

# Child Health Care in Rajasthan: A Spatial Analysis(2015-16)

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**Abstract:** According to the World Health Organisation (WHO) globally, 30% of children under five are estimated to be stunted and 18% have low weight-for-height, and 43 million children are overweight. The health care system in India is universal. That being said, there is great discrepancy in the quality and coverage of medical treatment in India. Healthcare between states and rural and urban areas can be vastly different. In India, an estimated 24.7 millions of children are born every year. Nutritional level among the children is the basic element of their overall mental and physical development. Malnutrition among the children reduced significantly over the time, but still the number of malnourished children is very high in the country. As per Census 2011, the share of children (0-6 years) accounts 13% of the total population in the Country. According to NFHS-3 60% of children have been brought to a health care facility with diarrhoea, 69% have Acute respiratory infection and 71% have presented a high fever. Only 39% of children under five having diarrhoea during the time of the survey received some kind of oral rehydration therapy. More than one fourth of children with diarrhoea received no treatment at all.

**Keywords:-** Child health, Malnutrition, Immunization, Stunted children, Wasted children.

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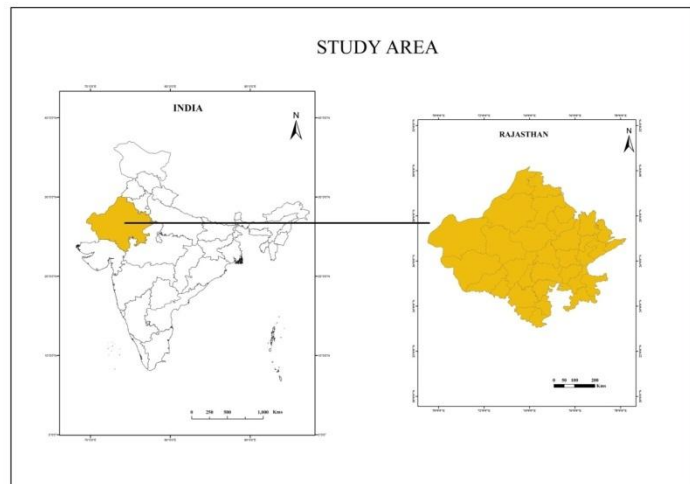
## INTRODUCTION

Child healthcare remain pervasive and damaging condition in low income and middle income countries. The healthy future of society depends on the children of today and their mother, who are guardians of the future. Definition of health according to world health organisation (WHO) - Health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity. In India 84% of all health care expenditure is out of pocket. This places a great number of families at risk of falling into poverty due to high health expenses. Millions of children are at risk of becoming malnourished. Every third child in India is malnourished. Infant and child mortality rates still remain very high. They are lowest among marginalised groups such as scheduled castes and tribes, and females.

Discrimination in food based schemes and in society in general leads to starvation deaths among women and children of the Scheduled Castes and Scheduled Tribes. Muslim children have the highest rate of stunting and second highest rate of being underweight. There are almost no services or programmes for children with mental health issues. Children with disabilities, HIV/AIDS and mental disorders are stigmatized and hence have little access to health facilities. In Rajasthan, which has a population about seven crore, escalating expenses on healthcare are burdening poor families. The state has been increasingly outsourcing healthcare services to private hospitals. Less than 2% of the state's GDP is allocated to healthcare services, this is grossly inadequate. The economic profile of Rajasthan is demonstrated, per capita income in Rajasthan is lower compare to the national average.

### STUDY AREA

Rajasthan is located in north western part of India. Geographical location of Rajasthan is between 23°03' to 30°12' north latitude and 69°30' to 78°17' east longitude. Established 26 January 1950 In, 2011 the total population of Rajasthan was 6,86,21,021 which is 5.67% of the country's population, Area 3,42,239 sq. Km, 10.41% of land area, Forest vegetation – 9.54% and Thar Desert: 70% of total landmass. The oldest chain of the mountains – The Aravali. Roads : 1,51,914 km. (8,798 km national highway). Administrative division, 33 districts and 289 blocks and total revenue village 44672 The total boundaries of Rajasthan with redcliffe line are 1070 km. It is found in four districts in Rajasthan. Shri Ganganagar, Bikaner, Jaisalmer, Barmer.



### OBJECTIVE

- To examine the spatial pattern of child health care in Rajasthan.

### Database and Research Methodology

The present study is based on the secondary source of data. Data has been collected from NFHS 4 report (2015 – 2016). The data is processed with the help of simple statistical

technique and has been displayed by maps prepared in MS excel and GIS software Arc 10.0. Composite Index is based on WHO formulas as mention below ;

- **Formulas according to WHO :-**

$$\text{Positive Indicator} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

### **POSITIVE INDICATORS**

1. Fully immunized children
2. Children received BCG
3. Children received 3 doses of polio vaccine
4. Children received 3 doses of DPT vaccine.
5. Children received measles vaccine.
6. Children received 3 doses of hepatitis B vaccine.
7. Children received a vitamin A dose in last 6 months.
8. Children with diarrhoea received ORS.
9. Children with diarrhoea received zinc.
10. Children with diarrhoea taken to a health facility.
11. Children with fever taken to a health facility.
12. Children received adequate diet.

### **NEGATIVE INDICATORS**

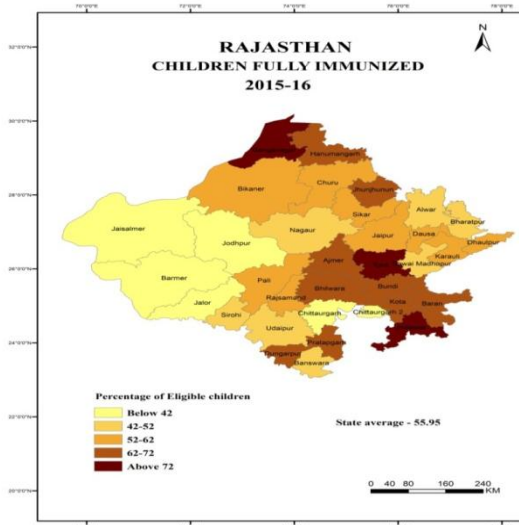
1. Prevalence of diarrhoea.
2. Prevalence of symptoms of Acute Respiratory Infection (ARI).
3. Stunted children.
4. Wasted children.
5. Several wasted children.
6. Underweighted children.

### **RESULT AND DISSCUTION**

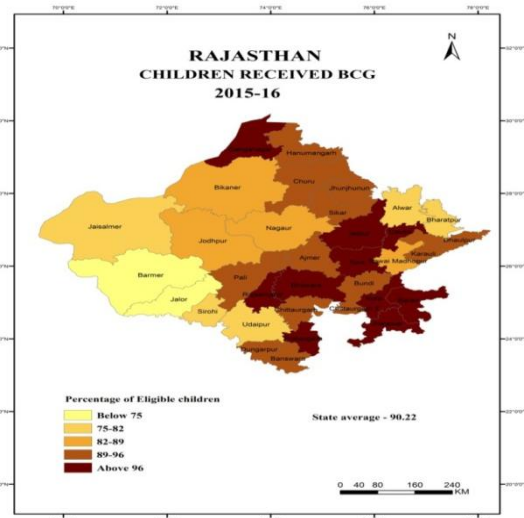
#### **Distribution of full immunised and received BCG children**

$$\text{Negative Indicator} = \frac{\text{Minimum value} - \text{Actual value}}{\text{Maximum value} - \text{Minimum value}}$$

The figure 1 (a) shows that the area of fully immunized children is very highest in Shri Ganganagar , Tonk and Jhalawar. And very low in western part of Rajasthan. This map show moderate immunised children in central part of Rajasthan. And state average is 55.95%.



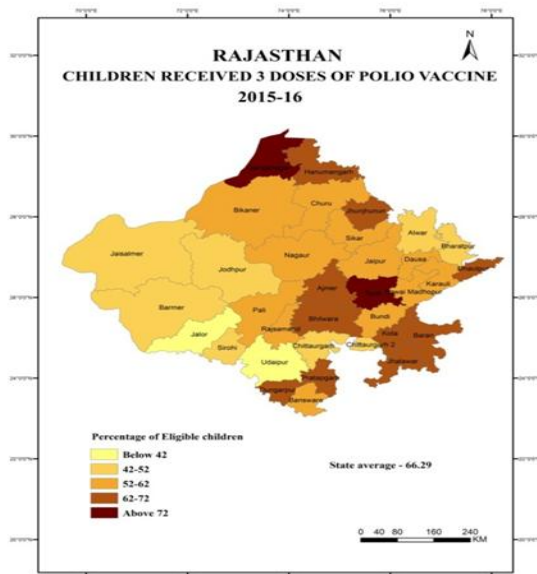
**Fig 1 (a)**



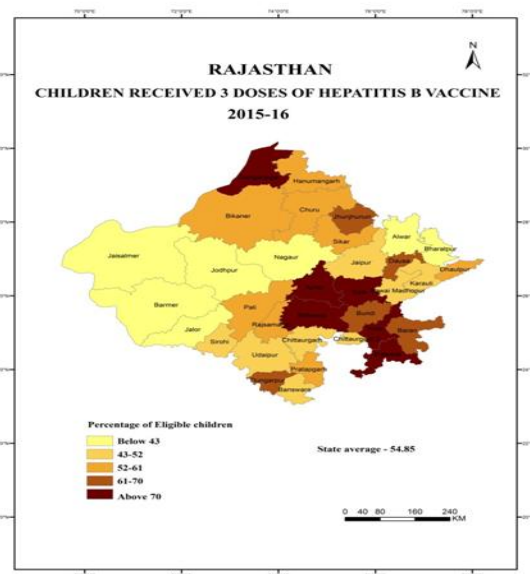
**Fig. 1(b)**

And the figure 1(b) shows that the area of children received BCG in age group 12- 23 months. Children received BCG is highest in Shri Ganganagar and south eastern part of Rajasthan, and high BCG received children in north and some middle part of Rajasthan. BCG received children is very low in Barmer and Jalor. And moderate BCG received children in middle western part of Rajasthan. The state average of BCG received children is 90.22%.

**Distribution of children received 3 doses of polio and 3 doses of DPT vaccine**



**Fig 2 (a)**



**Fig. 2(b)**

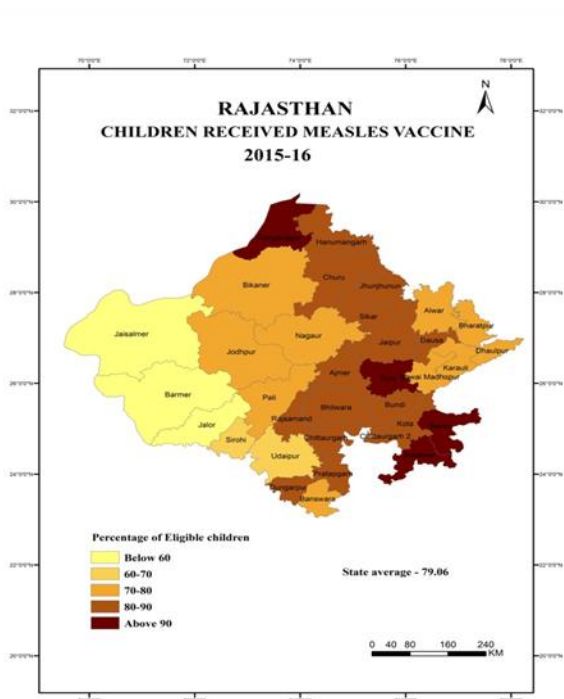
According to the Fig.2(a) shows that the children received 3 doses of polio vaccine is highest in Shri Ganganagar and Tonk, And lowest in Jalor and Udaipur. In middle part of Rajasthan children received 3 doses of polio vaccine is moderate. The state average of 3 doses of polio vaccine is 66.29%.

This figure 2(b) shows that the children received 3 doses of DPT vaccine is highest in Shri Ganganagar, Tonk, Bhilwara, and lowest in western part of Rajasthan. Children received 3 doses of DPT vaccine is moderate in middle part of Rajasthan, the state average of it is 72.16%.

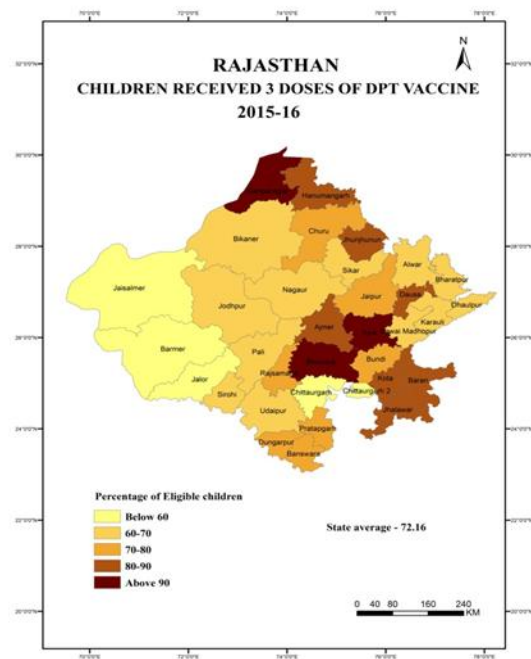
**Distribution of children received measles and 3 doses of hepatitis B vaccine**

The fig3(a) shows that the children received measles vaccine is highest in Shri Ganganagar, Tonk, Baran and Jhalawar, lowest in western part of Rajasthan. High is north to south eastern part of Rajasthan. Children received measles vaccine is moderate in middle western part of Rajasthan. The state average of measles vaccine is 77.96%.

The figure 3(b) shows that the children received of 3 doses of hepatitis B vaccine is highest in Shri Ganganagar and south western part of Rajasthan. And lowest in western part of Rajasthan. Northern part of Rajasthan children received 3 doses of hepatitis B vaccine is high. The state average of children received 3 doses of hepatitis B vaccine is 54.85%.



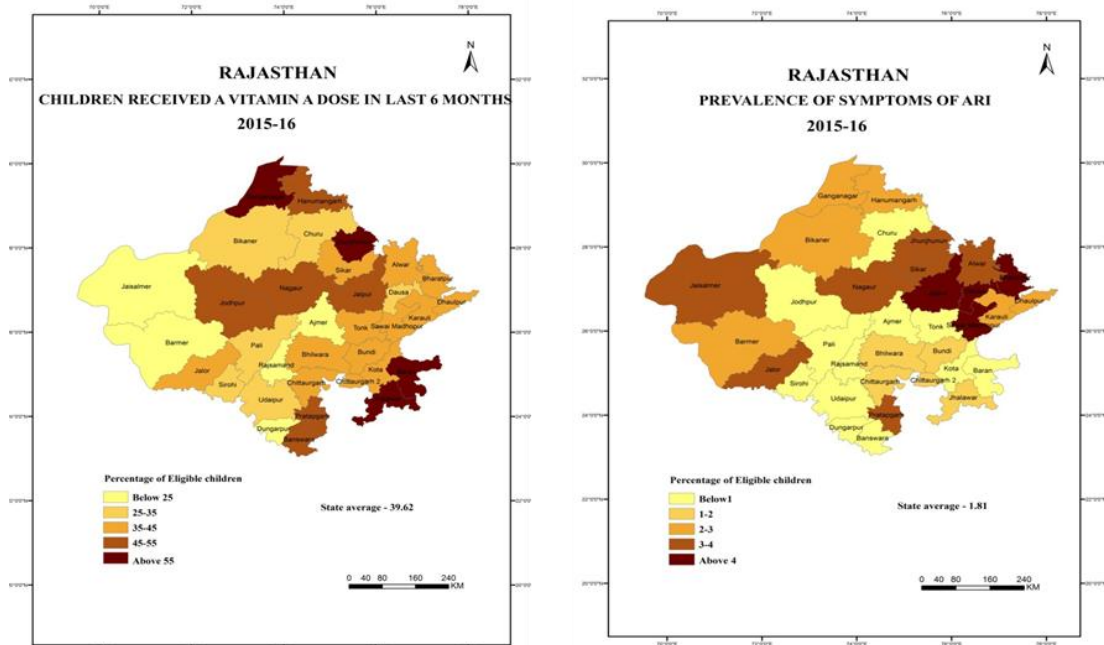
**Fig 3 (a)**



**Fig. 3 (b)**

**Distribution of children received A vitamin dose in last 6 months and prevalence symptoms of ARI**

the fig. 4 (a) shows that children received A vitamin a dose in last 6 months is very



**Fig 4 (a)**

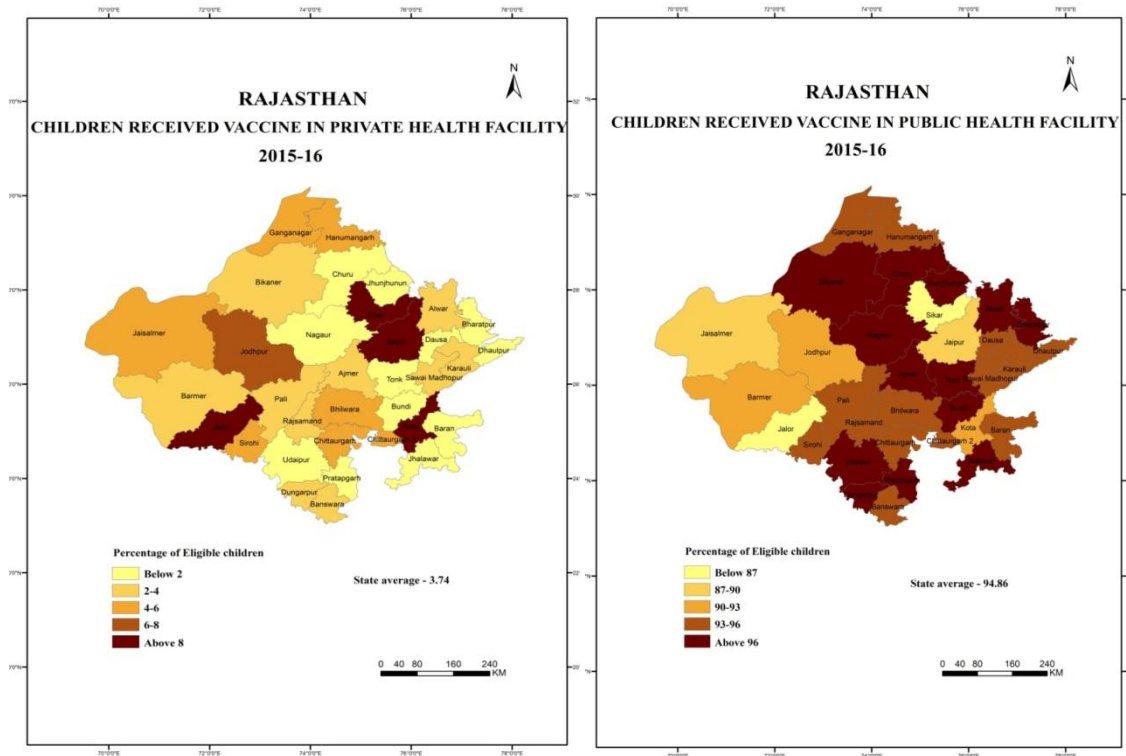
**Fig. 4(b)**

high in Shri Ganganagar, Jhunjhunun, Baran and Jhalawar. Lowest in western part of Rajasthan. And moderate in eastern part of Rajasthan. Children received A vitamin a dose is high in middle part of Rajasthan. The state average is 39.62% which is very low.

The Figure 4 (b) shows that the prevalence of acute respiratory infection is very high in eastern part of Rajasthan. And lowest in middle part of Rajasthan. Prevalence of symptoms of ARI is high in Jaiselmer Jalor and north eastern part of Rajasthan. It is moderate in north part of Rajasthan And Barmer Karauli, Dhaulpur also. State average is 1.81%.

**Distribution of children received vaccine in public and private health facility**

The figure 5(a) shows that children received vaccine in public health facility is very high in middle north part of Rajasthan. and low in Jalor and Sikar. It is high in some north part and some south part of Rajadsthan. It is moderate in Barmer Jodhpur and Kota. the state



average is 94.86%.

**Fig 5 (a)**

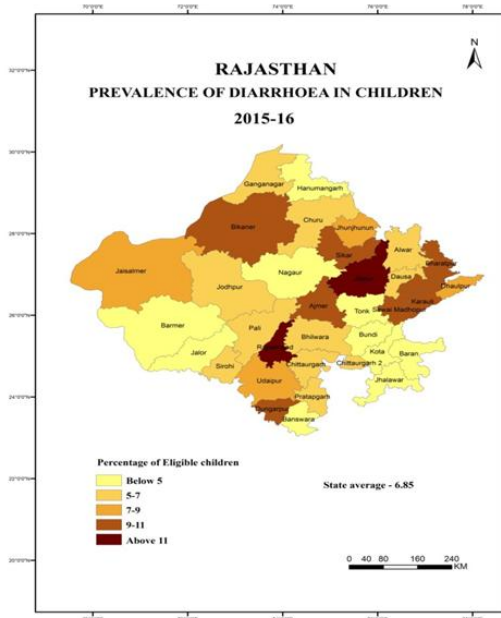
**Fig. 5(b)**

The figure 5(b) shows that children received vaccine in private health facility is very high in Sikar Jaipur, Jalor and Kota. It is very low in north to south belt of Rajasthan. It is moderate in Shri Ganganagar, Hanumangarh, Jaisalmer, Bhilwara, and Chittaurgarh. It is high in Jodhpur. And the state average is 3.74%.

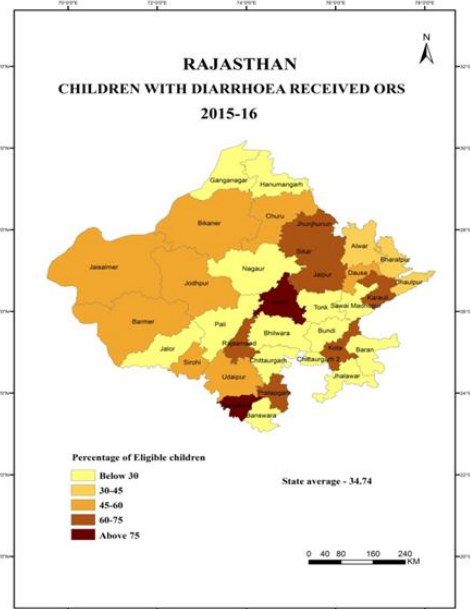
**Distribution of prevalence of diarrhoea in children and diarrhoea received ORS**

The figure 6 (a) shows that Prevalence of diarrhoea in children is very high in Jaipur and Rajsamand. Prevalence of diarrhoea is very low Nagaur, Barmer, Jalor Banswara and eastern part of Rajasthan. Prevalence of diarrhoea is moderate in Jaisalmer Jhunjhunun and Udaipur. The state average is 6.85%.

The figure 6 (b) shows that children with diarrhoea received ORS is very high in Dungarpur and Ajmer. ORS received children is moderate in western part of Rajasthan. And lowest in middle and south eastern part of Rajasthan. It is high in Jaipur, Sikar , Jhunjhunun, Rajsamand, Partapgarh Kota and Krauli. The state average is 34.74%.



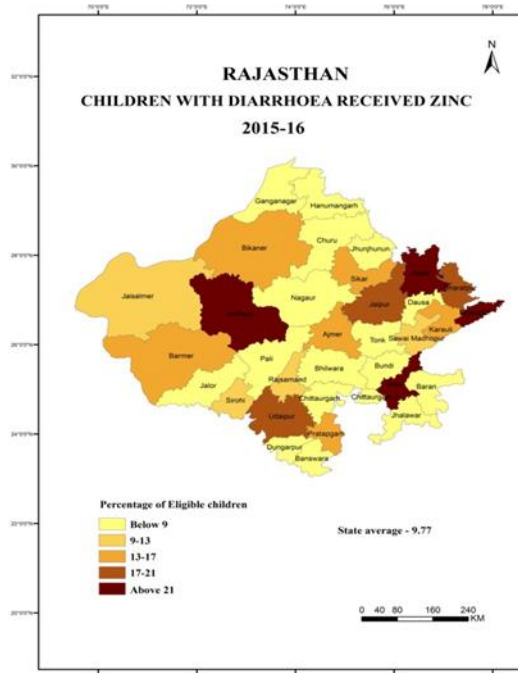
**Fig 6 (a)**



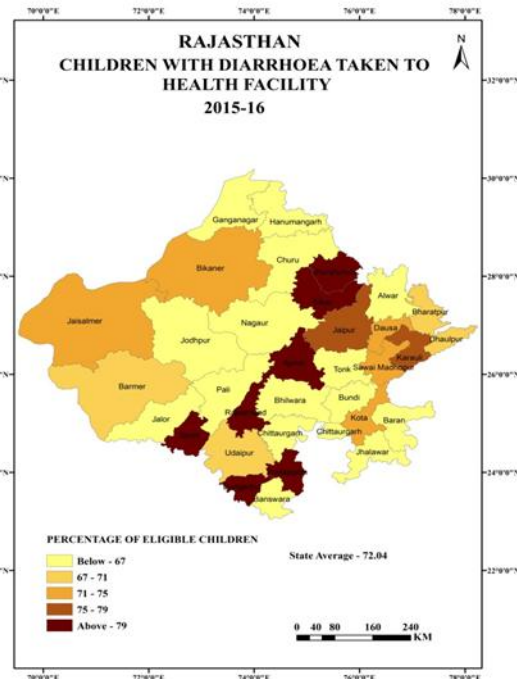
**Fig. 6(b)**

**Distribution of children with diarrhoea received zinc and taken to health facility**

The fig. 7 (a) shows that children with diarrhoea received zinc is very high in Jodhpur, Alwer, Dhaulpur, Kota. It is very low in middle and south eastern part of Rajasthan.



**Fig 7 (a)**



**Fig. 7 (b)**

It is moderate in Barmer, Ajmer, Sikar, Bikaner, Karauli and Pratapgarh. Children with diarrhoea received zink is high in bharatpur Udaipur and Jaipur. The state average is 9.77%.



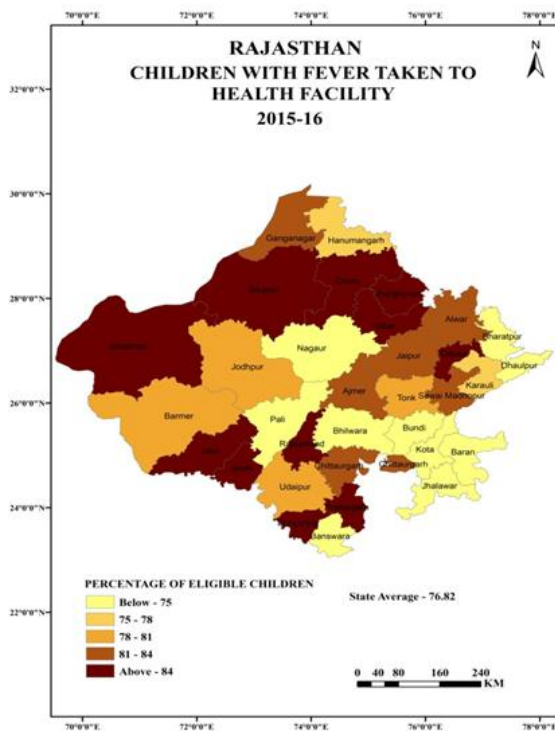
The figure 7 (b) shows that children with diarrhoea taken to health facility is very high in Jhunjhunun, Sikar, Rajsamand, Ajmer, Sirohi, Pratapgarh. It is very low in middle part of Rajasthan. And moderate in Bikaner, Jaiselmer, Dausa, Swai Madhopur, Kota and high in Jaipur and Kauroli.

The state average is 72.04%.

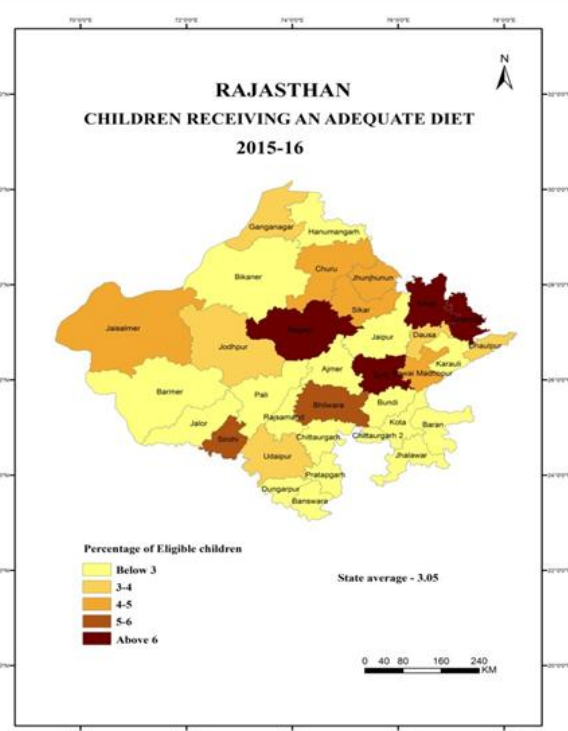
**Distribution of children with fever taken to health facility and received an adequate diet**

The figure 8 (a) shows that children with fever taken to health facility is very high in some north western part of Rajasthan and Jalor, Sirohi, Dausa, Rajsamand, Dungarpur, Pratapgarh also. And lowest in some middle part of Rajasthan. It is high in Alwar, Jaipur, Ajmer, Swai Madhopur and Chittaurgarh. State average is 76.82%.

The figure 8 (b) shows that children received an adequate diet is very high in Nagaur, Tonk, Alwer and Bhratpur, lowest in middle and west south eastern part of Rajasthan. Children received an adequate diet is moderate in Sikar, Churu, Jhunjhunun, Jaiselmer, and Swai Madhopur. State average of adequate diet is 3.05%. It is very low.



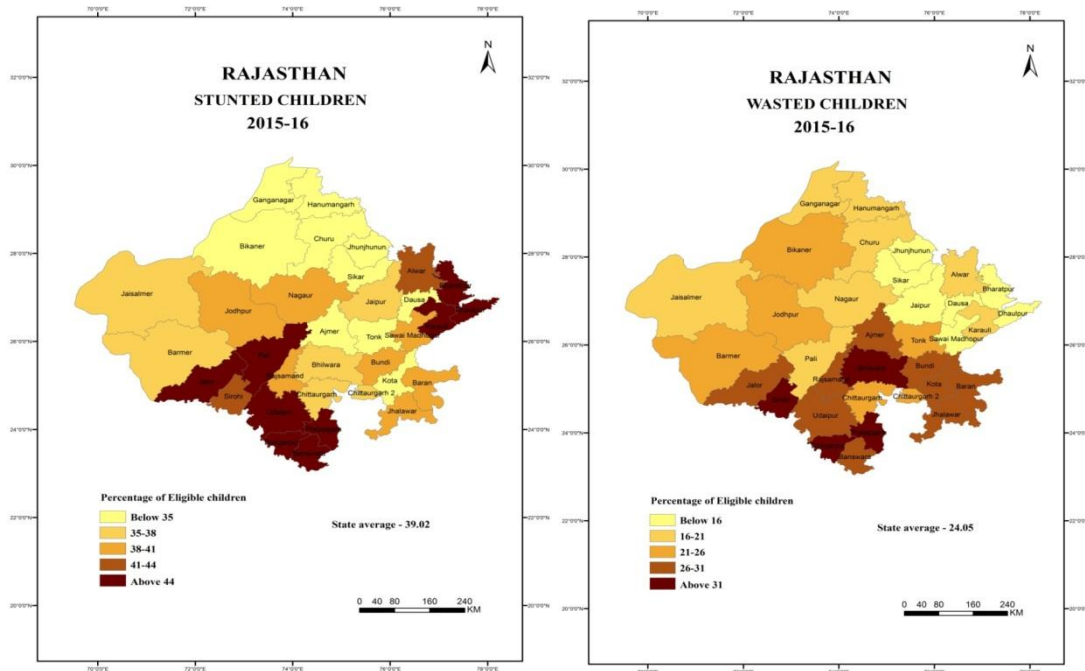
**Fig 8 (a)**



**Fig. 8 (b)**

**Distribution of stunted children and wasted children**

The figure 9 (a) shows that stunted children is very high in south eastern part of Rajasthan. Stunted children is moderate in middle part of Rajasthan. It is very low in northern part of Rajasthan. Stunted children is high in Alwar and Sirohi. Low stunted children in Jaisalmer, Barmer, Jaipur, Bhilwara, and Chittaurgarh. The state average is 39.02%.



**Fig 9 (a)**

**Fig. 9 (b)**

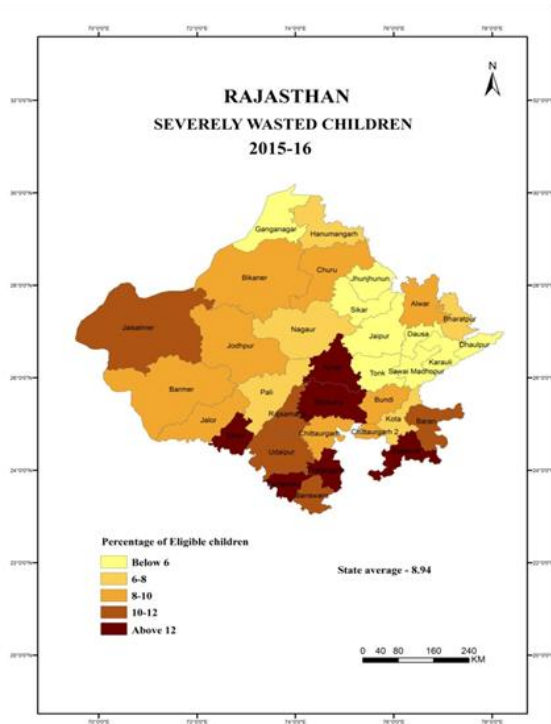
The figure 9 (b) shows that wasted children is very high in Sirohi, Dungarpur, Bhilwara, and Pratapgarh, and high in southern part of Rajasthan. Wasted children is lowest in eastern part of Rajasthan. It is moderate in western part of Rajasthan. The state average is 24.05%.

**Distribution of severely wasted children and underweighted children**

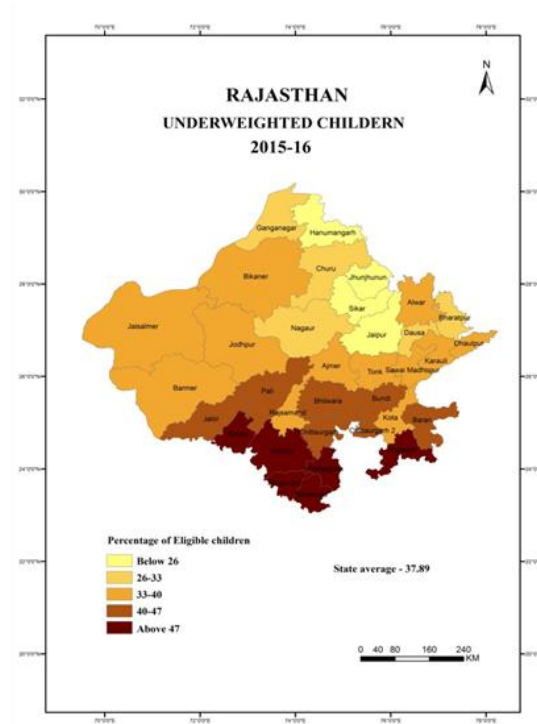
The figure 10 (a) shows that severely wasted children is very high in Sirohi, Ajmer, Dungarpur, Pratapgarh, and Jhalawar. Severely wasted children is very low in eastern part of Rajasthan, and moderate in western and northern part of Rajasthan. The state average is 8.94%.

The figure 10 (b) shows that underweighted children is very high in southern part of Rajasthan, and lowest in Jhunjhunun, Sikar, Jaipur and Hanumangarh. Underweighted

children is moderate in western part of Rajasthan. It is high in Jalor, Pali, Bhilwara, Bundi, Baran and Chittaurgarh. The state average of underweighted children is 37.89%.



**Fig 10 (a)**



**Fig. 10 (b)**

**CONCLUSION:-**

In western part of Rajasthan all type of healthcare facility is in very nasty state. Fully immunized children is very low in western part and children who received measles vaccine, DPT vaccine and hepatitis B vaccine is also very low in western part of Rajasthan. Stunted children is highest in southern part of Rajasthan and lowest in eastern part of Rajasthan. Its not good indicator for health of children. Underweighted children are highest in tribal region of Rajasthan. Due to lack of awareness about health and lack of health infrastructure facility like that problems created.

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