Usmani and Ahmad, J Perioper Crit Intensive Care Nurs 2017, 3:1
DOI: 10.4172/2471-9870.10000138

Journal of Perioperative & Critical Intensive Care Nursing

Review Article OMICS International

Health Status of Children in India

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Abstract

India with a population of 1.21 billion population stand at the second position as the most populous country in the world after China. India comprises almost 13.1 per cent of child population aged 0-6 years. Children of today are tomorrow's citizens; hence it is very necessary to provide better health care facilities to them. India accounted almost 43 per cent underweight children against 32 percent in Pakistan, 9 percent in South Africa. 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. Malnutrition and mortality among children are the two faces of a single coin. Mortality among infants and under-5 children is also a major concern. In India the number of under-5 mortality rate and infant mortality rates are 49 and 42, respectively. Thus there is a need, to be more focused on the child health issues. The main objective of this paper is to study the child health condition in terms of nutrition and survival rate. The study is based on the secondary data from various published reports of the government of India.

Keywords: Child health; Malnutrition; Vaccination; Immunization; Infant mortality rate; Child mortality rate; Under-5 mortality rate

Introduction

India, with 1.21 billion of population is the world's second most populous country after China. An estimated 26 millions of children are born every year. It is alarming that with an absolute increase in population of about 181 million in the population during the census 2001 and 2011, there is a reduction of 5.05 million in the child population aged 0-6 years during the same period. According to 2011 census, the total number of children aged 0-6 years is 158.79 million which is reduced by 3.1 percent compared to the child population in 2001 census. According to the data available the share of children of the age group 0-6 years to the total population is 13.1 percent in 2011.

Children of today are tomorrow's citizen, thus it is extremely important to ensure good health for children. Child health plays a vital role in the development of a country. The first six years of life constitutes the most crucial span in life. At this stage if life, the foundation are laid for mental, physical and social development. Children are the assets for tomorrow's productivity. The growth of any country is depending on the availability of healthy human resource. As children represent the future generation, thus makes them healthy is of crucial importance. Healthy children ensure for healthy adult who in turn ensure a sound growth and development of the economy. New-borns particularly infant and under-five children are more vulnerable to malnutrition, mortality and other diseases, which can be easily prevented or treated.

India is listed in the countries where malnutrition and child mortality is alarmingly high. According to the data released by the Office of the Registrar General of India, indicate that although the mortality rate especially infant and under-five mortality rate is declining over the years, yet there are some states where these rates are very high. This shows that instead the progress in health care sector in India, young population especially in the age group 0-6 years continuously lost their lives due to inadequate nutrition and proper care. The mortality rates and nutritional status of the children reflects the threats in child health. Despite various measures and programmes to control the malnutrition and mortality among children the condition remains a cause of serious concern that need to be addressed urgently. The latest survey on children brought out by the ministry of Women and Child Development titled "Rapid Survey on Children - 2013-2014" [1] shows the deprived condition of children in the country.

The present paper made an attempt to study the child health issues related to the nutrition and survival. Nutrition is the basic element of healthy life. Adequate nutrition is very essential in the early stages of life. Nutrition helps in the growth and development of body. Indian has the largest food supplementation programme in the world. Although country experiences rapid economic growth and easy access to affordable food and food supplementation programmes for children, yet there are nearly half the under-five children are underweight. Another important concern of the paper is child mortality. Despite progress in health sector, India has very high child mortality rates. The child mortality rates reflect the threats in child health. Malnutrition is the major cause of mortality among children.

The study is based on the secondary data collected from various government reports such as NFHS reports, World Health Organization, Rapid Survey on Children report [1], Sample Registration System Survey reports, etc.

International Comparison of Child Health

Internationally child health has approved as the most important indicator for the development of the world. In every country the respective governments have made every possible effort to tackle down the prevalence of underweight children. Underweight percentage reflects the percentage of malnutrition. According to the World Health Organization (WHO) [2], 43 percent of Indian children are underweight. Figure 1 shows the underweight children in the developing countries. From the figure it is cleared that India is far behind in the health status of children comparatively to other neighboring countries. Among these countries India (43%) has the highest percentage of underweight children. The percentage of underweight children in China is 4 percent, Brazil (2%), South Africa (9%). The percentage of underweight

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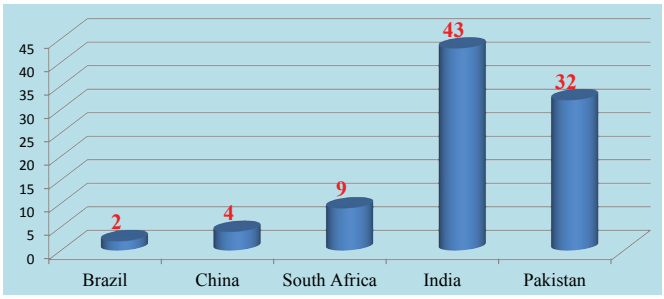
Received March 15, 2017; **Accepted** March 23, 2017; **Published** March 30, 2017

Citation: Usmani G, Ahmad N (2017) Health Status of Children in India. 3: 138. doi:10.4172/2471-9870.10000138



Source: World Health Organization [2]

Figure 1: Underweight children in the developing countries (%).

children in Pakistan is also very low comparatively to India. Pakistan has only 32 percent of underweight children. The health condition of children is worst in India comparatively to other developing countries. Though Country experience higher economic growth but stands far behind in terms of underweight children in the world comparatively to other developing countries. Data from the Rapid Survey on Children (RSoC) reported that 29.4 percent Children was underweight in 2013-2014 (Annexure 2). Stunted children are also reported as high as 38.7 percent in India in 2013-14 (Table 1).

According to former Vice President of India, Hamid Ansari: "it seems the state you are born in determines how long you live". Table 2 presents the extent of malnutrition in India and major states. Child malnutrition measures are based on weight-for-age, height-for-age and weight-for-height. Each of these measures gives somewhat different percentage of nutritional level of children. The weight-for-height index measures body weight in relation to body height, case of acute malnutrition. Height-for-age index measures growth retardation (stunting) among children, case of chronic malnutrition. Weight-for-age index reflects both the case of chronic and acute malnutrition. Nutrition plays a central role in human well-being. Nutrition acts both as an essential element of and a vital input to other aspects of well-being and development. On the other side, under-nutrition represents a deprivation of basic aspects of well-being.

The implications that child malnutrition have for growth and development are multiple and cumulative. About 38.7 percent of children were stunted, 15.1 percent were wasted and 29.4 percent of children were underweight in India in 2013-14 (RSoC 2013-14). Among the states, Uttar Pradesh (50.4) has the highest percentage of stunted children followed by Bihar (49.4), Gujarat (41.6), Madhya Pradesh (41.5) and Assam (40.6). The states of Kerala and Tamil Nadu have the lowest percentage of stunted children. Kerala has only 19.4 percent and Tamil Nadu has 23.3 percent of stunted children. The percentage of wasted and underweight children for India is 15.1 percent and 29.4 percent, respectively. The numbers of malnourished children are quite high in the country. In terms of wasted and underweight children, the highest percentage of wasted children is in the states of Tamil Nadu (19) followed by Gujarat (18.7), Bihar (13.1), Karnataka (17), Kerala (15.5), Madhya Pradesh (17.5), Maharashtra (18.6) and Odisha (18.3). The lowest number of under-weight children is in the states of Punjab (8.7) followed by Haryana (8.8) and Uttar Pradesh (10). On the contrary, underweight children are quite high in the country and in states. The states of Bihar and Madhya Pradesh have the highest number of underweight children among the major states in the country. Bihar (37.1) has the highest number of underweight children followed by Madhya Pradesh (36.1), Uttar Pradesh (34.3) and Gujarat (33.6). The lowest number of underweight children is in the states of Punjab (16) and Kerala (18.5).

Table 2 presents the percentage change of nutritional status in children in the country over the time. In the NFHS -2 survey 51 percent of children are stunted in the country which gradually down to 45 percent in NFHS-3 round. Between these two rounds of NFHS, the percentage change in the percentage of stunted children is only -0.12 percent. The most recent survey "Rapid Survey on Children" (RSoC) conducted by the ministry of Women and Child Development reported that in the country, the percentage of stunted children down to 38.7 percent in 2013-2014 from 45 percent in 2005-2006. The percentage decline stunted children between NFHS-2 and the RSoC is -0.24.

During NFHS-2 [3], the percentage of wasted children in India is 20 percent. The number of wasted children increased to 23 percent in NFHS-3 [4]. The percentage increase between these two rounds of National Family Health Survey (NFHS) is 0.15 percent [5]. The percentage of wasted children in India further declined to 15.1 percent in 2013-2014. Between NFHS-2 and RSoC the percentage declined in wasted children is -0.25 percent. Country seems highest percentage decline in the underweight children. The percentage declined over the period between NFHS-2 and RSoC in underweight children is -0.32. The percentage of underweight children is 43 percent in the country during NFHS-2. The number reduced to 40 percent in NFHS-3. During these two rounds the percentage declined is -0.070. Trends from NFHS-2 to RSoC show an overall significant declined in stunted, wasted and underweight children in the country.

Table 3 presents the huge social disparities in the extent of child malnutrition. There is a large gap between the social groups in India in terms of child malnutrition. While India has 38.7 per cent and 29.4 per cent of children suffer from stunted growth and underweight. Nearly 42.4 per cent and 32.7 percent of children from schedule caste (SC) suffer from stunted and underweight, respectively. The percentage of stunted and underweight children from SC groups is more than the national level. The level of nutrition among children improves with the social status.

Almost 38.9 per cent and 29.6 per cent of Children from Other Backward Classes (OBCs) suffer from growth retardation (Stunted) and low body weight (underweight) respectively. The percentage of wasted children among the social groups is high Schedule Tribe (18.7), the percentage of wasted children reduce with the social status. Schedule caste and Other Backward Class have only 15.5 percent and 14.8 percent of wasted children. Government has to implement some more effective programmes mainly focusing on the socially backward group of the country to reduce the extent of malnutrition.

Nutrition and health care both are very crucial in the early stages of life. Nutrition acts both as an essential element on the one hand and increased the rate of child survival on the other hand. Healthcare is also very necessary for the growth and development of children. Lack of adequate nutrition increased the risk of mortality.

Child mortality is very sensitive indicator for the socio-economic development of the country. Infant Mortality Rate (IMR) and Under-5 Mortality Rate (U5MR) are the most important component of child mortality. Infant Mortality Rate is the probability of dying of child within the first year of his life per thousand live births while U5MR is an indicator of the risk of death of child within the first five years of life. U5MR is also a global indicator of health and used to assess the impact of various interventions at improving the child health and survival.

States	Stunted	Severely Stunted	Wasted	Severely Wasted	Underweight	Severely Underweight
AP	35.4	12.0	19.0	6.0	22.3	4.7
ASM	40.6	21.0	9.7	2.7	22.2	7.0
BR	49.4	26.1	13.1	3.9	37.1	14.7
GUJ	41.6	18.3	18.7	6.7	33.6	10.1
HAR	36.5	19.3	8.8	2.7	22.7	7.5
Kar	34.2	15.1	17.0	6.3	28.9	9.8
KER	19.4	8.0	15.5	5.4	18.5	5.7
MP	41.5	18.5	17.5	5.4	36.1	12.0
MAH	35.4	10.0	18.6	6.3	25.2	5.7
ORS	38.2	15.5	18.3	4.9	34.4	11.0
PUJ	30.5	13.1	8.7	3.2	16.0	4.3
RAJ	36.4	17.3	14.1	2.9	31.5	11.2
TN	23.3	9.3	19.0	6.3	23.3	6.1
UP	50.4	28.4	10.0	2.9	34.3	12.9
WB	34.7	12.8	15.3	3.9	30.0	8.9
INDIA	**38.7**	**17.3**	**15.1**	**4.6**	**29.4**	**9.4**

Table 1: Extent of malnutrition among children, age 0-59 months in major states (in percentage).

Malnutrition	NFHS-2	NFHS-3	RSoC 2013-14	% Change*-**	% Change *-***
Stunted	51	45	38.7	-0.12	-0.24
Wasted	20	23	15.1	0.15	-0.25
Underweight	43	40	29.4	-0.070	-0.32

*- NFHS-2; **-NFHS-3; ***- RSoC 2013-2014 [1,3,4]

Table 2: Percentage change in nutritional status of children in India.

	SC	ST	OBC	INDIA
Stunted	42.4	42.3	38.9	**38.7**
Severely Stunted	19.3	19.5	17.8	**17.3**
Wasted	15.5	18.7	14.8	**15.1**
Severely Wasted	4.9	5.3	4.4	**4.6**
Underweight	32.7	36.7	29.6	**29.4**
Severely Underweight	10.8	13	9.3	**9.4**

Source: Rapid survey on children, 2013-2014 [1]

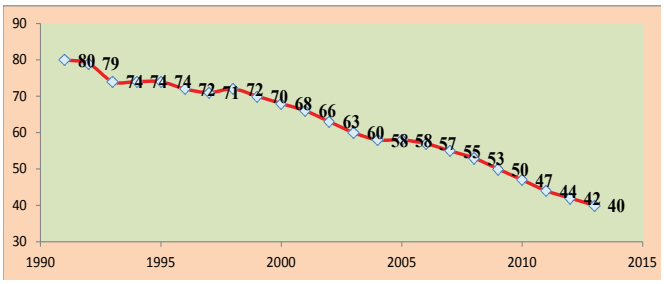
Table 3: Nutritional status of children by social category (percentage).

Infant Mortality Rate (IMR)

Infants are the most sensitive and vulnerable section of the population. Infants show a higher rate of mortality among all other indicators of child survival. Neo-natal Mortality (NNM) and post-natal Mortality (PNM) are the components of IMR. NNM and PNM have a lower rate because most of these deaths often biological in nature especially. All these constituents of IMR are expressed at per 1000 live births. Infant mortality is defines as the number of deaths in the first year of child's life per thousand live births in the given year. Though at the all India level IMR has declined continuously since after the reform, yet it was as high as 40 per thousand live birth in 2013 [6].

Figure 2 show the trends in infant mortality rate since 1990 in India. From 80 in 1991 IMR has come down 66 in 2001. It was recorded at 58 in 2005 from 66 in 2001. It was seen that the number of infant deaths declined almost at a constant rate but after the launch of NRHM (2005) the percentage growth of declining infant mortality is somewhat constant but more than before the introduction of NRHM. From 80 per 1000 live births in 1990 IMR has reduced to 40 per thousand live births in 2013 (SRS).

Table 4 presented the infant mortality rate in India and her major states. The rate of reduction in infant mortality rate calculated by the compound annual growth rate (CAGR) is -0.03 percent at the national



Source: Sample registration system, office of the registrar general of India, 1991-2013 [6]

Figure 2: Infant mortality rate in India, 1990-2013.

level. Among the states, India is experiencing a big diversity in the rate of infant mortality. The states like Madhya Pradesh (54) and Assam (54) have the highest number of infant deaths in the country. The states of Uttar Pradesh (50), Rajasthan (47), Bihar (42), Haryana (41) Andhra Pradesh (39), have IMR above the national average (40) per thousand live births in 2013. Kerala (12) has the least number of IMR followed by Tamil Nadu (21) in 2013 (SRS).

The highest compound annual rate of decline in IMR is found in the states of Tamil Nadu. From 76 per 1000 live births in 1987 it comes

down to 21 per thousand live births in 2013 and shows a CAGR of -0.05 percent, followed by the states of Maharashtra and Gujarat both have a CAGR of -0.04 percent, respectively. The lowest reduction is found in the states of Assam. In 1987 Assam has 102 IMR; it falls to 54 per thousand live births in 2013. Assam has -0.02 percent compound annual growth rate (CAGR) which is lowest among all the major states in the study. It is well known fact that mother's education, higher birth interval, higher maternal age at birth, ante-natal care, breast feeding and access to proper medical care play a vital role in determining the child survival rate especially infants [7].

Table 5 presents a picture of disparity in infant's deaths at rural-urban level. There is a gap of 18 points at all India level. Though it has improved between 2005 and 2012 by 6 points, but still the gap is very large. In 2005 rural areas IMR was recorded at 64 per thousand live births while in urban areas it was only 40 percent per thousand live births. It shows a gap of 24 points in 2005. Moreover this gap is very large at state level. In some states there have been significant improvements in the infant's survival rate in 2005-2012. The rate of fall in infant's deaths calculated by compound annual growth rate is higher in urban areas (-0.044%) comparatively to rural areas (-0.040%). As the world development report 2004 finding presented that if the health services, delivered well, will improve health outcomes for even the poorest groups. In 2012, rural IMR was 46 percent per thousand live births against the 28 percent urban IMR. The causal factor of this gap is that the urban women have better education facilities, healthcare facilities, easily accessible healthcare centres, etc.

States	1987	1991	2001	2011	2012	2013	CAGR %
AP	79	73	66	46	43	39	-1.975
ASM	102	81	74	58	55	54	-1.972
BR	101	69	62	48	44	42	-1.980
GUJ	97	69	60	44	41	36	-1.983
HAR	87	68	66	48	44	41	-1.977
KAR	75	77	58	38	35	31	-1.980
KER	28	16	11	13	12	12	-1.979
MP	120	117	86	62	59	54	-1.978
MAH	66	60	45	28	25	24	-1.983
ORS	126	124	91	61	57	51	-1.981
PUJ	62	53	52	34	30	26	-1.980
RAJ	102	79	80	55	52	47	-1.977
TN	76	57	49	24	22	21	-1.988
UP	127	97	83	61	57	50	-1.982
WB	71	71	51	31	32	31	-1.979
INDIA	**95**	**80**	**66**	**47**	**44**	**40**	-1.980

Source: Sample registration system, office of the registrar general of India, CAGR is taken from Annexure 1 [6]

Table 4: Infant mortality rate in India since 1987 to 2013.

States	Rural		CAGR %	urban		CAGR %
	2005	2012		2005	2012	
Andhra Pradesh	63	46	-1.83	39	30	-1.81
Assam	71	58	-1.78	39	33	-1.77
Bihar	62	44	-1.84	47	34	-1.83
Gujarat	63	45	-1.84	37	24	-1.86
Haryana	64	46	-1.83	45	33	-1.83
Karnataka	54	36	-1.85	39	25	-1.86
Kerala	15	13	-1.75	12	9	-1.82
Madhya Pradesh	80	60	-1.82	54	37	-1.85
Maharashtra	41	30	-1.83	27	17	-1.87
Orissa	78	55	-1.84	55	39	-1.84
Punjab	49	30	-1.87	37	24	-1.86
Rajasthan	75	54	-1.83	43	31	-1.83
Tamil Nadu	39	24	-1.87	34	18	-1.90
Uttar Pradesh	77	56	-1.83	54	39	-1.83
West Bengal	40	33	-1.78	31	26	-1.77
INDIA	**64**	**46**	**-1.83**	**40**	**28**	**-1.84**

Source: Sample registration system, govt. of India, CAGR taken from Annexure 2 [6]

Table 5: Infant mortality rate by residence in India and major states.

Infant mortality by residence shows that rural infants are less cared for than their urban counterpart. This is an effective cause of higher infant mortality rate in rural areas of the country. India experiences a huge difference in rural-urban rates of Infant deaths. In rural areas where healthcare services are rarely available and if, available they are not sufficient to catering such a big population. Infant mortality rates are quite high in rural areas as comparatively to urban areas of the country.

In rural areas of the Indian major states IMR ranges from 13 to 58 percent and 9 to 39 percent in urban areas. Figures show that there is a gap of almost 50 percent among rural and urban areas. Among the better performing states in terms of rural IMR Kerala leads and is much ahead of the rest states. Kerala has IMR of 13 per 1000 live births in rural areas and 9 percent per thousand live births in urban areas. Other states of Tamil Nadu (24), Maharashtra (30) and Punjab (30) also performed better in rural areas.

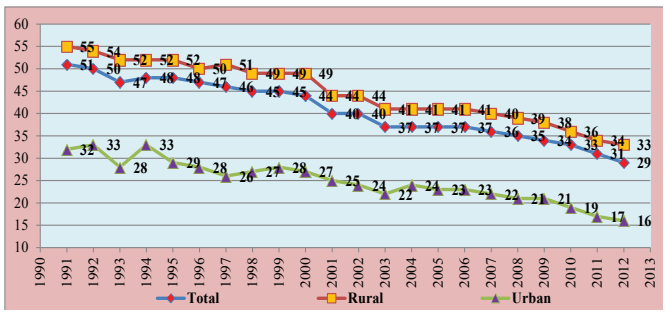
Neonatal Mortality Rate

Almost 0.76 million new-borns die every year in India, the highest among all the countries in the world. Neo-natal mortality (NNM) is the deaths of a new-born before completing 29 days of his life. At the all India level the NNM is 29. The NNM of the country falls from 51 per 1000 live births in 1991 to 29 per thousand live births in 2012. The rate of decline has been slow, as compared to IMR and U5MR. The major causes of neonatal mortality are preterm birth complication, infection during birthing. About 2/3 of infant deaths and half of under-5 deaths are during the neonatal period of the new-born.

Neonatal mortality rate has declined over the years. Figure 3 presented the NNM has declined from 51 in 1991 per 1000 live births to 29 per thousand live births in 2012. Over the period from 1991-2012 neonatal mortality has reduced by 0.57 percent [8].

Same is in the case of rural and urban areas but data available from the government sources indicate that the rate of reduction is higher in rural areas comparatively to urban areas (Table 5). Rural areas accounted for 0.60 percent reduction in NNM while urban areas account only 0.50 percent in 1991-2012. The rural NNM falls from 55 per thousand in 1991 to 33 per 1000 live births in 2012, likewise urban NNM has fallen only to 16 percent per thousand live births in 2012 from 32 percent per 1000 live births in 1990's. The Average Annual Growth Rate (AAGR) of reduction of NNM was only modest at around -1.961 percent in the period from 1991-2012. The rate of reduction in neonatal mortality is somewhat less than that of infant mortality during the same period (-1.989 percent annual reduction) (Table 6).

Figure 4 shows that the neonatal mortality is not uniform in the states as well. The states of Kerala (7) and Tamil Nadu (15) have lowest NNM across the country; Odisha (39), Uttar Pradesh (37) and Madhya Pradesh (39) have very NNM. There is a big diversity in the northern and southern states in terms of NNM. The southern states perform well in reducing neonatal mortality rate as compared to northern states.



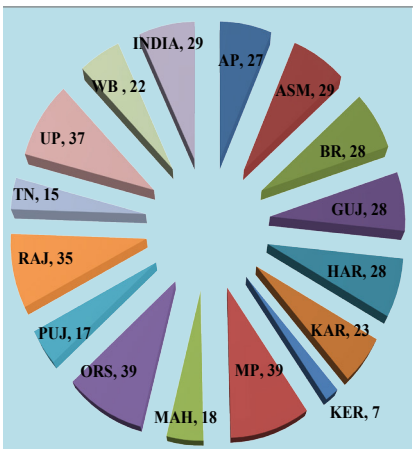
Source: SRS statistical report 2012, Government of India [6]

Figure 3: Neo-natal mortality rate in India 1991-2012.

Year	Total	Rural	Urban
1991	51	55	32
1995	48	52	29
2000	44	49	27
2005	37	41	23
2010	33	36	19
2011	31	34	17
2012	29	33	16
% Change	**0.57**	**0.60**	**0.50**
AAGR %	**-1.961**	**-1.957**	**-1.968**

Source: SRS statistical report, 2012, govt. of India, % change and AAGR taken from Annexure 3 [6]

Table 6: NNM in India 1990-2012.



Source: Sample registration system, statistical report, 2012 [6]

Figure 4: Share of neonatal mortality by major states.

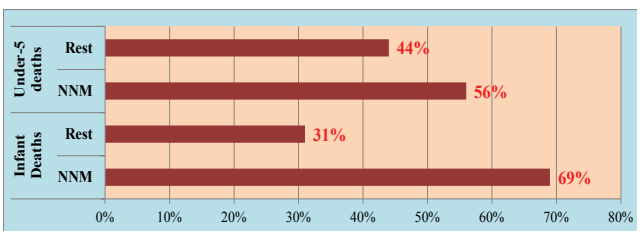
Neonatal mortality is the most sensitive among the child mortality indicators. The neonatal deaths contribute a larger portion in infant mortality and under-five mortality of the country. To achieve our targeted goals of reducing IMR and U5MR we have to ensure a substantial reduction in neonatal mortality. India accounts 29 percent NNM per thousand live births in 2012, almost 70 percent of infant die in their neonatal period (Figure 5) and more than half of under-five mortality in the country fall in the neonatal period (Figure 5).

Child Mortality Rate (CMR)

Child mortality is defined as the death of child before completing 4 years of his/her life. Child mortality rate is calculated at per thousand child population per year. Most of the child deaths were reported in the states namely Madhya Pradesh, Uttar Pradesh, Assam, Rajasthan and Bihar. These states are also marked by some of the highest poor people and illiterate people in India. Child mortality is an important indicative of the country's general medical and public health condition and hence the country's level of socio-economic development. Additionally, the robustness of a public health system has been highlighted as a necessary component to achieve the Millennium Development Goals (MDG) [9]. Socio-economic condition, health and literacy level of mother are some of the important factors of child mortality rate. Diaherea and malnutrition are the main causes of deaths in this group. Most of these deaths could be preventable by effective and low cost interventions. Table 7 shows the glaring disparity in child mortality in India and her major states. Child mortality rate comes down to 11.5 percent in 2012 from 16.6 percent in 1991. This reduction of CMR is also observed in almost all states. The highest CMR is observed in the states of Madhya Pradesh (17.8) followed by Uttar Pradesh (16.8) and Assam (16.5). The states of Orissa (14.7), Rajasthan (14.3) and Bihar (11.5) have above than national average child mortality rate (11.5 percent). The states of Kerala with 2.5 percent child mortality rate is the best performing states in the country, followed by the states of Tamil Nadu (4.9), Maharashtra (5.2), Punjab (7.4), West Bengal (7.6) and Karnataka (8.0) [10].

The figures of CMR presented in Table 7 reflect the inadequacy as well as disparity in the healthcare sector of the country and her states respectively. Table 7 depicts a picture of huge difference between the northern and southern states in terms of CMR. Generally, the southern states do better and have very low percentage of child mortality as comparatively to northern states of the country. The ranks of high developed states (Kerala, Tamil Nadu, Andhra Pradesh, Karnataka) in terms of child mortality rate are higher than the less developed states (Madhya Pradesh, Uttar Pradesh, Rajasthan, Assam, Orissa).

Figure 6 presented the rural-urban gap in child mortality in India and her major states. The picture of CMR is gloomier in rural areas than urban areas. The rural-urban gap is almost double and in some states it is more than double. This is because of the inter-regional diversity in major states. Rural healthcare infrastructure is not adequate and historically neglected. Rural healthcare infrastructure and facilities are less efficient compared to that in urban areas. The highest rural/urban gap is observed only in the states of Madhya Pradesh with 19.5 percent CMR per 1000 children (0-4 years) in rural areas and 10 percent per 1000 children (0-4 Years) in urban areas. The lowest rural/ urban gap in CMR was achieved by Kerala (2.6/1.9 percent) followed by Tamil Nadu (5.5/4.1 percent). Even after government has been taken various steps to reduce the child mortality rate, the situation is not improved even in the best performing states. Gujarat is relatively a more developed state but has very high Rural/urban gap in child mortality rate (12.9/7.1)



Source: SRS, statistical report, 2012 [6]

Figure 5: Neonatal deaths as a percentage of infant deaths and of under-5 deaths.

close to that of Uttar Pradesh (17.6/12.7), Assam (17.6/7.5), Rajasthan (15.6/8.8), Bihar (11.8/7.9), respectively. This means that provision of healthcare is more important than economic advancement as in the case of the states of Kerala a moderately advanced state, has very low rate of child deaths as compared to Maharashtra, Gujarat and Haryana.

Table 8 presents the component of child mortality. India accounts more than a quarter of global Neo-Natal Mortality. Two-thirds of infant deaths and almost half of under-5 deaths are during the neonatal period of life. The IMR has reduced over the years but reduction is at a much slower rate as compared to the U5MR. The percentage of reduction of IMR in the period from NFHS-1 to NFHS-2 is -0.14 percent and from NFHS-1 to SRS-12 is -0.47 percent. The highest percentage of reduction is seen in the U5MR, between NFHS-1 to SRS-12 the percentage reduction of U5MR is -0.52 percent. Over the same period of time Neo-Natal Mortality reduced to -0.41 from NFHS-1 to SRS-12.

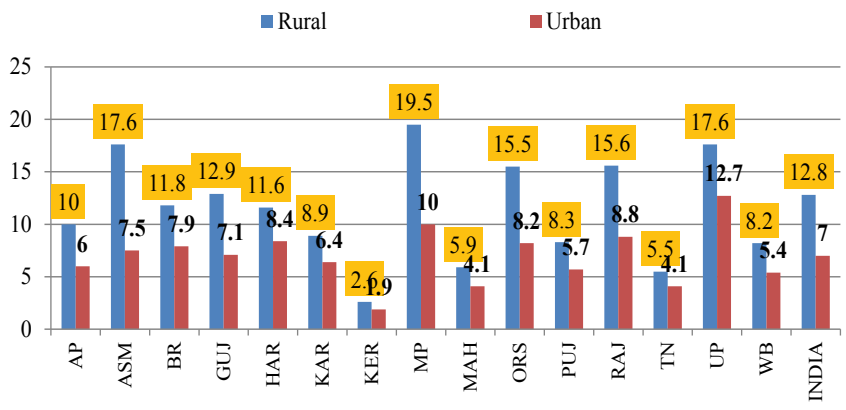
Figure 7 presents the under-5 mortality rate by residence from 2009 to 2013. According to the SRS 2012, U5MR in India stood at 52 in 2012 compared to the 74 in NFHS-3. In 2009 the number of U5MR for rural areas was 71 while it is 41 for urban areas. The rural-urban gap seems to be constant over the period of time from 2009 to 2013. Rural areas have nearly double burden of U5MR since after the Independence. Figure shows the data from 2009 to 2013, in 2009 the number of U5MR in rural and urban areas is 71 and 41 respectively. The numbers reduce to 61 for rural areas and 35 for urban areas in 2011. Again the rural-urban gap is almost constant. In 2013, U5MR for rural (55) and for urban (29) the gap percentage of reduction between rural and urban is almost same over the entire period of time. We can say that rural areas need more attention by policy makers to intervene efficiently in the child health status.

Table 9 presents the Millennium Development Goals for 2015 and child mortality rates (IMR, U5MR). India is unlikely lag behind in achieving the MDG goals-4 for 2015 to reduce the under-5 mortality rate by two third. In 1990 the number of U5MR was 109 per 1000 live births the number declined to 49 in 2012 just close to the target of 42. IMR is 80 per 1000 live births in 1990 which decline to 42 in 2013. Country is lag behind in achieving the target of 28 IMR by 2015 (MDG-4) [11,12].

States	1991	2001	2006	2007	2008	2009	2010	2011	2012
AP	21.3	16.0	15.2	14.6	13.2	11.6	10.4	9.7	8.8
ASM	32.4	23.6	19.7	18.2	20.4	19.0	17.9	17	16.5
BR	22.8	19.4	18.5	18.9	16.3	14.7	13.4	12.4	11.5
GUJ	23.3	18.5	16.2	15.1	13.7	13.7	12.9	12.1	10.9
HAR	23.0	19.2	16.2	15.2	14.5	13.3	12.5	11.3	10.7
KAR	23.6	16.2	12.5	12.1	12.3	11.0	10.3	8.6	8.0
KER	4.3	2.6	3.2	2.8	2.4	2.6	2.9	2.6	2.5
MP	44.5	28.1	24.3	23.5	22.6	21.4	20.0	18.8	17.8
MAH	16.3	10.3	8.8	8.4	7.9	6.8	6.4	5.1	5.2
ORS	39.0	24.4	22.0	20.0	19.5	18.4	17.1	15.8	14.7
PUJ	17.0	14.1	11.0	11.1	10.2	9.5	8.7	7.4	7.4
RAJ	30.9	24.3	22.4	19.5	18.8	17.2	16.2	15	14.3
TN	16.1	11.8	9.2	8.4	7.3	6.7	5.8	5.0	4.9
UP	35.6	26.8	23.9	22.3	21.6	20.1	19.6	17.9	16.8
WB	20.6	13.3	9.7	9.2	8.5	7.9	7.4	7.8	7.6
INDIA	**16.6**	**19.3**	**17**	**16**	**15.2**	**14.1**	**13.3**	**12.2**	**11.5**

Source: Compendium of India's fertility and mortality indicators 1971-2007, RGI and health and family welfare statistics in India 2013 [10]

Table 7: Child mortality rate in India since 1991 to 2012.



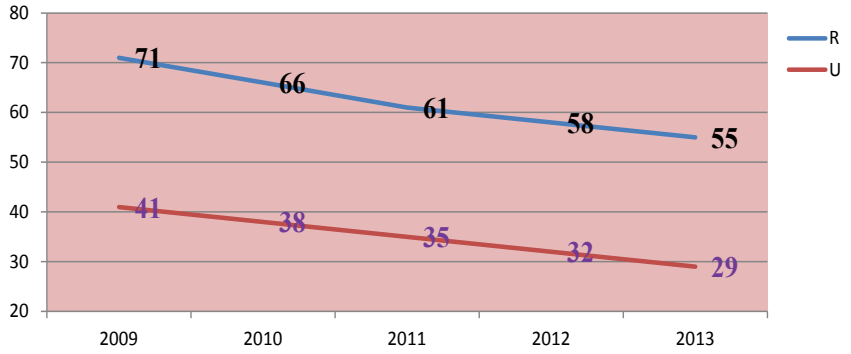
Source: Health and family welfare statistics in India 2013 [10]

Figure 6: Child mortality rate by residence in India, 2012.

	NFHS-1	NFHS-2	NFHS-3	SRS-12	% Change between NFHS-1 and 2	% Change between NFHS-3 and SRS-12	% Change between NFHS-1 and SRS-12
IMR	79	68	57	42	-0.14	-0.26	-0.47
U5MR	109	95	74	52	-0.13	-0.30	-0.52
NMR	49	43	39	29	-0.12	-0.26	-0.41

Source: NFHS and sample registration system, statistical report 2012 [6]

Table 8: Child mortality indicators in India.



Source: Sample registration system, office of registrar general of India [6]

Figure 7: Under-five mortality by residence in India.

	1990 levels	Goal for 2015	Current levels
U5MR	109	**42**	49
IMR	80	**28**	42

Source: NFHS-1; SRS 1990, 2012, 2013 [5,6]

Table 9: Millennium development goals of child mortality and current levels.

Conclusion

It is proved from the above discussion that the child health status of India is very poor and there are wide inter-state disparities in the country. Though child health shows improvement over the years but still India is far behind in terms of child health standard because of the increasing population of the country. Child health status is in very pity condition and overall health status of the country is not improving without the improvement in the health condition of children.

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Citation: Usmani G, Ahmad N (2017) Health Status of Children in India. 3: 138. doi:10.4172/2471-9870.10000138