CHAPTER – II
REVIEW OF LITERATURE

2.1 CONCEPTS

This chapter provides an elaborate and exhaustive discussion of literature available on the Integrated Child Development Services scheme. It includes the definitions of the technical terms and concepts. It also focuses on the integrated child development programme related components.

2.1.1 Child

The Census of India defined, “a person below 14 years of age as a child”. As per the Constitution of India also a person below 14 years is a child. As per the Convention on the Rights of the Child (CRC), a child means every human being below the age of 18 years. The development of children is the first priority on the country’s development agenda, not because they are the most vulnerable, but because they are our supreme assets and also the future human resources of the country.

Article 1 of Indian Constitution defines the holder of rights under the CRC as ‘every human being below the age of 18 years unless under the law applicable to the child, majority is attained earlier.’ The Convention clearly specifies the upper age limit for childhood as 18 years, but recognises that majority may be attained at an earlier age under laws applicable to the child. The Article, thus, accommodates the concept of an advancement of majority at an earlier age, either according to the Federal or State laws of a country, or personal laws within that country. However, the upper limit on childhood is specified as an age of

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1 India, Registrar General and Census Commissioner (2001), Census of India, Government of India. New Delhi T.8
2 Director (2000), National Institute for Public Cooperation and Child Development, Government of India, New Delhi p.4
‘childhood’ rather than ‘majority’, recognizing that in most legal systems, a child can acquire full legal capacity with regard to various matters at different ages.\(^3\)

In view of Article 41, which declares that nothing in its provisions shall effect realisation of the rights of the child under the law of a State, it is essential that there is some synchronisation of the upper age limit for childhood. India has achieved this to a large extent, for instance, the minimum compulsory age of education is 14 years. The various laws relating to labour prohibit a person under the age of 14 years to work. Thus, the minimum age at which compulsory education ends synchronises with the minimum age of employment\(^4\).

The ages of capacity to contract a marriage are 18 years for a girl and 21 years for a boy, for all communities. The Child Marriage Restraint Act, 1978, defines a child as a person who, if a male, has not completed 21 years of age, and if a female, has not completed 18 years of age. Under Section 5 of this Act whoever performs, conducts or directs any child marriage shall be punishable with simple imprisonment upto three months and shall also be liable to fine, unless he proves that he had reason to believe that the marriage was not a child marriage. This uniform legislation is an effort to discourage child marriages under personal laws. However, regarding certain aspects that are deeply rooted in the community, and compounded by historical poverty and vulnerable socio-economic conditions, there is a gap between laws and their enforcement. For example, child labour is a fact that exists in our country, and in spite of our consistent efforts, child marriages are still prevalent. The Government has already initiated action to review and amend the laws pertaining to rape and sexual consent, so as to remove any discrepancy between girls and boys.\(^5\)

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\(^4\) Director ( 2000), National Institute for Public Cooperation and Child Development, Government of India, New Delhi p.6

\(^5\) Ibid p.224
As per the Child Rights Charter, a universal definition of "child" includes all persons under the age of 18. 40 per cent of India’s population is below the age of 18 years which is at 400 million. It is the world’s largest child population.  

**Data on Health of Children**

Seventy in every 1000 children born in India do not see their first birthday. The total number of such children works out to 2 million. 58 per cent of India's children below the age of 2 years are not fully vaccinated. And 24 per cent of these children do not receive any form of vaccination.

Only 38 per cent of India’s children below the age of 2 years are immunized.

74 per cent of India's children below the age of 3 months are anemic. Over 60 per cent of children in India are anemic.

Acute respiratory infections are the leading causes of child mortality (30 per cent) followed by diarrhoea (20 per cent) in India.

Almost one in every five children in India below the age of 14 suffers from diarrhoea, an easily preventable disease.  

One in every 100 children in India in the age group of 0-14 years suffers from acute respiratory infection.

Almost one in every five children in India below the age of 14 suffers from diarrhoea. 58 per cent of India’s children below the age of 2 years are not fully vaccinated. And 24 per cent of these children do not receive any form of vaccination.

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6 Indian Child Rights Charter (2004), Government of India, New Delhi p.88
7 [Http:// Smile foundation of India.org](http://SmilefoundationofIndia.org)
More than 50 per cent of India’s children are malnourished. While one in every five adolescent boys is malnourished and one in every two girls malnourished. Around 23 per cent of India’s children are underweight at birth.

Special Statistics on Girl Child


Of the 12 million girls born in India, 1 million do not see their first birthday. Of the 12 million girls born in India, 3 million do not see their fifteenth birthday, and a million of them are unable to survive even their first birthday. One-third of these deaths take place at birth. Every sixth girl child's death is due to gender discrimination. Females are victimized far more than males during childhood. Three lakhs more girls than boys die every year

Female mortality exceeds male mortality in 224 out of 402 districts in India. Death rate among girls below the age of 4 years is higher than that of boys. Even if she escapes infanticide or foeticide, a girl child is less likely to receive immunisation, nutrition or medical treatment when compared to a male child.

Pregnancy

According to Seashore, Margretta (2000) in about one week after fertilization the ball of cells embeds itself in the blood rich uterus and feeds off the nutrients there. The balls continue to divide forming the first body as blood vessels and nerves.

With in 5 weeks developing body is now above 10 mm (1/2 in) long. It has a recognizable head, back, and heart, and the beginnings of a mouth and eyes.

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thumbs are forming as stub by buds. At this stage the developing baby is called an embryo.\textsuperscript{10}

In 8 weeks baby is about 25 mm (1 in) long and all the major parts of the body have formed including the fingers and eyes. The developing is now called a fetus.

In 12 weeks the cells are still active in the baby, dividing and growing and putting on the body, such as eyelids, fingernails, and toenails. The baby is about 13 cm (5 in). These are a still to grow before it is born\textsuperscript{11}.

**Genetics**

Simpson and Joe Leigh (2002) observe that certain characteristics, such as eye or hair colour, are handed down to children from their parents. This is called heredity. Genetics is the study of heredity. All of us inherit characteristics through genes from our parents. The genes are present in structures called chromosomes. Each cell in the body (except egg and sperm cells) contains 46 chromosomes, consisting 23 pairs, Egg and sperm cells have half the regular amount of chromosomes. When the egg and sperm cells join together at fertilization the new cell has correct number, 46 chromosomes.\textsuperscript{12}

**Low Birth Weight of Infant (LBW)**

Pankajam (2005) says that babies born 3 weeks or more before the end of a full 38 week pregnancy or who weigh less than 5.5 pounds (2,500 grams) have been referred to as pre-mature.\textsuperscript{13}

\textsuperscript{10} Ibid p.28
\textsuperscript{11} Ibid p.28
\textsuperscript{13}Pankajam,G(2005) “Know your child” published by Ashok Kumar Mittal , Concept publications company limited, New Delhi - p.9
Hirve(1994) finds that premature babies are at risk for many problems. Frequent illness, visual impairments, inattention over activity, low intelligence test scores and school learning problems are some of the difficulties that extend into the childhood years.\textsuperscript{14}

\subsection*{2.1.2 Health}

Health is the level of functional or metabolic efficiency of a living being. In humans, it is the general condition of a person's mind, body and spirit, usually meaning to be free from illness, injury or pain.

Health is defined in the World Health Organisation (WHO) Constitution of 1948 as "a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity." Although this definition has been subjected to controversy, in particular as having a lack of operational value and the problem created by use of the word "complete", it remains the most enduring. Classification systems such as the WHO Family of International Classifications, including the International Classification of Functioning, Disability and Health (ICF) and the International Classification of Diseases (ICD), are commonly used to define and measure the components of health.\textsuperscript{15}

The maintenance and promotion of health are achieved through different combinations of physical, mental and social well-being, together sometimes referred to as the “health triangle”. The World Health Organisation’s 1986 Ottawa Charter for Health Promotion says that health is not just a state, but also a resource for everyday life and not the objective of living. Health is a positive concept emphasizing social and personal resources, as well as physical capacities.


Systematic activities to prevent health problems and promote good health in humans are delivered by health care providers. In addition to health care interventions and a person's surroundings, a number of other factors are known to influence the health status of individuals, including their background, lifestyle, and economic and social conditions; these are referred to as "determinants of health".

**Determinants of Health**

Generally, the life style with which an individual lives is of great importance on health status and quality of life. It is increasingly recognized that health is maintained and improved not only through the advancement and application of health science, but also through the efforts and intelligent lifestyle choices of the individual and society. According to the World Health Organization, the main determinants of health include the social and economic environment, the physical environment, and the person's individual characteristics and behaviours.

**2.1.3 Health Economics**

Health economics is a branch of economics concerned with issues related to efficiency, effectiveness, value and behaviour in the production and consumption of health and health care. In broad terms, health economists study the functioning of the health care systems as well as health-affecting behaviours such as smoking\(^\text{16}\).

A seminal (1963) article by Kenneth Arrow, often credited with giving rise to the health economics as a discipline, drew conceptual distinctions between health and other goods. Factors that distinguish health economics from other areas include extensive government intervention, intractable uncertainty in several dimensions, asymmetric information, barriers to entry, externalities and the

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presence of a third-party agents. In healthcare, the third-party agent is the physician, who makes purchasing decisions (e.g., whether to order a lab test, prescribe a medication, perform a surgery, etc.) while being insulated from the price of the product or service.\footnote{Arrow, Kenneth J(1963). "Uncertainty and the Welfare Economics of Medical Care" The American Economic Review Vol. 53 No. 5 pp. 941-973}

Health economists (1996) evaluate multiple types of financial information: costs, charges and expenditures. Uncertainty is intrinsic to health, both in patient outcomes and financial concerns. The knowledge gap that exists between a physician and a patient creates a situation of distinct advantage for the physician, which is called asymmetric information\footnote{Fuchs, Victor R. (1996). “Economics, Values, and Health Care Reform,” American Economic Review, 86(1), pp. 1.-24.}.

Economics is the science of scarcity. The application of health economics reflects a universal desire to obtain maximum value for money by ensuring not just the clinical effectiveness but also the cost effectiveness of healthcare provision. Achieving ‘value for money implies either a desire to achieve a predetermined objective at least cost or a desire to maximize the benefit to the population of patients served from a limited amount of resources. This requires services to be evaluated for ‘cost effectiveness’.

Health economics can help to inform and improve decision making through the systematic and objective application of common sense. Such applied common sense, which symmetrically balances costs and benefits, represents a valuable mode of thinking for decision-makers, irrespective of whether a formal economic evaluation is undertaken.

\subsection*{2.1.4 Antenatal and Postnatal Mothers}

Antenatal describes the period before something is born. An example of an antenatal period of time is the third trimester of a human pregnancy.
Antenatal testing describes procedures performed during pregnancy to detect health problems in the growing fetus; establish characteristics such as fetal age, sex, or weight; or diagnose any material conditions that may affect fetal development.

Ganatra (1995) observes that antenatal tests and examinations are important tools for protecting the health of a pregnant woman and her developing child. Various tests are administered over the course of pregnancy to determine if the mother has any health conditions that may interfere with normal development of the fetus or if the fetus has any health conditions that may affect the baby's quality of life. Often, families will use information provided by the tests to prepare for the baby's birth and make arrangements for special care if needed or make the decision to terminate the pregnancy. Physicians also use antenatal tests to determine various characteristics of the fetus, such as gestational age, size, and position in the uterus, or to verify the presence of multiple fetuses.

Postnatal (Latin for after birth, from post, meaning after, and natalis, meaning of birth) is the period beginning immediately after the birth of a child and extending for about six weeks. Another term would be postpartum period, as it refers to the mother (whereas postnatal refers to the infant). Less frequently used is puerperium.

It is the time after birth, a time in which the mother's body, including hormonal levels and uterus size, returns to a non-pregnant state. Lochia is postpartum vaginal discharge, containing blood, mucus, and placental tissue. In scientific literature, the term is commonly abbreviated to PX.

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2.1.5. Antenatal and Postnatal Mother Care

Antenatal Care

Pregnancy is a period of great physiological as well as psychological stress for a woman. During pregnancy, the baby in the mother’s womb grows from a minute cell to a fully formed baby. During pregnancy many changes take place in the mother’s body and she needs special care. During pregnancy, a woman should always remain happy and should maintain good health so as to provide good nutrition for the development of foetus and prepare herself for delivery and lactation.

A pregnant woman on knowing her pregnancy or within the first three months of the pregnancy must register herself with an Anganwadi worker. A pregnant woman should take “Mother Child Card” from the Anganwadi worker.

An Anganwadi worker must ensure that a pregnant woman gets three antenatal check up done during pregnancy with the help of medical department doctor and village health nurse (VHN). During the check up complete physical examination of the pregnant woman should be done.

An anganwadi worker should provide information to pregnant woman on care, diet and rest during pregnancy. She should keep a record of ante-natal care in the “Mother Child Card” provided for the purpose. She should identify the pregnant women at risk and refer them to the nearest health facility.

A pregnant woman should consume “supplementary food” provided at anganwadi centre daily and regularly. Pregnant woman should eat extra food i.e.1/4th more than the normal diet as she has to look after the needs of two lives-her own and that of the growing baby.
Postnatal Care

A nursing mother needs special care about her health, diet and factors influencing lactation in order to breast feed her baby successfully. A nursing mother should have the confidence and desire to breastfeed her baby successfully. A nursing mother in addition to normal diet needs one additional good quality meal everyday.

The mother and the baby should have two health check-ups within 7-10 days of delivery for their well being, to prevent infection and to establish successful breastfeeding. A nursing mother and the baby should also have regular health check up. For the mother, personal hygiene is very important, because any maternal infection can easily be passed on to the infant.

2.1.6 Child Health and Care

Child health care (1999) system should focus to meet the needs of the children and their facilities by providing comprehensive child health care during the illness as well as in health.\textsuperscript{20}

Child health care is required for promotion of health, prevention of diseases and provision of treatment. Follow up preventive measures should be practiced in wards, clinics, centres and in the community to help the people to prevent or solve their health problems.\textsuperscript{21}

Health care includes the diagnosis, treatment, and prevention of disease, illness, injury, and other physical and mental impairments in humans. Health care is delivered by practitioners in medicine, chiropractic, dentistry, nursing, pharmacy and allied health and other care providers. It refers to the work done in

\textsuperscript{20} Tanbulwadkar. R.S (1999). “Pediatric Nursing” published by vora medical publication Bombay p.2
\textsuperscript{21} Ibid p.2
providing primary care, secondary care and tertiary care, as well as in public health\textsuperscript{22}.

Access to health care varies across countries, groups and individuals, largely influenced by social and economic conditions as well as the health policies in place. Countries and jurisdictions have different policies and plans in relation to the personal and population-based health care goals within their societies. Health care systems are organizations established to meet the health needs of target populations. Their exact configuration varies from country to country. In some countries and jurisdictions, health care planning is distributed among market participants, whereas in others planning is made more centrally among governments or other coordinating bodies. In all cases, according to the World Health Organization (WHO), a well-functioning health care system requires a robust financing mechanism; a well-trained and adequately-paid workforce; reliable information on which to base decisions and policies; and well maintained facilities and logistics to deliver quality medicines and technologies\textsuperscript{23}.

Health care can form a significant part of a country's economy. In 2008, the health care industry consumed an average of 9.0 per cent of the gross domestic product (GDP) across the most developed OECD countries. The United States (16.0 per cent), France (11.2 per cent), and Switzerland (10.7 per cent) were the top three spenders.

Health care is conventionally regarded as an important determinant in promoting the general health and wellbeing of peoples around the world. An example of this is the worldwide eradication of smallpox in 1980—declared by the WHO as the first disease in human history to be completely eliminated by deliberate health care interventions.

\textsuperscript{22} Ibid p.3
2.1.7 Child Development

Hurlock (1978) in his book that child development is the process of growth and development of a child over a period of time and explains how and why it occurs. Child development extends from the moment of conception to the pubescent comprising changes in all round development of the child at each stage. Child development focuses on the pattern of development and the role played by environment and learning experiences\(^\text{24}\).

According to Mussen (1970) child development refers to the biological and psychological changes that occur in human beings between conception and the end of adolescence, as the individual progresses from dependency to increasing autonomy. Related terms include "developmental psychology", referring to development throughout the lifespan and "pediatrics", the branch of medicine relating to the care of children. Developmental change may occur as a result of genetically-controlled processes known as maturation, or as a result of environmental factors and learning, but most commonly involves an interaction between the two. Age-related development terms are: newborn (age 0–1 month); infant (age 1 month – 1 year); toddler (age 1–3 years); preschooler (age 4–6 years); school-aged child (age 6–11 years); adolescent (age 11–18)\(^\text{25}\). However, organizations like Zero to Three and the World Association for Infant Mental Health use the term infant as a broad category, including children from birth to age 3, a logical decision considering that the Latin derivation of the word infant refers to those who have no speech, and speech is generally well-established by 3 years. The optimal development of children is considered vital to society and so it is important to understand the social, cognitive, emotional, and educational development of children. Increased research and interest in this field have resulted


in new theories and strategies, with specific regard to practice that promotes
development within the school system. In addition there are also some theories
that seek to describe a sequence of states that comprise child development.\textsuperscript{26}

and growth, development of children, who are a nation’s wealth, is based on the
view that more than economic growth, it is the development of human capability
in its population that makes a nation prosper. This implies that people’s lives
improve when they are free from illness, when they are well nourished and
literate, and have self respect, work that matters and the freedom of choice. The
processes of developing these aspects of human capability begin in the earliest
years of life in early childhood\textsuperscript{27}.

According to Hurlock (1990) “development is a progressive series of
orderly and coherent changes leading toward the goal of maturity. The term
progressive indicates that development is always forward”\textsuperscript{28}.

Child development is holistic in nature i.e. a child develops as a whole. All
round development of a child comprises three major aspects or areas or domains.
These are:

1. Physical and motor development
2. Cognitive and language development
3. Psychosocial development.

Development in each of the three aspects does not occur independently, in
fact it is interdependent. The effect of development in each area can not be
separated out easily as each affects the development of other. Experiences and

\textsuperscript{26} Ibid pp19-20
\textsuperscript{28} Hurlock E.B.(1990) “Developmental Psychology”, Published by Tata McGraw Hill Publishing
  Company Ltd New Delhi p.64
achievements of a child in the three areas of development contribute towards developing a child’s personality.29

When growth in any aspect is unusually slow or advanced, the interrelation may change. All children grow through the normal sequence of development. “Physical growth and mental development are two important criteria “by which we judge a child’s progress. At the beginning of pregnancy the fetus weighs 1 gram while at birth (40 weeks) an average baby weighs 3000 g on an average he will be double in birth weight by 4-5 months and triple by one year of age. Then upto adult hood he will grow not more than 20 times in birth weight.

Chowdry (1980) says that development is a continuous process which starts at conception and not at birth. All children go through the same stages of development but the rate of development may vary. Hence development is defined as maturation of functions. It denotes acquisition of a variety of competence for optimal functioning of the individual30.

The term “development” is applied to different aspects of children’s growth emotional, physical and intellectual and it is now generally understood that a child may be developing normally even though his maturity on any of these levels may not match his chronological age. Research has revealed much about the different rates at which children mature in all these ways and the unevenness that makes growth not a smoothly rising curve but a halting progress, with level plateaus and occasional dips as well as occasional sports31.

29 Director(2006) “Hand Book for Anganwadi Workers” Published by, National Institute of Public Co-operation and child development, New Delhi p.35
The factors influencing growth and development of a child are illustrated in Figure 2.1. They are:

i. Environment
ii. Family Structure and relationship
iii. Early stimulation and learning experiences
iv. Child Rearing practices, attention and love
v. Social environment
vi. Psychological environment
vii. Health and Nutrition care
viii. Economic condition
ix. Birth spacing
x. Sex of the child
xi. Position of the child in the family
xii. Maturation and learning
xiii. Prenatal environment
xiv. Heredity (Genes)

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32 “Hand Book for Anganwadi Workers” (2006) Published by Director, National Institute of Public Co-operation and child development, New Delhi p.36
Fig. 2.1 Factors Influencing Growth and Development of a child

Source: “Hand Book for Anganwadi Workers” (2006) Published by Director, National Institute of Public Co-operation and child development, New Delhi p.36
2.1.8 Child Development and Growth

Growth is an increase in the size of the whole body or any of its part. It can be measured in inches, centimeters, pounds or kilograms. The term growth implies a net increase in the size of or mass of tissues. It is largely due to multiplication of cells and increase in the intercellular substance.\(^{33}\)

“Development is functional maturation. It is a progressive increase in skills and capacity of function. It is orderly not half hazard. There is a direct relationship between its one stage and the next. Each child has its own rate of growth, physical, social, emotional and spiritual growth and development proceed at different rates but they are interrelated.\(^{34}\)

The term growth and development are often used together, but they are not interchangeable because they represent two different aspects of dynamic change, i.e. those of quantity and quality.\(^{35}\)

2.1.9 Stages of Childhood

Childhood is divided into four major stages beginning from conception to the time when the child becomes sexually mature. These are

1. Prenatal – Conception to birth: This stage sees extremely rapid growth, physiological development and growth of all bodily structure.
2. Infancy – birth to 2 years: This stage sees the rapid growth of body and mental abilities of the child.
3. Childhood - 2-12 years: In early childhood (2-6 Years) muscular and mental coordination, social development and self reliance are seen. In late childhood (6-12 years) socialization, personality development and rapid social and emotional developments are observed.

\(^{33}\) Ibid p7
\(^{34}\) Ibid pp7-8
4. Adolescence – 12-18: In this stage there is rapid increase in height and weight and personality development.

2.1.10 Developmental Milestones

Parents or caregivers should be aware of the “developmental milestones” so as to know whether the child is making normal progress or something is wrong or there is a disability. Child progress on the path of development across definite stages is marked by certain indicators called developmental milestones36.

Milestones are like guideposts for various stages of development, through which every normal child passes. Milestones indicate the ages at which children are expected to perform tasks which are also called developmental tasks. Milestones for growth are easy to measure e.g. height and weight, whereas milestones for development are more complex and difficult to measure e.g. cognitive, language, social development, etc.

For every child there is a normal range for completion of a milestone. But each child reaches a milestone or performs the expected developmental task at his/her own pace and in his or her own way. Sometimes, a stage is skipped or another one is delayed and some children progress more rapidly than the others. But this need not be a cause for alarm. If accomplishment of ‘milestone’ is unduly delayed, it is a signal that the child should be medically examined. Table 2.1 explains milestones of development.

36 Director(2006) “Hand Book for Anganwadi Workers” Published by, National Institute of Public Co-operation and child development, New Delhi p.40
<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Age</th>
<th>Milestone of Development</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Eighteen months</td>
<td>Walks well&lt;br&gt;Expresses wants&lt;br&gt;Stands one foot with help&lt;br&gt;Point to objects or pictures when they are named (e.g. nose, eyes)&lt;br&gt;Starts saying names of objects&lt;br&gt;Puts pebbles in a cup</td>
</tr>
<tr>
<td>2</td>
<td>Two years</td>
<td>Walks, climbs and runs&lt;br&gt;Says several words together&lt;br&gt;Follows simple instructions&lt;br&gt;Scribbles if given a pencil or crayon&lt;br&gt;Enjoys simple stories and songs&lt;br&gt;Imitates the behavior of others on household work&lt;br&gt;Begins to eat by herself or himself</td>
</tr>
<tr>
<td>3</td>
<td>Three years</td>
<td>Walks, runs, climbs, kicks and jumps easily&lt;br&gt;Recognises and identifies common objects and pictures by pointing&lt;br&gt;Makes sentences of two or three words&lt;br&gt;Says her or his own name and age&lt;br&gt;Can name colours&lt;br&gt;Can understand numbers&lt;br&gt;Uses make-believe objects in play&lt;br&gt;Expresses affection&lt;br&gt;Feeds herself or himself</td>
</tr>
<tr>
<td>4</td>
<td>Four years</td>
<td>Balance on one foot&lt;br&gt;Plays simple games with others&lt;br&gt;Asks questions&lt;br&gt;Answers simple questions&lt;br&gt;Shows different emotions&lt;br&gt;Recognises to six basic colours&lt;br&gt;Washes hands alone</td>
</tr>
<tr>
<td>5</td>
<td>Five years</td>
<td>Moves in a coordinated way&lt;br&gt;Speaks in sentences and uses many different works&lt;br&gt;Understands opposites (e.g. fat and thin)&lt;br&gt;Plays with other children&lt;br&gt;Dresses without help&lt;br&gt;Answers simple questions&lt;br&gt;Counts to 10 objects&lt;br&gt;Washes her or his hands</td>
</tr>
</tbody>
</table>

Source: “Hand Book for Anganwadi Workers” (2006) Published by Director, National Institute of Public Co-operation and child development, New Delhi
2.1.11 Monitoring Growth of a Child

Growth Monitoring means keeping a regular track of the growth of the child through key indicators like weight, height, etc according to age, at regular intervals. Growth monitoring is a way to detect growth failure in children at an early stage and take immediate and effective action. Growth monitoring must start right from the birth of the child\(^\text{37}\).

**Weight**

Weight is a commonly used indicator of body size, as it reflects the level of food intake.

**Height**

Height is another measure of growth of a child. The height helps us to know whether the child is growing normally. It is a way to detect growth failure in children at an early stage and take immediate and effective action. In Integrated Child Development Services programme, Growth monitoring is done with the help of Growth Chart. Growth Chart is a tool for assessing the growth of the child using “weight for age” as indicator. It is a visual record of the growth pattern of a child.

The weights of the children should be taken up to 3 years of age every month, Weights of children 3-6 years old should be recorded once in every three months.

2.1.12 Nutritional Requirements for Child Growth and Development

**Nutritional Status**

Only two studies included children’s nutritional status as an outcome and neither reported benefits of intervention on growth. Surprisingly, one study reported that children in the intervention group had lower weight for height than

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\(^{37}\) Director(2006) “Hand Book for Anganwadi Workers” Published by, National Institute of Public Cooperation and child development, New Delhi p.96
children in the control group (Aboud 2007). In this study, no pretest was conducted and hence it is possible that this difference reflected children’s prior nutritional status.\(^{38}\)

Food requirements vary according to age, sex, physical activity and physiological condition of an individual. The body needs energy to maintain body temperature, for metabolic purposes, to support growth, and for physical activity. Foods fulfill physiological, psychological and social needs of an individual. Nutrients required by our body are carbohydrate, proteins, fats, vitamins, minerals and water.\(^{39}\)

**Proteins**

Proteins are essential for the development and growth of children. The requirement of proteins is furnished in Table 2.2

<table>
<thead>
<tr>
<th>Age (Years)</th>
<th>Body weight (kg)</th>
<th>Protein (g/day)</th>
<th>Allowance/ g/kg/day</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-3</td>
<td>12.03</td>
<td>22</td>
<td>1.83</td>
</tr>
<tr>
<td>4-6</td>
<td>18.87</td>
<td>29</td>
<td>1.56</td>
</tr>
</tbody>
</table>

**Calcium**

Calcium requirement for children can be calculated on the basis of the amount of calcium secretion during the period of growth. It is 400-500 mg/day for a child of 1-9 year age.

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\(^{39}\) Ibid p.3-13
Iron

Iron is an important constituent of hemoglobin, myoglobin and several enzymes. During growth, for an increase of a kg in body weight, 30mg iron is required. Since the increase in body weight during childhood is 2kg per year on an average, the daily requirement of iron for growth will be 0.2mg.

Vitamins

Vitamins are essential for the maintenance of normal health. Although needed in very small amounts, they play an important role in the metabolism of several nutrients.

Recommended Dietary Intakes of Nutrients

It has been decided to provide 50 per cent of the recommended dietary allowances (RDA) for different micronutrients to 6 year old children through 80g of ready to eat energy food/raw food material. Table 2.3 shows the recommended dietary allowances.

Table 2.3

Recommended Dietary Allowances

<table>
<thead>
<tr>
<th>Sl.No</th>
<th>Nutrient</th>
<th>1-2 years Age</th>
<th>4-6 years Age</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Calorie (kcal)</td>
<td>1220</td>
<td>1720</td>
</tr>
<tr>
<td>2</td>
<td>Proteins (g)</td>
<td>22.0</td>
<td>29.4</td>
</tr>
<tr>
<td>3</td>
<td>Calcium (g)</td>
<td>0.4-0.5</td>
<td>0.4-0.5</td>
</tr>
<tr>
<td>4</td>
<td>Iron (mg)</td>
<td>20.25</td>
<td>20.25</td>
</tr>
<tr>
<td>5</td>
<td>Vitamin –A (mg)</td>
<td>250</td>
<td>300</td>
</tr>
<tr>
<td>6</td>
<td>Vitamin –B (mg)</td>
<td>1000</td>
<td>1200</td>
</tr>
<tr>
<td>7</td>
<td>Riboflavin (mg)</td>
<td>0.7</td>
<td>1.0</td>
</tr>
<tr>
<td>8</td>
<td>Thiamine</td>
<td>0.5</td>
<td>0.9</td>
</tr>
<tr>
<td>9</td>
<td>Vitamin –C</td>
<td>40.0</td>
<td>40.0</td>
</tr>
</tbody>
</table>

Source: Know your Child “ G.Pankajam, Published by Ashok Kumar Mittal, Concept Publishing Company, New Delhi 2005
2.1.13 Diseases Inflicting Faced by Children

A large number of diseases attack children due to infection. These are called communicable diseases. These diseases are spread or transmitted from one person to another person through saliva, excretion, air, water and or bodily contact. The common diseases are common cold, fever, diarrhea, dysentery, mumps, tonsillitis, ear infection, scabies, measles, chicken box, diphtheria, pertussis, tetanus, poliomyelitis, tuberculosis, typhoid, infective hepatitis and worm infection.

2.1.14 Immunization

The important aspect in the child care is to protect children against specific preventable diseases. Immunization of pregnant women and infants protects children from six vaccine preventable diseases-poliomyelitis, diphtheria, pertussis, tetanus, tuberculosis and measles. These are major prevention methods of child mortality, disability, morbidity and related malnutrition. Immunization of pregnant women against tetanus also reduces maternal and neonatal mortality. This service is delivered by the Ministry of Health and Family Welfare under its Reproductive Child Health (RCH) Programme. In addition, the iron and vitamin "A" supplementation to children and pregnant women is done under the RCH Programme of the Ministry of Health and Family Welfare. Table 2.4 lists the vaccines to be administered to the children periodically.

Table 2.4

Required Vaccinations for Children

<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Vaccine Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>At Birth</td>
<td>BCG vaccine,</td>
</tr>
<tr>
<td></td>
<td>Oral Polio vaccine 0 dose</td>
</tr>
<tr>
<td></td>
<td>Hepatitis B vaccine</td>
</tr>
<tr>
<td>6 Weeks</td>
<td>DTP 1&lt;sup&gt;st&lt;/sup&gt; dose</td>
</tr>
<tr>
<td></td>
<td>Hib vaccine 1&lt;sup&gt;st&lt;/sup&gt; dose</td>
</tr>
<tr>
<td></td>
<td>Oral polio vaccine 1&lt;sup&gt;st&lt;/sup&gt; dose</td>
</tr>
</tbody>
</table>

Table cont...
<table>
<thead>
<tr>
<th>Age of Child</th>
<th>Vaccine Administered</th>
</tr>
</thead>
<tbody>
<tr>
<td>10 Weeks</td>
<td>Hepatitis B vaccine</td>
</tr>
<tr>
<td></td>
<td>DTP 2\textsuperscript{nd} dose</td>
</tr>
<tr>
<td></td>
<td>Hib vaccine 2\textsuperscript{nd} dose</td>
</tr>
<tr>
<td></td>
<td>Oral polio vaccine 2\textsuperscript{nd} dose</td>
</tr>
<tr>
<td>14 Weeks</td>
<td>DTP 3\textsuperscript{rd} dose</td>
</tr>
<tr>
<td></td>
<td>Hib vaccine 3\textsuperscript{rd} dose</td>
</tr>
<tr>
<td></td>
<td>Oral polio vaccine 3\textsuperscript{rd} dose</td>
</tr>
<tr>
<td>9 months</td>
<td>Hepatitis B vaccine</td>
</tr>
<tr>
<td>15-18 months</td>
<td>Measles vaccine</td>
</tr>
<tr>
<td></td>
<td>MMR(Measles, Mumps, Rubella) vaccine</td>
</tr>
<tr>
<td></td>
<td>DTP 1\textsuperscript{st} booster dose</td>
</tr>
<tr>
<td></td>
<td>Hib Vaccine 1\textsuperscript{st} booster dose</td>
</tr>
<tr>
<td></td>
<td>Oral Polio vaccine 4\textsuperscript{th} dose</td>
</tr>
<tr>
<td>2 Years</td>
<td>Typhoid vaccine</td>
</tr>
<tr>
<td>5 Years</td>
<td>DTP 2\textsuperscript{nd} booster dose</td>
</tr>
<tr>
<td></td>
<td>Oral Polio vaccine 5\textsuperscript{th} booster</td>
</tr>
<tr>
<td>10 Years</td>
<td>TT booster dose</td>
</tr>
<tr>
<td>15-16 Years</td>
<td>TT booster dose</td>
</tr>
<tr>
<td></td>
<td>Typhoid vaccine</td>
</tr>
</tbody>
</table>

Source: Ministry of Women and child Development Government of India

2.1.15 Factors Influencing Child’s Personality

So many factors determine the personality of a child. The factors influencing child’s personality are furnished in Figure 2.2. They are\textsuperscript{40}

- Parents Expectation/Aspirations
- Good Parenting,
- Family values and influences
- Family background and profiles
- Family relationship and interactions

\textsuperscript{40} “Hand Book for Anganwadi Workers” (2006) Published by Director, National Institute of Public Co-operation and child development, New Delhi, Page. 44
f. Child rearing practices

g. Peer group

h. Cultural and Traditional values

i. Exposure to Radio, Television and media

j. School and learning opportunities

k. Heredity

l. Physical features and body type

m. Early stimulation and experiences
Fig. 2.2 Factors Influencing Child’s Personality

Source: “Hand Book for Anganwadi Workers” (2006) Published by Director, National Institute of Public Co-operation and child development, New Delhi, Page. 44
2.1.16 Infant Mortality Rate (IMR)

Definition: This entry gives the number of deaths of infants under one year old in a given year per 1,000 live births in the same year; included is the total death rate, and deaths by sex, male and female. This rate is often used as an indicator of the level of health in a country.41

Because of lack of nutrition, the child's immunity is low. Children of five years of age die every day across the world. India tops the list of countries for 2011, with the highest number of under five years of age.42

In the research area the Infant Mortality Rate was 27 in 2003, the IMR is decreasing year by year in this area. The rate has decreased due to the impact of the health services by the governments, ICDS scheme, awareness of the people and increasing the welfare programme.

Reports say that rates of child mortality have fallen in all regions of the world in the last two decades. Half of all under-five deaths occurred in five countries India, Nigeria, and the Democratic Republic of the Congo 43

Infant Mortality Rate in India

India has a high infant mortality rate of 58 per 1,000 live births as indicated by the Vital Statistics Division of the Office of the Registrar General and Census Commissioner of India (2005). The Infant mortality rates in rural and urban areas were 64 and 40 Per 1,000 live births respectively. The female infant mortality rate was 61 while for males it was 56 Per 1,000 live births respectively. Table 2.5

42 Http://newswebindia123.com
43 UN News Centre - 9/13/2012 10:20:37 PM
shows that Infant mortality rates for the periods 1961, 1981, 2001 and 2010 in all states of India. It is clearly seen that the rate is decreasing.\textsuperscript{44}

\begin{table}[h]
\caption{Infant Mortality Rates in India}
\centering
\begin{tabular}{|l|c|c|c|c|}
\hline
\textbf{State/ Union Territory} & \textbf{1961} & \textbf{1981} & \textbf{2001} & \textbf{2010} \\
\hline
Andaman & Nicobar Is. & 77 & 69 & 30 & 25 \\
Andhra Pradesh & 91 & 55 & 66 & 33 \\
Arunachal Pradesh & 126 & 91 & 44 & 12 \\
Assam & NA & 92 & 78 & 36 \\
Bihar & 94 & 75 & 67 & 38 \\
Chandigarh & 53 & 48 & 32 & 23 \\
Dadra & Nagar Haveli & 98 & 81 & 61 & 22 \\
Daman & Diu & 57 & 56 & NA & 29 \\
Delhi & 67 & 54 & 51 & 29 \\
Goa & 57 & 51 & 36 & 10 \\
Gujarat & 84 & 78 & 64 & 30 \\
Haryana & 94 & 52 & 69 & 38 \\
Himachal Pradesh & 92 & 82 & 64 & 29 \\
Jammu & Kashmir & 78 & NA & 45 & 32 \\
Karnataka & 81 & 74 & 58 & 28 \\
Kerala & 52 & 42 & 16 & 13 \\
Lakshadweep & 118 & 91 & 30 & 27 \\
Madhya Pradesh & 150 & 133 & 97 & 42 \\
Maharashtra & 92 & 74 & 49 & 20 \\
Manipur & 32 & 28 & 25 & 9 \\
Meghalaya & 79 & 80 & 52 & 37 \\
Mizoram & 69 & 53 & 23 & 20 \\
Nagaland & 68 & 51 & NA & 21 \\
Odissa & 115 & 125 & 98 & 43 \\
Puducherry & 73 & 34 & 21 & 21 \\
Punjab & 77 & 74 & 54 & 28 \\
\hline
\end{tabular}
\end{table}

\textsuperscript{44} Director, "Statistics on Women In India"(2007) published by National Institute of Public Cooperation and Child Development, New Delhi p.96

\textit{Table cont...}
The India’s population has crossed 1.2 billion in 2011. Some indicators of quality of life in Asian countries, including India such as life expectancy, literacy and infant mortality rate have improved over the years, while others remained static or deteriorated such as environmental sanitation and environmental quality. International comparisons on a few of the indicators of human development for Asian countries and indicators for different states in India are given in the tables below.45

Table 2.6

Indicators of Human Development for SAARC Countries and some Asian Countries, 2004

<table>
<thead>
<tr>
<th>Country</th>
<th>Life Expectancy at Birth (years)</th>
<th>Infant Mortality Rate (per thousand live births)</th>
<th>Adult Literacy Rate (per cent) (age 15 years &amp; above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>India</td>
<td>63.6</td>
<td>62</td>
<td>61.0</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>63.3</td>
<td>56</td>
<td>41.1</td>
</tr>
<tr>
<td>Bhutan</td>
<td>62.8</td>
<td>67</td>
<td>47.0</td>
</tr>
<tr>
<td>China</td>
<td>71.9</td>
<td>26</td>
<td>90.9</td>
</tr>
</tbody>
</table>

Table cont...

<table>
<thead>
<tr>
<th>Country</th>
<th>Life Expectancy at Birth (years)</th>
<th>Infant Mortality Rate (per thousand live births)</th>
<th>Adult Literacy Rate(per cent) (age 15 years &amp; above)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indonesia</td>
<td>67.2</td>
<td>30</td>
<td>90.4</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>77.3</td>
<td>5</td>
<td>98.0</td>
</tr>
<tr>
<td>Malaysia</td>
<td>73.4</td>
<td>10</td>
<td>88.7</td>
</tr>
<tr>
<td>Maldives</td>
<td>67.0</td>
<td>35</td>
<td>96.3</td>
</tr>
<tr>
<td>Nepal</td>
<td>62.1</td>
<td>59</td>
<td>48.6</td>
</tr>
<tr>
<td>Pakistan</td>
<td>63.4</td>
<td>80</td>
<td>49.9</td>
</tr>
<tr>
<td>Philippines</td>
<td>70.7</td>
<td>26</td>
<td>92.6</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>74.3</td>
<td>12</td>
<td>90.7</td>
</tr>
<tr>
<td>Thailand</td>
<td>70.3</td>
<td>18</td>
<td>92.6</td>
</tr>
</tbody>
</table>


Infant Mortality Rate in Tamil Nadu

In Tamil Nadu infant mortality rate is low when compared to other states due to better health programme, medical facilities etc. The following Table 2.5 shows the infant mortality rates in rural and urban areas for the period 1990-2008.

Table 2.7

<table>
<thead>
<tr>
<th>Year</th>
<th>Infant Mortality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
</tr>
<tr>
<td>1990</td>
<td>70</td>
</tr>
<tr>
<td>1991</td>
<td>65</td>
</tr>
<tr>
<td>1992</td>
<td>66</td>
</tr>
<tr>
<td>1993</td>
<td>66</td>
</tr>
<tr>
<td>1994</td>
<td>64</td>
</tr>
<tr>
<td>1995</td>
<td>+1</td>
</tr>
</tbody>
</table>

Table cont...
<table>
<thead>
<tr>
<th>Year</th>
<th>Infant Mortality Rate</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Rural</td>
<td>Urban</td>
<td>Combined</td>
</tr>
<tr>
<td>1996</td>
<td>60</td>
<td>39</td>
<td>53</td>
</tr>
<tr>
<td>1997</td>
<td>58</td>
<td>40</td>
<td>53</td>
</tr>
<tr>
<td>1998</td>
<td>58</td>
<td>40</td>
<td>53</td>
</tr>
<tr>
<td>1999</td>
<td>58</td>
<td>39</td>
<td>52</td>
</tr>
<tr>
<td>2000</td>
<td>57</td>
<td>38</td>
<td>51</td>
</tr>
<tr>
<td>2001</td>
<td>54</td>
<td>35</td>
<td>49</td>
</tr>
<tr>
<td>2002</td>
<td>50</td>
<td>32</td>
<td>44</td>
</tr>
<tr>
<td>2003</td>
<td>48</td>
<td>31</td>
<td>43</td>
</tr>
<tr>
<td>2004</td>
<td>45</td>
<td>35</td>
<td>41</td>
</tr>
<tr>
<td>2005</td>
<td>39</td>
<td>34</td>
<td>37</td>
</tr>
<tr>
<td>2006</td>
<td>39</td>
<td>33</td>
<td>37</td>
</tr>
<tr>
<td>2007</td>
<td>38</td>
<td>31</td>
<td>35</td>
</tr>
<tr>
<td>2008</td>
<td>34</td>
<td>28</td>
<td>31</td>
</tr>
</tbody>
</table>

**Source:** Department of ICDS, scheme Chennai

The combined infant mortality rate in 1990 was 59 and in 2008 it reduced to 31. The IMR rate is reduced due to improved the health services by the government of Tamil Nadu. Figure 2.3 is also explaining the infant mortality rates in Tamil Nadu and India for the period of 2000-2008.
Fig. 2.3 Infant Mortality Rates of Tamil Nadu and India
2.1.17 Maternal Mortality Rate

Maternal death is the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management but not from accidental or incidental causes. To facilitate the identification of causes of maternal deaths, a new clause has been introduced: Pregnancy-related death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death.\(^\text{46}\)

The maternal mortality rate (MMR) is the annual number of female deaths per 100,000 live births from any cause related to or aggravated by pregnancy or its management (excluding accidental or incidental causes). The MMR includes deaths during pregnancy, childbirth, or within 42 days of termination of pregnancy, irrespective of the duration and site of the pregnancy, for a specified year.

Live birth refers to the complete expulsion or extraction from its mother of a product of conception, irrespective of the duration of the pregnancy, which, after such separation, breathes or shows any other evidence of life - e.g. beating of the heart, pulsation of the umbilical cord or definite movement of voluntary muscles - whether or not the umbilical cord has been cut or the placenta is attached. Each product of such a birth is considered live born.\(^\text{47}\)

Methods of estimation

Measuring maternal mortality accurately is difficult except where comprehensive registration of deaths and of causes of deaths exists. Elsewhere, census, surveys or models have to be used to estimate levels of maternal mortality.

Reproductive-age mortality studies (RAMOS) use triangulation of different sources of data on deaths of women of reproductive age coupled with record review and/or verbal autopsy to identify maternal deaths. Based on multiple sources of information, RAMOS are considered the best way to estimate levels of maternal mortality. Estimates derived from household surveys are subject to wide confidence intervals and long period rates (often for 10 year periods). Global and regional estimates of maternal mortality are developed every five years, using a regression model.

India and Nigeria together accounted for a third of the deaths of pregnant women globally in 2010, latest UN figures said, even as maternal deaths declined by nearly half in the past two decades due to improvement in health systems and increased female education.\(^{48}\)

Globally, an estimated 287,000 women died in pregnancy and child birth in 2010, a decline of 47 per cent from levels in 1990, with Sub-Saharan Africa and Southern Asia accounting for 85 per cent of the those maternal deaths, according to a report on trends in maternal mortality between 1990 to 2010 released by UN Population Fund (UNFPA), World Health Organisation, UN Children's Fund and the World Bank. At the country level, India and Nigeria accounted for a third of global maternal deaths, with India at 19 percent (56,000) and Nigeria at 14 percent (40,000).

The global maternal mortality rate in 2010 was 210 per 100,000 live births, down from 400 maternal deaths per 100,000 live births in 1990.

**Maternal Mortality Rate (MMR) in India**

India is moving well on maternal mortality rates. India has made progress in this regard. The maternal mortality rates recorded a 38 per cent decline in maternal deaths between 1999 and 2009. There has been progress but we are not there just yet. The government needs to ensure the availability of auxiliary nurses and midwives closer to the homes of women who are delivering. Almost 150 women were dying daily in India, as per 2010 data on maternal deaths. This means one woman is dying every ten minutes. The government must work to address the issue of unmet need for contraception of women. They need to be counseled to space their children better. India has reduced MMR significantly from 437 per one lakh live births in 1999 to 212 now, but needs to hasten the pace under National Rural Health Mission to achieve related Millennium Development Goal.\(^{49}\)

To achieve this Millennium Development Goal (MDG) 5 (on maternal health) India needs to reduce maternal mortality rate from 437 deaths per 100,000 live births in 1991 to 109 by 2015. It has only reached the 212 mark just yet. The United Nation Millennium Development Goal Report 2012 points out that overall, three important targets of poverty, slums and water have to be met three years ahead of the 2015 deadline. The share of people living on less than 1.25 USD a day has reduced to less than half as compared to 1990. The proportion of people with improved access to drinking water has risen from 76 per cent in 1990 to 89 per cent in 2010\(^{50}\). As many as 237 million Indians are still living in hunger though India has managed to meet the first MDG of reducing people in extreme poverty by half between 1990 and 2015.

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\(^{49}\) The Hindu(2012)"U.N. India likely to Miss on MDG Maternal Health” published in Hindu Daily News, New Delhi dated 3\(^{rd}\) july 2012 p.5

\(^{50}\) Ibid p5
Maternal Mortality Rate in Tamil Nadu

Government of Tamil Nadu introduced various programmes for the benefit of women and children which include establishment of twenty four hours delivery care services in all the 1539 primary health centres, 108 ambulance services in all the districts, establishment of Comprehensive Emergency Obstetric and Newborn Care in government hospitals and medical college hospitals and Basic Emergency Obstetric and Newborn Care centres in block primary health centres, mobile medical outreach services in all blocks, upgradation of primary health centres with 30 beds, operation theatres and posting of specialists, ultra sonogram facilities in almost all the primary health centres, establishment of blood storage facilities primary health centres, gestational diabetes mellitus control programme, and trainings for all the doctors and nurses. Table 2.8 list the primary health centres in Tamil Nadu except in Chennai district.

Table 2.8
Primary Health Centres in Tamil Nadu (2010)

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Name of the District</th>
<th>No. of Primary Health Centres</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Thiruvallur</td>
<td>42</td>
</tr>
<tr>
<td>2</td>
<td>Kancheepuram</td>
<td>49</td>
</tr>
<tr>
<td>3</td>
<td>Vellore</td>
<td>66</td>
</tr>
<tr>
<td>4</td>
<td>Dharmapuri</td>
<td>38</td>
</tr>
<tr>
<td>5</td>
<td>Krishnagiri</td>
<td>31</td>
</tr>
<tr>
<td>6</td>
<td>Tiruvannamalai</td>
<td>79</td>
</tr>
<tr>
<td>7</td>
<td>Viluppuram</td>
<td>79</td>
</tr>
<tr>
<td>8</td>
<td>Salem</td>
<td>70</td>
</tr>
<tr>
<td>9</td>
<td>Namakkal</td>
<td>46</td>
</tr>
<tr>
<td>10</td>
<td>Erode</td>
<td>65</td>
</tr>
<tr>
<td>11</td>
<td>The Nilgiris</td>
<td>27</td>
</tr>
</tbody>
</table>

Table cont...
## Name of the District | No. of Primary Health Centres
---|---
12 Coimbatore | 38
13 Tiruppur | 29
14 Dindigul | 48
15 Karur | 28
16 Tiruchirappalli | 53
17 Perambalur | 27
18 Ariyalur | 20
19 Cuddalore | 49
20 Nagapattinam | 42
21 Thiruvarur | 38
22 Thanjavur | 57
23 Pudukkottai | 51
24 Sivaganga | 43
25 Madurai | 42
26 Theni | 26
27 Virudhunagar | 35
28 Ramanathapuram | 45
29 Thoothukkudi | 46
30 Tirunelveli | 61
31 Kanniyakumari | 30

Source: Government of Tamil Nadu, Health Department

These programmes have helped in significantly reducing pregnancy related deaths (maternal deaths). Since the countdown to achieve Millennium Development Goals by 2015 has already started, the Health and Family Welfare Department focuses its attention to bring down the maternal mortality rate in Tamil Nadu to less than 30 per 1,00,000 live births and infant mortality rate to less than 20 per 1000 live births. While analyzing the causes of maternal deaths in
Tamil Nadu, it is seen that post partum hemorrhage (PPH – bleeding after the birth of the baby) is the major cause of maternal deaths. 22 percent of the maternal deaths are due to PPH and to a large extent these deaths are preventable. 51

2.1.18 Malnutrition

Malnutrition is the condition that results from taking an unbalanced diet in which certain nutrients are lacking, in excess (too high an intake), or in the wrong proportions. A number of different nutritional disorders may arise, depending on which nutrients are under or overabundant in the diet. 52

The World Health Organization (2001) report says that the most of the world, malnutrition is present in the form of under nutrition, which is caused by a diet lacking adequate calories and protein. While malnutrition is more common in developing countries, it is also present in industrialized countries. In wealthier nations it is more likely to be caused by unhealthy diets with excess energy, fats, and refined carbohydrates. A growing trend of obesity is now a major public health concern in lower socio-economic levels and in developing countries as well. 53

The World Health Organization cites malnutrition as the greatest single threat to the world's public health. Improving nutrition is widely regarded as the most effective form of aid. Nutrition-specific interventions, which address the immediate causes of undernutrition, have been proven to deliver among the best value for money of all development interventions. Emergency measures include

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providing deficient micronutrients through fortified sachet powders or directly through supplements.\textsuperscript{54}

World Health Organisation, UNICEF, and the United Nation World Food Programme recommend community management of severe acute malnutrition with ready to use therapeutic foods, which have been shown to cause weight gain in emergency settings. The famine relief model increasingly used by aid groups calls for giving cash or cash vouchers to the hungry to pay local farmers instead of buying food from donor countries, often required by law, to prevent dumping hurting local farmers.\textsuperscript{55}

The term "severe malnutrition" is often used to refer specifically to protein-energy malnutrition. Protein-energy malnutrition (PEM) is often associated with micronutrient deficiency. Two forms of protein-energy malnutrition are kwashiorkor and marasmus, and they commonly coexist.

Kwashiorkor displaced child is mainly caused by inadequate protein intake resulting in a low concentration of amino acids. The main symptoms are edema, wasting, liver enlargement, hypoalbuminaemia, steatosis, and possibly depigmentation of skin and hair. Kwashiorkor is identified by swelling of the extremities and belly, which is deceiving of actual nutritional status.

Marasmus (to waste away) is caused by an inadequate intake of both protein and energy. The main symptoms are severe wasting, leaving little or no edema, minimal subcutaneous fat, severe muscle wasting, and non-normal serum albumin levels. Marasmus can result from a sustained diet of inadequate energy and protein, and the metabolism adapts to prolong survival. It is traditionally seen


\textsuperscript{55} "Cash roll-out to help hunger hot spots". World Food Programme. December 8, 2008.
in famine, food restriction, or anorexia. Conditions are characterized by extreme wasting of the muscles and a gaunt expression.

Natasha Audrey Ledlie\textsuperscript{56} in his thesis says that The ICDS scheme was initiated in India to address child malnutrition and long-term poverty. The goals of the program are to reduce the intergenerational cycle of child malnutrition and its determinants, and as a result, improve early childhood outcomes. The evaluation suggests that the ICDS scheme has not been successful in decreasing the prevalence of child malnutrition in India. However, since the ICDS scheme is effectively targeted to individuals with a low nutritional status, one must be cautious when drawing conclusions regarding the effectiveness of the scheme.

2.1.19 Family Income and Child Development

The family income and family situation are the basic requirements for the growth and development of a child. The growth of higher income people’s children is very high when compared to that of poor income people. In village area people go to work in the agricultural fields, the women send their children to the anganwadi centre and the children are sitting in the centre. The anganwadi workers take full care of the children. The agricultural working woman’s child is very poor in health point of view. They do not care for the children due to family circumstances.

2.2 REVIEW ON INTEGRATED CHILD DEVELOPMENT SERVICES SCHEME

2.2.1 Integrated Child Development Services Scheme Model

Horwath and Morrison describe the integrated model as integrated services. They are characterized by a unified management system, pooled funds, common governance, whole systems approach to training, information and finance, single

\textsuperscript{56} Natasha Audrey Ledlie, B.A.(2011) “Integrated Child Development Services programme: Impact of Water Quality on Child malnutrition in India” thesis submitted to Faculty of the Graduate School of Arts and Sciences of Georgetown University p.41
assessment and shared targets ... Partners have a shared responsibility for achieving the service goals through joint commissioning, shared prioritization, service planning and auditing. Joint commissioning can be one of the major levers for integration, service change and improving the delivery of children’s services. Ultimately, joint commissioning may lead to the merger of one or more agencies, who give up their individual identities for a shared new identity.57

2.2.2 Evaluation of Integrated Child Development Services Scheme


Major findings of the study conducted by NCAER (1996-2001) are detailed below.

i. Most of the AWCs across the country were located within accessible distance (100-200 metres) from beneficiary households. A majority of the beneficiary households was within 100 metres of the AWCs. Another 10 per cent were about 150-200 metres away. The rest were beyond 200 metres. Thus, the factor of distance of beneficiary households from the AWCs was unlikely to affect attendance at the AWCs during inclement weather;

ii. Most of the AWCs in the country, except those in Tamil Nadu, Kerala, Karnataka and Odissa were functioning from community buildings. The type of building plays an important role in safeguarding against any natural hazards. Of those sampled, about 40 per cent were functioning from pucca buildings.

iii. Nearly 50 per cent Anganwadi centres reported adequate space, especially for cooking.

iv. One out of two Anganwadi workers was found to be educated at least up to matriculation level across the country. In all central and southern States, less than 50 per cent of the Anganwadi workers were at least matriculates, more than 75 per cent of Anganwadi workers were matriculates in the northern and eastern States of the country. Gujarat and Rajasthan reported lowest percentage of matriculate functionaries.

v. Though about 84 per cent of the functionaries reported to have received training, the training was largely pre-service training. In-service training remained largely neglected.

vi. The day to day functioning of the Anganwadi centre is a critical indicator of the effectiveness of the ICDS scheme. An assessment of activities of sample Anganwadi centres through observations, record reviews and personal interviews with the Anganwadi workers revealed that, on an average, an Anganwadi centre functioned for 24 of 30 days in a month. On a given day, the Anganwadi centre functioned for about 4 hours. By and large, environmental factors did not affect the functioning of the Anganwadi centres.

vii. On an average nearly 66 per cent of eligible children and 75 per cent of eligible women were registered at the Anganwadi centres. This indicates lack of motivation on the part of the Anganwadi workers in identifying and registering the entire eligible population.
viii. Community leaders were generally positive about the functioning of the Anganwadi centres (more than 80 per cent in all States) while more than 70 per cent found the programme to be beneficial to the community;

ix. Participation of beneficiary women and adolescent girls in Anganwadi centre activities was reported to be low. These two segments of population form the foundation for any child care programme and their involvement is imperative for successful implementation of the ICDS scheme.

Helen Baker-Henningham and Florencia Lopez Boo (2010) in their comprehensive study report indicate that early stimulation interventions are effective in improving child and maternal outcomes and these benefits are likely to be sustained over a long term. Interventions should target younger and more disadvantaged children and their families and should involve active involvement of the children’s caregivers. Interventions should also promote the well-being of families as a whole, particularly the mothers. Interventions of higher quality, greater intensity and of longer duration are likely to be the most effective.

Programme Evaluation Organisation, (2011) has released an Evaluation Report on Integrated Child Development Services which says that past evaluation studies on ICDS were primarily concerned with answering evaluation questions relating to implementation. The emphasis of all-India level studies carried out by NCAER (2000) and NIPCCD (1992-93, 2006) was on adequacy and quality of infrastructure and some issues related to quality of service delivery. The latter study of NIPCCD devoted a section on impact, but did not use an appropriate methodology. Some studies made use of NFHS data, which showed a decline in the proportion of malnourished children (under 3 years) from 51.5 per cent in 1992-93 to 42.7 per cent in 1998-99 and further to 40.4 per cent in 2004-05, to

58 Helen Baker-Henningham and Florencia Lopez Boo (2010)” Early Childhood Stimulation Interventions in Developing Countries, A Comprehensive Literature Review” Inter-American Development Bank and IZA, P.O. Box 7240, 53072 Bonn, Germany p.55.
examine as to what extent this decline can be attributed to ICDS. Evidence of lower malnourishment in villages with ICDS centres has been thrown up by World Bank studies.

Bredenkamp and Akin (2004) and Dasgupta (2005) have used NFHS data. The report titled “Focus on Children under Six (FOCUS)” brought out by Citizen’s Initiative for the Rights of Children under Six (CIRCUS, 2006) includes results of a survey of 122 villages. A diagnostic analysis carried out in the study linked “effectiveness” of service delivery in ICDS with increased beneficiary participation and improvement in nutritional status. However, conclusive evidence of positive impact of ICDS is not available. Nor did these studies adopt rigorous impact evaluation designs.\(^{59}\)

2.2.3 Rapid Facility Survey by NCAER

The National Council of Applied Economic Research (NCAER) conducted a rapid facility survey on ICDS infrastructure in 2004. The report submitted by NCAER in February, 2005 has, inter-alia, brought out the following.\(^{60}\)

i. More than 40 per cent Anganwadi centres across the country are neither housed in ICDS building nor in rented buildings. One-third of the Anganwadis are housed in ICDS building and another one-fourth are housed in rented buildings.

ii. As regards the status of Anganwadi building, more than 46 per cent of the Anganwadis were running from pucca building, 21 per cent from semi-pucca building, 15 per cent from kutch building and more than 9 per cent running from open space.

iii. It is quite encouraging to observe that average number of children registered at the Anganwadi centre is 52 for boys and 75 for girls.


\(^{60}\) Economic and Political Weekly” 2012 Vol XLVII No.II A. Sameeksha Publication Mumbai
iv. The survey data reveal that more than 45 per cent Anganwadis have no toilet facility and 40 per cent have reported the availability of only urinal;

v. Of the 39 per cent Anganwadis reporting availability of handpumps, half of the handpumps were provided by the Gram Panchayats and 12 per cent provided by the ICDS.

vi. Regarding the provision of services at the Anganwadi centres, more than 90 per cent centres provided supplementary food, 90 per cent provided pre-school education and 76 per cent weighed children for growth monitoring.

vii. Only 50 per cent Anganwadis reported providing referral services, 65 per cent health check-ups of children, 53 per cent for health check-ups of women and more than 75 for nutrition and health education.

viii. Average number of days in a month in which services are provided at the Anganwadi centres are 24 for supplementary food, 28 for pre-school education and 13 for nutrition and health education.

ix. More than 57 per cent of Anganwadi centres reported availability of ready-to-eat food and 46 per cent availability of uncooked food at the Anganwadi centres.

x. Nearly three-fourth of the Anganwadis have reported the availability of medical kits and baby weighing scale. On the other hand adult weighing scale has been reported only by 49 per cent of the Anganwadis.

2.2.4 Three Decades of ICDS – An Appraisal by NIPCCD (2006)

The study covered 150 ICDS projects from 35 States/UTs covering rural, urban and tribal projects. A total of five Anganwadi centres were randomly selected from each sample project covering 750 Anganwadi centres. The main findings of the appraisal are as under.61

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61 Director “Annual Report” (2009-2010) Published by Director, National Institute of Public Cooperation and Child Development New Delhi p.8
1. Around 59 per cent Anganwadi centres studied have no toilet facility and in 17 Anganwadi centres this facility was found to be unsatisfactory.
2. Around 75 per cent of Anganwadi centres have pucca buildings;
3. 44 per cent Anganwadi centres covered under the study were found to be lacking pre school education kits.
4. Disruption of supplementary nutrition was noticed on an average of 46.31 days at Anganwadi level. Major reasons causing disruption was reported as delay in supply of items of supplementary nutrition.
5. 36.5 per cent mothers did not report weighing of new born children.
6. 29 per cent children were born with a low weight which was below normal (less than 2500 g)
7. 37 per cent Anganwadi workers reported non-availability of materials/aids for nutrition and health education (NHED).

2.2.5 End Line survey (2005-06)

An endline survey was carried out in 5 States, i.e., Rajasthan, Maharashtra, UP, Kerala and Tamil Nadu, under the World Bank assisted ICDS-III Project. The study covered a sample size of 44,000 households, 40,000 mothers of children aged 0-6, 1,900 pregnant women, 8,000 adolescent girls and 720 AWWs. The end line survey (ELS) was conducted in 2005, while the base line survey (BLS) was carried out during 2000-01. The ICDS-III Project ended on March 31, 2006 after 6.5 years of implementation.

The endline survey found a significant decline in underweight children aged 0-3 years in the project blocks. As compared to the project development objective of reduction of underweight children aged 0-3 years by 10 percentage points, a reduction of 8.95 percentage points was actually achieved (BLS: 45.04per cent, ELS: 36.09per cent). While all 5 States contributed to this decline,
UP, Maharashtra and Tamil Nadu achieved the target. There was also a marginal decline in percentage of severely malnourished children. 62.

The finding is surprising – the percentage of underweight boys is greater than percentage of underweight girls (except in UP). As regards caste, no significant difference between SC, ST, OBC and others was found, except in Maharashtra where ST children were found to be more malnourished than others. However, as expected, malnutrition is more prevalent among children of lower socioeconomic groups. 63.

The findings indicate positive changes in the infant feeding practices during the project period:

- Proportion of children whose mothers did not squeeze out the first milk (colostrum) from breasts 59 per cent in BLS to 64 per cent in ELS.
- Proportion of children under 3 year who were breastfed within 2 hours of birth: 37 per cent in BLS to 51per cent in ELS 64.
- Proportion of children of age 6-9 months receiving solid or semi-solid food and breast milk (complementary feeding): 38 per cent in BLS to 64 per cent in ELS.
- Proportion of children of age 6-36 months who consumed vitamin-A rich food: 53 per cent in BLS to 71 per cent in ELS.

However, breastfeeding exclusively up to six months remains a problem. It has been found that only 21 per cent children under six months were reported to have been exclusively breastfed, which has come down from 28 per cent in BLS.

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63 Ibid
ELS also reveal that about 37 per cent children up to six months were given water along with breast milk, which is a wrong practice.

Significant progress is indicated in antenatal care of the pregnant women, immunization, de-worming and treatment of diarrhoea. Monthly growth monitoring of under-3 children has also improved overall as reported by AWWs (from 67 per cent in BLS to 82 per cent in ELS). Availability of weighing scales went up in UP, Rajasthan and Maharashtra, contributing to an overall increase from 73.5 to 81.7 per cent. Practice of weighing at birth showed overall improvement from 40 per cent in BLS to 46 per cent in ELS. Incidence of low weight at birth declined from 15.4 percent to 13.0 per cent.

Impact of IEC and training is also evident in increased awareness of infant breastfeeding practices among the AWWs. But knowledge transfer from AWWs to adolescent girls and women remains a matter of concern.

2.2.6 Borrower’s Evaluation Report

The project has achieved its development objectives of reduction of malnutrition in under-three children. The significant change in household behaviours in respect of infant and young child feeding practices and increased awareness on nutrition and health issues, participation of other stakeholders in the programme, is a pointer to the success of the project. The impact of the project could have been much more significant had there been no bottlenecks during initial years and technical expertise in some key areas like nutrition and health was made.

The reductions in the proportion of severely malnourished considered separately are not as significant as the reductions in underweight children. Reduction is only 1.7 per cent points. That is, from 15 per cent in BLS, it has dropped to 13.5 per cent in ELS. A state-wise analysis would reveal that the maximum reduction (7 per cent) has been recorded in Uttar Pradesh, followed by
Maharashtra (5 per cent), Rajasthan (3 per cent) and Kerala (2 per cent). Surprisingly, in Tamil Nadu it has remained at 13 per cent both in BLS and in ELS.

Renu Khosla (1986) has observed that the impact of training lasted up to six months or may be a little more. There reasons for gradual decline in performance of AWWs were absence of skills in the workers to create new activities, lack of support and recognition from supervisors and CDPOs for extra efforts put in, erratic supervision and monitoring of Anganwadi activities, etc.

There was a significant improvement in the knowledge of AWWs regarding preschool activities, use of teaching aids and locally available resources, and involvement of mothers in conducting preschool activities after the refresher training. There was an improvement in the skills of AWWs in conducting preschool education activities in Anganwadis and this effect was sustained even after six months. It was observed that the impact of training was not statistically significant after one month, but it was so after six months. The reasons for this could be that it took AWWs some time to introduce the new activities after receiving training. It was observed that due to the availability of preschool education (PSE) kit that AWWs had prepared during the refresher training, the use of teaching aids and play material was better after the refresher training.

2.2.7 Statewise Comparison of Nutritional Status of Children

Gopalan (2009) in has study on “A State-wise comparison of nutritional status of children” showed that Assam had the highest number of children with normal weight followed by Haryana and Delhi. The proportions of children with normal weight were the lowest in Karnataka and Maharashtra. The major services

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provided by AWWs, of which the health functionaries were aware, were supplementary nutrition (62 per cent), immunization (56 per cent) and non-formal preschool education (48 per cent). Very few functionaries had seen AWWs impart health and nutrition education and perform activities like growth monitoring and health check-up. 90 per cent health workers were aware that medicines were available with AWWs for treating minor ailments. It was observed that 14 per cent workers had stopped treating children and women. About 78 per cent health workers advised AWWs and also sought their help in areas related to immunization, family planning, diagnosis and use of medicines, health check-up and referral services.67

2.2.8 Supervision in ICDS Scheme

The difficulties experienced by supervisors were lack of cooperation from mothers and ANMs for immunization; inadequate supply of play material and insufficient space for preschool education; unhelpful attitude of the health authorities and poor health services; collusion of AWWs with those who supply food material; preferential treatment given to some beneficiaries; inability of supervisors to pay frequent visits; unwieldy size of the block; hilly terrain; lack of transport; bogus and incomplete records; insufficient time to prepare records and reports; apathetic attitude of housewives; lack of ability to communicate with tribals who spoke different dialects, etc. Womens’ organizations and school teachers did provide assistance in Nilakkottai and Thally and local leaders assisted in all the three districts. However, at times they created trouble, exhibited high handedness and interfered in the working of Anganwadi centres68

Evaluation Report (2009) (ICDS) says that in the State of Jammu & Kashmir, the ICDS programme was not in a position to achieve its objectives to

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the desired level. Not only the coverage of the services was low, but the programme was not in a position to provide supplementary nutrition (SN) to beneficiaries throughout the year. As such, the programme was not in a position to improve the nutritional status of the children. Due to lack of nutrition items in the ICDS centres, pre-schooling has become a casualty, because many parents send their children to AWCs mainly for supplementary nutrition. The programme was not in a position to help majority of the women to receive ante-natal care services and health education, as only a limited number of women were informed by AWWs about ante-natal care services, child immunization, management of diarhoea, methods of family planning, etc. The study also found that there was lack of coordination between various departments engaged in implementation of the programme viz., Health, Rural Development, Education and Social Welfare. It was observed that lack of coordination was one of the major reasons for under performance of the ICDS. Another important reason for tardy implementation of ICDS was non-availability of adequate supervisory staff.69

Michael Lokshin, Monica Das Gupta, Michele Gragnolati and Oleksiy Ivaschenko (2006) say in their article that there is little evidence of impact ICDS programme on overall child nutrition status. However, these results need to be interpreted with caution. Using cross-sectional data can lead to various kinds of biases in estimations of the effectiveness of the programme. A conclusive evaluation of programme impact will have to wait until panel data are available. Nevertheless, many studies have highlighted problems with the implementation of the ICDS programme.70

We find limited evidence that the ICDS programme is meeting its goals of reducing child malnutrition in India. Some modifications are needed towards this

end. Firstly, programme coverage and fund allocation need to be shifted towards States with the highest prevalence of child malnutrition. Secondly, efforts have to be made to ensure that funds are fully utilized in States where this is not the case. Thirdly, the impact of the programme on recipients can be enhanced by changing some aspects of programme design and implementation. With such changes, the substantial resources allocated to the ICDS can be used more effectively for raising future generations of healthy children.\footnote{Report of the National Consultation on Child Undernutrition and ICDS in India (May 2006) says that underweight prevalence is higher in rural areas (50 per cent) than in urban (49 per cent) higher among boys (46 per cent), higher among scheduled castes (53 per cent) and scheduled tribes (56 per cent) than among other castes (44 per cent), and is as high as 60 percent in the lowest wealth quintile. Inter-state variations are large, with six States (Bihar, Madhya Pradesh, Maharashtra, Odissa, Rajasthan and Uttar Pradesh) having at least 50 per cent children underweight. The prevalence of underweight is falling more slowly in high-prevalence States. Overall, the inequalities in under nutrition between demographic, socioeconomic and geographic groups widened during the 1990s. Under nutrition in India has been estimated to be associated with about half of all child deaths. Most growth retardation occurs by the age.\footnote{Report of the National Consultation on Child Undernutrition and ICDS in India (May 2006) “Strengthening ICDS for Reduction of Child Malnutrition” New Delhi .32 pp 9-12}}

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2.2.9 ICDS: Findings from Recent Evaluations

Forty per cent of the time of AWWs (Anganwadi Workers are the village based primary functionaries of the ICDS program) is spent in preparation and distribution of supplemental nutrition. Another 30 percent of the AWW’s time is spent on preschool education. This is at the expense of the other ICDS activities that are crucial for promoting children’s growth and better nutritional status, such
as promoting good breastfeeding and complementary feeding practices, promoting disease prevention and control and providing micronutrient supplementation.

**Mismatch II - Limited reaches to the youngest and most vulnerable children**

Service delivery is not sufficiently focused on the 0-3 age-group children, who can potentially benefit most from ICDS interventions. Moreover, children from Wealthier households participate much more than poorer ones and ICDS are only partially succeeding in preferentially targeting girls and disadvantaged castes and tribes (Scheduled Castes and Scheduled Tribes).

**Mismatch III – Uneven ICDS coverage**

The States with highest prevalence of malnutrition are among ones with the lowest ICDS coverage, and States with most malnutrition spend less on ICDS than other States. Based on the findings, it is important to ask whether significant reforms are needed in ICDS implementation. Although ICDS is a remarkable programme, one key outcome, that is reduction in child undernutrition, is not improving rapidly enough.  

**2.2.10 Three Decades of ICDS – An Appraisal**

Dr. AK Gopal, Director, NIPCCD For the study, 150 ICDS projects were selected as a sample, out of 4,200 projects operational in 2000. Beneficiaries, functionaries and community leaders were interviewed – a total of over 41,000 respondents. The research indicated improvement in infrastructure, training status and educational qualifications of AWC staff. The percentage of children aged 6 months to 3 years and 3-6 years, and of pregnant women and nursing mothers availing of supplementary nutrition services showed a marked increase between 1992 and 2006. The quality of supplementary nutrition has improved markedly and also in strengthening ICDS for reduction of child malnutrition. The percentage of newborn children with weight less than 2500 grams declined from 41 per cent in 1992 to 29 per cent in 2006. Between ages 0-3 years, nutritional status

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73 Ibid p.45
improved, as shown by much less percentage of children in Grade IV, and much higher percentage in ‘normal’ category. Significantly more 0-3 year-old children (56.1 per cent) are receiving health checkups in 2006, as compared to 1992 (45.9 per cent). Percentage of children (6 months to 3 years) receiving IFA tablets has gone up from 30 per cent to 59.6 per cent. Percentage of children immunized (0-1 years) for BCG, measles and polio has increased. The projects supported by World Bank have better levels of infrastructure, equipment and service delivery, as compared to regular and NGO-run ICDS centres – i.e. more functional toilets, availability of indoor and outdoor space, separate storage and cooking space, availability of weighing scale, regular health checkups, immunization services, and referral services for children. Gaps exist for ICDS scheme in terms of infrastructure, equipment and service indicators. Health checkups are not being done for 43.9 per cent children aged 0-3 years, and 40.4 per cent children aged 6 months-3 years do not receive IFA tablets, while 34.0 per cent children are not fully immunized. 

Meera Shekar (1991) in the evaluation report called TINP evaluation report professes that in the pilot block, third and fourth degree malnutrition decreased from 20.4 per cent at baseline to 15.7 per cent in 1984 and in the control block it increased from 15.1 percent at baseline to 17.8 percent in 1984. This indicates a 23 percent decline in the pilot block compared with a 17 percent increase in the control block. This result has been interpreted indicates a 40 per cent net decline in 3rd and 4th degree malnutrition due to the project (Government of Tamil Nadu 1984). The terminal evaluation report further claims that within the category of 6 to 36 month old children, a higher rate of reduction of severe malnourishment has been recorded in the sub group of 13 to 24 month olds. Another section claims that the impact is the greatest in the 37 to 60 month age group. These and other inconsistencies detract from the validity of these conclusions.

74 Ibid p. 55
Before implementation of the Scheme

The study done at the grass root level has also brought out some significant observations about the delivery system and implementation process of ICDS Scheme. The nutritional status of the children is very poor and the children are affected by anemia, polio etc. The birth weight of children is below the UNICEF rate. In India during 1975, the maternal mortality rates (MMR) and infant mortality rates (IMR) were extremely high (MMR – 853 per 1,00,000 live births and IMR – 134 per 1,000 live births) due to the severe drought the country faced. To stop the soaring rate of MMR and IMR, the then Prime Minister, Smt. Indira Gandhi, launched ICDS in a few places which were affected acutely by drought.76

As the child’s health and nutritional status is affected to a large extent by the mother’s health status during pregnancy and lactation as well as by the attention and care given by the mother during childhood women in the reproductive age (15-45 years)77

After implementation of Scheme

In pursuance of the National Policy for Children, which laid emphasis on the integrated delivery of early childhood services and services for expectant and nursing women and based on the recommendations of the Inter-Ministerial Study Teams set up by the Planning Commission, the scheme of Integrated Child Development Services was evolved to make a coordinated effort for an integrated programme to deliver a package of such services. The blueprint for the scheme was drawn by the Ministry of Social Welfare, Government of India, in 1975. On


77 Ibid p. 13
the demographic front, the total Fertility Rate of 2.71 in Tiruchirappalli district is slightly lower than the TFR of 2.85 at the All India Level. With the introduction of Reproductive and Child Health Programme, more couples are now using family planning methods. As per National Family Health Survey-3, about 45 percent of women are now using modern family planning methods as compared to 49 percent in India as a whole.

After the scheme implementation the severe malnutrition consistently declined in all the districts for which data are reported. Increase in "normal + grade 1" is less consistent. The relatively impact in Tiruchirappalli over years of project operations is attributed to a better in all nutritional status, 10 percent severe malnutrition as against 15 to 17 percent in other areas (as per DEAR estimates)\(^78\).

The impact of ICDS, which is designed to deliver a package of services to children, pregnant and lactating women and adolescent girls to break the inter-generational cycle of malnutrition, morbidity and mortality, takes a long time to achieve its intended goal. A number of behavioral changes with respect to health, sanitation, hygiene, education, dietary habits/practices, etc. in the target population must precede realisation of its ultimate goals. The study was designed to generate the required data base to assess whether and to what extent ICDS has been successful in bringing about the intended behavioral changes in the target groups. A diagnostic analysis carried out in the study linked “effectiveness” of service delivery in ICDS with increased beneficiary participation and improvement in nutritional status\(^79\).

According to Sample Registration System (SRS, 2006), Tiruchirappalli district had an infant mortality rate of 49 per 1,000 live births, a birth rate of 18.7


\(^79\) Ibid p. 6
and a death rate of 5.6 per 1,000 population. The corresponding figures at the
national level were 58, 24 and 7.5 respectively. National Family Health Survey-3
(NFHS-3) has also estimated an infant mortality rate of 45 per 1,000 live births
and a birth rate of 20.9 for Tiruchirappalli district. The corresponding figures for
the national level are an infant mortality rate of 57 per 1,000 live births and a birth
rate of 18.8 per 1,000 populations. This is the result of sound government
policies, prioritized investments and actions to address the key causes of child
mortality and reach even the most difficult to reach populations.

Tiruchirappalli district, like other districts of the state is predominantly an
agrarian district with 70 percent of the population depends upon agriculture.
According to Census-2001, cultivators and agriculture workers comprised 49
percent of the total working force of the district. The importance of the various
other economic sectors in the economy has changed little over time. The
contribution of the agricultural sector to the district domestic product declined
from 38 percent in 1980-81 to 32 percent in 2000-01 and 27 percent in 2004-05.
The contribution of the manufacturing sector has increased from 5 percent in
1980-81 to 6 percent in 2004-05 and the share of the other tertiary sector has
increased from 58 percent to 67 percent in 2004-05. Agriculture contributed 32
percent to the state domestic product in 1999-2000 and provided employment to
more than 60 percent of the working population (Directorate of Economics and
Statistics, 1991)\textsuperscript{80}.

Industrially, Tiruchirappalli district is one of the leading district in the state
due to lack of infrastructural facilities such as easy transportation, electricity,
topography and other factors. Though the district is very rich in natural and human
resources, but these have not yet been utilized for establishing an industrial base in
the district.

\textsuperscript{80}Director, “Statistics on Women In India”(2007) published by National Institute of Public Cooperation
and Child Development, New Delhi p.42
WORLD BANK ASSISTED ICDS PROJECTS

UNICEF, WHO and the World Bank Group all support the Scaling Up Nutrition (SUN) global movement in its efforts to collaborate with countries to implement programmes to address poor nutrition at scale with a core focus on empowering women.

During the later part of seventies, the World Bank expressed interest in funding the ICDS scheme contributing significantly towards raising the status of health, nutrition and education of women and children and funded a project namely "Tamil Nadu Integrated Nutrition Project (TINP)" - a State Sector Project, in Tamil Nadu during 1980-89. Encouraged with the success of interventions in TINP-I, second phase of TINP in 318 blocks of Tamil Nadu was funded by the World Bank. TINP-II, launched in 1990-91, with an assistance of US$ 96 million, ended on December 31, 1997. The Project provided supplementary nutrition to children upto three years of age, pregnant women and nursing mothers.

Global and national action to improve child health

Both globally and in countries, a series of initiatives are in place aimed at improving access to maternal and child health care, inspired by the United Nations Secretary-General’s widely endorsed Global Strategy for Women’s and Children’s Health, which aims to save 16 million lives by 2015 through a “continuum of care” approach.

As part of this strategy, focus on specific areas is given through:

- A Global Vaccine Action Plan that is working towards universal access to immunization by 2020. Vaccination against preventable diseases is one of most effective country-driven and globally-supported actions, as it

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81 Tamil Nadu Integrated Nutrition Project (TINP) Report 1997
currently averts an estimated two to three million deaths every year in all age groups from diphtheria, tetanus, pertussis (whooping cough), and measles. In 2012, an estimated 83 per cent (111 million) of infants worldwide were vaccinated with three doses of diphtheria-tetanus-pertussis (DTP3) vaccine.

➢ Some 176 countries have signed on to A Promise Renewed – the call to action spearheaded by the Governments of Ethiopia, India and the United States, together with UNICEF in a global effort to stop children from dying of causes that are easily prevented.

➢ The United Nations Commission on Life-Saving Commodities for Women and Children is helping countries improve access to priority medicines such as basic antibiotics and oral rehydration salts.

➢ Earlier this year, WHO and UNICEF joined other partners in establishing a new Global Action Plan for Pneumonia and Diarrhoea which aims to end preventable child deaths from these two major killers of under-fives by 2025. The plan promotes practices known to protect children from disease, such as creating a healthy home environment, and measures to ensure that every child has access to proven and appropriate preventive and treatment measures.

➢ Similarly, partners are working on Every Newborn: a global action plan to end preventable deaths. The aim is to launch this global newborn action plan in May 2014 and provide strategic directions to prevent and manage the most common causes of newborn mortality, which account for around 44 per cent of all under-five mortality.

UNICEF, WHO and the World Bank Group all support the Scaling Up Nutrition (SUN) global movement in its efforts to collaborate with countries to implement programmes to address poor nutrition at scale with a core focus on empowering women.
"Global partnerships to further accelerate the reduction of under-five mortality globally and in sub-Saharan Africa are essential," said Wu Hongbo, Under-Secretary-General for Economic and Social Affairs at the United Nations. "In this regard, it is critical that national governments and development partners redouble efforts through to the end of 2015 and beyond."

Inter-agency Group for Child Mortality Estimation (IGME)

The report Levels & Trends in Child Mortality was produced by the IGME, which is led by UNICEF and the World Health Organization, and also includes the World Bank and the United Nations Population Division of the Department of Economic and Social Affairs. IGME was formed in 2004 to share data on child mortality, harmonize estimates within the UN system, improve methods for child mortality estimation report on progress towards the Millennium Development Goals and enhance country capacity to produce timely and properly assessed estimates of child mortality.

Child Development and UNICEF

UNICEF works in more than 190 countries and territories to help children survive and thrive, from early childhood through adolescence. The world’s largest provider of vaccines for developing countries, UNICEF supports child health and nutrition, good water and sanitation, quality basic education for all boys and girls, and the protection of children from violence, exploitation, and AIDS. UNICEF is funded entirely by the voluntary contributions of individuals, businesses, foundations and governments.

82 www.worldbank.org
83 www.childmortality.org
Child Development and World Health Organization (WHO)

World Health Organisation (WHO) is the directing and coordinating authority for health within the United Nations system. It is responsible for providing leadership on global health matters, shaping the health research agenda, setting norms and standards, articulating evidence-based policy options, providing technical support to countries, and monitoring and assessing health trends and improving global health security.  

Child Development and World Bank Group

The World Bank Group is a vital source of financial and technical assistance to developing countries around the world, with the goals of ending extreme poverty and boosting shared prosperity. Improving health is integral to achieving these goals. The Bank Group provides financing, state-of-the-art analysis, and policy advice to help countries expand access to quality, affordable health care, protect people from falling into poverty or worsening poverty due to illness and promote investments in all sectors that form the foundation of healthy societies.

Child Development and United Nations Development Programme (UNDP)

The United National Development Programme have been made in child survival, but efforts must be redoubled to meet the global target. The target is to reduce by two-thirds, between 1990 and 2015, the under five years old mortality rate, from 93 children of every 1,000 dying to 31 of every 1,000.

The Millennium Development Goals (MDGs) have been the most successful global anti-poverty push in history, the report says. Significant and substantial progress has been made in meeting many of the targets—including

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84 www.who.int
85 www.worldbank.org/health
86 The Millennium Development Goals Report 2013 UNDP
halving the number of people living in extreme poverty and the proportion of people without sustainable access to improved sources of drinking water. Remarkable gains have been made in the fight against malaria and tuberculosis. There have been visible improvements in all health areas as well as primary education.

This year’s report looks at the areas where action is needed most: hunger, maternal health, sanitation and environmental protection, for example. This report also shows that the achievement of the MDGs has been uneven among and within countries.

"In more than a decade of experience in working towards the MDGs, we have learned that focused global development efforts can make a difference," UN Secretary General Ban Ki-moon says in the report. Through accelerated action, the world can achieve the MDGs and generate momentum for an ambitious and inspiring post-2015 development framework."

**Highlights**

- The proportion of people living in extreme poverty has been halved at the global level
- Over 2 billion people gained access to improved sources of drinking water
- Remarkable gains have been made in the fight against malaria and tuberculosis
- The hunger target is within reach
- Environmental sustainability is under severe threat
- Most maternal deaths are preventable, and progress in this area is falling short
- Access to antiretroviral therapy and knowledge about HIV prevention must expand
- Too many children are still denied primary education
There is less aid money overall, with the poorest countries most adversely affected.\footnote{Ibid p. 15}

**International Labour Organization (ILO)**

The International Labour Organization (ILO) is a United Nations agency dealing with labour issues, particularly international labour standards and decent work for all. 185 of the 193 UN member states are members of the ILO.\footnote{www.ilo.org} The ILO has considered the fight against forced labour to be one of its main priorities, improve child development and abolition of child labour in work place.

The ILO's International Programme on the Elimination of Child Labour (IPEC) was created in 1992 with the overall goal of the progressive elimination of child labour, which was to be achieved through strengthening the capacity of countries to deal with the problem and promoting a worldwide movement to combat child labour. IPEC currently has operations in 88 countries, with an annual expenditure on technical cooperation projects that reached over US$74 million, €50 million in 2006. It is the largest programme of its kind globally and the biggest single operational programme of the ILO.

**Social protection**

Only 20 per cent of the world’s population has adequate social security coverage and more than half lack any coverage at all. The ILO actively promotes policies and provides assistance to countries to help extend adequate levels of social protection to all members of society. Social security involves access to health care and income security, particularly in cases of old age, unemployment, sickness, invalidity, work injury, maternity or loss of a main income earner. A “Global Campaign on Social Security and Coverage for All” launched in 2003
builds on efforts already underway in more than 30 countries. These include projects to help countries extend coverage at the national level and to strengthen community-based social security organizations.

**Economic and social development**

Roughly half the world's population still lives on the equivalent of about US$2 a day. And in too many places, having a job doesn't guarantee the ability to escape from poverty. This slow and uneven progress mandates us to rethink and retool our economic and social policies aimed at halving world poverty by 2015 (the Millennium Development Goals). The global jobs crisis is one of the biggest security risks of our time. Continuing along the present path, is taking the risk of a world more fragmented, protectionist and confrontational. A continued lack of decent work opportunities, insufficient investments and under-consumption lead to an erosion of the basic social contract underlying democratic societies: that all must share in progress. The commitments made by the global community to promote social inclusion and jobs as the basis of poverty reduction, and respect for fundamental principles and rights at work is to be revisited.

The ILO approach emphasises that economic growth is an essential but not sufficient condition for poverty reduction. Poverty reduction involves growth with a substantial reorientation in favour of the poor (so called "pro-poor growth"). It includes changes in institutions, laws, regulations and practices that are part of the process that creates and perpetuates poverty.

Overall all the United Nations International organizations are more importance in child development, reducing maternal mortality rate, infant mortality rate and child health.