Summer Training at
Public Health Foundation of India, Gurugram

To Study Achievement and Investment in Nutrition in Maharashtra

By
Aayushi Mishra

Under the guidance of
Col. (Dr.) Pramod Kumar

MBA Hospital & Health Management
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The IIHMR University, Jaipur
2018

INSTITUTE OF HEALTH
MANAGEMENT RESEARCH
(WHO Collaborating Centre for District Health System Based on Primary Health Care)

IIHMR UNIVERSITY

CERTIFICATE

This is to certify that **Ms.Aayushi Mishra** has undergone summer training in **Public Health Foundation of India, Gurugram, Haryana** from **11th April 2018 to 31st May 2018.**

The candidate herself completed the project assigned to her summer training. Her approach to the project was sincere and proactive. This summer training is in partial fulfillment of the course requirement recommended for the award of MBA in hospital and Health Management.

I wish her success in all her future endeavors.

Col.(Dr.)Pramod Kumar
Professor
IIHMR University, Jaipur

for (Col (Dr) Pramod Kumar)
Col.(Dr.) Ashok Kaushik
Dean (Academic & Student Affairs)
IIHMR University, Jaipur

1, Prabhu Dayal Marg, Near Sanganer Airport, Jaipur- 302029, Rajasthan, India.
Ph.: 0141- 3924700, 2791431- 32, Fax: 0141 3924738, E-mail: iihmr@iihmr.edu.in, Web.: www.iihmr.edu.in

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To whomsoever it may concern

This is to certify that Ms Aayushi Mishra has successfully completed her Internship from 11 April 2018 to 31 May 2018 with Public Health Foundation of India (PHFI). During her internship period, she worked with the project "Health Economics Group".

During the period of her internship programme with us she was found to be hardworking and sincere.

We wish her the very best in all her future endeavours.

For **Public Health Foundation of India**

Working towards a healthier India

Aparajita Roy
Director – Human Resources

Acknowledgement

I would like to thank Ms. Aparajita Roy (Director- Human Resource, PHFI) & Mr. Kaushik Ganguly (Senior Program Manager, PHFI) and Ms.Neha Mathur (Consultant- Nutrition Financing, PHFI) who in spite of busy schedule has co-operated with me continuously and indeed, his valuable contribution and guidance have been certainly indispensable for my project work.

I am thankful to Mr. Sheelu Joseph (Human Resource, PHFI) for giving me the opportunity to work with PHFI and to learn.

I would also like to thank and express my deep sense of gratitude to Mr. Col. Ashok Kaushik (Dean Academic & Student Affairs, IIHMR) and my faculty mentor Col (Dr)Pramod Kumar (Professor, IIHMR). I am greatly indebted to both of them for providing their valuable guidance at all stages of the study, their advice, constructive suggestions, positive and supportive attitude and continuous encouragement, without which it would have not been possible to complete the project. I am also thankful to Ms. Preeti Chaudhary (Academic Executive, IIHMR) who provided me the opportunity to work in the PHFI.

I owe my wholehearted thanks and appreciation to the entire staff of the organization for their cooperation and assistance during the course of my project.

I hope that I can build upon the experience and knowledge that I have gained and make a valuable contribution towards this organization in coming future.

Aayushi Mishra (0522)

IIHMR University Jaipur, Rajasthan

Table of Content

Organizational Learning

1.1 Introduction

About the Organization

The Public Health Foundation of India (PHFI) is a public private initiative that has collaboratively evolved through consultations with multiple constituencies including Indian and international academia, state and central governments, multi & bi-lateral agencies and civil society groups. PHFI is a response to redress the limited institutional capacity in India for strengthening training, research and policy development in the area of Public Health.

Structured as an independent foundation, PHFI adopts a broad, integrative approach to public health, tailoring its endeavours to Indian conditions and bearing relevance to countries facing similar challenges and concerns. The PHFI focuses on broad dimensions of public health that encompass promotive, preventive and therapeutic services, many of which are frequently lost sight of in policy planning as well as in popular understanding.

The Prime Minister of India, Dr. Manmohan Singh, launched PHFI on March 28, 2006 at New Delhi. PHFI recognizes the fact that meeting the shortfall of health professionals is imperative to a sustained and holistic response to the public health concerns in the country which in turn requires health care to be addressed not only from the scientific perspective of what works, but also from the social perspective of, who needs it the most.

PHFI is an autonomously governed public private initiative registered as a Society under the Societies Registration Act 1860. Under the governance structure adopted by the Society, the Foundation is governed by a fully empowered, independent, General Body (comprising of all the members of the Society) that has representatives from multiple constituencies - government, Indian and international academia and scientific community, civil society and private sector

Vision, Mission and Values

Vision	Vision of PHFI is to strengthen India's public health institutional and systems capability and provide knowledge to achieve better health outcomes for all
Mission	Mission of PHFI is developing the public health workforce and setting standards Advancing public health research and technology Strengthening knowledge application and evidence-informed public health practice and policy
Values	**Transparency** - Uphold the trust of our multiple stakeholders and supporters - Honest, open and ethical in all we do, acting always with integrity
	Impact - Link efforts to improving public health outcomes, knowledge to action - Responsive to existing and emerging public health priorities
	Informed - Knowledge based, evidence driven approach in all we do Drawing on diverse and multi-disciplinary expertise, open to innovative approaches

REPORT

ACHIEVEMENTS AND INVESTMENT IN NUTRITION IN MAHARASHTRA

1 Overview of Maharashtra

Maharashtra is a state in western India. According to the Census 2011, Maharashtra has a population of 11.24 Crores, an expansion from 9.69 Crore in 2001 registration. It is the wealthiest and most developed state in India .Capital of Maharashtra is Mumbai which is known as the financial capital of India. It has 36 districts. Maharashtra is the second most populated state in India.

Urbanization Maharashtra: 2001-2011

The urban population which was 42.4 percent in 2001 has expanded to 45.2 percent as per census 2011

• The rate of growth in rural areas, which was 15.25 percent in 1991-01 ended up 10.36 percent in 2001-11 though the same in urban diminished from 34.57 to 23.64 percent

Economic Achievements of Maharashtra

- Maharashtra is one of the largest, wealthiest and most developed states in India by current economic indicators. According to the Maharashtra economic survey 2017-18 Per Capita Income of the state is Rs180,596 . In per capita income, Maharashtra is the leading state amongst other states.
- It is the third-most urbanized state with urban population of 45% of whole population.
- Maharashtra is the leading state in expenditure of loans under the Pradhan Mantri MUDRA yojana scheme as it provide the financial facilities to people doing small business.

Table -1.6: Maharashtra Economic Achievements

GSDP (2017-18)	Rs27.96 lakh crore
GDP rank	**Ist**
GDP by sector	Agriculture 11.9%
	Industry 33.6%
	Services 54.5% (2016-17)

2. Socio-Economic Achievements of Maharashtra

Sex Composition Maharashtra 2011

There is an increase of 15.50 million persons in absolute number of population in Maharashtra during 2001-11. Growth Rate of females (16.47%) is higher than males (15.56%).

Table-1.1 Sex Composition in Maharashtra (Females per 1000 Males) (2011)

Residence	2001	2011	Change
Total	**922**	**929**	**+7**
Rural	**960**	**952**	**-8**
Urban	**873**	**903**	**+30**

Source: Census 2011

The table above reveals that there is a decline in sex ratio in rural from 960 to 952 (by 8 points) whereas in urban, Sex ratio has increased from 873 to 903 (by 30 points).

Table 1.2 **Decadal growth rate of Child population (0-6 age) - 2011**

YEAR	TOTAL		
	PERSON	MALE	FEMALE
1991-01	1.23	2.99	-0.62
2001-11	-2.52	-1.55	-3.58
RURAL			
1991-01	-4.17	-2.35	-6.08
2001-11	-8.78	-7.54	-10.13
URBAN			
1991-01	11.32	12.86	9.68
2001-11	7.54	8.03	7.00

Source- Census 2011

- As per Census 2011, the total number of children in Maharashtra is enumerated to be 13.32 million. From the table above we can see that both Male and Female Child (0-6) population has decreased in rural areas (-7.5% for males & -0.1% for females). Whereas the same has increased in urban areas (8.0% for males & 7.0% for females). However, the percent increase in urban during 2001-11 is less than that of during 1991-01.

Child Sex ratio

The sex ratio in the age group 0-6 years age group reveals the recent changes in our society in its attitude and outlook towards the girl child. Also it is an indicator of the future trends of sex ratio in the population.

Table-1.3: Child Sex Ratio

RESIDENCE	2001	2011	CHANGE
TOTAL	913	814	-19
RURAL	916	890	-26
URBAN	908	899	-9

Source- Census 2011

Nutritional status of children in Maharashtra

Table-1.4 Increased prevalence of wasting among Children under 5 years

TOTAL	**NFHS-4**	**NFHS-3**
WASTED	**25.6**	**16.5**
SEVERLY WASTED	**9.4**	**5.2**

Source- NFHS 4 Maharashtra factsheet

The table 1.4 reveals that the children under five who are wasted has increased from 16.5 to 25.6 whereas the children under five who are severely wasted has been almost doubled in NFHS-4 as compared to NFHS-3 in Maharashtra. The table 1.5 below also shows the rural-urban disaggregation of prevalence of wasting in Maharashtra. It is curious to note that although prevalence of wasting is marginally higher in Rural Maharashtra, in terms of prevalence of severely wasted there is no significant difference between the rural and urban prevalence rate.

Table – 1.5: Prevalance of wasting in rural and urban areas

NFHS-4		
	RURAL	URBAN
WASTED	26.1	24.9
SEVERLY WASTED	9.5	9.4

Source- NFHS 4 Maharashtra factsheet

Statement of Problem and Research Objective

Despite the fact that Maharashtra has accomplished impressive economic growth, it has a persistent malnourishment problem. In this context, the objective of this study is to assess the performance of all districts in Maharashtra in terms of nutritional indicators and some of their key socio-economic determinants. Such an analysis will help focus interventions and investments in nutrition to key under-performing districts.

2.1 Aim

- To find out value of various nutritional indicators of all districts of Maharashtra.
- To find out level of district-wise investment in health, nutrition and water and sanitation in Maharashtra.

2.2 Detailed Objectives

The specific objective of the study are as follows-

- To develop a better understanding as regards district wise performance of Maharashtra in nutrition and its determinants.
- To assess impact of district level investments on nutrition and its key determinants on performance of district performance in nutritional outcomes.

2.3 Data Collection -The study collected quantitative data on outcome indicators for nutrition and its determinants and public expenditure figures from the following sources:

- ✓ National Family and Health Survey-4, Maharashtra state level and district level Factsheet
- ✓ Census-2011
- ✓ Maharashtra state Annual Budget and District level Budget (various years)

2.4Research Methodology

A desk review of contemporary literature on social determinants of undernutrition in India was undertaken and concurrently a review of global literature on frameworks for interventions in alleviating undernutrition was undertaken. Based on the desk review, several indicators were identified that could summarily describe the undernutrition and its socio-economic determinants. District level data for these indicators were obtained from above mentioned sources and analyzed.

Section-3

Review of Literature

Under nutrition and disease burden both terms are related to each other. Maternal and child under nutrition is highly prevalent in low income families. Deficiency of vital micronutrients leads to under nutrition and mortality. Various factors like suboptimum breastfeeding, iron deficiency are responsible for under nutrition.

Contemporary literature and Scaling up nutrition report (2008) suggests 35% of children death are due to these factors[1]. High mortality and disease burden due to nutrition related factors is forcing government to implement intervention to eradicate mortality and disease burden.

These literatures identify several long term as well short term consequences of under nutrition. Short term consequences like mortality and long term consequence are low reproductive performance, increased cardiovascular disease. Stunting i.e short stature of mother leads to complicated pregnancies. Lack of health services leads to increased disease burden and finally results in mother and child under nutrition.

Vitamin A which is the most important component in infant growth. Maternal malnutrition does not affect breastfeeding unless it is severe but if mother is deficient of vitamin A which is very

important of infant growth , then there are high chances that the child born will be stunted. Micronutrients like folic acid , zinc are very important for mother and child.

Three determinants which are somewhere responsible for child under nutrition are food security, adequate care and health. Moreover suboptimum breast feeding and complementary feeding both are important for child because both play an important role in child growth.

Malnutrition and poor diet results in disease burden. Globally every household is spending some percent of their income to healthcare facilities. As the disease burden is increasing this healthcare cost is also increasing.

The main reason behind this is the scarcity of data. The data gaps plays a significant role in maternal and child under nutrition as the government does not have sufficient data and reports which lead to ineffective intervention which results useless from government side as the schemes launched by the government are not effective on the target group. Data related to every determinant of nutrition needs to tracked to see their effectiveness.

Government should focus on SMART (specific, measurable, achievable, relevant and time bound) to achieve their nutritional goal[2].

As per Maharashtra government measures, around 24000 children has died in Maharashtra in 2011. In the last four previous years 1.17lakh children lost their lives in Maharashtra.

It prodded the local organization to enhance from 2002 to follow and enhance the level of child nutrition in an area. After three years Maharashtra government decided to put this idea into a mission. The Rajmata Jijau Mother-Child Health and Nutrition Mission (RJMCNM) is in partnership with UNICEF, and works with Maharashtra government's Women and Child Development department, and the Integrated Child Development Services (ICDS) program. Their aim is to strengthen the ICDS and linking various administrative arms, give specialized direction and attempt distinctive models of advancement utilizing the child development center.

Evaluating the progress made by Rajmata Jijua mother –Child Health and Nutrition mission in minimizing under-nutrition among children under two years of age in Maharashtra between 2005-06 and 2012, this article shows that children suffering from under-nutrition, has declined significantly in the state in this period[3]. This indicates that this decline can be related with the intercessions started through the Rajmata Jijau Mother-child health and Nutrition Mission, which was started in 2005, furthermore, this shows the important role a state can play in minimizing child under-nourishment in India.

The dynamic pattern of all the three indicators of child under nutrition shows a decrease. The degree of decrease is higher in stunting (height for age) and wasting (weight for height). The decrease is higher in rural areas than urban in Maharashtra. The maximum decrease was in stunting in rural Maharashtra (16%) also, the minimum decrease was in wasting in urban areas of the state (just 1%).between 2005-06 and 2012 the indicator underweight has decline to 34.4%. In case of underweight the highest decline is in rural areas.

Due to the lack of nutrition and high number of seriously malnourished newborn children in Palghar locale, the Women and Child Development (WCD) division decided to re-begin a couple of projects that were closed in previous years[4] . The Cabinet decided to re-begin the Village Child Development Center (VCDC) in all the 97,287 anganwadis in the state. The WCD office urged Cabinet to take note of that not only in tribal areas but also in different regions for severe acute malnourishment (SAM) and Moderate acute malnourishment (MAM) kids.

To remove under nutrition from the state, the legislature is probably going to issue another Government Resolution (GR) which will measuredly incorporate making cognizance and achieving newborn children experiencing Severe Acute Malnutrition (SAM) and Moderately Acute Malnutrition (MAM)[5].

Consistently wellbeing information will be recorded by specialists and wellbeing registration camps will be led to screen the strength of mothers and newborn children. The proposed measures incorporate making an arrangement of food and medicines to babies, checking their wellbeing through information observing and making awareness about the wellbeing and cleanliness, particularly of expecting mothers.

Family planning also influences child health and nourishment via its role in helping females to meet their fertility desires by reducing unintended pregnancies and their related health Burdens[6]. As reported in Naik and Smith (2015) a 2011 survey by Shah et al. concentrating on both developed and developing nations found that unintended pregnancies resulting in a live birth had fundamentally higher chances of low birth weight. The chances of low birth weight expanded by 51 percent and 31 percent for undesirable and unintended pregnancies. Those with undesirable pregnancies had 50 percent more chances of preterm birth. Among the included studies was one from Ecuador utilizing the 1994 Ecuador Statistic and Maternal child health Survey. After analyzing different factors and variables, they found that children from

undesirable pregnancies had 64 percent more noteworthy chances of low birth weight contrasted with babies from desirable pregnancies.

Women empowerment as essential for enhancing nutritional results.[7] Since women are essential parental figures, they have impact on their child nutrition in a roundabout way through their own dietary status and specifically through childcare practices .Several studies have shown the vital relationship between women empowerment with their own nutrition and in addition to that of their children. An investigation in Andhra Pradesh, India, found that measures of maternal self-governance, were related with positive infant feeding and growth outcomes. An ongoing report in India found that maternal health was directly connected with child's nutritious status, but just for children under three years of age.

3.1 WCD Schemes in Maharashtra

Women and child department of Maharashtra has launched schemes to adolescent girls, mother and child so that they improve their nutritional status[13]. WCD has launched these scheme so that the targeted group can access the basic facilities provided by the government and educating them about importance of healthy diet and child feeding practices. Although these schemes are very effective in areas but in some areas they are ineffective due to the scarcity of data. In some Schemes government is providing money to the mothers so that they can invest some amount of that money in consuming healthy food. The schemes which are launches by the WCD department of Maharashtra Government are as follows[13]-

Table-2.1

SCHEME	OBJECTIVE	Beneficiaries
Integrated Child Development Service (ICDS)	Its main objective is to provide basic essential services like immunization, Supplementary nutrition, healthcare checkups, nutrition and health education in an integrated manner to both mother and child in their village.	• Young children • Adolescent girls • Pregnant mother • Nursing mother

Indira Gandhi MatritvaShayogYojna (IGSMY)	The principle objective of the plan is to provide money motivating force as pay of wage loss to during the period of their pregnancy and lactating period and also overhaul their wellbeing status and get nutritious nourishment.	➢ Pregnant and lactating mothers
Rajiv Gandhi Scheme for Adolescent Girls (SABLA)	Its objective is to nutritional and health status of adolescent girls. To make them aware of health, hygiene, nutrition, adolescent reproductive and sexual health (ARSH).	➢ Adolescent girls
Kishori Shakti Yojana	Give wellbeing and cleanliness instruction and preparing to adolescent girls in regards to on awful impacts of early marriage to avoid frequent child births need for balanced diet, consumption of green vegetables etc.	➢ Adolescent girls

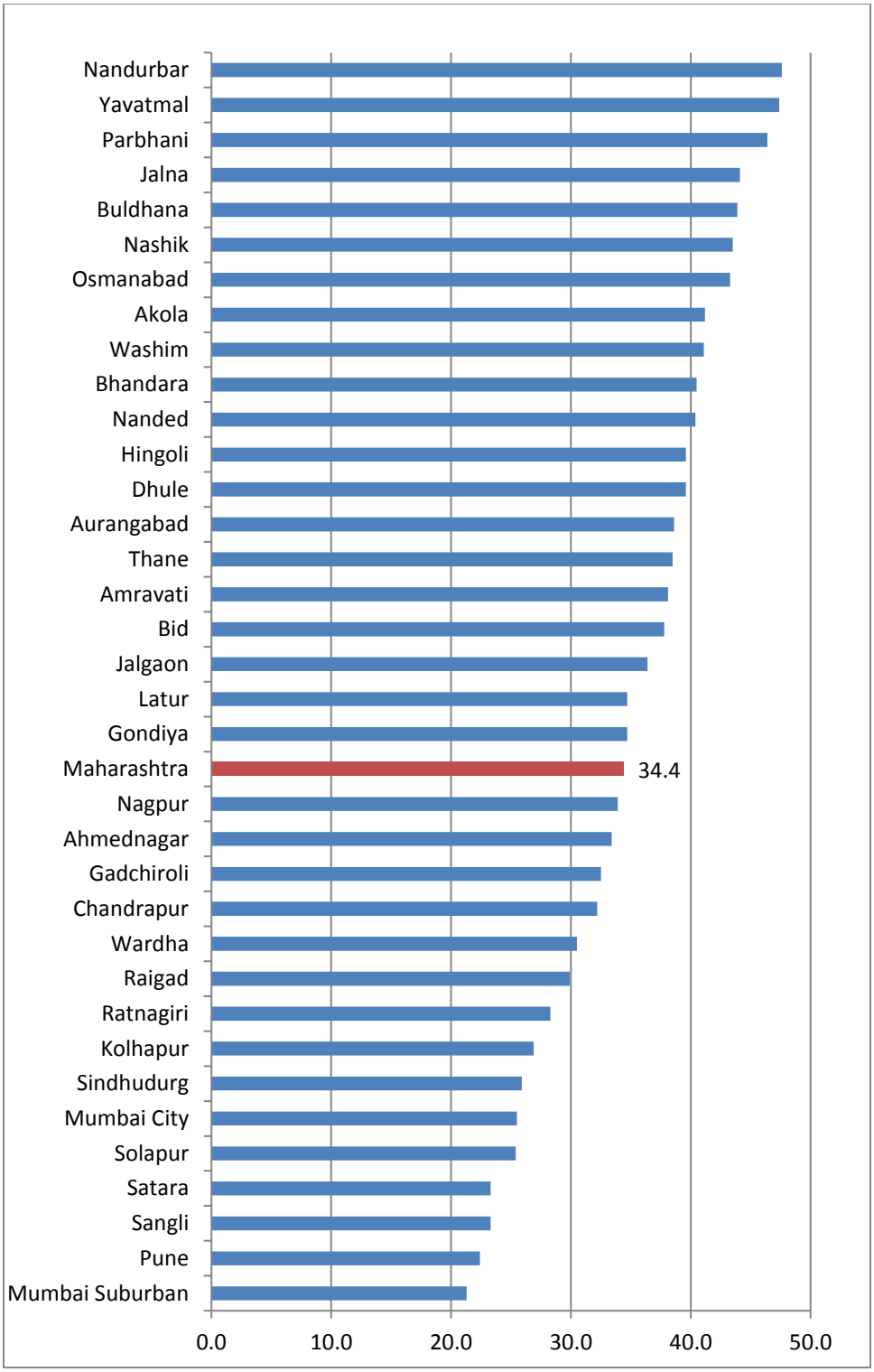
Source - Women and Child development department (Govt. of Maharashtra)

Section 4: District-wise performance of Maharashtra

4.1 Nutrition

- Children under 5 years who are stunted (height for age)
  According to the graph 1.1 Nandurbar (47.6) is the worst performing district as it has the largest number of the children under 5 who are stunted on the other side Mumbai suburban is the best performing district i.e. only 21.3% children under age 5 years are stunted.(Maharashtra =34.4)

Children under 5 years who are stunted

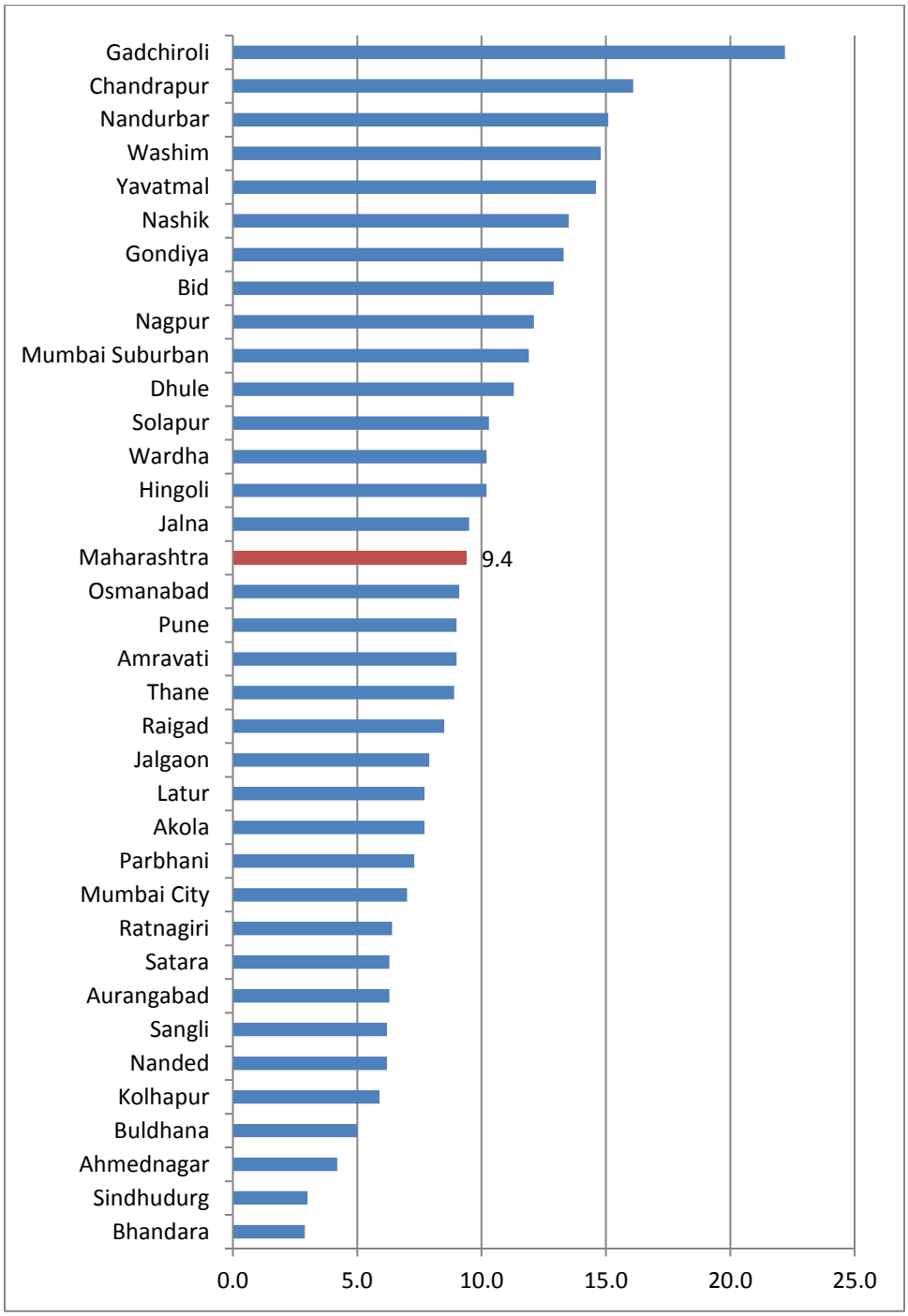

Nandurbar
Yavatmal
Parbhani
Jalna
Buldhana
Nashik
Osmanabad
Akola
Washim
Bhandara
Nanded
Hingoli
Dhule
Aurangabad
Thane
Amravati
Bid
Jalgaon
Latur
Gondiya
Maharashtra
34.4
Nagpur
Ahmednagar
Gadchiroli
Chandrapur
Wardha
Raigad
Ratnagiri
Kolhapur
Sindhudurg
Mumbai City
Solapur
Satara
Sangli
Pune
Mumbai Suburban
0.0
10.0
20.0
30.0
40.0
50.0

Graph-1.1

- Children under 5 years who are severely wasted (weight for height).

According to the graph 1.2Gadcholi is the worst performing district where 22.2% children are severely wasted ,whereas in Bhandara only 2.2% children are severely wasted which means Bhandara is the best performing district in this indicator.(Maharashtra=9.4)

Children under 5 years who are severely wasted

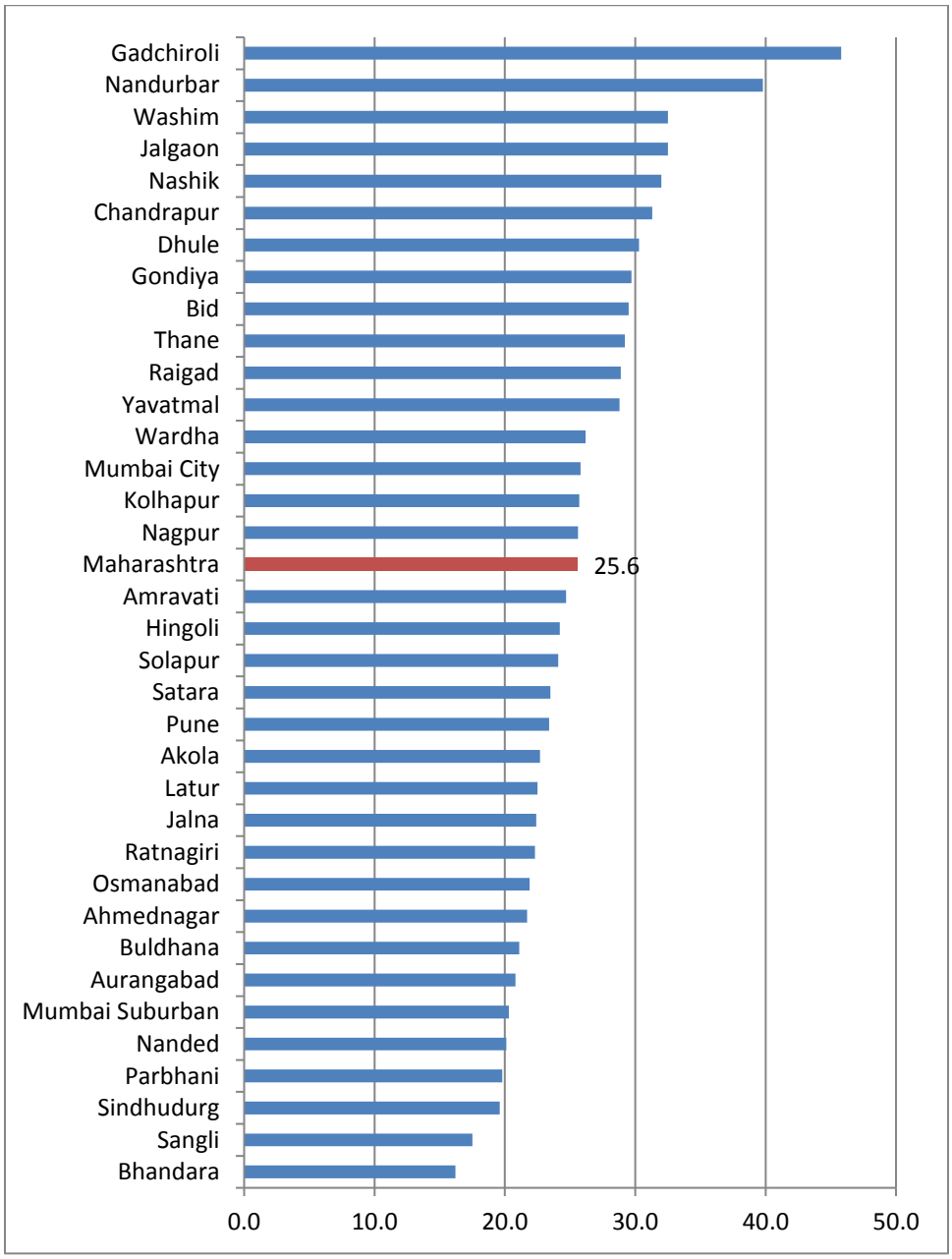


Graph-1.2

- Children under 5 years who are wasted(weight for height)

  According to the graph 1.3 Gadchiroli is the worst performing district in Maharashtra whereas Bhandara is the best performing district in this indicator , it has only 16.2% children under five who are wasted while Gadchiroli has 45.8% children under five who are wasted.(Maharashtra=25.6%)

Children under 5 years who are wasted

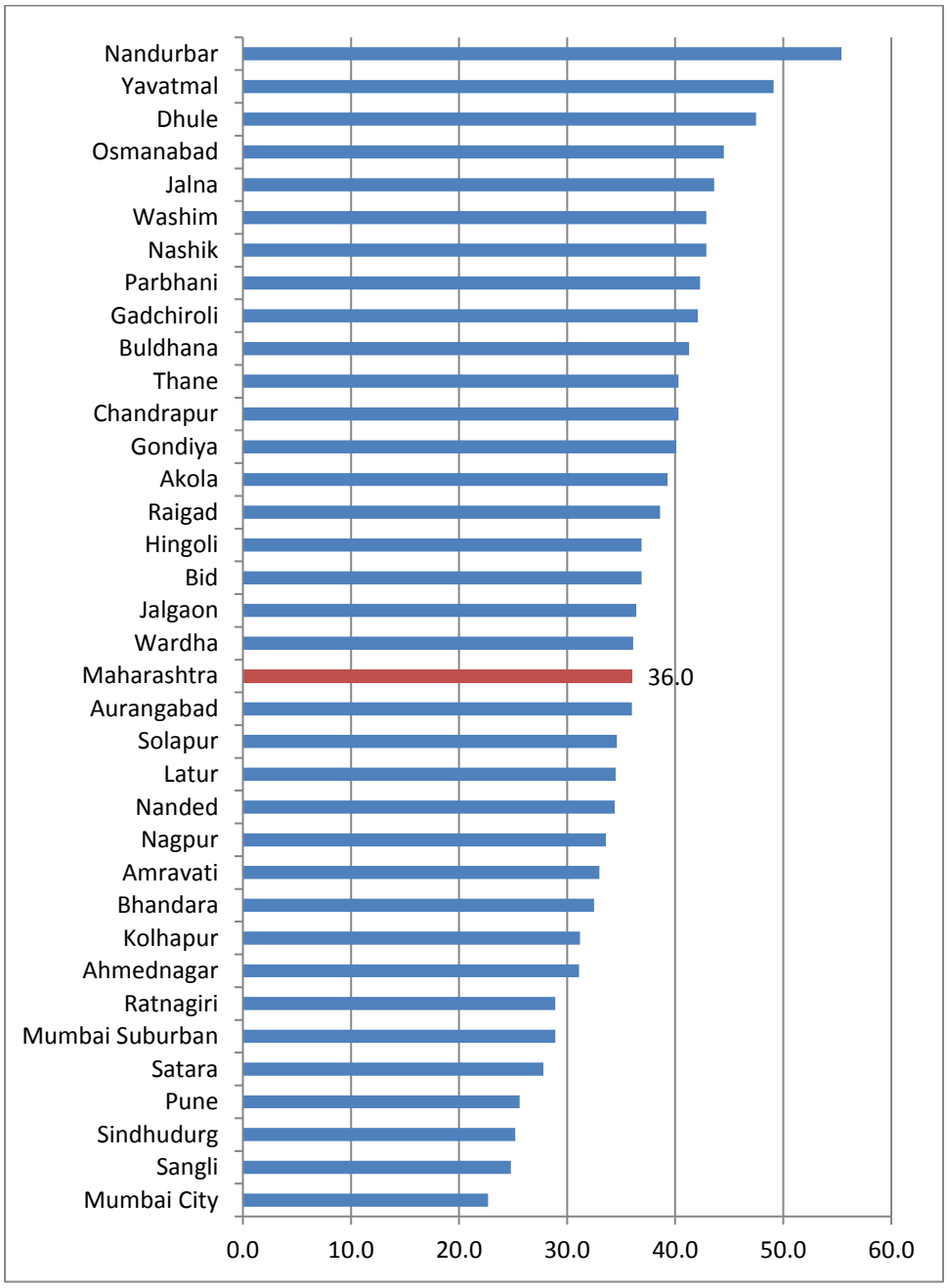


Graph-1.3

- Children under five years who are underweight(weight for age)

  It is found in graph 1.4 that Nandurbar is the worst performing district in this indicator where 55.4% children under 5 years are underweight while in Mumbai city only 22.7% children under 5 are underweight which means it is the best performing district.(Maharashtra=36.0%)

  Children under five years who are underweight



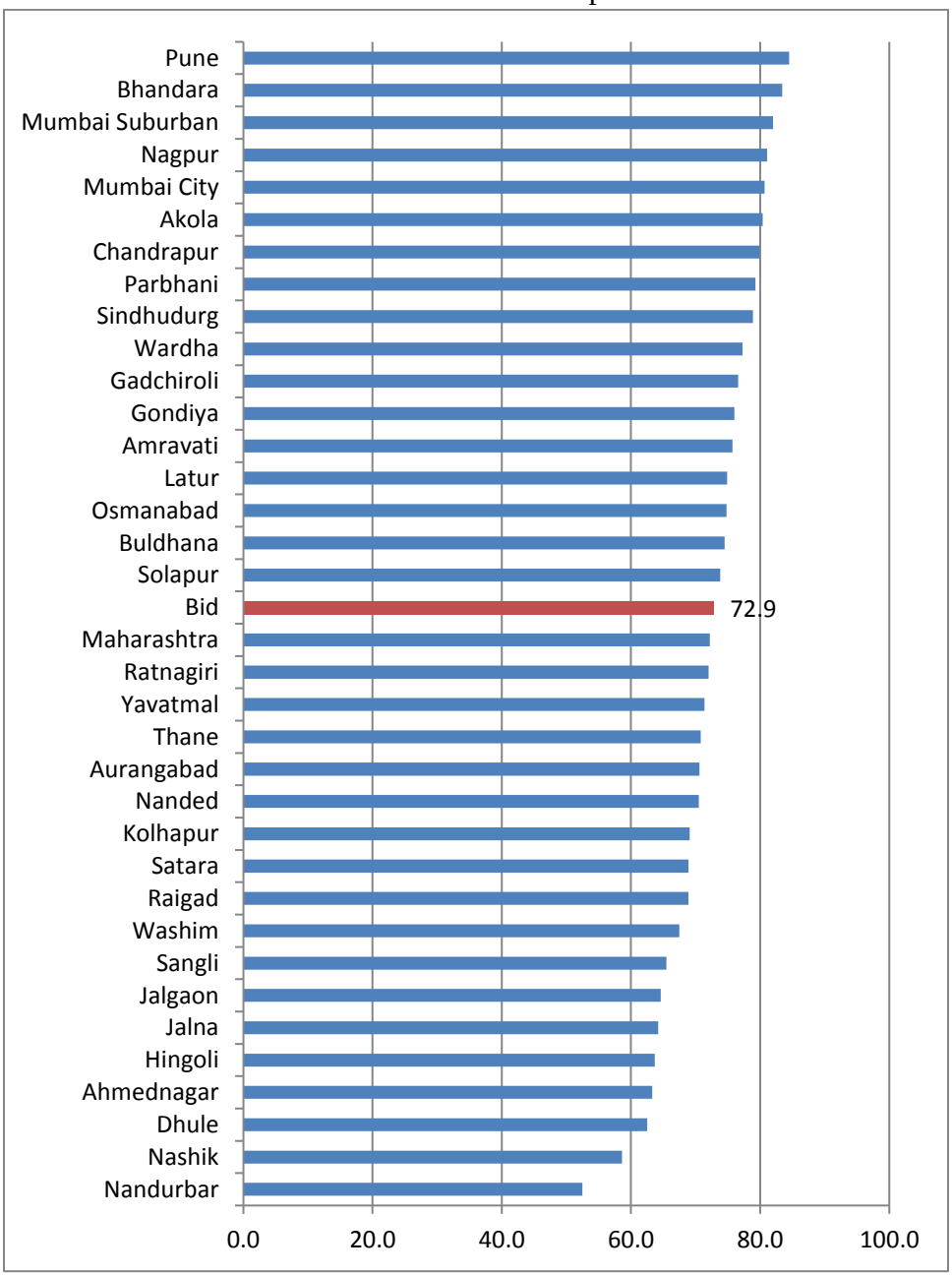
Graph-1.4

4.2 Maternal Health

- Mother who had atleast 4 antenatal checkups

  The graph 2.1 shows that in Pune maximum number mothers had atleast 4 antenatal checkups whereas in Nandurbar only 52.5% mother had atleast 4 antental checkups i.e below the average 72.2(we are taking Maharashtra's overall average rate as average rate of mothers who had atleast 4 antenatal checkups)

Mother who had atleast 4 antenatal checkups

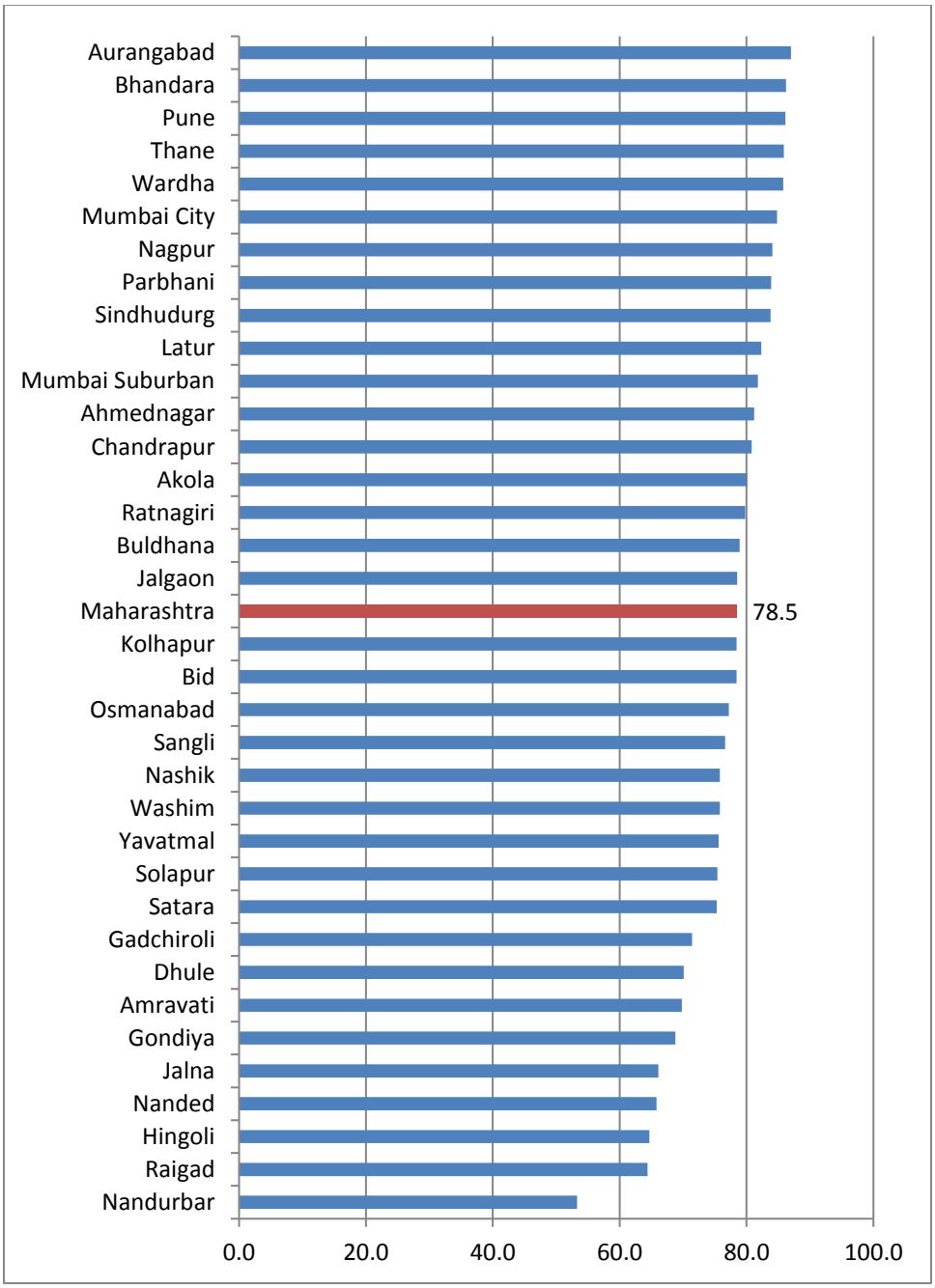


Graph-2.1

- Mothers who received postnatal care within two days of delivery

  Graph 2.2 shows that in Aurangabad, maximum mothers had postnatal care within 2 days of delivery whereas in Nandurbar only 53.3% females had received postnatal care within 2 days of delivery which is below the average.

  Mothers who received postnatal care within two days of delivery

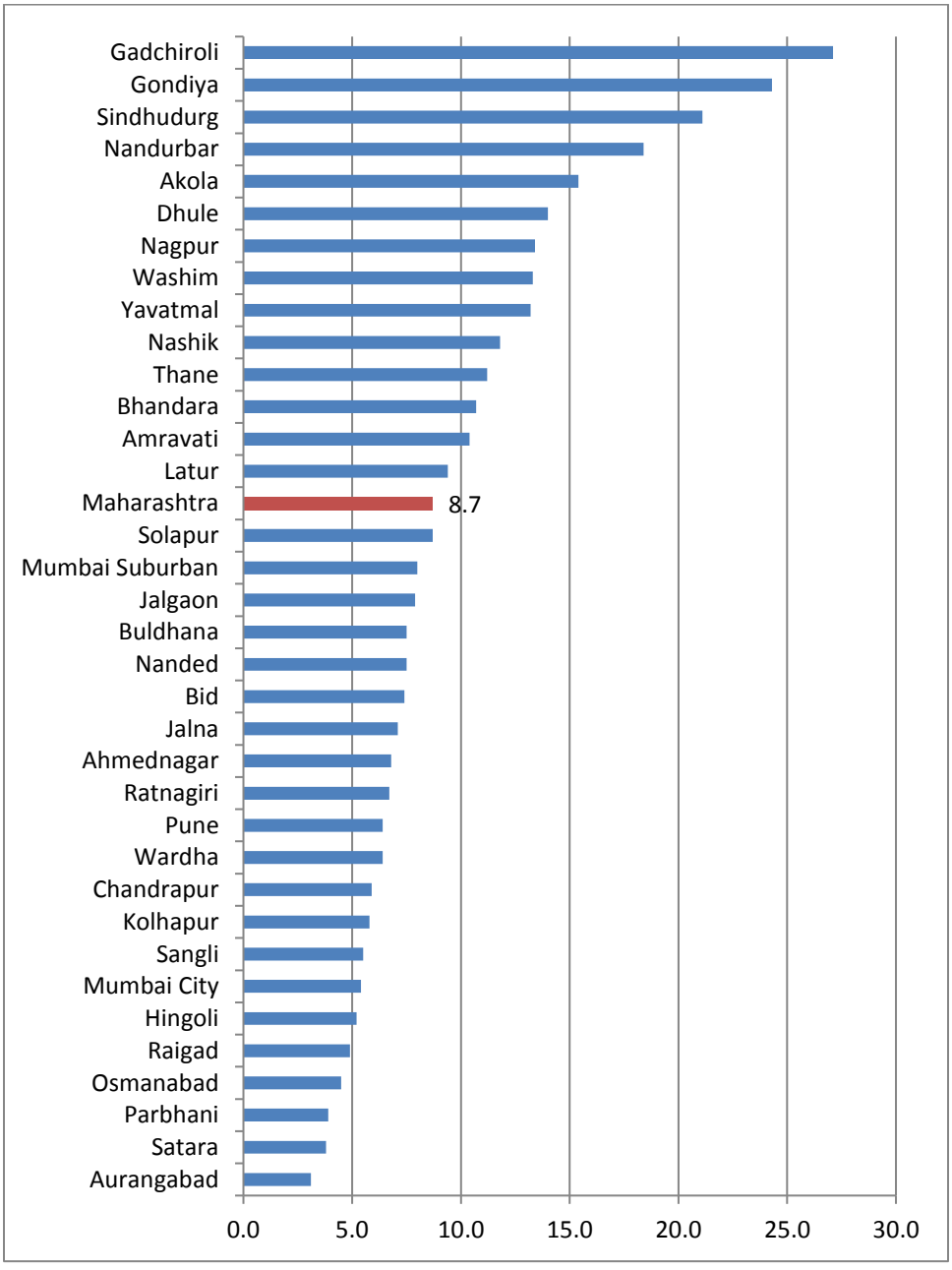


Graph-2.2

- Mothers who received financial assistance under JSY (Janani Suraksha Yojana) for births delivered in an institution.

  As per the Graph 2.3in Gadcholi maximum number of mothers has gotten budgetary help under JSY for birth delivered in a Institution while Aurangabad is the most exceedingly terrible performing region in this indicator . In Aurangabad just 3.1% has gotten money related help under JSY for births delivered in an Institution which is beneath average.

Mothers who received financial assistance under JSY

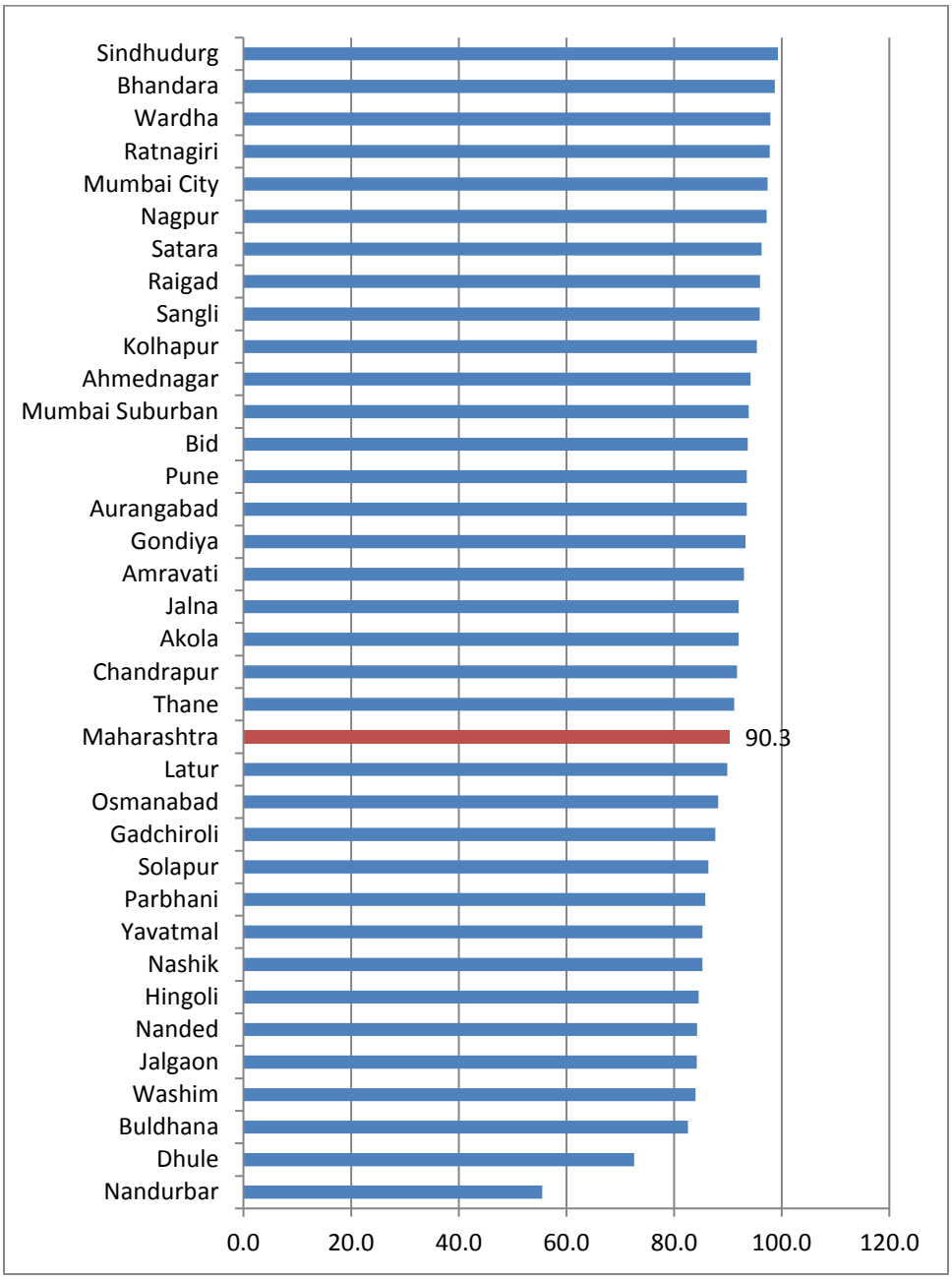


Graph- 2.3

- Institutional Births

Graph 2.4 demonstrates that Sindhudurg is the best performing district.In Sindhudurg 99.3% delieveries are done in institutions . Nandurbar is the most exceedingly bad performing district in this indicator , in this area just 55.5% delieveries are done in organizations.

Institutional Births

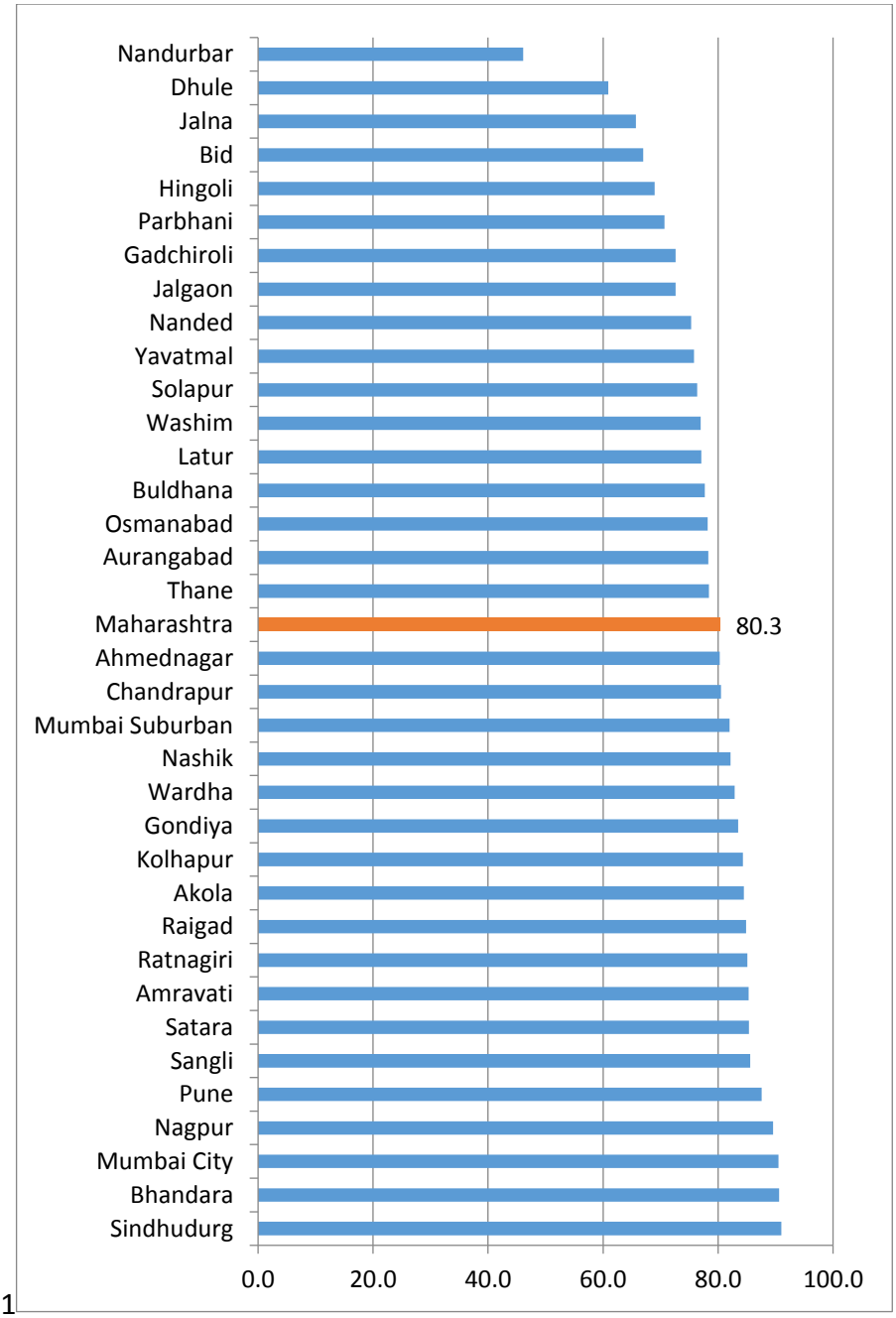


Graph-2.4

4.3 Women Empowerment

- Women who are literate.

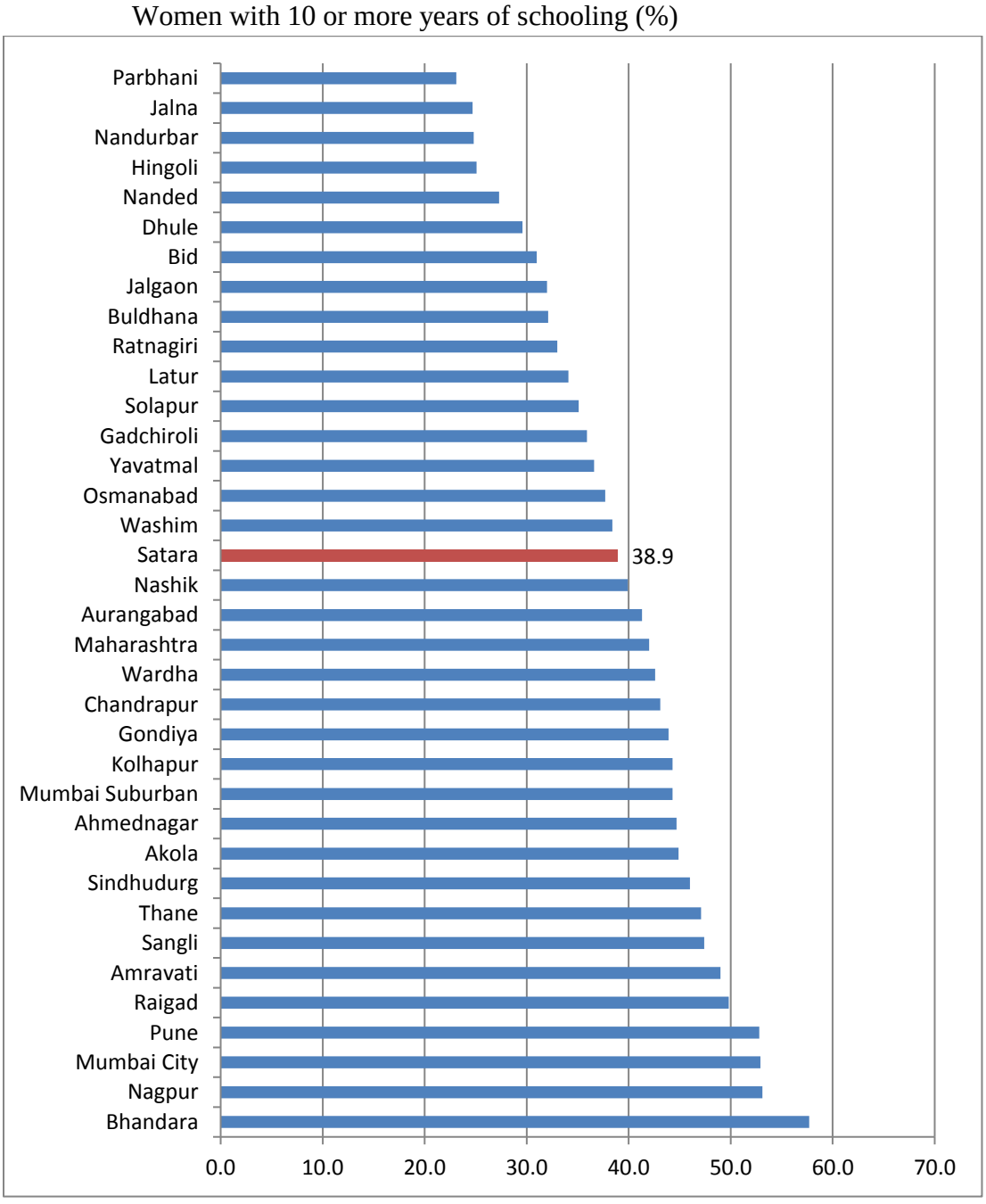
  The graph 3.1 shows that despite the fact that the level of females who are educated in Maharashtra is 80.3% yet at the same time there are numerous districts like Nandurbar where this rate is below the average literacy rate (we are taking Maharashtra's rate as the average literacy rate).



- Graph-3.1

- Women with 10 or more year of schooling

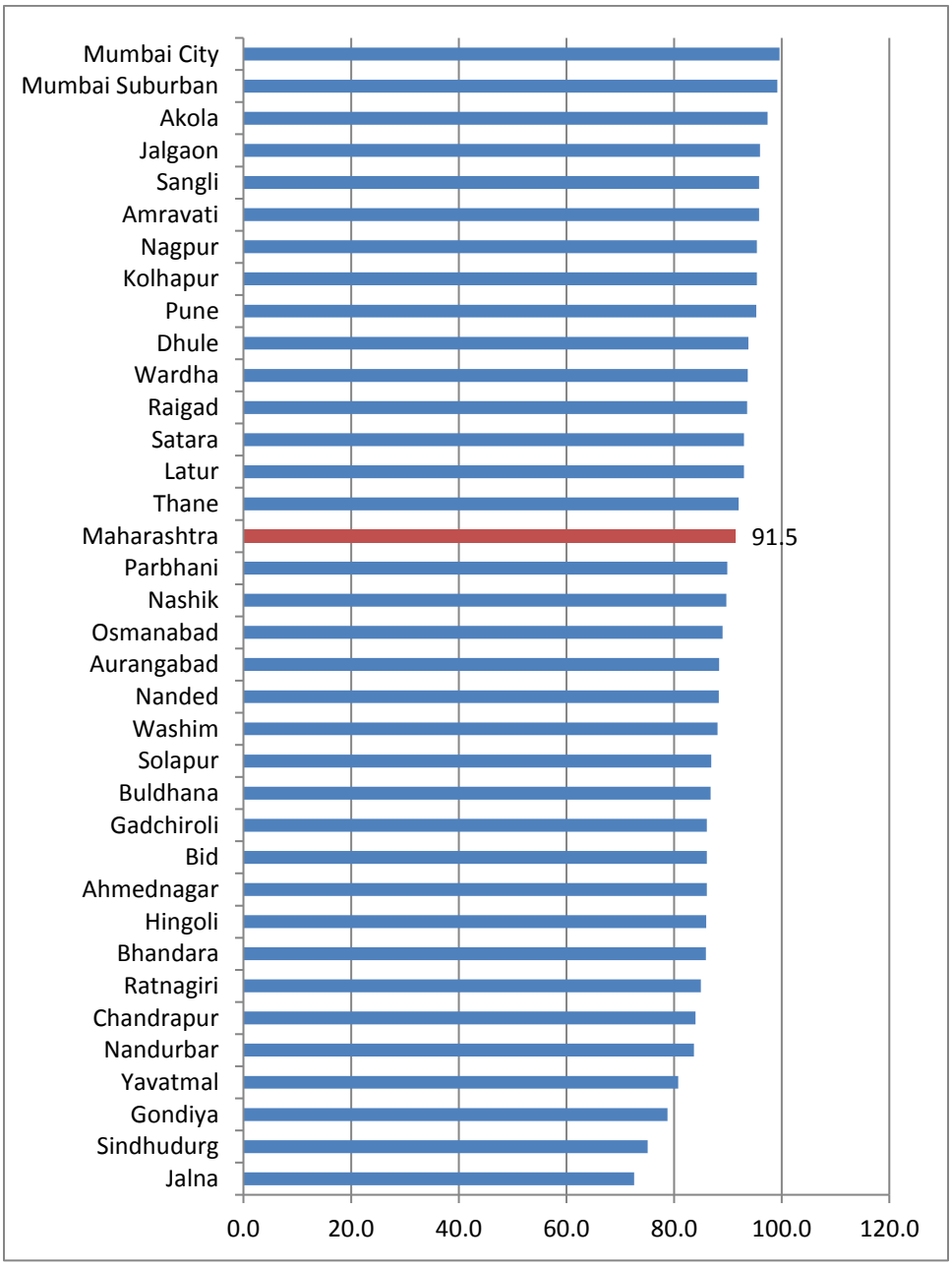
  The graph 3.2 reveals that Bhandara is the district where maximum number of women with 10 or more year of schooling while Parbhani is the worst performing district in this indicator i.e the percentage of women with 10 or more year of schooling is below the average ((we are taking Maharashtra's rate as the average rate of women with10 or more year of schooling).



Graph-3.2

4.4 Water Supply

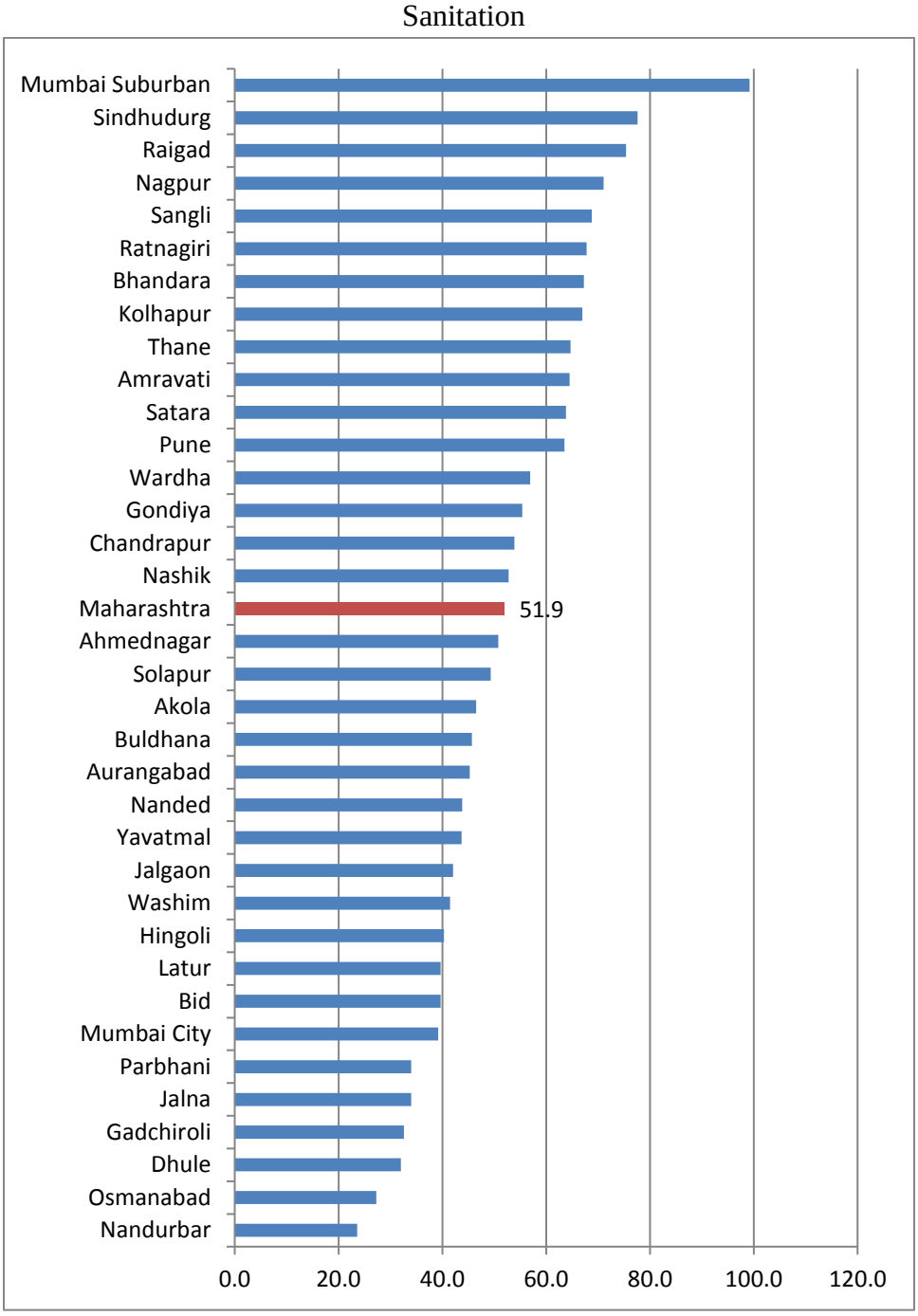
According to the graph 4.1 Mumbai city is the best performing district where maximum of the households get improved drinking water source whereas the Jalna is the worst performing district i.e. only 72.6% household has access to improved drinking water source which is below the average i.e. 91.5



Graph-4.1

4.5 Sanitation

Graph 4.2 demonstrates that Mumbai suburban is the best performing district where 99.2% household are using improved sanitation facility while Nandurbar is the worst performing district where only 23.6% households are using sanitation facility which is below the average.(Maharashtra =51.9)

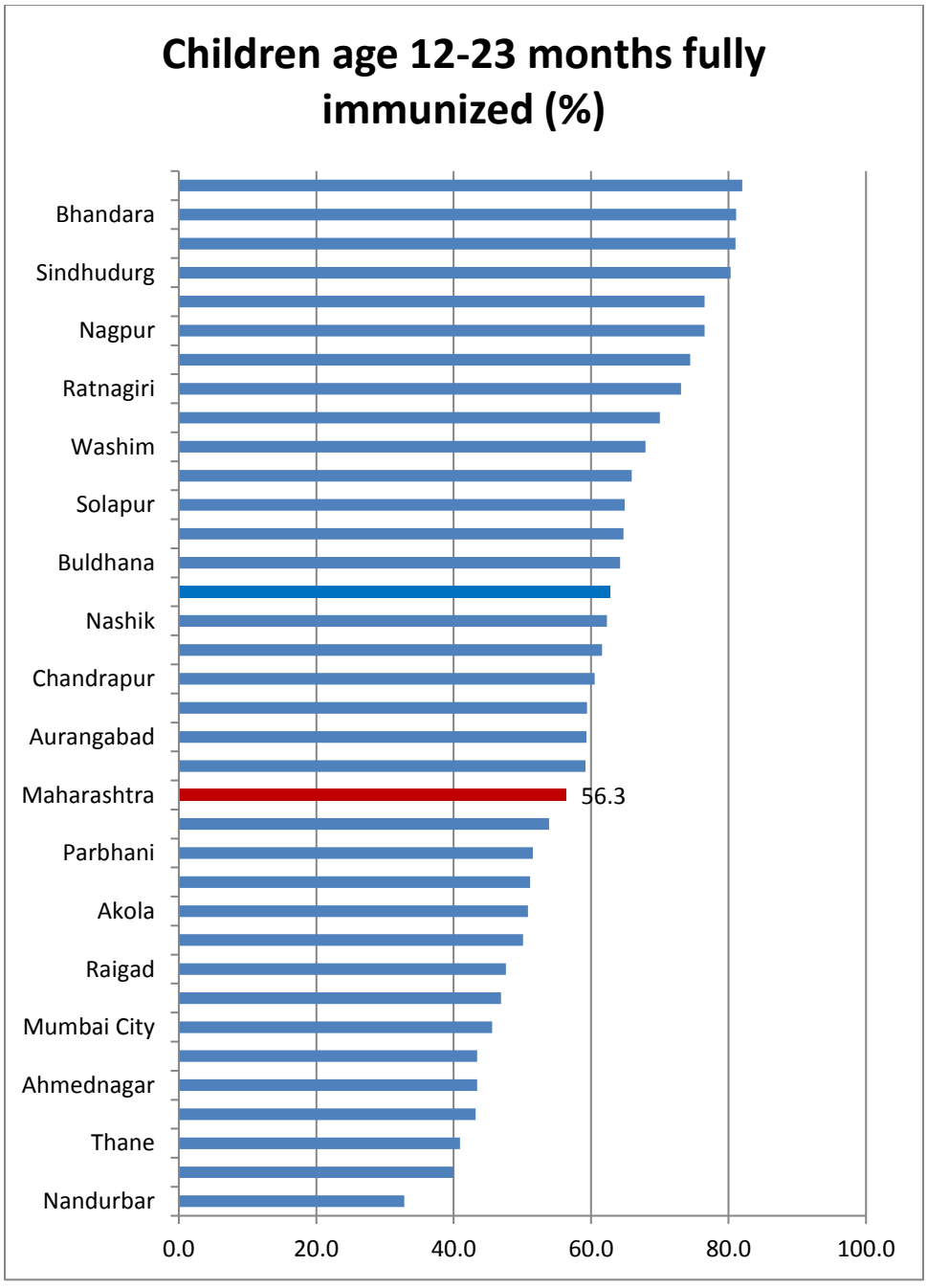


Graph-4.2

4.6 Child Health

- Children age 12-23 months fully immunized

  According to graph -5.1 Gadcholi is the best performing district as 82% children age 12-23 months are fully immunized whereas in Nandurbar only 32% children age 12-23 months are fully immunized due to which it is the worst performing district .(Maharashtra=56.3)

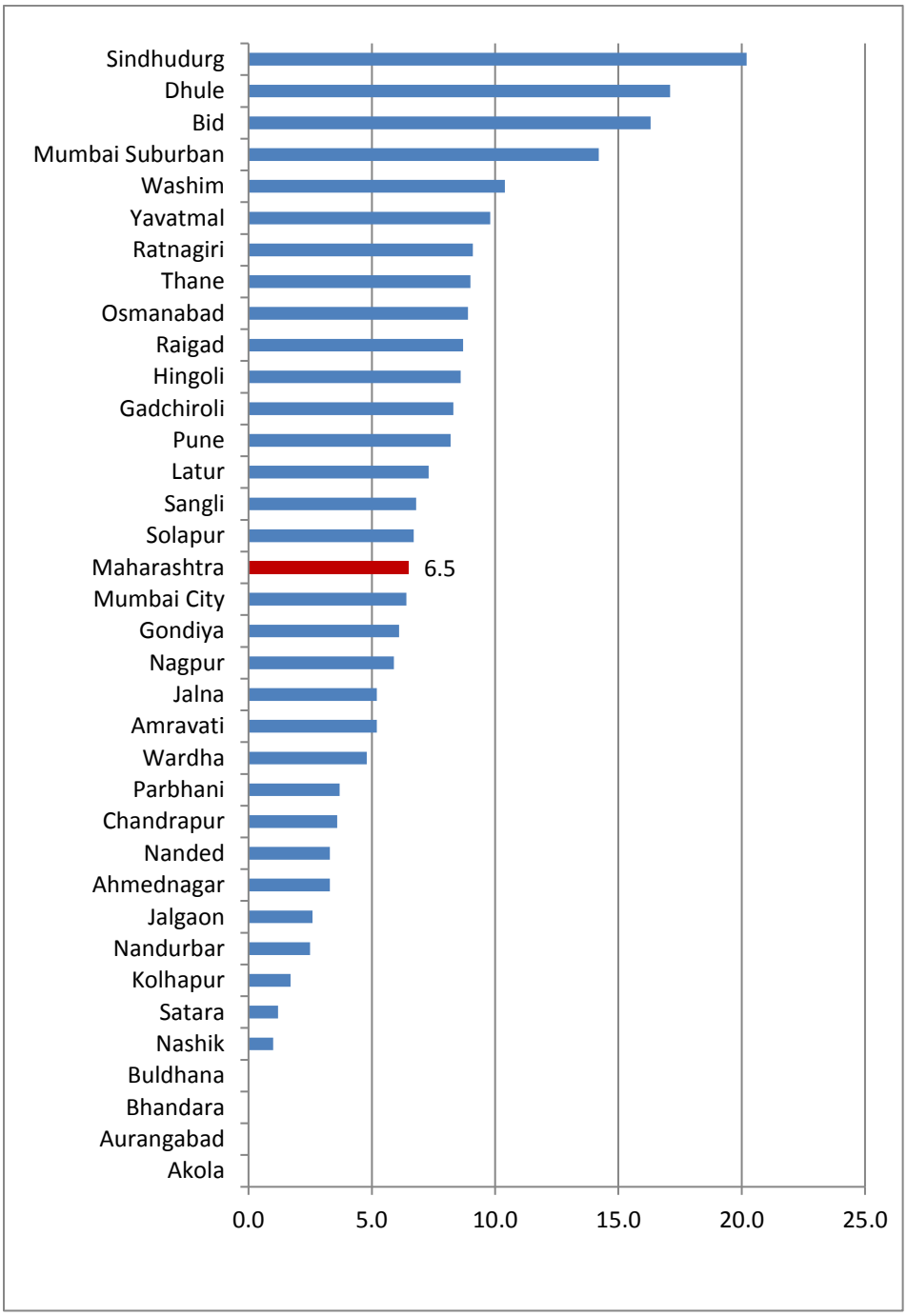


Graph-5.1

- Total children age 6-23 months receiving an adequate diet

  It is clear from the Graph-5.2 that in Dhule district 22.2% children age 6-23 months are receiving adequate diet so Dhule is the best performing district in this indicator whereas in Nashik only 1% children age 6-23 months has received an adequate diet which is below the average i.e. 6.5% of Maharashtra.

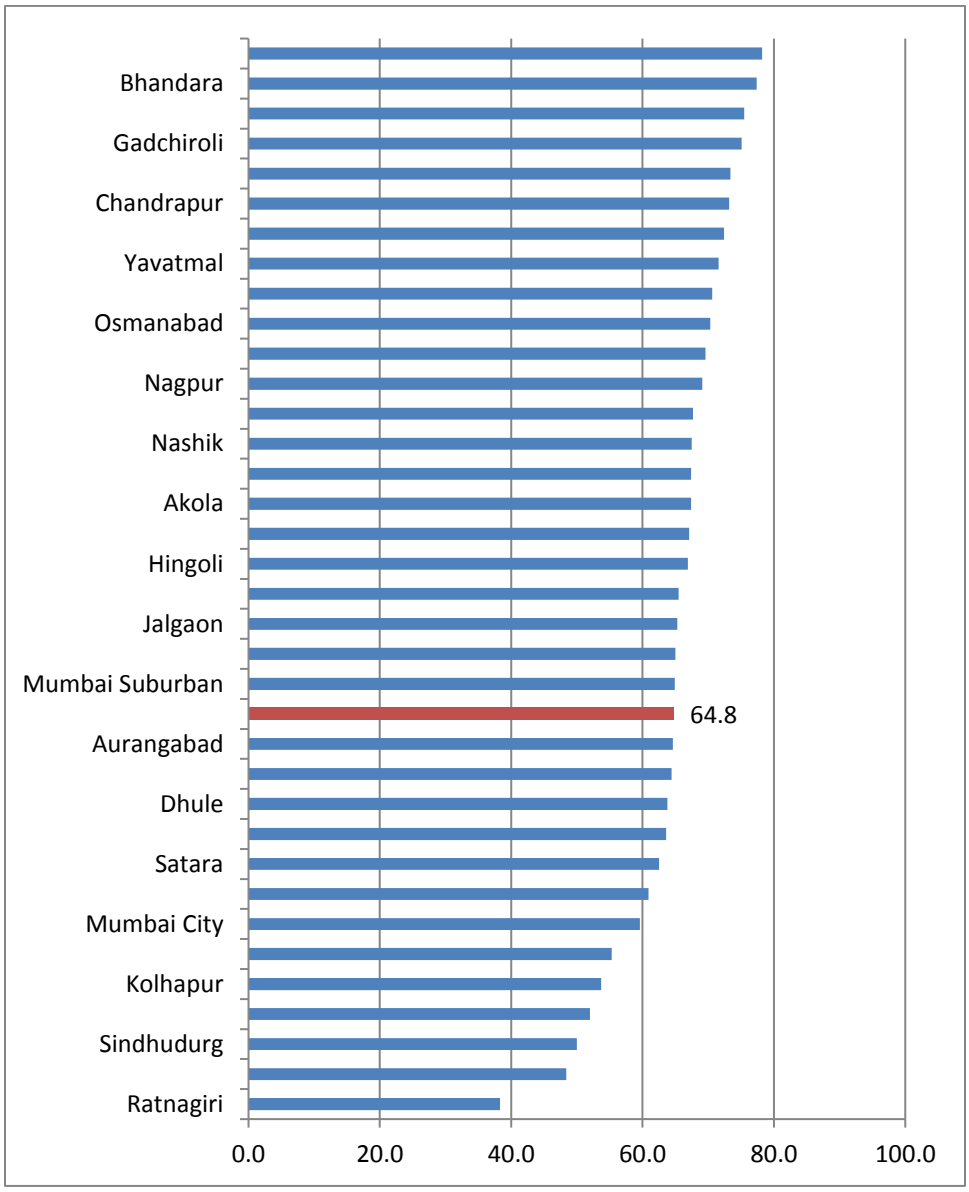
  Total children age 6-23 months receiving an adequate diet



Graph- 5.2

4.7 Family planning method

It is clear from the Graph-6.1 that in Wardha district 78.2% people are using any family panning method which shows that they are aware of family planning methods so Wardha is the best performing district in this indicator whereas in Ratnagiri only 38.3% people are using any family planning method which is below the average i.e. 64.8% of Maharashtra

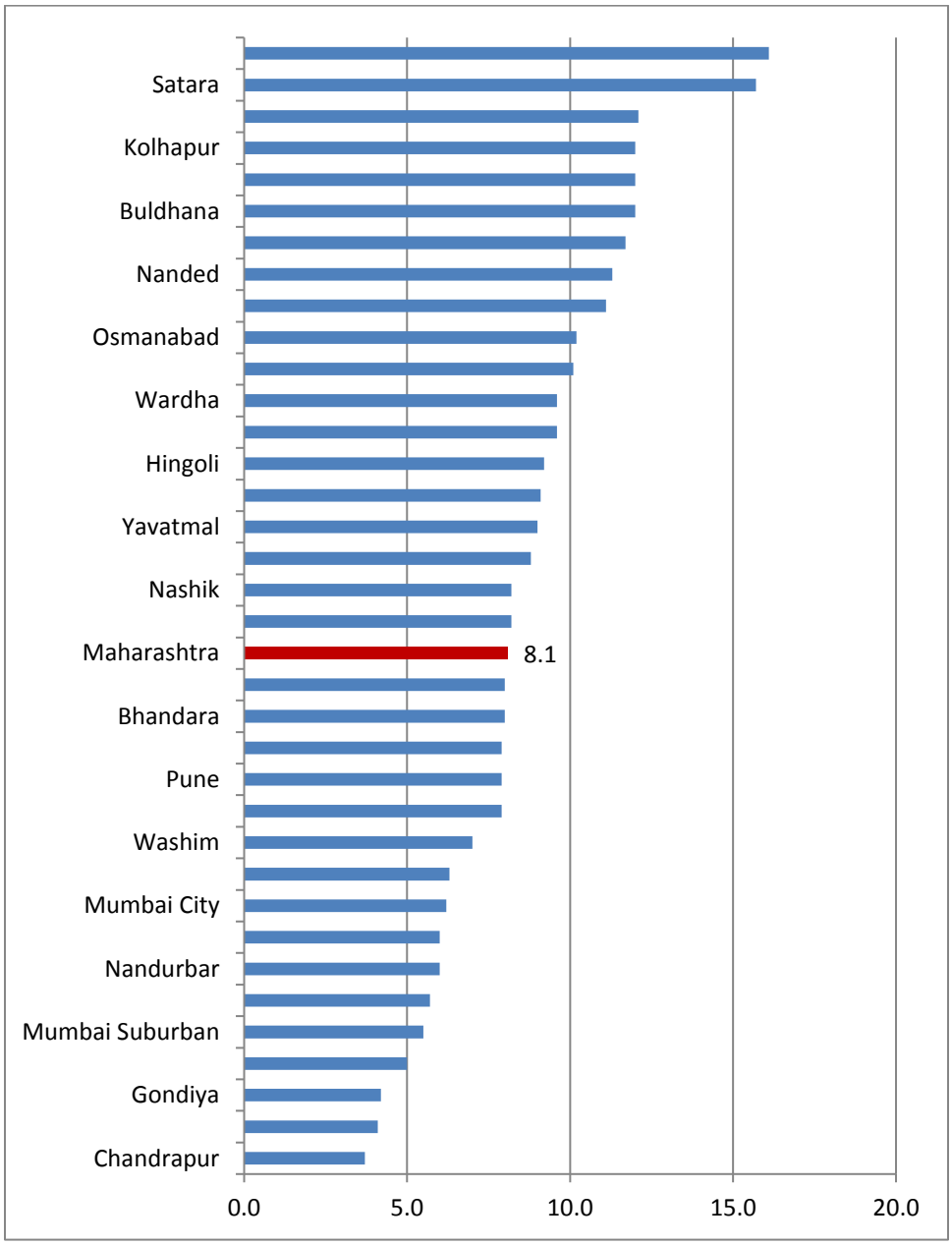


Graph-6.1

4.8 Prevalence of diarrhea in last 2 weeks preceding the survey

According to the graph 6.2 Latur is the worst performing district in Maharashtra as it has 16.1% prevalence of diarrhea in last 2 weeks preceding the survey whereas in Chandarpur there is only 3.1 % prevalence which means Chanarpur is the best performing district in this indicator.

Prevalence of diarrhea in last 2 weeks preceding the survey

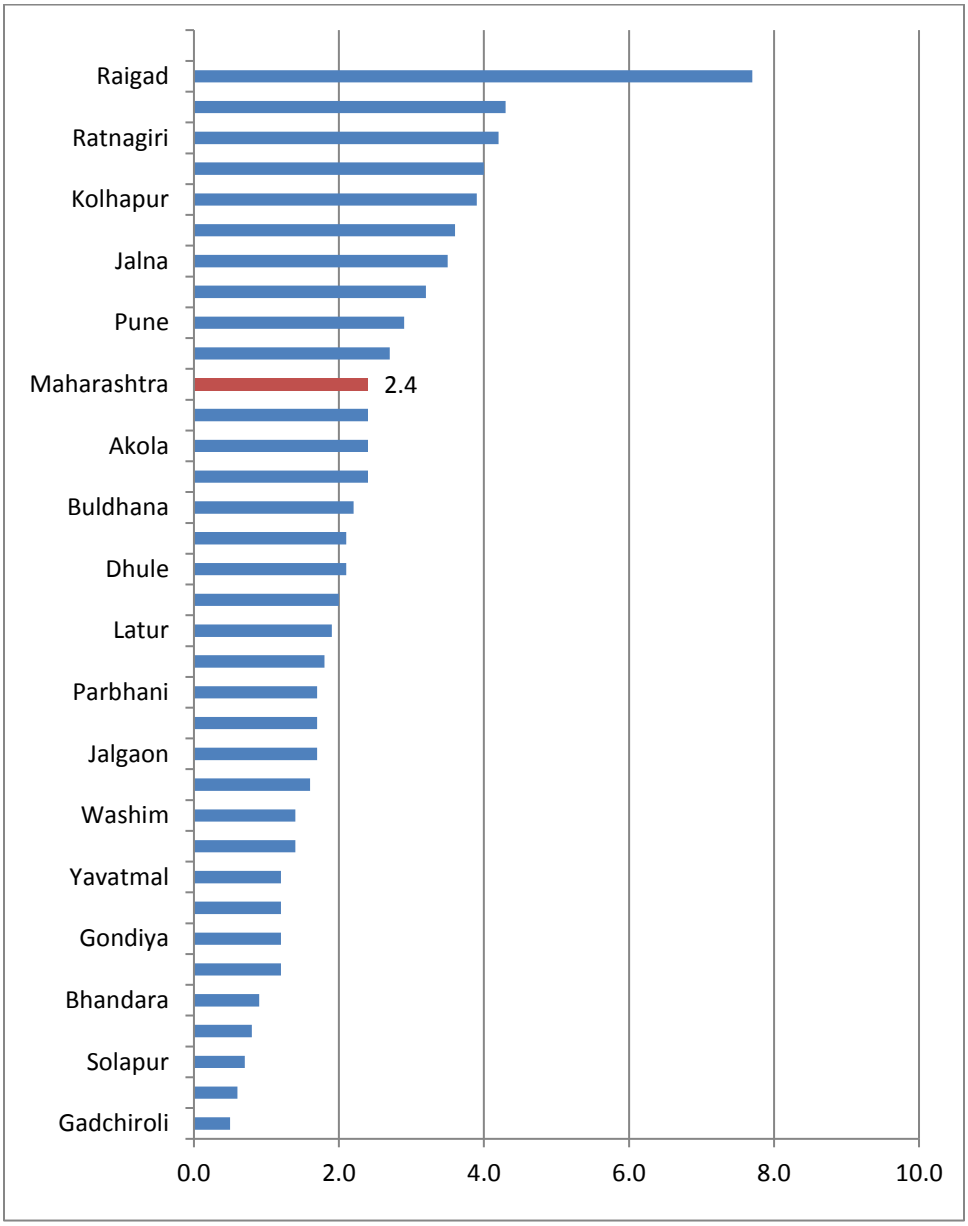


Graph-6.2

4.9 Prevalance of symptoms of acute respiratory infection in the last 2 weeks preceding the survey

According to the graph 7.1 Raigad is the worst performing district in Maharashtra as it has 7.7% prevalence of symptoms of acute respiratory infection in the last 2 weeks preceding the survey whereas in Gadcholi, there is only0.5 % prevalence of symptoms of acute respiratory infection in the last 2 weeks preceding the survey which means Gadcholiis the best performing district in this indicator.

Prevalance of symptoms of acute respiratory infection in the last 2 weeks preceding the survey



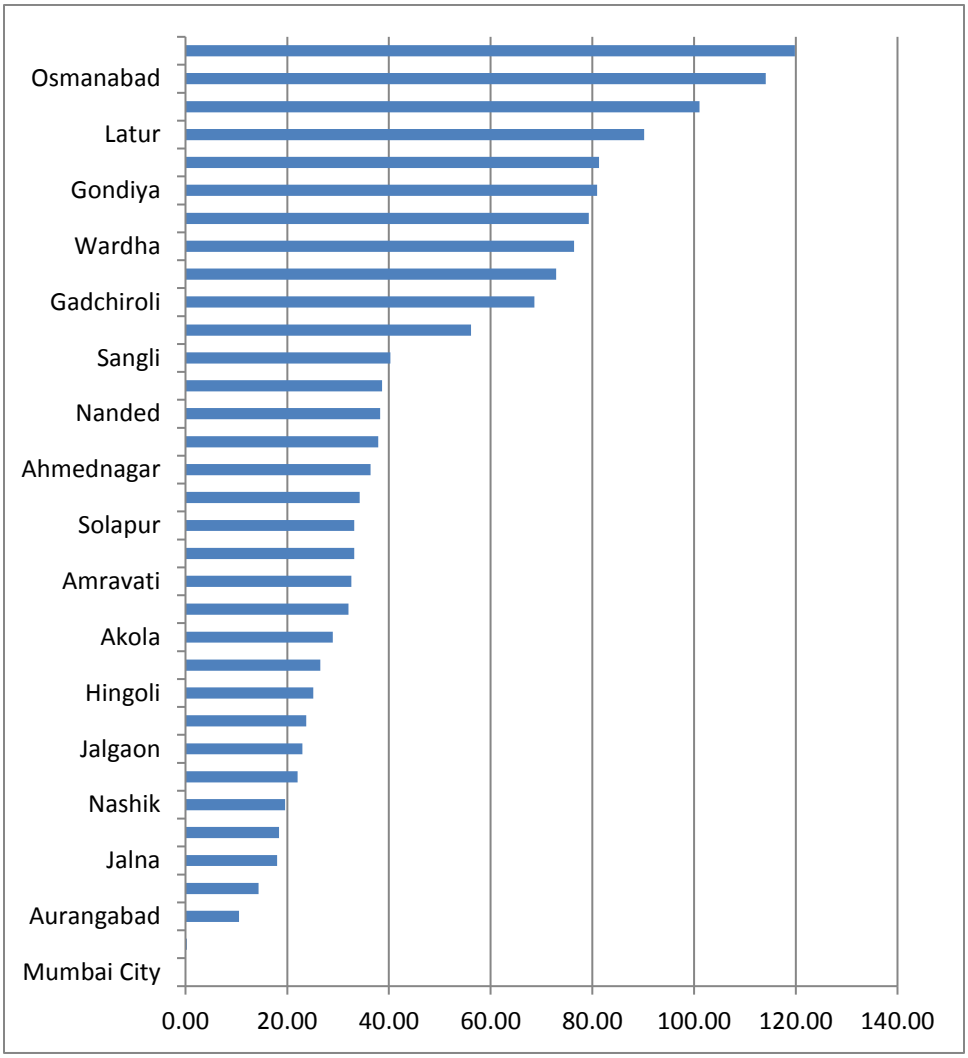
. Graph-7.1

Section- 5

- **Total expenditure on medical and public health per capita**

As we have seen before in Graph- 5.7 that Sindhudurg is the best performing district in Maharashtra where 99.3% Institutional deliveries occured and it gets Rs101.06 per capita as far as Medical and Public Health though Nandurbar is the most noticeably worst performing district where just 55% institutional deliveries happened and it gets just Rs37.90 per capita.

In terms of Antenatal checkups we have seen in graph-5.3 Pune is the best performing district where84.5% Mothers get atleast 4 antenatal visits and it gets Rs26.2 per capita Whereas Nandurbar which is the worst performing district where only 52.5% mothers get atleast antenatal visits and it gets Rs37.90 per capita.



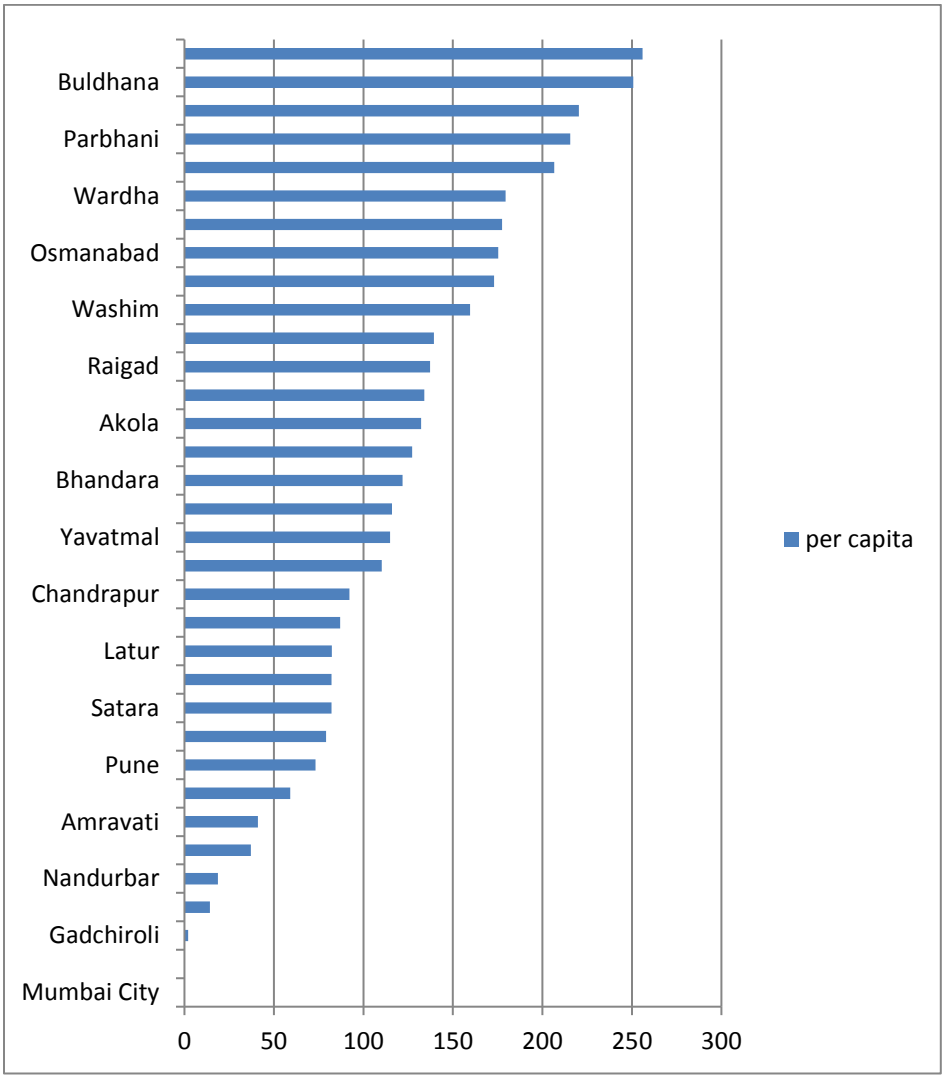
Graph-6.2

- Total expenditure on water supply and sanitation per capita

As we have discussed earlier that in water supply facility Mumbai city is the best performing city where 99.6% people get improved water supply and Jalna is the worst performing district where only 72.6% people get improved water supply and in terms of per capita expenditure it gets only Rs 220.3.

In sanitation facility Mumbai suburban is the best performing district where 99.2% people get improved sanitation facility whereas Nandurbar is the worst performing district where only 23.6% people gets improved sanitation facility and in terms of per capita expenditure on this district by government is Rs18.7 which is very low .

Per capita (in Rs)

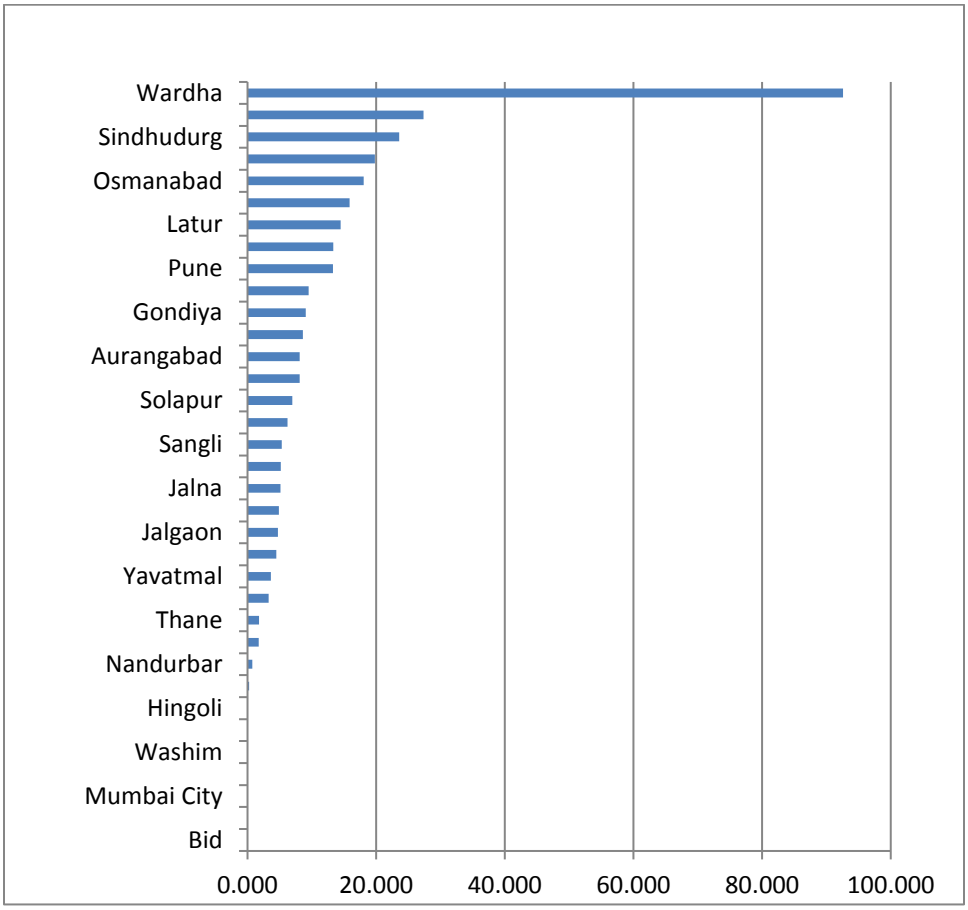


Graph-6.3

- Total expenditure on Nutrition

- According to the Graph-5.9 Nandurbar is the worst performing district where 47.6% children under five are stunted and it gets Rs0.77 per capita on Nutrition and Mumbai city is the best performing district in this indicator(Data on Nutrition Expenditure for Mumbai is not Available in Maharashtra budget sheet)
- Graph 5.10 revealed that Gadcholi is the worst performer in the indicator of children under 5 years who are severely wasted whereas Bhandara which is the best performer in this indicator receives Rs15.85 per capita for Nutrition.
- In graph-5.11 we saw that Gadcholi is the worst performer in the indicator of children under 5 years who are wasted whereas Bhandara which is the best performer in this indicator where only16.2% children under age 5 years are wasted receives Rs15.85 per capita for Nutrition.
- In graph-5.12 we saw that Nandurbar is the worst performer in the indicator of children under 5 years who are underweight receives Rs0.77per capita whereas Mumbai city which is the best performer in this indicator where only22.7% children under age 5 years are wasted receives Rs15.85 per capita for Nutrition.

Per capita (in Rs)



Graph-6.4

Discussion

Although Maharashtra ranks first in GSDP but its nutritional status is below national average. According to Robert E Black et al (2016). Under nutrition and disease burden both terms are related to each other. It is seen that those districts which are not performing good in nutritional indicators they also perform poor when it comes to maternal and child health. Districts like Nandurbar and Gadcholi where the nutritional indicators like stunting ,wasting, sever wasting and underweight are below average ,their maternal and child health indicators are also below average. Due to data gaps the government is unable to allocate the resources according to the recent evidences. Moreover unawareness, lack of education, ignorance, poverty also play a role in this.

Better performing districts attract more investments in program interventions in nutrition, health, and water and sanitation whereas the level of per-capita investments in the under-performing districts are significantly low and needs to attention.

There are short term as well as long term consequences . Short term consequences like mortality and long term consequences such as low reproductive performance, increased cardiovascular disease. Stunting i.e short stature of mother leads to complicated pregnancies. Lack of basic health services leads to increased disease burden and finally results in maternal and child under nutrition.

As the disease burden is increasing the healthcare cost is also increasing rapidly .
The main reason behind this is the scarcity of data or data gaps. The data gaps plays a significant role in maternal and child under nutrition as the government does not have sufficient data and reports which lead to ineffective intervention which results useless from government side as the schemes launched by the government are not effective on the targeted group of society. Data related to every determinant of nutrition needs to tracked to see their effectiveness.
Districts like Nandurbar and Gadcholi where the nutritional indicators like stunting,wasting, sever wasting and underweight are below average ,their maternal and child health indicators are also below average. Due to data gaps the government is unable to allocate the resources according to the recent evidences.

The dynamic pattern of all the three indicators of child under nutrition shows a decrease. The degree of decrease is higher in stunting (height for age) and wasting (weight for height). The decrease is higher in rural areas than urban in Maharashtra.

. The Rajmata Jijau Mother-Child Health and Nutrition Mission (RJMCNM) is in partnership with the UNICEF, and works with Maharashtra government's Women and Child Development department, and the Integrated Child Development Services (ICDS) program. Their aim is to

strengthen the ICDS and linking various administrative arms, give specialized direction and attempt distinctive models of advancement utilizing the child development center.

Rajmata Jijua mother –Child Health and Nutrition mission in minimizing under-nutrition among children under two years of age in Maharashtra between 2005-06 and 2012, this article shows that children suffering from under-nutrition, has declined significantly in the state in this period. This indicates that this decline can be related with the intercessions started through the Rajmata Jijau Mother-child health and Nutrition Mission, which was started in 2005, furthermore, this shows the important role a state can play in minimizing child under-nourishment in India.

Unintended pregnancies resulting in a live birth had fundamentally higher chances of low birth weight. The chances of low birth weight expanded by 51 percent and 31 percent for undesirable and unintended pregnancies. Those with undesirable pregnancies had 50 percent more chances of preterm birth. Districts like Wardha where78.2% are using any family planning method whereas Ratnagiri where 38.3% people are using any family planning.

Conclusion

Overall Maharashtra has made significant progress in reducing undernutrition in the state and improving its maternal and child health indicators along with other determinants of health and nutrition. A district level analysis of these indicators reveals the following:

a) Worse performing districts in terms nutritional indicators also perform poorly when it comes maternal and child health indicators and provision of basic amenities.
b) Although it is intuitive that better performing districts attract more investments in program interventions in nutrition, health, and water and sanitation, the level of per-capita investments in the under-performing districts are significantly low and needs to catch up.
c) Funding prioritization in investments by Maharashtra Government needs to be done according to the evidences from NFHS-4 outcome indicators data.

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