

Civic Services and Health Need Assessment of Urban Poor in Maharashtra

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ABSTRACT

Introduction: Urban health is often not listed as a priority for the policy maker as there is a popular notion that there is greater concentration of health facilities and personnel in the urban areas largely rendered by the private sector will be sufficient to address health need in the urban areas. The paper aims to assess the state of health and living conditions among the urban poor by comparing with rural areas.

Materials and Methods: The study used the third round of District Level Household Survey (2007-08). Three composite indices are computed viz. household living condition index (HLC), public health coverage (PHC), and child health status (CHS). The region-wise nutritional status of children aged 0-23 months has been adopted from Comprehensive Nutritional Survey in Maharashtra conducted in 2012.

Results: The findings of the paper suggest that urban poor have better access in all indicators of HLC than the rural areas except the indicator like *pucca* house and a separate room for the kitchen. While looking at PHC, the prevalence of each selected public health indicators found lower among the urban poor than rural areas. Similarly, findings related to CHS suggest that the prevalence of each selected child health indicators are same or higher among children of urban poor than the rural areas. Whereas, the child nutritional status is worse off in Nashik region i.e. almost third child in Nashik is stunted (31.9%) and underweight (29.1%). Overall, the HLC, PHC and CHS and child nutritional status found relatively worse in Amravati, Aurangabad and Nashik region of Maharashtra.

Conclusion: The findings of the paper demonstrate that the urban poor are lagging behind than the rural areas in terms of PHC as well as CHS. To achieve equity in access to health services, the role of community based workers or out-reach workers may play a significant role in increasing access to maternal and child health care services among urban poor.

Keywords: Child health, Civic services, Maharashtra, Public health, Urban poor

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INTRODUCTION

Maharashtra is among the most urbanized, industrialized and the richest states in term of contribution toward Indian economy. As per Indian Human Development Report 2011, Maharashtra state ranks 5th in the country. It has 110 million population which accounts for 9.3% of the total population of India. The state is highly urbanized with 45.2% people residing in the urban areas according to Census, 2011. Figure 1 suggests that Maharashtra's urban population has been increasing rapidly in the recent decades and estimated that the urban population

of the state will nearly double from 4.1 crores in 2001 to 8.1 crores in 2026.

Being a most industrialized and urbanized state does not translate to equity in access to basic provisions and needs. According to Ministry of Housing and Urban Poverty alleviation annual report (2012-13) suggest that most of the urban poor's (in absolute number) are in Maharashtra i.e. 90.9 lakhs i.e. 18.3% of the total urban population.¹ Figure 2 suggest that unlike rural poverty, which has been showing declining trends in recent decades, the number of urban poor persons living below

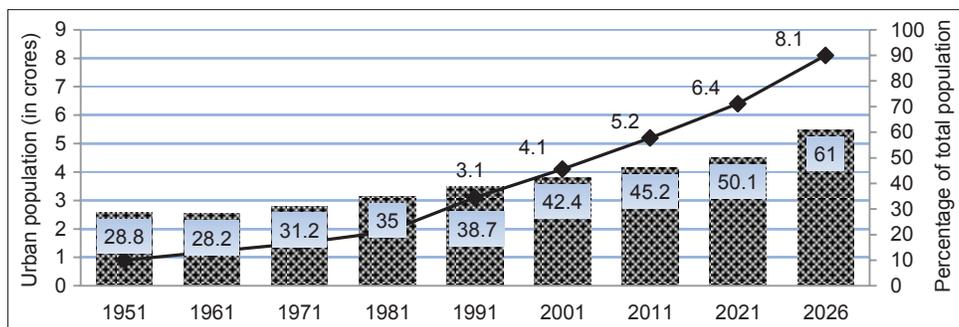


Figure 1: Growth of urban population in Maharashtra, 1951-2026 (Source: Census of India 1951-2011; Report of technical group on population projections constituted by the National commission on population, 2006)

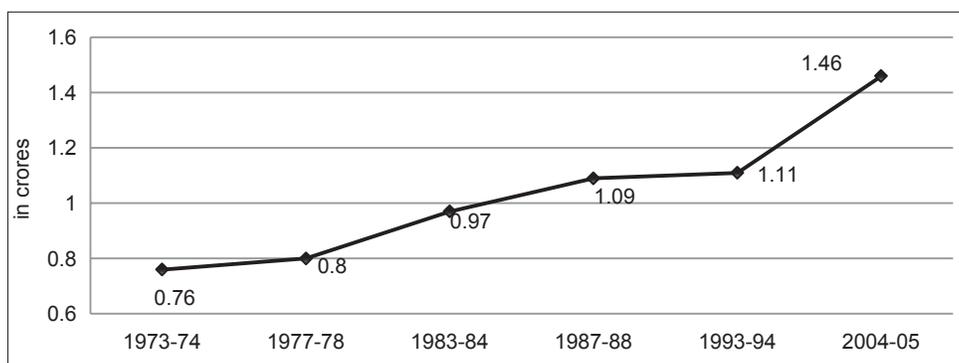


Figure 2: Number of urban poor population in Maharashtra 1973-74 to 2004-05 (Source: Urban Health Resource Center: Wall chart Maharashtra, 2008)

the poverty line is increasing rapidly in Maharashtra. Earlier studies suggest that the urban poor generally live in slums or slum like conditions in cities and due to their unhealthy living conditions they are prone to many health problems.^{2,3}

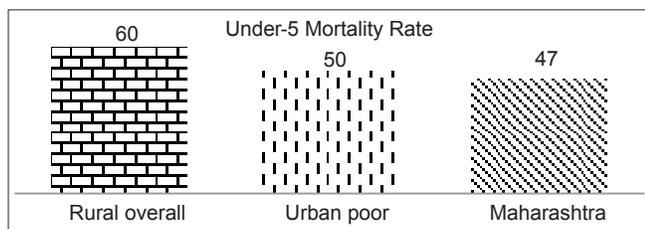
Urban poor who generally outnumber in slum areas are bonded to stay in dilapidated living conditions. Increasing slum population is a manifestation of urban poverty and characterized as insecure residential status, poor structural quality of housing, over-crowding, inadequate access to safe drinking water, toilet facility, sanitation and other infrastructures resulting poor health conditions.^{4,5}

Access to safe drinking water and sanitation is an important measure of the socioeconomic as well as health status of the household. The Millennium Development Goal (MDG) (7) has pledged to reduce by half the proportion of people without sustainable access to safe drinking water and basic sanitation between 1990 and 2015. Unsafe water, poor sanitation, and unhygienic conditions claim many lives each year and contribute to about 88% of deaths from diarrhoeal diseases around the world.⁶ In India, it is the leading cause of child mortality and is estimated to cause 0.5 million deaths annually.⁷ Recent studies have also shown that in India, about 0.5 million premature deaths each year could be attributed to indoor air pollution.⁸

Human development index and MDG goals incorporates the mother and child well being as top agenda reflects how well as society cares and nurtures its most precious members in terms of reduction in child mortality, improved maternal health along with other goals.^{9,10} However, despite of several national level policy efforts such as the National Population Policy (2000)¹¹ and the National Health Policy (2002),¹² the sluggish progress in reducing maternal and child mortality in India could be attributed to the stark socioeconomic and regional inequality in the availability, and accessibility of healthcare services.^{13,14} Although document on National Population Policy (2000) has also specify to achieve 80% institutional deliveries and 100% deliveries by trained health personnel by 2010 as its socio-demographic goals, few studies have highlighted the growing poor/non-poor gap in the utilization of maternal healthcare services and child health in urban India.¹⁵ For instance, according to NFHS3-2005-06, one in 20 children of urban poor children in Maharashtra die before reaching their fifth birthday. This is nearly double the child mortality rate among the urban non-poor. High childhood mortality reflects the lack of access to health care, poor health behaviours, nutritional status and environmental conditions results in urban poor areas of the state.

The average childhood nutritional status is better in urban areas though the socio-economic inequalities in childhood nutritional status is higher in urban than the rural

areas in developing countries.^{16,17} The worst childhood nutritional status among the urban poor is attributed to their poor sanitation and unhygienic condition and income constraints¹⁸ and thereby giving rise to repeated episodes of parasitic diseases or diarrhea.¹⁹



(Source: IIPS, National Family Health Survey-3, 2005-06)

In order to cater the civic needs of urban poor, National Urban Health Mission (NUHM-2008) as well as Jawaharlal Nehru National Urban Renewal Mission-2005 aims to improve the health of urban poor through equal access to health facilities and provide basic services to the urban poor.²⁰ In the context of increasing urban population in state like Maharashtra, it would be interesting to analyze the overall health concern of urban poor population which seems contemporary on the eve of NUHM and its policy directives. In this backdrop, the present paper examines the region wise urban-rural as well as urban poor and rural differentials in health and living condition.

MATERIALS AND METHODS

For the purpose of analysis, Maharashtra has been divided into six administrative division *viz.* Amravati, Aurangabad, Konkan, Nagpur, Nashik and Pune. There are 35 districts in the state of Maharashtra.²¹ Districts are divided into six administrative regions of Maharashtra as follows:

Administrative regions in Maharashtra

Amravati	Aurangabad	Nagpur	Nasik	Kokan	Pune
Buldana	Nanded	Wardha	Nandurbar	Thane	Pune
Akola	Hingoli, Bid	Nagpur	Dhule	Raigarh	Solapur
Washim	Parbhani	Bhandara	Jalgaon	Ratnagiri	Satara
Amravati	Jalna, Latur	Gondia	Nashik	Sindhudurg	Kolhapur
Yavatmal	Aurangabad	Gadchiroli	Ahmednagar		Sangli
	Osmanabad	Chandrapur			

Third round of District Level Household Survey (2007-08) was used in the analysis.²² In Maharashtra, 37,716 households were canvassed and out of these households, 34,920 ever married women aged 15-49 were surveyed. Initially, the analysis was carried out to see the urban-rural differentials in the health and living condition and further comparison was done to analyze health and living conditions among urban poor and rural areas. Following indicators were used in the estimation of three composite indices for assessment

of living and health conditions in the six administrative regions of Maharashtra.

Household Living Condition Index (HLC)

The HLC index is computed based on six of the following indicators:

1. Percentage of households accessing improved source of drinking water
2. Percentage of households having improved sanitation
3. Percentage of households having a *pucca* house
4. Percentage of households using cooking gas/liquid fuel
5. Percentage of households with electricity as the source of lighting
6. Percentage of households with a separate room for the kitchen.

Public Health Coverage Index (PHC)

Following critical health indicators have been considered for PHC index, which comprises antenatal care (ANC), institutional delivery, and postnatal care and immunization:

1. Percentage of women who have received full ANC
2. Percentage of women who delivered in any health facility
3. Percentage of children who received full immunization.

Child Health Status Index (CHS)

Two indicators of child health are considered for the computation of health status index:

1. Percentage of children showing symptoms of acute respiratory infection (ARI)
2. Percentage of children suffering from diarrhea.

UNDP's methodology for computation of composite indices is used in the estimation of HLC index, PHC index, and CHS index. The methodology of computation includes two steps.

Step 1 is the computation of the dimension index (Di) for each of the indicators considered for specific composite index (CI). To transform a variable, say *x*, into a unit-free index between 0 and 1 (which allows different indices to be added together), the following formula is used:

$$Di = \frac{[x - \min(x)]}{[\max(x) - \min(x)]}$$

Where *x* is the actual value of the indicator, *min* (*x*) is the minimum percentage value of the indicator in distribution and *max* (*x*) is maximum value which is also termed as goal post in the index and in this study, it is 100. Step 2 is the computation of the CI. Equal weight

is given to all the indicators considered for CI. A CI is estimated by using the following formula.

$$CI = (1/N) * (D_{i1} + D_{i2} + D_{i3} + \dots)$$

Where Di is the dimension index and N is the number of dimension indices considered for the CI. The CI value varies from 0 to 1 where higher values of the index means better position and vice-versa but in case of CHS, higher values shows worse condition.

Wealth index has been computed by combining household amenities, assets and durables and divided into quintiles. The principle of factor loading to amenities, assets and durables derived by factor analysis is used for the computation of wealth index. The sample is divided into three equal proportions of quintiles labeled poor (bottom), middle and rich (upper). Bivariate estimates and composite indices are used in the analysis. A CI has a number of factors, which are averaged to form a product representative of the summary measure. In this paper, the composite statistic is used to rank regions by level of "performance in selected indicators."

The region-wise nutritional status of children aged 0-23 months has been adopted from Comprehensive Nutritional Survey in Maharashtra conducted in 2012.²³ WHO child growth standards (2006) have given three standard indices of physical growth that describe the nutritional status of children: (1) Height-for-age, (2) weight-for-height, and (3) weight-for-age. Each of the three anthropometric indicators is expressed in standard deviation (SD) units (Z-scores) from the median of the reference population. Children with Z-scores below -2 SD from the median of the reference population are considered undernourished. Weight is known to be a sensitive indicator of acute deficiencies, whereas height captures more chronic exposure to deficiencies and infections. Wasting is used as a way to identify severe acute malnutrition.

RESULTS

Household Living Conditions

Table 1 shows the CI and rank for indicators related to household condition by region. Result depicts that Pune holds the first rank regarding household conditions with the highest CI 0.86 followed by Konkan (CI = 0.79). On the other hand, Aurangabad holds last (sixth) rank and has lowest CI 0.17, followed by Amravati (0.23) and Nagpur (0.36).

Table 1 shows the comparison of the indicators related to HLC among rural and urban poor. Findings suggest that urban poor have better access to the sources of improved drinking water than the rural part in all the regions of Maharashtra. This differential is maximum in Konkan, 88% urban poor households have access to improved drinking water, whereas there are 54% such households in a rural area. While considering improved toilet facility, urban poor have relatively better access to improved toilet facility than rural areas in all the regions of Maharashtra. It is highest in Konkan region both for urban poor as well as among rural households, but the differentials is highest in Aurangabad region i.e. 40% urban poor households have access to improved toilet facility whereas there are 17% such households in rural area. In the case of *pucca* house, urban poor have relatively less *pucca* houses than rural areas in all the regions of Maharashtra.

Similarly, the less proportion of urban poor households has separate kitchen than rural households in all the regions of Maharashtra. On the other hand, urban poor households are better off regarding excess to electricity and gas/liquid cooking fuel as compared to the rural area.

Public Health Coverage

In Table 2, we examine MCH component in terms of full ANC received by mother, institutional delivery and full

Table 1: Ranking based on CI score for HLC among urban poor and comparison of its indicators among rural and urban poor in various regions of Maharashtra

Region	HLC ¹ among urban poor		Improved water source ²		Improved toilet ³		Pucca house ⁴		Gas/liquid cooking fuel		Separate room for kitchen		Electricity	
	CI	Rank	Urban poor	Rural total	Urban poor	Rural total	Urban poor	Rural total	Urban poor	Rural total	Urban Poor	Rural Total	Urban Poor	Rural Total
Amravati	0.12	6	94.2	74.6	39.4	20.6	8.3	10.8	18.3	7.0	70.5	83.0	85.7	71.6
Aurangabad	0.16	5	97.3	78.4	39.5	17.2	17.9	15.7	20.0	5.1	67.7	77.1	89.0	70.9
Konkan	0.35	2	88.4	54.2	64.1	60.8	20.0	29.8	64.5	17.7	93.5	95.0	96.1	89.0
Nagpur	0.25	3	95.7	70.8	44.3	33.6	15.2	16.5	25.7	8.9	80.3	88.4	84.9	61.7
Nashik	0.21	4	97.1	82.5	48.4	23.1	8.8	15.4	45.8	16.1	65.7	79.1	91.5	68.0
Pune	0.44	1	98.0	86.2	72.5	56.8	18.5	27.9	68.9	26.0	82.0	83.4	90.1	85.0

¹HLC includes improved source of drinking water, improved toilet facility, safe cooking fuel, Pucca house, separate room for kitchen and electricity,

²Improved source of drinking water includes piped water into dwelling/yard/plot, public tap/standpipe, tube well or borehole, protected dug well, protected spring, bottled water, ³Improved, not shared sanitation facility includes flush/pour flush to piped sewer system, flush/pour flush to septic tank, flush/pour flush to pit latrine, ventilated improved/pit latrine/biogas latrine, pit latrine with slab, twin pit, and composting toilet, ⁴A pucca house is constructed with brick, cement and iron and these houses are very strong, HLC: Household living condition, CI: Composite index

child immunization coverage to understand the situation of public health services in context of maternal and child health in various regions of Maharashtra. Table 2 presents the comparative picture of PHC in urban and rural area in terms of CI and the ranking of the regions of Maharashtra. Findings reveals that in urban area, Aurangabad (CI = 0.0) and Amravati (CI = 0.37) are relatively worse condition whereas, Pune (CI = 1.0) and Konkan (CI = 0.55) are stand highest in terms of PHC. While comparing indicators related to PHC among urban poor and rural areas for various regions of Maharashtra, the prevalence of each selected public health indicators are lower among urban poor households than rural.

This differential is highest in institutional delivery followed by complete childhood immunization and complete ANC. In Nasik, prevalence of institutional delivery is 79% in rural area whereas 41% in urban area, with maximum difference of 38%, followed by Nagpur and Amravati where the difference is 28% and 21% respectively. With respect to differential in complete immunization, Nagpur region has highest differential, 48% among urban poor and 67% among rural, followed by Amravati and Aurangabad. In Konkan and Pune, prevalence of complete immunization is higher among rural area as compared to urban poor. In the case of differentials in full ANC, Konkan region has highest differential, 15% among urban poor and 31% among rural, with maximum difference of 17%.

Child Health Status

Table 3 examines CHS by calculating a CI, which involves the symptoms of ARI and prevalence of diarrhea to understand the level and differentials in child health in the regions of Maharashtra.

Findings suggest that Amravati (CI = 1.0) and Aurangabad region (CI = 0.67) shows worse condition whereas, Pune (CI = 0.0) and Konkan (CI = 0.35) are stand highest i.e. better condition in terms of CHS in urban areas. Add to this, while comparing indicators related to child health among urban poor and rural area in various regions of Maharashtra.

Table 4 show the nutritional status of children aged 0-23 months in various regions of Maharashtra. Findings reveal that, among the six regions of Maharashtra, children from Nashik region were worse off in terms of their nutritional status. Almost every third child (32%) in Nashik is stunted, 19% children were wasted and 29% were underweight.

Even in Amravati, Aurangabad and Konkan, the prevalence of stunting was on the higher side (24-26%). Among these divisions; the proportion of underweight

Table 2: Ranking based on CI score for PHC among urban poor and comparison of its indicators among rural and urban poor in various regions of Maharashtra

Region	PHC ¹ among urban poor		Full immunization ²		Full ANC ³		Institutional delivery	
	CI	Rank	Urban poor	Rural total	Urban poor	Rural total	Urban poor	Rural total
Amravati	0.19	3	57.0	69.7	16.8	19.0	57.1	78.5
Aurangabad	0.09	5	57.6	69.7	16.6	17.7	54.3	72.0
Konkan	0.38	2	81.4	77.7	14.5	31.3	71.6	84.2
Nagpur	0.08	6	47.6	66.8	21.5	30.4	43.9	71.4
Nashik	0.11	4	42.0	47.6	18.9	21.4	41.6	79.1
Pune	0.58	1	93.1	84.7	34.2	36.5	74.9	90.6

¹PHC comprises full ANC, institutional delivery and full immunization, ²Full immunization includes children aged 12-23 months who received BCG, measles, and three doses each of DPT and polio (excluding polio 0), ³Full ANC includes women aged 15-49 who received at least 4 ANC visit, consumed 100 or more IFA tablets or syrup and atleast one TT injection during pregnancy, PHC: Public health coverage, ANC: Antenatal care, DPT: Diphtheria, pertussis and tetanus, BCG: Bacille calmette guerin, CI: Composite index

Table 3: Ranking based on CI score for CHS among urban poor and comparison of its indicators among rural and urban poor in various regions of Maharashtra

Region	CHS ¹ among urban poor		Diarrhea		ARI ²	
	CI	Rank	Urban poor	Rural total	Urban poor	Rural total
Amravati	0.37	6	32.1	24.2	67.5	58.4
Aurangabad	0.23	5	30.8	25.5	46.7	55.6
Konkan	0.19	3	15.9	15	55.8	37.8
Nagpur	0.08	1	26.9	21.9	32.5	55.4
Nashik	0.23	4	23.8	24.1	55.6	52.6
Pune	0.17	2	12.4	18.1	41.2	48.8

Table based on women with youngest living child born since January 01, 2004, ¹CHS includes diarrhea and symptoms of ARI shown in last 2 weeks prior to survey, ²ARI estimated for children under age 5 years who had been ill with a cough accompanied by short, rapid breathing which was chest related in the 2 weeks preceding the survey, CHS: Child health status, ARI: Acute respiratory infection, CI: Composite index

Table 4: Percentage of children aged 0-23 months according to anthropometric indices of nutritional status by administrative divisions in Maharashtra, 2012

Division	Percentage below-2 SD			<2.5 kg ⁴
	Height-for-age ¹	Weight-for-height ²	Weight-for-age ³	
Amravati	24.0	18.2	29.7	13.2
Aurangabad	26.0	14.1	20.9	15.8
Konkan	23.9	14.5	19.8	21.7
Nagpur	15.7	24.5	25.6	15.6
Nashik	31.9	18.9	29.1	29.4
Pune	18.1	13.6	18.5	20.2

Source: Factsheet "Comprehensive Nutritional Survey in Maharashtra," 2012, Provisional data ¹Height-for-age: Stunting means the child has low height for age, ²Weight-for-height: Wasting means low weight for height, ³Weight-for-age: Underweight means low weight for age, ⁴Child weighted at the time of birth in last 2 years preceding the survey; child weight below 2.5 kg is considered as LBW, LBW: Low birth weight, SD: Standard deviation

children was quite high in Amravati (30%) as compared to Aurangabad and Konkan (20-21%). Among all the division, although the prevalence of stunting was lowest (16%) in Nagpur, the extent of wasting was highest at 25% and even a large proportion of children were underweight (26%). Nutritional status of children Pune division was better where the prevalence of stunting (18%), wasting (14%) and underweight children (19%) was relatively lower.

DISCUSSION

Earlier, urban health is often not listed as a priority for the policy maker as there is a popular notion that there are greater concentration of health facilities and personnel in the urban areas largely rendered by the private sector will be sufficient to address health need in the urban areas. However, the rapid growth of the cities in developing countries, together with the growth of the urban poor and inequities created within cities, made this position untenable.²⁴ As the health policy in India underwent a major shift in 2005 with the implementation of the National Rural Health Mission (NRHM). In the same line, the Government of India laid the foundation for the NUHM in 2008.¹⁹ In the context of NUHM, the present study attempts towards systematic assessment of critical policy issues concerning health and living conditions in the regions of Maharashtra which is most urbanized and developed state in India. Paper provides valuable insights on living and health condition of urban poor among regions of Maharashtra and thereby made an effort for prioritizing action in urban areas.

CONCLUSION

The findings of the paper demonstrate that the urban poor are lagging behind than the rural areas in Maharashtra in terms of PHC and CHS. In fact, numbers of studies conclude that the health of the urban poor is often comparable to health conditions in rural areas.²⁵⁻²⁷ Despite the presence of a large number of health care service providers, the urban poor are unable to access them as per their requirement which make them vulnerable towards adverse health outcomes. Consequently, their health indicators are similar or sometimes worse than those of the rural areas.

SUMMARY

Present paper look into the differentials in the living and health condition among rural and urban poor in the six regions of Maharashtra. While assessing region wise HLC among urban poor, Amravati, Aurangabad and Nagpur region stand lowest place which suggest worst living conditions among urban poor. On the other

hand, while comparing among rural and urban poor, it is found that urban poor have better access to almost all indicators of HLC than the rural areas except in *pucca* house and separate room for kitchen. While looking at PHC among urban poor, Nagpur, Aurangabad and Nashik stand lowest i.e. relatively worse condition of PHC. While comparing PHC in rural and urban poor, the prevalence of each selected public health indicators are lower among urban poor households than the rural in all the regions. In case of CHS, analysis reveals that Amravati, Aurangabad and Nashik stand highest i.e. worse condition of CHS. While considering indicators related to child health among urban poor and rural area in various regions of Maharashtra, findings suggest that the prevalence of each selected child health indicators are same or higher among children of urban poor households than rural. Similarly, the child nutritional status is worse off in Nashik region i.e., almost third child in Nashik is stunted and underweight. Even in Amravati, Aurangabad and Konkan, the prevalence of stunting was on the higher side (24-26%).

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