

THE PAEDIATRIC DOMAIN

2.1. Introduction

In any community, children constitute a priority group. In India, children under 15 years of age is about 34.8% of total population as per the Govt. of India report 1995 [1]. By virtue of their numbers, children are the major consumer of health services.

They not only constitute a large population group, but also are vulnerable or special risk group. The risk is related with growth, development, disease pattern and survival. From the commonly accepted indices, it is evident that mortality rates in the paediatric age group are higher than adult population especially in developing countries. Thus by improving the health of children, we contribute to the health of the general population. These considerations have led to the formulation of special health services for children all over the world.

In response to the acute needs of children throughout the world, the United Nations World Summit, 1990, for children was convened. The objective of the summit was to establish national programmes of actions for achieving basic health and social goals. These goals include control of major childhood diseases, halving of child malnutrition, one-third reduction in under-fives mortality rate, halving of maternal mortality rate, provision of safe water to all communities, universal availability of family planning, and basic education for all children. The summit also urged upon the ratification of the convention on the rights of the children.

2.2. Statistical Importance

As stated above, statistically children constitute a priority group. This is further confirmed by the tables 2.1, 2.2, and 2.3 showing the age wise distribution.

Table 2.1. Distribution of population by age group (in 000's) in India [2].

Sl.No.	India / States	All Ages	0 - 4	5 - 9	10 -14
1	2	3	4	5	6
	INDIA	846303	108296	112047	99436
1.	Andhra Pradesh	66508	7448	8951	7776
2.	Assam	22414	3206	3247	2746
3.	Bihar	86374	12452	12955	10571
4.	Gujarat	41310	4887	5091	4809
5.	Haryana	16464	2321	2231	2021
6.	Karnataka	44977	5277	5657	5338
7.	Kerala	29099	2759	2851	3053
8.	Madhyapradesh	66181	9345	9064	7663
9.	Maharashtra	78937	9806	9683	8820
10.	Orissa	31660	3881	4122	3618
11.	Punjab	20282	2500	2340	2312
12.	Rajasthan	44006	6394	6394	5465
13.	Tamil Nadu	55859	5397	5964	6002
14.	Uttar Pradesh	139112	19708	20110	16991

Table 2.2. Age-wise percentage distribution of West Bengal, India[3].

Age groups	Urban	Rural	Total
0 - 4	2.24	9.25	11.49
5 - 9	2.84	10.43	13.27
10-14	3.02	8.3	11.85

Table 2.3. Distribution of children by age in the United States [4].

Age (year)	Number (Resident Population)
< 1	4011
1	3969
2	3806
3	3718
4	3717
<5	19222
5	3702
6	3681
7	3575
8	3512
9	3767
5-9	18237
10	3703
11	3662
12	3484
13	3414
14	3409
10-14	17671
15	3293
16	3362
17	3360
18	3383
19	3808
15-19	17205
20	4080
21	3969
0-21	80384

2.3. Children in developing countries

The total dependence of child on adults for survival and development puts them in an extremely vulnerable situation. In most societies, the parents or the close relatives look after the children. In many countries, some economically advanced and others with a socialistic pattern of government, the State plays a major role in child care ensuring that his basic health and education requirements and physical needs are met with.

Many developing countries, by and large, face some problems in this regard [5]. India, in view of its vast population, leads in numbers [6]. There are about 20 million children in organized labour work force, 30 million disabled children (2 million blind children) and more than 25 million street children. The number of those suffering from malnutrition and chronic diseases such as tuberculosis is extremely high. We have serious problems of destitute children, child prostitution and various other forms of child abuse and neglect and discrimination against the girl child. Adequate care and full opportunities for development (stimulatory environment, proper education, health care) are available largely to the small affluent section of the society.

With the alarming increase in population the factors like poverty, illiteracy and ignorance, poor state of village environment (where the majority of children live), and increasing urban slums are responsible for leading to a poor quality of life for the majority of our children. Child survival has been improved, as indicated by a decline in various indices of mortality, but / however, the necessary inputs towards various other needs of children have been grossly insufficient.

Besides, curative and preventive health care, comprehensive child care comprises various aspects of child development including a stimulatory environment, education and prevention of child abuse and exploitation. The later encompass a spectrum of cruelty to children from mild forms of neglect to employment in hazardous industries. Problems like child labour, sexual abuse and child prostitution are also very serious. These problems are multifactorial. Society as a whole has to think in these matters.

2.4. Age related health problems in India

The morbidity and mortality patterns vary from one age group to another. For example, congenital anomalies are common during early months of life, haemolytic diseases, hypoxic-ischemic-encephalopathy, aspiration syndromes, RDS are unique problems of neonates. Sudden infant death syndromes are common during infancy. Rotaviral diarrhoea are seen below two years of age. Infections and infestations are common during almost whole of the childhood. Personality disorders are the problems of adolescence. Age related common health problems are narrated in table 2.4.

2.5. Burden of the diseases in India

More than 90% of World's children are born each year in the developing world. Nearly 35,000 of them die each day most from common and preventable problems. Health and illness for these children are the result of a complex dynamics of environmental, social, and economic factors. India is also facing the similar problem.

- **Acute Diarrhoeal Diseases**

Diarrhoea is a major health problem in developing countries. An estimated 1.3 billion episodes of diarrhoea occur each year and 3.2 million children under the age of 5 years die of diarrhoeal diseases. Again 80 percent of these deaths affect children under the age of two years. The incidence of diarrhoeal attack was calculated may be 6-12 episodes per child per year in most developing countries. The total diarrhoea morbidity for a given child may be as high as one third of its first two years of life. Overall children are ill with diarrhoea for 10-20 percent of their first 3 years of life [7]. In India, according to SRS estimates during the year 1992, the child mortality was about 26.6 per 1000 children under 5 years age, out of which 20% death were due to diarrhoeal diseases [8].

- **Respiratory Diseases**

Acute respiratory infection (ARI), particularly Pneumonia is one of the leading causes of health problem and accounted for an estimated 3.9 million death among children under the age of 5 years in the developing world during the year 1996 [9]. On an average, a child in both developed and developing countries has 5 to 8 attacks of ARI annually. The incidence and severity of Pneumonia are not spread evenly around the world. The incidence of Pneumonia is almost constant in children in developed countries, varying 3-4 percent a year. By contrast, the incidence in developing countries ranges between 10-20%.

In India, ARI is one of the major causes of death. Hospital records from states with high infant mortality rate show that upto 13% of inpatient deaths in Paediatric wards are due to ARI. In the community, this may be much higher as children may die at home [10].

- **Nutritional Diseases**

The specific nutritional problems in India are :

a) **Protein-Energy malnutrition (PEM)**

Protein-energy malnutrition has been identified as a major health and nutrition problem in India. It occur particularly in weaklings and children in the first year of life. It is characterized by low birth weight if the mother is malnourished, poor growth in children and high level of mortality in children between 12-24 months, and is estimated to be an underlying cause of 30% of deaths among children under age five [11].

b) **Nutritional anaemia**

India has probably the highest prevalence of nutritional anaemia in woman and children. About one-half of the non-pregnant women and children are estimated to suffer from Anaemia.

c) **Xerophthalmia**

About 0.04% of total blindness in India is attributed to nutritional deficiency of Vitamin A. Keratomalacia has been the major case of nutritional blindness in children usually between 1-3 years of age.

- **Infections and Infestations**

Infections and Infestations are quite prevalent in India, out of which water-borne diseases (e. g. acute diarrhoea, dysentery and enteric fever, viral hepatitis) lead all. Studies show that half of the world's tuberculosis patients are in India accounting from 14 million cases of which approximately 3.5 million are infectious cases [11]. Tetanus and Diphtheria are not yet under complete control. Among the parasitic diseases, Malaria and Kala-azar have staged a come back. Intestinal parasites such as ascariasis, hookworms, giardiasis and amoebiasis are widely prevalent.

2.6. **Indicators and denominators in India**

- **Mortality Rate in Infancy Childhood**

Mortality rates are good indicators to measure the level of health and health care in different countries. They also help in assessing the overall socio-economic development of a country and correlate well with certain economic variables such as GNP. Medical and social progress have substantially reduced mortality rate in childhood.

- **Perinatal Mortality Rate**

Perinatal mortality is one of the most sensitive indices of maternal and child health. The perinatal mortality rate is an indication of the extent of pregnancy wastage as well as the quality and quantity of health care available to the mother and the new born. Various factors are known to be associated with perinatal morbidity and mortality including socio-economic status, parity of the mother, quality and quantity of prenatal, intranatal and neonatal care. Provision of special care to mothers at risk is mandatory to bring about a reduction in preventable death rate.

About two-thirds of all perinatal deaths occur among infants having less than 2500 gm. birth weight. The causes involve one or more complications in the mother during pregnancy or labour, in the placenta or in the foetus or neonate. The main causes of death are intrauterine and birth asphyxia, low birth weight, birth trauma and intrauterine or neonatal infections.

Perinatal mortality rates in developed countries like USA, UK and developing country like India are shown in table 2.5. [12,13].

Table 2.5. Perinatal mortality rates.

INDIA			USA	UK
Rural	Urban	Combined		
49.1	32.7	46.0	10.0	10.0

- **Neonatal and post-neonatal mortality rate**

Neonatal mortality is a measure of the intensity with which **endogenous factors** (e.g., low birth weight, birth injuries) affect infant life. The neonatal mortality rate is directly related to the birth weight and gestational age; the lighter or more immature is the baby, the higher is the death rate. The higher concentration of infant deaths in the **early** neonatal period with **endogenous factors** causes, suggests the need to improve the antenatal and post-natal services to expectant mothers. However, neonatal mortality is the most difficult part, of infant mortality, to alter, because of the endogenous factors which are not sensitive to improvement in environmental conditions. Neonatal mortality is greater in boys throughout the world, because newborn boys are biologically more fragile than girls.

Deaths occurring from 28 days of life to under one year are called **post neonatal death**. The causes of neonatal and post neonatal mortality are given under table 2.6 [11]. Table 2.7 shows the status of perinatal and neonatal mortality of South-East Asia region.

Table 2.6. Causes of neonatal and post neonatal mortality

Neonatal mortality (0-4 weeks)	Post-neonatal mortality (1-12 months)
1. Low birth weight	1. Diarrhoeal diseases
2. Birth injury and difficult labour	2. Acute respiratory infections
3. Congenital anomalies	3. Other communicable diseases
4. Haemolytic diseases of newborn	4. Malnutrition.
5. Conditions of placenta and cord	5. Congenital anomalies
6. Diarrhoeal diseases	6. Accidents
7. Acute respiratory infections	
8. Tetanus	

Table 2.7. Perinatal and Neonatal mortality of the South-East Asia Region, 1995 [14].

Country	Number of Perinatal deaths (in thousands)	Perinatal mortality rate per 1000 births	Number of neonatal deaths total (in thousands)	Neonatal mortality rate (per 1000 live births)
India	1736	65	1328	50
Bangladesh	368	85	264	65
Bhutan	.....	100	.....	75
DPR Korea	.....	20	8	15
Indonesia	214	45	161	35
Maldives	< 1	45	< 1	30
Myanmar	86	55	53	35
Nepal	67	75	49	55
Sri Lanka	9	25	7	20
Thailand	26	20	23	20

- **Infant mortality rate (IMR)**

The infant mortality rate is one of the good overall indicators of health status. Infant mortality is given a separate treatment by demographers because (a) infant mortality is the largest single age-category of mortality, (b) deaths at this age are due to a peculiar sets of diseases and conditions to which the adult population is less exposed or less vulnerable, (c) infant mortality is affected rather quickly and directly by specific health programmes and hence may change rapidly than the general death rate.

There are wide variations between countries or regions in the rates of infant mortality. The world average of IMR for 1995 has been estimated to about 60 per 1000 live birth [15]. However, infant mortality rate varies from 6.9 per 1000 live births in the developed countries to 106.2 per 1000 live births in the least developed countries. The average in the developing countries was 66.6 per 1000 live births.

India is still among one of the countries having high infant mortality rate (74 per 1000 live births in the year 1996). Infant mortality rate has declined slowly from 204 during 1911-15 to 129 per 1000 live births in 1970 and remained at around 127 for many years, then declined a bit once again to 114 in 1980 and to 110 in 1982, coming down to 74 in the year 1996. Despite this significant decline, the rates are high as compared to developed countries (4-9 per 1000 live births) as shown in tables 2.8. Trends in infant mortality in South-East Asia region are shown in table 2.9.

Table 2.8. Infant mortality rate in selected countries [16-18]

Country	1900	1950	1985	1996
India	232	127	95	74
Bangladesh	...	159	133	100
Sri Lanka	...	77	38	15
Sweeden	96	22	6	5
Switzerland	139	32	8	6
France	149	53	8	7
New Zealand	75	23	11	9
USA	162	33	11	7
UK	145	33	9	7
Japan	151	60	6	4

Table 2.9. Trends in Infant mortality in South-East Asia region [14].

Country	Estimated infant mortality rate (per 1000 live births)						
	1965-1970	1970-1975	1975-1980	1980-1985	1985-1990	1990-1995	1995-2000
Bangladesh	140	140	137	128	110	91	78
Bhutan	189	178	165	150	131	117	104
DPR Korea	63	50	38	32	28	24	22
India	145	132	129	106	93	78	72
Indonesia	124	114	105	90	75	58	48
Maldives	136	121	106	94	82	60	49
Myanmar	136	122	114	106	103	90	78
Nepal	175	160	142	125	109	96	82
Sri Lanka	61	56	44	35	24	18	15
Thailand	84	65	56	44	39	32	30

- **Under-five mortality rate**

Under-five mortality refers to deaths occurring after birth but before five years of age. It is often used as an approximation for the probability of dying between the exact ages of 0 and 5 years. Another commonly used indicator is the child mortality rate which approximates the probability of dying between the exact ages of 1 and 5 years.

A large part of the reduction in under-five mortality is accounted for by reductions in infant mortality. The successful implementation of immunization programmes in all countries resulted in a dramatic decline in infant and child deaths due to the six vaccine-preventable diseases. The implementation of diarrhoeal diseases and acute respiratory infection control programmes, improved sanitation, access to clean water,

and better accessibility to health services have been other factors leading to the decline in under-five mortality.

The global average for under-five mortality in 1996 was 81 per 1000 live births. In the developed countries, the rate was 8 per 1000 live births. In the developing countries, it was 89 per 1000 live births; in the least developed countries it was 153 per 1000 live births - 18 times higher than the rate of an industrialized nation. Child mortality has declined significantly during the past 25 years, although the pace of decline has not been uniform among the children of different age groups in different countries. Globally, child mortality declined from 134 per 1000 live births in 1970 to about 81 in 1996, i.e., about 40% during the period 1970 - 1996. Table 2.10 shows child mortality rate of some selected countries.

Table 2.10. Under - five mortality rate in some selected countries during 1960, 1980 and 1996 (per 1000 live birth) [16, 19].

Country	1960	1980	1996
India	236	177	99
Srilanka	130	52	19
Thailand	146	61	43
China	209	65	43
Bangladesh	247	211	144
UK	27	14	8
USA	30	15	9
Japan	40	11	6
Singapore	40	13	9

However, most of the reduction in under-five mortality is due to decline in infant mortality. This reduction was early due to a 35% drop in vaccine preventable deaths as well as 13% fewer deaths from acute respiratory infection and 10% fewer deaths from diarrhoea [19]. The estimated mortality among children under-five by cause of death in the developing countries during 1985, 1990 and 1993 are shown in table 2.11.

2.7. Low birth weight (LBW)

Low birth weight is the major significant indicator of the chance of survival of a baby and its growth and development. It is thus an important guide to the level of care needed for individual baby. A preterm baby whose gestational period is less than 37 weeks, is physiologically immature and is at a high risk of dying during the neonatal period. Low birth weight babies are at higher risk of death and severe morbidity than full term and full sized infants; not only during the neonatal period but also during infancy and childhood.

Table 2.11. Estimated mortality among children under-five years by cause of death in the developing countries(in 1000)[20].

Cause of death	1985	1990	1993
Acute respiratory infections	4730	4200	4110
Neonatal and perinatal causes	3640	3750	3715
Diarrhoea alone	2955	2870	2740
Neonatal tetanus	790	275	290
Tuberculosis	295	295	280
Measles	495	275	290
Malaria	740	995	940
Pertusis	590	375	360
Malnutrition	-	250	190
HIV related	-	75	100
Accidents	195	195	170

It is estimated that low birth weight infants have a three or four times greater risk of dying from diarrhoeal diseases and acute respiratory infections. Owing to the frequent attacks of infections, by the age of five years they are more likely to be stunted. There is also evidence that there might be a link between low birth weight and cardiovascular disease, hypertension and diabetes in adult life.

The weight of the infant at birth in relation to its gestational age portrays, to some extent, the effects of intrauterine environment and maternal factors such as nutrition, toxemia, chronic illness, etc. The birth weight of the baby is the most crucial determinant of its chances of survival and freedom from morbidity.

By International agreement low birth weight has been defined as a birth weight of less than 2.5 kg (up to and including 2499 gm); the measurement being taken preferably within the first hour of life, before significant postnatal weight loss has occurred [21]. Apart from birth weight, babies can also be classified into 3 groups according to gestational age, using the words '**pre-term**', '**term**' and '**post-term**' as follows :

Pre-term : Babies born before the end of 37 weeks of gestation (less than 259 days);

Term : Babies born from 37 completed weeks to less than 42 completed weeks (259 to 293 days) of gestation.

Post-term : Babies born at 42 completed weeks or any time thereafter (294 days and over) of gestation.

A LBW infant then, is any infant with a birth weight of less than 2.5 kg regardless of gestational age.

2.7.1. Incidence of low birth weight(LBW)

World-wide, some 25 million of the 142 million infants born in 1990 had low birth weight. Nineteen million of the LBW infants were born in developing countries. Globally, this means, about 1 in every 6 infants has a LBW, but the incidence is not evenly spread around the globe. It ranges from about 4 per cent in the most developed countries to almost 50 per cent in some of the least developed countries as shown in the table 2.12. For the world as a whole, the average for the year 1990 has been estimated at around 17 per cent [20]. The trends of low birth weight values of South-East Asia region [22] are shown in table 2.13 and graphical representation have been shown in fig. 2.1.

Table 2.12. Incidence of LBW babies.

Countries	Percentage of live births
India	33
Sri Lanka	25
Thailand	13
China	9
Bangladesh	50
USA	7
Netherlands	4
Sweden	5
UK	7
Switzerland	5

Table 2.13. Trends in Low birth weight of South-East Asia Region [22].

Country	Percentage of infants with low birth weight			
	1980-1988	1990	1990-1994	1994-1996
India	30	33	33	30.0
Bangladesh	47	50	50	50.0
Bhutan	...	...	...	16.0
DPR Korea	...	...	...	1.0
Indonesia	14	14	14	11.0
Maldives	...	...	...	20.0
Myanmar	16	16	16	...
Nepal	...	...	...	23.2
Sri Lanka	25	25	25	18.0
Thailand	12	13	13	7.25

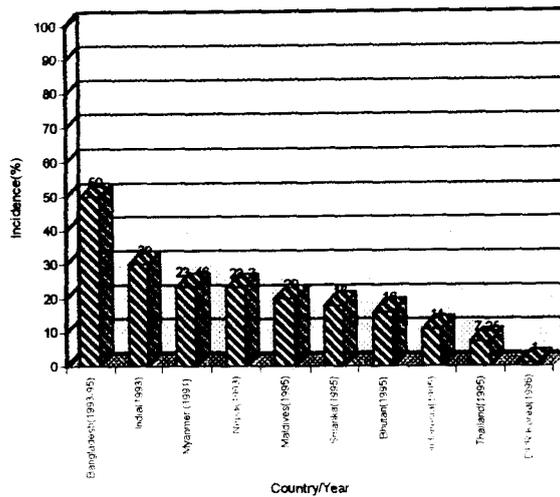


Fig. 2.1. Trends in low birth weight.

The gravity of the problem has now been universally recognized and at the 34th World Health Assembly, the Member States of WHO adopted, as part of the global strategy for health for all by the year 2000, the proportion of infants born with a LBW as one of the global indicators with which to monitor progress. The target is reduction in the incidence of LBW to less than 10 per cent.

Infants who weigh less than 2.5 kg at birth represent about 33 per cent of all live births in India [22]. More than half of these are born at term. The Government of India wishes to control this problem and decrease the incidence to 10 per cent by the year 2000 along with the strategies that had been developed to achieve "Health for All" by the year 2000. As birth weight is conditioned by the health and nutritional status of the mother, the percentage of infants born with a low birth weight closely reflects the health status of the communities in which they are born. The babies of healthy well nourished mothers weigh about 3.5 kg. If mothers are malnourished, it is 3 kg or less. In most parts of India, the mean birth weight is between 2.7 kg and 2.9 kg [23].

While the concept of LBW has the advantage of introducing uniformity, it carries the disadvantage that it does not take into consideration the genetic and environmental factors which also determine birth weight. Low birth weight, as defined by WHO, has less practical significance in countries like India, as most LBW infants are mature by gestation. For example, the mean birth weight of a mature Indian infant is about 500 gm less than that of the American infant. The criterion laid down by WHO where 2.5 kg is the dividing line between LBW baby and mature baby cannot be applied for Indian infants. It was assessed by Indian scientists by maturity, respiratory distress and feeding

problems that 2 kg or less should be taken as the criterion of LBW babies [24]. When this criterion was applied, the incidence of LBW babies having a birth weight of 2 kg was found to 5.5 per cent as against 25-30 per cent when the criterion was 2.5 kg and less.

2.7.2. Importance of reducing low birth weight rates

LBW is one of the most serious challenges in maternal and child health in both developed and developing countries. Its public health significance may be ascribed to numerous factors - its high incidence; its association with mental retardation and a high risk of perinatal and infant mortality and morbidity (half of all perinatal and one-third of all infant deaths are due to LBW); human wastage and suffering; the very high cost of special care and intensive care units and its association with socio-economic under development [25].

LBW is the single most important factor determining the survival chances of the child. Many of them die during their first year. The infant mortality rate is about 20 times greater for all LBW babies than for other babies. The lower the birth weight, the lower is the survival chance. Many of them become victims of protein-energy malnutrition and infection. LBW is thus an important guide to the level of care needed by individual babies. LBW also reflects inadequate nutrition and illhealth of the mother. There is a strong and significant positive correlation between maternal nutritional status and the length of pregnancy and birth weight. A high percentage of LBW therefore points to deficient health status of pregnant women, inadequate prenatal care and the need for improved care of the newborn.

2.8. Socio-cultural and economical problems in India [26]

The socio-cultural practices and the economic deprivation affect child's health more than adults. Few examples are given below :

- The common practice amongst the Indian families specially in rural areas is to feed the male earning members and head of the family maximum and the best, followed by male childrens, female childrens and lastly mothers. In maximum cases these mothers suffer from scarcity of food both in quantity and quality. This is even aggravated during poor economic conditions. However, the recommendation of ICMR nutritional needs for pregnant woman 300 extra calories during pregnancy. When it is not fulfilled the mothers suffer from anaemia and / or nutritional deficiencies. The resultant effects on foetus and neonates are as follows :

- a) Low birth weight, both preterm and / or small for gestational age(SGA);
- b) Poor brain growth;
- c) Poor storage of iron in neonates leading to anaemia during infancy.

- Certain beliefs and practices like offering honey, water, sugar water just after birth to neonates and not allowing to feed them colostrum leads to suppression of breast milk in mothers and deprivation of good effects of colostrum on neonates. Colostrum contains high concentration of protein and other nutrients the body needs. It is also rich in anti-infective factors which protect the baby against respiratory infections and diarrhoeal diseases.
- The unhygienic ways of feeding neonates leads to Gastro-Intestinal infections. The cutting-off of umbilicus with unsterile blades, bamboo nail and application of cowdung may lead to Tetanus, Umbilical sepsis or septicaemia. The wide prevalent practice of hot fomentation with soots of oil lamps may lead to umbilical sepsis. Keeping the baby and mother in an unhygienic room may cause neonatal septicaemia. The practice of oil massage during early neonatal period in unhealthy way causes to abrasions and skin infections.
- The wrong advices by the unwanted female advisers regarding formula feed, buffalo milk, goats milk, cows milk lead to suppression of breast milk, and increase in the diarrhoeal diseases, malnutritions amongst infants.
- The mother's milk is sufficient for proper growth of infants upto 4 to 6 months of the age after which supplementary feeds should be started. But, due to poor practices or cultural belief babies receive nutritionally poor food in unhygienic way. This further leads to malnutrition and diarrhoeal disease.
- Other false belief i. e. eating rice in early age may lead to abdominal distention. Pulses and wheat cereals are not digested by the babies, and some fruits are too hot and some are too cold for the babies may lead to nutritional diseases.
- The cultural belief and practice may produce obstacles to the immunization programmes. Due to lack of immunization children suffer from communicable diseases like, Diphtheria, Tetanus, Measles, Whooping Cough etc.
- Poor maternal literacy rate leads to unregulated family size and is the cause of nutritional gap, trauma, accident, less medical care, deficiency etc.

2.9. Status of Rural Health Centres in India

With the above discussion it is evident that percentage of perinatal, neonatal, infant under-five, 1-4 year age, mortality rates in Indian rural region is high. The reasons behind high mortality rate have been discussed in brief. Large number of paediatric populations are living in rural region. To mitigate these problems proper treatment planning is required. For proper treatment planning the basic requirement is paediatric experts. Actual picture of paediatric expert distribution in rural region is given in table

2.14 which is not at all satisfactory. To mitigate the scarcity of expertise, automated consultation systems within expert systems framework may be useful.

Table 2.14. Paediatricians working in rural areas of India [27].

Sl. no.	State/UT	PAEDIATRICIANS		
		S	P	V
1.	Andhra Pradesh	38	20	18
2.	Arunachal Pradesh	5	5	Nil
3.	Assam	INR	INR	INR
4.	Bihar	INR	INR	INR
5.	Goa	1	Nil	1
6.	Gujrat	29	8	21
7.	Haryana	60	3	57
8.	Himachal Pradesh	6	6	-
9.	J & K	4	1	3
10.	Karnataka	33	27	6
11.	Kerala	INR	INR	INR
12.	Madhya Pradesh	134	58	76
13.	Maharashtra	28	25	3
14.	Manipur	2	2	Nil
15.	Meghalaya	INR	INR	INR
16.	Mizoram	1	Nil	1
17.	Nagaland	3	Nil	3
18.	Orissa	81	77	4
19.	Punjab	58	47	11
20.	Rajasthan	65	26	39
21.	Sikkim	9	1	8
22.	Tamil Nadu	INR	INR	INR
23.	Tripura	INR	INR	INR
24.	Uttar Pradesh	142	123	19
25.	West Bengal	80	11	69
26.	A & N Islands	Nil	Nil	Nil
27.	Chandigarh	1	1	Nil
28.	D & N Haveli	Nil	Nil	Nil
29.	Daman & Diu	Nil	Nil	Nil
30.	Delhi	1	Nil	1
31.	Lakshadweep	Nil	Nil	Nil
32.	Pondicherry	Nil	Nil	Nil

INR = Information not received

S = Number sanctioned,

P = Number in position

V = Vacant posts

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