.
Improving the urban health status and reducing ill health pose a major challenge to national as well as local governments in multisectoral decision making. Policy plays a vital role in shaping the social and physical environment in ways that are conducive to better urban health. The urban health is strongly determined by their living and working conditions, the quality of their environmental, socio-economic factors as well as the quality and accessibility of health care services. So, it is an urgent need to take action on addressing urban health inequities for betterment of city dwellers.

Health is a fundamental need of all citizens. It is the role and responsibility of individuals, civil society and government to sustain this. Unless urgent action is taken to address urban health inequities, city will not achieve the health related goals. Acting on urban health inequities requires the involvement of organized communities and local government as well. Local leaders and government organizations can and should play a key role in promoting urban health equity. Jointly taken action is essential to ensure that ‘Growing City is Healthy City’.

The following suggestions based on conclusions are needed to improve the urban health of study area by Jalgaon City Municipal Corporation (JCMC):

- Improvement in the quality and quantity of safe drinking water
- Increase in implementation of affordable housing schemes
- Address the issue of overcrowding
- Use of underground drainage system
- Improvement in sanitation systems
- Improvement and providing enough public toilet facilities
- Improvement in the health status of a targeted groups (slum dwellers as well as urban poor population)
- Role of advocacy and media in improving health of urban slum communities
- Inculcate health awareness about physical exercise and food habit among non slum households
• Decentralization and improvement in primary education as well as higher education facilities too, particularly for slum dwellers
• Focus on reducing the gap between the worst-off and the best-off
• Improvement in health care services for economically backward groups e.g. SC, ST, Hindu, Muslim etc. (particularly in slum areas)
• Create health awareness particularly in habituated male slum dwellers through campaign and rallies
• Improvement in accessibility for institutional deliveries particularly in peripheral poor slum dwellers
• Increase in numbers of accredited health workers for health awareness and personal hygiene among illiterate and people living in slum localities.
• Implementation of policies and programs related to urban health
• Integration of programmes that deals with communicable and non-communicable diseases with urban health
• Community participation must be encouraged through ward committees in different stages of planning, implementation and monitoring of the urban health related programmes
• Involvement NGOs in urban health planning, monitoring and evaluation of programmes, providing counseling services, community mobilization and other related activities to make the process more community oriented
• Involvement of elected representatives (corporators) and educated social workers in urban health care must be encouraged
• Coordination is required between various health departments; such as Jalgaon City Municipal Corporation, Jalgaon Zila Parishad Health Department, State Health Department, Department of Women and Child Development, Jawaharlal Nehru National Urban Renewal Mission, National Rural Health Mission, National Urban Health Mission, Civil Society, Private Healthcare Providers, Non-Government Organizations etc. for betterment of urban health
• Conducting Survey of all notified and non-notified slums
• Mapping of slums and health facilities using the state-of-art technology
Collection of systematic ward wise data through regular survey and analyze as a baseline information for comprehensive health planning
Bibliography:

BOOKS

JOURNALS


