Role of Integrated Child Development Services (ICDS) Program in Early Childhood Care vis-a-vis Human Development: A Micro Level Study in Kerala, India

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ABSTRACT

The ICDS Program has remained in the forefront of the efforts of the Government of India (GoI) and the State Governments to achieve the child nutrition related Millennium Development Goal (MDG1). However, more attention has been given to increase coverage than to improve the quality of service delivery and to distribute food rather than changing family-based feeding and caring behavior. The present study attempts to examine the role of ICDS by analyzing the success in improving nutritional status of children and the effectiveness of Preschool education. The study is based on the findings of a one month field survey conducted in Vallachira Panchayath in Thrissur District. Z scores for Weight for age, height for age and weight for height are used to assess the nutritional status of the children. The result reveals that low coverage of eligible beneficiaries is the major problem faced by the ICDS in the study area. But ICDS provide better service to the beneficiaries who enrolled in AWC. It remains successful in improving the nutritional status in the study area. It also finds that the program has a positive impact on the preschool education of ICDS children. In addition, there is a need to achieve better community participation and awareness about the program. Therefore the study suggests a multipronged approach to address community involvement in ICDS.

***Keywords**: early childhood care, child development, health & nutritional status, Anganwadi Centre*

INTRODUCTION

Human resource development is fundamental to the development process contributing to the poverty eradication and the long term economic growth through improved health, education and human capacity building. Human resource development (HRD) means the accumulation of human capital and its effective investment in the development of an economy, and it deals with the efficient allocation of resources for increasing productive capabilities of individual through education, training and health care. The outstanding experiences of fast growing Asian economies such as Taiwan, Hong Kong, and South Korea are perhaps obvious examples of the importance of human capital to economic growth. Despite the lack of natural resources, these countries have managed to grow faster than any other countries, because they have had higher quality in human capital (Becker, 1992). Therefore the new growth theories emphasized that through education, health, learning and skill formation, people can become much more productive, and this contributes significantly to the process of economic growth. The separate roles of education and health in promoting human development have been extensively studied and discussed. As the impressive social and economic performance of 'East Asian tigers' seems to show, strong education and health systems are vital to economic growth and prosperity (World Bank, 1993). Therefore the investment in health, education, hygiene, training and skill formation is needed to transform population in to human resource/capital. All this in turn leads to human development (Prakash, 2000).

Good education nurtures inquisitiveness and teaches the links between cause and effect, with possible positive consequences for health outcomes as evidenced by the impact of maternal education on child health (LeVine, 1987; Caldwell, 1979; Buor, 2003). Likewise, different theoretical channels from improved health to better education occur over the course of an individual's life. Good health, as an infant enhances cognitive development, allows healthy children to derive greater benefit from schooling. Health is identified as a component of human development in the human development report 1990 (UNDP, 1991) and remains a central constituent element of the human development index. There is a complex relationship between health and development; it is not a one way relationship, and

there are reciprocal and synergistic relationships to it. It has long been acknowledged that health status of the population in any particular place or country influences development. The health status of the people, especially the health and well-being of children, is profoundly influenced by the state of nutrition. The health and well-being of children are of critical importance and play a crucial role in the socio economic development of the country.

ICDS-THE PROGRAM

In India nutrition and health services for children are of great importance, and they need special consideration. Recognizing the need for early intervention to ensure the development of a young child's body, mind and intellect to its maximum potential, the Government of India started Integrated Child Development Services (ICDS), a centrally sponsored program which is a step towards responding to the child's needs in a comprehensive and holistic perspective (NIPCCD, 2006). Integrated Child Development Services (ICDS) is the world's largest early childhood development program aimed at improving the health, nutrition and learning opportunities of young children and women. It is an integrated approach to the development of women and children across the country .The Integrated Child Development Services (ICDS) scheme integrates several aspects of early childhood development and provides Supplementary nutrition, immunization, health check-ups, and referral services to children below six years of age as well as expecting and nursing mothers, non-formal pre-school education to children in the 3-6 age group, and health and nutrition education to women in the 15-45 age groups. ICDS was launched on October 2, 1975 (5^{th} Five Year Plan) in pursuance of the National Policy for children in 33 experimental blocks and used Below Poverty Line (BPL) as criteria for delivery of services. Following a Supreme Court order (2004), ICDS was expanded in 2005 to cover the entire country. Initially the scheme was 100 percent funded by the central government except for supplementary nutrition, which was funded by state governments. In response to resource constraints faced by many states, the central government increased financial assistance to cover half of the supplementary nutrition costs in 2006. For 2009-10, the central government has proposed that the sharing ratio be modified to

90:10 and 50:50 for general assistance and supplementary nutrition, correspondingly, for all states (except the North-eastern states) and 90:10 for all components for North-Eastern states.

The program incorporates the main components of human resource development, namely-health, nutrition and education. The Ministry of Women and Child Development (MWCD) is accountable for coordinating ICDS and working with state governments to monitor and evaluate the scheme's performance. Panchayats have also been actively involved in the implementation and monitoring of ICDS since the 73rd Amendment Act was passed in 1992. In the year 2004, Supreme Court declared that BPL could not be used as eligibility criteria for providing supplementary nutrition under ICDS. Consequently, the revised guidelines specified that states were to identify and register beneficiaries by monitoring health and nutrition of children and women regularly. ICDS services are delivered through a centre called the 'anganwadi', it is a child care centre located within the village itself. Each Anganwadi Centre (AWC) is staffed by anganwadi workers (AWWs) and anganwadi helpers. These are supervised by Child Development Project Officers (CDPO) at the block level, who in turn report to District Programme Officers at the district level. To promote convergence of health services, three of the six services under the ICDS scheme – immunization, health check-up and referral services – are delivered through existing public health infrastructure: health sub-centers, and primary and community health centers operating under the Ministry of Health and Family Welfare. Today the program is extended to the entire country through 6908 operational projects and 1370718 Anganwadi centers and reaches more than 70 million children and 15 million expectant and nursing mothers.

CONTEXT OF THE STUDY

Since children are the most valuable asset of a nation, their welfare and health is the edifice of sound and sustained economic development. The most neglected form of human deprivation is malnutrition, particularly among preschool children. The health of infants and children is determined by the nutritional status and chronic illness associated with poor nutritional status among children.

Malnutrition is associated with more than half of all deaths of children worldwide (Pelletier et al, 1995). After the independence, the elected governments in India have undertaken a lot of steps for the health and nutrition of the children. But still malnutrition is a severe problem in India. According to NFHS- III, 42 percent of the Indian children under age of six are malnourished and three out of four children in India are anemic. (NFHS 2005-06). These situations express the urge for child health care services in all India level. In this context, the importance of ICDS become prominent, because it provides the interventions in nutrition, health and education together concerned with the overall development of the child. The three of the eight Millennium Development Goals (MDGs) emphasize on the health which includes reduction in child mortality, improved maternal health and combating HIV/AIDS, malaria and other diseases (Chhabra et al, 2004). The objectives of ICDS are directly related to the MDG of reducing child mortality by two thirds between 1995 and 2015. The human development indicators of India cannot strengthen with high rates of child mortality and extremely high rates of malnutrition among children. ICDS is India's response to the challenge of breaking the vicious circle of malnutrition, morbidity and mortality among children.

Though the regional economy, Kerala, India performs well in health at par with developed nations is evident from international literature. "….the state of Kerala in India show, the impacts of good health on development are limited without concomitant advances in other areas." (Bloom, 2003). Also, it is well documented that the state has done exceedingly well in reducing the infant and child mortality compared to other states in India. However, the situation of nutrition of child population does not portray a bright picture. There is widespread prevalence of Malnutrition in the form of Underweight, Low Birth Weight, Wasting, Stunting, Anemia, and other manifestations of micro- nutrient deficiencies among different age groups of the child population as a whole. Even though Kerala has successfully implemented all nutrition oriented programs and other related programs of housing, sanitation and potable drinking water, the state could not achieve the nutritional level equal to that of the best performing countries. The recent NFHS (NFHS-2005-06) data related to child health and nutrition reveals, Kerala is now in the reverse trend of the health care advancement (Gangadharan, 2009).

The argument gets supported by a recent report by the Comptroller and Auditor General (CAG) of India. The report says that as per the World Health Organization (WHO) growth standards, the percentage of malnourished and severely malnourished children in Kerala is 36.92 per cent and 0.08 percent respectively as of March 2011. Kerala lags behind neighboring Tamil Nadu which has 35.22 per cent malnourished and 0.02 per cent severely malnourished children. The CAG report said Kerala found a place among States where the gap between eligible beneficiaries and actual beneficiaries of ICDS was more than 50 per cent. This indicates that under utilization of ICDS services in Kerala also remains a causative factor for the flipside of Kerala's claim to strong health indices. Even though the ICDS is operated in the entire community blocks in Kerala, the present nutritional profile among the children is not attractive compared to the rest of the country (Thankappan et al, 2009, Gangadharan, 2011). Considering the situation that exists in Kerala, a study that investigates the impact of ICDS on child development gets significance.

Considering the importance of ICDS, some studies were undertaken to evaluate the impact of ICDS on the children in Kerala. Miriam Mani (2002) studied the impact of ICDS on intellectual, social and physical development of pre-schoolers. The intellectual, social and physical development of the ICDS beneficiary, anganwadi attending children was compared with the non-ICDS children's in balwadis. Results revealed that ICDS children have better intellectual, social and physical development and preschool education plays a very important role. Rajaram et al (2003), analysed the childhood malnutrition in Kerala and Goa by examining the nutritional status of children below 5 years and the confounding factors that influence the nutritional status of children in these states. The results showed that the relative prevalence of underweight and wasting was high in Kerala, but the prevalence of stunting was medium. Both family planning and socio economic variables were significantly associated with the malnutrition in these states but at varied levels. The study recommends more area-specific policies for the development of nutritional intervention programs. Roy Mathew (2001) studied the impact of Integrated Child Development Services (ICDS) scheme on women and children in Kottayam District. Concepts like impact, intellectual development, health awareness, dropout rates etc. have been brought under the impact study. The effect of pre-school

education in enhancing the intellectual ability of children is clear from the study. Hence efforts should be taken to expand preschool facilities to all children in the preschool' age group. It is recommended that leading voluntary organizations in the area should be given sufficient participation in the scheme during all stages of its Implementation.

The review of various research studies shows that ICDS plays a very crucial role in child development. But the studies have concentrated on the universalization/expansion of ICDS after 2005. Various Government reports published recently show that, even though the ICDS scheme is operated in the entire community blocks in Kerala, the present nutritional profile among the children is not attractive. Kerala is now facing serious threats in the field of nutritional status among children. Therefore, it is important to develop strategies for overcoming malnutrition and it is also necessary to focus on building capacities and laying the foundations for future learning. In this context the present study intend to examine role of ICDS in early childhood development, both physical and cognitive development by examining the nutritional status and the performance of ICDS children in preschool education. Therefore the study has the following objectives:-

- To examine the level of nutritional status among the ICDS children in the study area.
- To discuss the extent to which the ICDS helped children in preschool get non formal education

METHODOLOGY AND DATA BASE

The study was based on primary data collected from the Vallachira Panchayath in Thrissur District of Kerala. This panchayath comprises of 20 Anganwadis. Out of these 20 anganwadis, primary data was collected from 4 selected Anganwadis in the vallachira panchayath. AWC Cherussery, AWC Sreekrishanapuram, AWC Kadalassery and AWC Aratupuzha were selected as sample AWCs. For the purpose of analysis, a sample of 120 ICDS children has been selected through stratified sampling. From each centre, a sample of 30 children has been selected. The study also collected data from the AWWs and Mothers. To collect the data, survey using a pretested questionnaire was used. Table 1 gives the details of the sample used for the study.

Table 1

Target Population in the Sample Area

Children	Anganwadi Centres (AWCs)				
	Cherussery	**Sreenarayanapurm**	**Kadalassery**	**Aratupuzha**	**Total**
3years-6 years	18	15	14	10	57
6 months-3 years	12	15	16	20	63
All	30	30	30	30	120

Source: Survey Data, 2012.

To assess the nutritional status of children, the World Health Organization recommends the use of *Z*-score indicators. The *Z*-score indicators of weight-for-age (WAZ), height-for-age (HAZ) and weight-for-height (WHZ) are generally used for evaluating the nutritional status of children. The present study also used the Z score indicators to calculate the nutritional status among the ICDS children in the study area

The Z- score is calculated as follows:

$$\text{Z Scores} = \frac{\text{Individual Value} - \text{Median Value of the Reference Population}}{\text{Standard Deviation (SD) of the reference Population}}$$

If the Z scores are more than -1, that children are included in the *normal* category; if Z scores lies between -1 and -2, these children are placed in the *mildly malnourished* category; if the Z scores are less than -2, the children are considered as *moderately malnourished;* and if it is less than -3, the children are included in the *severely malnourished* category (Table 4.2). However these anthropometric measures are widely regarded by nutritionists as a reliable indicator of malnutrition. The Nutrition Foundation of India support that the WHO standard is applicable to Indian children (Dibley et al, 1987; Gupta et al, 1991).

MEASUREMENT OF NUTRITIONAL STATUS OF CHILDREN IN THE STUDY AREA

Education about nutrition, household food security, health services and proper childcare are essential for the general population to improve the state of children's nutrition today. Effectiveness in reducing child malnutrition is closely linked to improvements in access and outreach of health care and nutritional services of children (especially ICDS), and nutritional status of women.

The measurement of nutritional status is based on a primary data collected from the four selected anganwadi centres (Cherussery, Sreenarayanapuram, Kadalassery and Aratupuzha). The sample includes 120 children (6months to below 6 year), registered in selected AWCs (30 children from each AWC). For calculating nutritional status age, height, and weight of the children were taken by using

standard devices like measuring tape, Salter scale, and platform scale

It can be seen from Table (2) that, no severely malnourished children in the four selected Anganwadi centres in the study area. In the AWC Cherussery, no children in the age group 6 months to 3 years are stunted and wasted. However, it can be seen that 11.1 percent children in the age group 3years to 6 years are mildly stunted and wasted. In the case of underweight 16.7 percent of children (6m-3yrs) are facing mild underweight and 5.6 percent of children in the age group 3yrs to 6yrs are facing moderate under-weight. The centre at Sreenarayanapuram, 6.6 percent of children are mildly stunted, 26.7 percent are mildly underweight whereas 6.7 percent of children are moderately wasted belonging to the age group 6m-3yrs. In the age group, 3yrs to 6 yrs, 13.3 percent, 6.6 percent and 6.67 percent of children are mildly stunted, underweight and wasted. Also, 6.7 percent of children face the problem of moderate underweight in this AWC. In Kadalassery AWC, about 25 percent, 12.5 percent and 14.3 percent of children in the age group 6m to 3yrs are mildly stunted, underweight, and wasted. Besides, 6.3 percent of children in this AWC are moderately stunted. Compared to the other selected centres, stunting was slightly higher in Kadalassery AWC. Among the age group 3yrs-6yrs about 14, 7, and 6 percent of children in this centre are stunted, underweight and wasted respectively. Aratupuzha AWC has located in a SC dominated area, so most of the beneficiary children are from the SC category. According to the Social Welfare Department (CDPO Office), Aratupuzha AWC has come under the low performing category, because the coverage of eligible beneficiaries is low in this centre compared to the other centres. (See Table 4) But in terms of nutritional status of children, this centre is at par with other centres. In this centre, around 10 percent of registered children among the age group 6m-3yrs are mildly wasted whereas, 20 percent of them are mildly underweight and stunted in the same age group. About 25 percent of the children belonging to the age group 3yrs to 6yrs are mildly stunted 15 percent are mildly under-weight and 10 percent are suffered from mild wasting. It is evident from the table that, there is a slight difference among the AWC's in terms of nutritional status of children.

In general, all the centres show almost same level of nutritional status. There is not much difference between the nutritional status of children in different age groups. Consider the overall nutritional status in the study area, no children has come under severely malnourished

Table 2

Children under six years classified by nutritional status

AWC	Age group	Height for age (stunting)				Weight for age (under weight)				Weight for height (wasting)				No. Of children
		Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	
Cherussery	6m-3yrs	12 (100)	0	0	0	10 (83.3)	2 (16.7)	0	0	12 (100)	0	0	0	12
	3yrs-6yrs	16 (88.9)	2 (11.1)	0	0	17 (94.4)	0	1 (5.6)	0	16 (88.9)	2 (11.1)	0	0	18
Srinarayanapuram	6m-3yrs	14 (93.3)	1 (6.6)	0	0	11 (73.3)	4 (26.7)	0	0	14 (93.3)	0	1 (6.7)	0	15
	3yrs-6yrs	13 (86.7)	2 (13.3)	0	0	13 (86.7)	1 (6.6)	1 (6.7)	0	14 (93.33)	1 (6.67)	0	0	15
Kadalassery	6m-3yrs	11 (68.8)	4 (25)	1 (6.3)	0	14 (87.5)	2 (12.5)	0	0	14 (85.7)	2 (14.3)	0	0	16
	3yrs-6yrs	12 (85.7)	2 (14.3)	0	0	13 (92.9)	0	1 (7.14)	0	13 (93.7)	1 (6.3)	0	0	14

(continued)

AWC	Age group	Height for age (stunting)				Weight for age (under weight)				Weight for height (wasting)				No. Of children
		Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	
Aratupuzha	6m-3yrs	15 (75)	4 (20)	1 (5)	0	16 (80)	4 (20)	0	0	18 (90)	2 (10)	0	0	20
	3yrs-6yrs	7(75)	3 (25)	0	0	9 (85)	1(15)	0	0	9 (90)	1 (10)	0	0	10
Total	6m-6yrs	100 (83.4)	18 (15)	2 (1.6)	0	103 (85.9)	14 (11.6)	3 (2.5)	0	110 (91.67)	9 (7.5)	1 (0.83)	0	120

Source: Computed from survey data 2012, Figures in parenthesis indicate respective percentages of each measure (column wise) at AWCs wise)

category. In the study area 15 percent of children are mildly stunted and 1.6 percent is moderately stunted.11.5 percent facing mild under weight and 2.5 percent facing moderate under weight. Wasting is very low in the study area, 7.5 percent of children are mildly wasted and only 0.83 percent is moderately wasted.

In nutshell, around 16 percent of children in the study area are (including mild and moderate) stunted, 14 percent are underweight and 8 percent are wasted, and there is no severe malnutrition. Around 84 percent of the children in the study area have normal height for their age, 86 percent have normal weight for age and 92 percent have normal weight for their height. While having focus group discussions with the stakeholders, it was reported that there have been cases of severe malnutrition among children having no ICDS coverage. Wherever the ICDS has better coverage, better nutritional status is seen. It indicates that, there is a positive relationship between the nutritional status and ICDS coverage; it pinpoints the success of ICDS in providing Supplementary Nutrition in the study area. But in Kerala, according to the NFHS-III, 21 percent are stunted, 29 percent are underweight and 16 percent are wasted. In the study area the rate of stunting (16%) is higher than the other two measures, and that too, a higher ratio in comparison with the state average (29%). The foregoing discussion reveals the fact that nutritional status of beneficiary children registered in AWCs in the panchayath under study are having better nutritional status than that of the state average, revealing the relative success of ICDS in fulfilling one of its major objectives.

In the case of nutritional status among children only marginal differences are observed in terms of underweight, stunting and wasting between the two sexes (Table 3). The Data shows that the degree of stunting, wasting and under-weight are comparatively higher among female children. Male children had a higher proportion of normal weight for age (89.6%) and height for age (86.6%) when compared to their female counter parts (81.1% & 79.3%). But in the case of weight for height the difference is slight, i.e. 92.5 percent boys and 90.5 percent girls have normal weight for height. Severe undernourished children are not found both in male and female category. Also, the proportion of female children with mild stunting is 16.9 percent while that of moderate stunting is 3.8 percent. (see

Table 3) In the case of boys, the proportion of children with mild stunting is about 13.4 percent, and that of mild underweight and wasting is 10.4 and 7.5 percent respectively. Female children with mild underweight was about 13.2 percent and moderate underweight was 5.7 percent and female children with mild and moderate wasting is 7.6 and 1.9 percent respectively. And no male child was found with moderate malnutrition. In short, about 20 percent female children are stunted, 18 percent are underweight and 9 percent of them are wasted. In the case of male children 13.5 percent are stunted, 10.4 percent are underweight and 7.5 percent of them are wasted.

The extent of mild and moderate degree of underweight, stunting and wasting is slightly higher among female children. This is in line with the nutritional picture of almost every state of India. Several nutrition experts have suggested that the negligence of the girl child during illness may tend to deteriorate their nutritional status rather than differences in food distribution between boys and girls. The overall nutritional status of male and female preschool children was not seen statistically significant (Vipin Chandran, 2011). However, the biological consequences known to occur in later life cannot be over looked. Evidence suggests that malnourished female children grow up as short statured women and give birth to low birth weight babies characterized by growth retardation throughout the growing period, there by perpetuating a vicious cycle through generations. Therefore, there is a need to increase the coverage of eligible female children under ICDS, but in the study area, the total coverage of female children is lower than the male children, which adversely affect their (female child) nutritional intakes. The nutritional supplementation has played a major significant role in determining the overall nutritional status of the children in Kerala. The ICDS programme provides nutrition and health services for children under age six years and pregnant or breastfeeding women, as well as preschool activities for children in the age group of 3-6 years. Therefore the government needs to spend more money on ICDS programme in order to reduce the state of malnutrition and therefore improving health services, education for females and reduction in poverty. Besides the improvements in food availability and in women's education, strategies to make the beneficiaries better involved and covered are also important for future progress in child nutritional status and congenial health environment.

Table 3

Sex Wise Classification of Nutritional Status among Children (6m-6yrs) in the Study Area

Sex	Height for age (stunting)				Weight for age (under weight)				Weight for height (wasting)				No. of children
	Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	Normal	Mild	Moderate	Severe	
Male	58 (86.6)	9 (13.4)	0	0	60 (89.5)	7 (10.5)	0	0	62 (92.5)	5 (7.5)	0	0	67
Female	42 (79.3)	9 (16.9)	2 (3.8)	0	43 (81.1)	7 (13.2)	3 (5.7)	0	48 (90.5)	4 (7.6)	1 (1.9)	0	53
Total	100 (83.4)	18 (15)	2 (1.6)	0	103 (85.9)	14 (11.6)	2 (2.5)	0	110 (91.7)	9 (7.5)	1 (0.83)	0	120

Source: Computed from survey data 2012.

EXTENT OF PRESCHOOL EDUCATION (PSE) UNDER ICDS

Along with the child's physical growth and his or her intellectual, emotional and social growth are crucial for the child's overall development. Adopting a holistic approach is crucial in this regard. Preschool education (PSE) is a crucial component of the package of services envisaged under ICDS, as it seeks to lay the foundation for proper physical, psychological, cognitive and social development of the child. Non-formal pre-school education envisaged in this project emphasize on .imparting desirable attitudes, values and behavior patterns and aim at providing environmental stimulation. This is in contrast to the formal learning focused in other preschool institutions.

Non-formal education is imparted through PSE to children in the age group 3 to 6 at the AWCs. The Early Childhood Care and Preschool Education Programme (PSE), conducted through the non-formal and play way methods by joyful learning, should aim at providing a learning environment for promotion of social, emotional, cognitive, physical and aesthetic development of the child. The activities in PSE are visibly sustained for more than three hours a day and the teacher has a very important role in the programme. She has to participate in the activities with the children; learn by observing them; listen to the children and encourage them to speak spontaneously without interrupting; give opportunities to make choices; ensure the involvement of all the children in the group; and provide a secure environment.

For analyzing the preschool component of ICDS, the study took 57 registered 3-6 years aged children from the sample Anganwadis in the Vallachira Panchayath and also collected information through unstructured interview with their mothers and Anganwadi Workers to understand the effectiveness of PSE.

COVERAGE OF CHILDREN UNDER PSE IN SELECTED AWCS

Preschool Education at the AWCs focuses on the overall development of the child. It brings and keeps young children at the anganwadi centre. Children in the anganwadi centres are provided with joyful and stimulating environment giving emphasis on necessary inputs for optimal growth and development. Through the informal way they

learn alphabets and numerical counting at the centre. The children are motivated and prepared to enter into the formal education system, therefore, maximum coverage of preschool children is essential at the AWC. All the children of 3-6 years of age are expected to visit the AWC and take part in the preschool activities. Coverage of children for PSE in the study area is shown in Table 4.

Table 4

Number of Children Registered and Attending PSE in AWCs

AWC	Total No of children in the area	No of registered children in AWCs	No of registered children receiving PSE
Cherussery	56	18 (32.14)	17 (94.5)
Sreenarayanapuram	45	15 (33.33)	13 (86.7)
Kadalassery	23	14 (60.9)	12 (85.7)
Aratupuzha	24	10 (41.7)	6 (60)
Total	148	57 (38.51)	48 (84.21)

Source: Survey Data, 2012.

Table 5

Sex Wise Coverage of Children in Selected AWCs

Sex	Total No of children (3-6) in the area	No of registered Males and Females in AWCs	No of registered males and females receiving PSE
Male	77	35 (45.5)	30 (85.71)
Female	71	22 (30.9)	18 (81.81)
Total	148	57 (38.51)	48 (84.21)

Source: Survey Data 2012.

It is very much clear from the study that, there is an inadequate coverage of targeted children for preschool education. Out of the total 148 children (3yrs-6yrs) in the selected areas, only 38.5 percent (57)

are registered under AWCs. Among these registered, 84.2 percent (48) are attending PSE. This indicates that all anganwadis have been playing a meaningful role in imparting preschool education to the children by covering as many as 48 (84.21%) out of the 57 registered. Considering the AWCs, in the AWC Cherussery out of the 32.14 percent children registered 94.5 percent of them attend AWC regularly. But in the AWC Aratupuzha only around 60 percent of registered children are regularly attending AWC for PSE. Also it is evident from Table-5 that the participation rate of female children is low compared to that of male children (45.5 percent male children and 30.9 percent of female children in the study area are registered in AWCs). However, out of these registered children 85.7 percent of male and 81.1 percent of female children are attending AWC regularly for PSE. The low registration of females compared to the males indicates that the parents preferred to send their sons to AWCs or daughters to attend private or other preschools. AWWs should ensure that all eligible girls avail benefits of PSE, as the future health of nation depends largely on how healthy and efficient the girls grow up to be. There are certain causes which contribute to this low attendance, like the parents not understanding the importance of ICDS program so they send their children to private and other preschools. They think that ICDS do not provide quality education, and that it devotes less time for preschool education and is taught in an informal way. They also think that ICDS is a food based program so the AWWs give more importance to the supplementary nutrition than the Preschool education. Therefore, more parents prefer private nursery schools than the ICDS centres. Efforts related to the enhancement of PSE coverage have to be strengthened so as to cover almost all the children for PSE. Therefore, concerted efforts on the parts of the AWWs are required in this direction. Help from the side of community/local leaders is also essential to involve more children in PSE provided by AWCs. Community also needs to be sensitized adequately to the need and importance of the PSE so as to eliminate the chances of non-cooperation of parents in the process of preschool education.

EFFECTIVENESS OF PRESCHOOL EDUCATION ON THE BENEFICIARY CHILDREN

To know the effectiveness of preschool education on the beneficiary children, the researcher undertook discussion with children for testing

their capabilities, and also collected information from their mothers and teachers through unstructured interview. Notwithstanding the fact that PSE has a lesser coverage, it had a positive impact on the overall development of the children attending AWC in the study area. (See Table 6)

Around 26 percent of children from the selected AWCs are able to read simple words, 96 percent of the children could count numbers, around 85 percent could write alphabets/words and distinguish colours, and 65 percent could distinguish objects. (Table 6). Besides, 73 percent of the children used to describe the activities of AWC at home. All the selected AWCs perform more or less in the same way. Interviews with the mothers reveal that 72.9 percent of the selected children describe AWC activities at home, whereas, 27.1 percent do not describe the activities at home. The observations of the study on this component of the ICDS suggest that PSE made a positive and efficient impact on the children who attend/enrolled in the AWC. The PSE programme tends to be well-designed to suit the needs of young children, with teaching being done through a variety of creative games aimed at developing key skills such as language, recognition of objects, comparison skills, etc. In most states of India, however, this component of ICDS has been grossly neglected. In these states more emphasis has been placed on distribution of food, and to some extent on immunization. States like Kerala and Tamil Nadu have made great strides with "preschool education" (PSE). In Kerala the AWCs give much importance to the education component of ICDS program and they spend more time for preschool education.

FINDINGS AND SUGGESTIONS

The present study establishes the fact that there is an institutional failure of ICDS in achieving total coverage of eligible beneficiaries in the study area. It was evident from the study that less than half of the total eligible children (43.5%) are registered in AWCs. Out of the registered ones, more than ¾ (83.33) of them avail supplementary nutrition food. Integrated Child Development Services Scheme in the study area has been successful in improving the nutritional status of beneficiary children in the study area. More than 80 percent has shown relatively good/normal nutritional status. No severe malnourished children are found in the study area. Around 16 percent of the children are stunted, 14 percent are underweight and 8 percent are wasted.

Table 6

Effectiveness of Preschool Education on the Beneficiary Children

Effectiveness of PSE	**AWC**				
Child able to:-	**Cherussery (N=17)**	**Sreenarayanapuram (N=13)**	**Kadalassery (N=12)**	**Aratupuzha (N=6)**	**Total (N=48)**
Read simple words	9 (52.9)	7 (53.9)	6 (50)	4 (66.7)	26 (52.1)
Count numbers	17 (100)	12 (92.3)	11 (91.7)	6 (100)	48 (95.8)
Write alphabets/words	15 (88.2)	11 (84.6)	11 (91.7)	4 (66.7)	41 (85.4)
Distinguish between colors	16 (94.1)	12 (92.3)	11 (91.7)	4 (66.7)	43 (89.5)
Distinguish objects	11 (64.7)	9 (62.2)	8 (66.7)	3 (50)	31 (64.6)
Recognize pictures/ describe	12 (70.6)	9 (62.2)	9 (75)	4 (66.7)	34 (70.8)
Describe AWC activities at home					
Yes	12 (70.6)	10 (76.9)	9 (75)	(4 66.7)	35 (72.9)
No	5 (29.4)	3 (23.1)	3 (25)	2 (33.3)	13 (27.1)

Source: Survey Data 2012.

While having focus group discussions with the stakeholders, it was reported that there have been cases of severe malnutrition among children having no ICDS coverage. Wherever the ICDS has better coverage, better nutritional status is seen. Therefore, there is a positive relationship between ICDS coverage and nutritional status.

In the case of Preschool Education (PSE) the total coverage of targeted children is visibly low (38.5%) because more parents prefer private preschools to AWCs. More boys (45.5%) were registered than girls (30.9%). Out of the 85 percent of registered children attending the AWC; 86 percent of registered boys and 82 percent of registered girls are attending AWC for PSE. The flourishing growth of private and other aided preschools have badly affected the AWCs. The study found that PSE has a positive impact on the children who are attending AWCs. All AWCs provide PSE to the children (3-6years) more than four hours a day. PSE in AWCs are conducted through the non-formal play-based methods. For this purpose, every AWC has PSE kits which contain play materials for children. The study also found that 77.2 percent of the mothers are satisfied with the PSE component of the ICDS, whereas, 17.5 percent mothers are unsatisfied because they wrongly view the Scheme as a food providing initiative instead of nutrition and child development programme. It is also revealed from the study that 43.8 percent mothers reported that play way method is the best method for teaching in preschool centres while 8.8 percent favoured formal method of teaching.47.4 percent mothers preferred a combination of both.

The supplementary food distribution scheme under ICDS has a positive impact on improving the nutritional status of children in the ICDS areas. However, it is seen that a large number of children in the area are not attending AWCs and are not receiving supplementary food. Therefore, it is recommended that efforts should be taken to improve the coverage of eligible children under ICDS by exhaustive door-to-door surveys, awareness campaigns, encouraging consumption of food at the Anganwadi, enhancing mothers' awareness about appropriate weaning practices and supplementary food and improvement in community participation.

The effect of pre-school education in enhancing the overall development of children is clear from the study. Hence, efforts should be taken to extend preschool facilities to all children in the preschool age (3-6 yrs) group. AWCs covered under the present study were found to be lacking in PSE kits as most of the items

were broken due to their continuous use. Actions are to be taken to ensure more availability of PSE kits in all the AWCs. It is also essential to impart training to AWWs to develop special skills on preparing PSE kits using local materials as this would further ensure availability of PSE kits at Anganwadi centre. And it is important to educate the community/parents on various aspects of joyful learning and enhancing community awareness and involvement through community mobilization activities like annual Anganwadi days, shows etc., constituting parents committees, regular meetings, use of electronic media, and encouraging community members as resource persons.

CONCLUSION

The health and well-being of children must be recognized as the prime concern of any modern civil society, and all efforts should be made to realize this goal. Prudent health initiatives in respect of child have become the priority area across the society in building up human resource and human capital for the new development paradigm of any nation. Therefore, welfare programs for children become an essential part of the country's development strategy. AWWs play a significant role in this regard. Even though ICDS faces the problem of low coverage in the study area, it helps in improving the nutritional status and providing better Preschool Education to the beneficiaries who are enrolled in AWCs in the study area. However there is further space to strengthen involvement of community in this program. Therefore, the study points out that a multipronged approach is required to address the question of community participation and awareness of ICDS among beneficiaries.

REFERENCES

Becker, G. (1992). *Human capital: A theoretical and empirical analysis, with special reference to education*. Chicago: The University of Chicago Press.

Bloom, David E. (2003). Education, health and development. Project on Universal, Basic and Secondary Education, American Academy of Arts and Science.

Buor, Daniel. (2003). Mothers' education and childhood mortality in Ghana. *Health Policy 64* (3) (June), 297–309.

Caldwell, J. C. (1979). Education as a factor in mortality decline: An examination of Nigerian data. *Population Studies 3*, 395–414.

Chhabra, R. & Rokx, C. (2004). The nutrition MDG indicator - Interpreting progress. World Bank Discussion paper. Washington D.C: World Bank.

Dibley, Michael. & Norman, Staehking, Philip, Nieburg & Fredrick, Trowbridge. (1987). Interpretation of Z-score anthropometric indicators derived from the international growth references. *American Journal of Clinical Nutrition 46* (5),749-762.

Gangadharan, K. (2007). Morbidity and health care in Kerala – A distributional profile and implications. *Indian Journal of Social Development 7*, 195-211.

Gangadharan, K. (2009. Nutrition and health transition lessons from Kerala. New Delhi: Serials Publications.

Guptha, S. et al. (1991). Growth performance of affluent Indian children (Under-fives): Growth standard for Indian children. New Delhi: Nutrition Foundation of India.

Harbison, F. & Myers, C. A. (1964). Education, manpower and economic growth: Strategies of human resource development. New York: McGraw-Hill.

LeVine, Robert A. (1987). Women's schooling, patterns of fertility, and child survival. *Educational Researcher 16* (9) (December), 21–27.

Mani, Miriam. (2002). The impact of ICDS with regard to the intellectual, social and physical development of preschoolers. Phd Thesis. Mahathma Gandhi University, Kottayam.

Mathew, Roy. (2001). Critical evaluation of ICDS in the development of women and children in Kottayam District. PhD Thesis. M G University, Kottayam.

National Family Health Survey (NFHS-3). (2005-06). *National Report*. Mumbai: International Institute of Population Science.

NIPCCD. (2006). Nutrition and health education: Experiences of *NIPCCD*. New Delhi: NIPCCD.

Prakash, Shri. (2000). Utilization of human resources. *Business Perspectives 2* (2), 50-58.

Pelletier, D.L et al. (1995). The effects of malnutrition on child mortality in developing countries. *Bulletin of the World Health Organization 73*, 443-448.

Rajaram, S.T.S., Sunil & Lisa, K. Zottarelli. (2003). An analysis of childhood malnutrition in Kerala and Goa. *Journal of Biosocial sciences 35*, 335- 351.

Thankappan, K.R. et al. (1991). Health and development in Rural Kerala - A study of the linkages between socio-economic status and health status, Kerala. Shasthra Sahitya Parishad, Thiruvanthapuram.

UNDP. (1991). Human Development Report 1990. Newyork: Oxford University Press.

Vipin, Chandran. (2011). Nutritional status of preschool children - A socio economic study of rural areas of Kasaragod district in Kerala. Phd Thesis. Kannur University.

WHO. (1975). Health by the people. Geneva, Switzerland: WHO.

World Bank (1993) The East Asian miracle: Economic growth and public policy. New York: Oxford University Press.