Research Paper

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An Investigative Study of Child Mortality Across the States of India

Statistics

KEYWORDS : Infant mortality rate, child mortality statistics, socio economic factors

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ABSTRACT

Infant mortality rate has been viewed as the vital index which can be used to measure the health level of a country and also can indirectly illustrate the economic development level of the country. The child mortality scenario varies widely across the states of India ranging from moderate level of child mortality in some states to alarming high in other states. This paper gives the statistical fact of infant mortality rate in different states across the country.

1] Introduction

Children of today are citizens of tomorrow, so it is extremely important to ensure proper health care facilities as well as adequate nutritional intake for the children. It is now globally acknowledged that an investment in human resources development is important for the nation. Infant mortality is a good indicator of the welfare of the people in a given society.

Biologically childhood is the span of life form birth to adolescence. Infant mortality rate can be measure of the nation's health and social condition. It is an effective resource for the health department to make decision on medical resources allocation. Infant mortality also formulates global health strategies and helps evaluate the programme success.

India is among the countries where infant mortality rate is alarming high. Infant mortality rate (IMR) and U5MR measure the probability of dying before one and five years respectively as against 1000 live births. The report admits India's failure to match up with China when it came to protecting its children. It says that in 1950-55 China & India shared same crude death rate along with similar infant mortality rate and life expectancy at birth.

In the course of time however China progressed more rapidly than India on these indicators. The infant mortality rate per 1000 live births in China & India in 1950-1955 was 195 & 190 respectively but by 2000-2005 the figure had declined by more than six times in China whereas it dipped by only three times in India. The report said.

According to SRS 2011 the latest mortality estimates for 2009 in India indicates that 34 children per 1000 live births died within the first month, 50 per 1000 live births died before one year, & 64 per 1000 live births died before five years. ICMR Director General Dr. V.M.Katoch said, "Child mortality is a sensitive indicator of a country's socio economic development." Social cultural and economic and environmental factors are found to affect child mortality especially during post neonatal period.

2] Causes of child mortality

Some causes of infant mortality are malformations, sudden infant death syndrome, maternal complications during pregnancy & accidental unintentional injuries. Environmental & social barriers prevent access to better medical resources and thus contribute to an increasing infant mortality rate. Eighty six percent of ninety nine percent deaths of infants are due to infections, premature births, and complications during delivery. Sudden infant death syndrome is a significant cause of thousand of infant death per year. Malnutrition is a primary factor contributing to the complications of many diseases. Protein energy malnutrition and micro nutrient deficiency are two main reasons for stunted growth to the children under five years old in the least developed countries. Vitamin a deficiency can lead to stunting blindness and increased mortality due to lack of nutrients in the body. 250 millions infants are affected by Vitamin A deficiency. Iron deficiency anaemia increases maternal and infant mortality rates.

Two key pollutants on infant mortality rate are carbon monoxide, smoke. Carbon monoxide does great harm especially to infants because of their immature respiratory system. Another major pollutant is smoke can have detrimental effects on a fetus. More importantly smoking is worse for the fetus. The American journal Epidemiology stated that 'Compared with nonsmoking women having their first birth, women who smoke less than one pack of cigarettes per day had a 25% greater risk of mortality and those who smoke one or more packs per day had a 56% greater risk.'

3] Statistical facts about child sex ratio across different states of India

The following statistical facts about growth of the population and child sex ratio are furnished as below. These statistical facts are compiled from the data published by SRS.

- During the decade 2001-2011 there are 181 million increases in the country's population while the population of children aged 0-6 years has been reduced to 5.05 million during this period. Decline in male children 2.06 million and in female children is 2.99 million.
- Compared to census 2001 the share of children (0-6 years) in the total population showed a decline of 2.8 points in 2011 and the decline was sharper for female children than male children.
- Child sex ratio in a country showing declining trend. In the period 1991-2011 child sex ratio declining from 945 to 914.
- As per census 2011 the child sex ratio referred to be alarming low (<900) in the following states/UTs. Haryana (830), Punjab (846), Jammu & Kashmir (859), Delhi (866), Chandigarh(867), Rajasthan(883), Maharashtra(883), Uttarakhand (886), Gujrat (886), Uttar Pradesh (899), The child sex ratio which are having better(>= 950) child sex ratio are Mizoram (971), Meghalaya (970), A&N Ireland(966), Puducherry (965), Chhattisgarh (964), Arunachal Pradesh(960), Kerala(959), Assam(957), Tripura(953), & West Bengal(950).
- Child sex ratio in rural India is 919 whereas in urban India is 902.
- The period 2005-2010 has shown slight improvement in the child sex ratio (from 892 to 905) as compared to the period 2000-2005 in which child sex ratio dipped continuously (from 892 to 880).
- As per the sample registration system (2008-2010) sex ratio at birth is lowest in some of the major states Punjab (832), Haryana (848), & highest in Chhattisgarh (985), Kerala (966).

Table 1
Under mortality rate in India & States

	1992	1998	2005	2009	2010
India	109.3	94.9	74.3	64	59
Andhra Pradesh	91.2	85.5	63.2	52	48
Assam	142.2	89.5	85	87	83
Bihar	127.5	105.1	84.8	70	64
Delhi	83.1	55.4	46.7	37	34

Gujrat	104	85.1`	60.9	61	56
Haryana	98.7	76.8	52.3	60	55
Himachal Pradesh	69.1	42.4	41.5	51	49
Jammu & Kashmir	59.1	80.1	51.2	50	48
Karnataka	87.3	69.8	54.7	50	45
Kerala	32	18.8	16.3	14	15
Madhya Pradesh	130.3	137.6	94.2	89	82
Maharashtra	70.3	58.1	46.7	36	33
Orissa	131	104.4	90.6	84	78
Punjab	68	72.1	52	46	43
Rajasthan	102.6	114.9	85.4	74	69
Tamilnadu	86.5	63.3	35.5	33	27
Uttar Pradesh	141.3	122.5	96.4	85	79
West Bengal	99.3	67.6	59.6	40	37

Source: NFHS, Sample registration System

4] Infant Mortality Rate (IMR)

The infant mortality rate is the probability (expressed as rate per thousand live births) of a child born in a specified year dying before reaching the age of one if subject to age specific mortality rates.

The method used to calculate depends on the type of data available. In practice data can be obtained from vital registration system, national population census and/or household surveys. Vital registration system is the preferred source of data on infant mortality because they collect information prospectively and cover the entire population.

Infant mortality rate is calculated by the following formula

$$= \frac{\text{No of deaths of infants less than one year of age in a place in a year}}{\text{Total number of live births in some places in the given year}} \times 1000$$

Infant mortality is good indicator of the welfare of the people in a given society. Infant mortality takes away society's potential, physical, social & human capital. Many factors contribute the infant mortality such as level of mother's education, environmental condition, political & medical infrastructure. The work status of a mother is also an important determinant of mortality of her children at the younger ages 0 to 5.

5] Demographic profile of children in India

The ministry of Statistics released a report named Children in India – 2012 : A Statistical appraisal which shows the griming status of children in India.

Table 1
Population (0-6 years) 2001-2011 – India

	Children (0-6years) (in millions) Male Female Total	Total Populations (in millions) Male Female Total	Share of children(0-6 years) to the corresponding total population (in %) Male Female Total
Census 2001	85.01 78.83 163.84	532.2 496.5 1028.74	15.97 15.88 15.93
Census 2011	82.95 75.84 158.79	623.7 586.5 1210.79	13.3 12.9 13.1

Source: Census 2011

During 2001-2011 the share of children to total population has been declined and the decline was sharper for female children in the age group (0-6 years).

The following table shows under mortality rates in India and states

Table 2
Under mortality rate in India & States

	1992	1998	2005	2009	2010
India	109.3	94.9	74.3	64	59
Andhra Pradesh	91.2	85.5	63.2	52	48
Assam	142.2	89.5	85	87	83
Bihar	127.5	105.1	84.8	70	64
Delhi	83.1	55.4	46.7	37	34
Gujrat	104	85.1`	60.9	61	56
Haryana	98.7	76.8	52.3	60	55
Himachal Pradesh	69.1	42.4	41.5	51	49
Jammu & Kashmir	59.1	80.1	51.2	50	48
Karnataka	87.3	69.8	54.7	50	45
Kerala	32	18.8	16.3	14	15
Madhya Pradesh	130.3	137.6	94.2	89	82
Maharashtra	70.3	58.1	46.7	36	33
Orissa	131	104.4	90.6	84	78
Punjab	68	72.1	52	46	43
Rajasthan	102.6	114.9	85.4	74	69
Tamilnadu	86.5	63.3	35.5	33	27
Uttar Pradesh	141.3	122.5	96.4	85	79
West Bengal	99.3	67.6	59.6	40	37

Source: NFHS, Sample registration System

In the following table infant mortality rates in India and various states in India per 1000 live births is given

S. No.	India/States	2005	2006	2007	2008	2009	2010
	India	58	57	55	53	50	47
1	Andhra Pradesh	57	56	54	52	49	46
2	Assam	68	67	66	64	61	58
3	Bihar	61	60	58	56	52	48
4	Chhatisgarh	63	61	59	57	54	51
5	Gujrat	54	53	52	50	48	44
6	Haryana	60	57	55	54	51	48
7	Jharkhand	50	49	48	46	44	42
8	Karnataka	50	48	47	45	41	38
9	Kerala	14	15	13	12	12	13
10	MP	76	74	72	70	67	62
11	Maharashtra	36	35	34	33	31	28
12	Odisha	75	73	71	69	65	61
13	Punjab	44	44	43	41	38	34
14	Rajasthan	68	67	65	63	59	55
15	Tamilnadu	37	37	35	31	28	24
16	UP	73	71	69	67	63	61
17	West Bengal	38	38	37	35	33	31
18	AP	37	40	37	32	32	31
19	Delhi	35	37	36	35	33	30
20	Goa	16	15	13	10	11	10
21	HP	49	50	47	44	45	40
22	J&K	50	52	51	49	45	43
23	Manipur	13	11	12	14	16	14
24	Meghalaya	49	53	56	58	59	55
25	Mizoram	20	25	23	37	36	37
26	Nagaland	18	20	21	26	26	23

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27	Sikkim	30	33	34	33	34	30
28	Tripura	31	36	39	34	31	27
29	Uttarakhand	42	43	48	44	41	38
30	Chandigarh	19	23	27	28	25	22
31	Puducherry	28	28	25	25	22	22

Source : Sample registration system

6] Conclusion

In order to reverse the upward trend in mortality there is an urgent need to intensify efforts to reduce the poverty, to enable most people to have adequate food supply improves the public health sector so that it can deliver health care to all people, to make greater effects to raise the living standards of rural populations. Some of the states in India are working on this problem and they are showing good efforts.

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