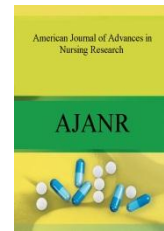




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### EFFICACY OF THE INTEGRATED CHILD DEVELOPMENT SERVICE SCHEME IN BACKGROUND OF DIETETIC CONDITION AND DEVELOPMENT STRING IN CHOSEN DISTRICT OF KERALA STATE (INDIA)

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#### ABSTRACT

A survey was conducted to assess the nutritional status of children (0-6 years) among 40 Anganwadis in 4 districts of Kerala State registered under the ICDS scheme. A self-prepared structured interview schedule was used to collect qualitative information for the study. Anthropometric measures which included height and weight were used for assessing nutritional status of the children. The stepwise analysis of two variables height for age and weight for age was applicable on the basis of Waterlow's and Gomez' classification. To examine the relationship between nutritional status of the child and selected variable that affects nutritional status of children, Chi-square test was employed. Based on Gomez' classification, out of 400 children, only 300 (75.0%) of children received supplementary nutrition through ICDS out of which 250 (83.3%) children were normal and 50 (16.7%) were underweight. Based on Waterlow's classification out of 400 children, only 290 (72.5%) of children received supplementary nutrition through ICDS; out of these children 200 (69.0 %) were normal while 90 (31.0%) were stunted. It can thus be concluded that supplementary nutrition through ICDS improved the nutritional status of children surveyed.

#### INTRODUCTION

India has one of the highest percentages of the severe malnourished children in the world along with sub-Saharan Africa region [1-3]. Malnutrition is "the syndrome that results from the interaction between poor diets and disease and leads to most of the anthropometric deficits observed among children in the less developed countries" [4]. Integrated Child Development Service Scheme is a unique programme, which encompasses the

main components of human resource development, namely - health, nutrition and education. The National Policy for children adopted in 1974 has emphasized the need to accord priority to children, in the country's developmental efforts. The policy statement focuses on preventive and promotive aspects of child health and nutrition for expectant and nursing mothers. It aims to provide adequate services for children both before and after birth and throughout the period of growth to ensure their full physical, mental and social development. There are studies done which shows that there is a positive impact of ICDS on child nutritional status. Singh et al. (1993) and Chiani et al. (1994) have found positive

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impact of ICDS on child nutritional status. The nations of the world are ranked according to their achievements in fulfillment of child rights and progress for women. A majority of children live in impoverished economic, social and environmental condition, which impedes their physical and mental development. Recognizing the Indian government has been greatly concerned about safeguarding and enhancing the development of children particularly those from the weaker sections of society [5-10]. Emphasizing on the above significance of positive impact of ICDS on children and their nutritional status, the present paper presents the result of an evaluation of the nutritional status of children aged between 0-3 years registered in government sponsored maternal and child care in *Anganwadi* centers in India.

## METHODOLOGY

A survey-based study was conducted in the month of February, 2013 to January, 2014 among 40 *Anganwadis* in 4 districts of Kerala State i.e., Thiruvananthapuram, Kollam, Pathanamthitta and Kottayam registered under the ICDS scheme. For the study permission was taken from the government official at Directorate of Social Welfare, Thiruvanthapuram (Govt. of Kerala). A self-prepared structured interview schedule was prepared and pretested in the field. In the present study anthropometric measurements (height and weight) were used for assessing nutritional status of the children. Children were examined in the *Anganwadis* where their heights and weights were taken.

A complete assessment of nutritional status includes the collection of anthropometric data. A standard measuring tape was used to measure height. Children were weighed using a standardized Salter's scale to the nearest 100 grams when attending an *Anganwadi*. A total number of 400 children were taken for the study as sample and for all of them the supplementary food was provided. Weight for age and height for age were calculated and children were classified into different grades of malnutrition according to Gomez's and Waterlow's classification [11]. Data of 400 children were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0.

## RESULTS

### Supplementary Nutrition

Malnutrition is clearly linked to inappropriate feeding practices rather than just to food availability or household food security. ICDS/*Anganwadis* centers are supposed to provide supplementary feeding and inculcate good feeding practices among mothers. Supplementary feeding should be introduced at around 6 months of age in addition to continued breastfeeding upto two years of age. According to ICDS norms, identified severely

malnourished children, those placed in Grade III and Grade IV, should be given special supplementary feeding which may be therapeutic in nature, or just double rations, and should also be referred to medical services. However, since the nutritional status of the ICDS children was rarely recorded or categorized in different grades as per the growth chart, no variation in the quantity of food given to these children was observed. All the children were provided with the same quantity of food. Table 2 data shows that only 75.0 % of children had received the supplementary nutrition through ICDS and 25.0 % of children did not receive supplementary nutrition.

Williams (1988) conducted a study which revealed that ICDS provided nutrition supplements consisting of 300 calories and 10 g of proteins for all 60-72 month old children. The similar work reported by Ali and Jahan (2012) and Swaminathan (1990) on the impact of ICDS programme found that the mothers of ICDS areas were better informed of the care during pre-natal period, importance of supplementary feeding, growth services to children and to improve the capability of mothers to meet the help and nutritional needs of their children through proper nutrition education [17-21]. Table 3 shows that based on Gomez' classification, out of 25.0% children who did not receive supplementary nutrition, majority 15.0 % of their children was underweight.

On the other hand, out of 75.0 % children, who received supplementary nutrition majority 62.5 % of children, were having normal weight for age. To examine the relationship between nutritional status (weight) of children and those who received supplementary nutrition, null hypothesis was formulated, that is, children who received supplementary nutrition had no effect on nutritional status (weight). To examine the hypothesis chi-square test was used. Calculated value of  $\chi^2$  was 46.7 and table value of  $\chi^2$  at 5% level of significance and 1 degree of freedom was 3.5. Calculated value was greater than table value. So null hypothesis was rejected, that is, children, who received supplementary nutrition, had better nutritional status (weight).

Table 4 indicates that based on Waterlow's classification out of 27.5 % children who did not receive supplementary nutrition, 7.5 % children were stunted. Out of 72.5 % children who received supplementary nutrition, majority 50 % of the children were of normal height for their age. To examine the relationship between nutritional status (height) of children and supplementary nutrition receive by children, null hypothesis was formulated, i.e., supplementary nutrition received by children has no effect on their nutritional status (height).

For testing the hypothesis chi-square test was use. Calculated value of  $\chi^2$  was 2.01 and table value of  $\chi^2$  at 5% level of significance was 3.21. Calculated value



was less than table value so null hypothesis was accepted, that is, supplementary nutrition receive by children has no

effect on their nutritional status (height).

**Table 1. Waterlow's and Gomez' classification**

Classification by Gomez et al.	
Normal	>90% of standard weight for age
Grade I	89%-75% of standard weight for age
Grade II	74%-60% of standard weight for age
Grade III	<60% of standard weight for age
Classification by Waterlow	
Normal	>95% of height for age
Mildly impaired	87.5%-95% of height for age
Moderately impaired	80%-87.5% of height for age
Severely impaired	<80% of height for age

**Table 2. Percentage distribution of children who received/ did not receive supplementary nutrition through ICDS (N=300)**

Supplementary nutrition through ICDS	Number	Percentage
Received	300	75.0
Did not receive	100	25.0
Total	400	100.0

**Table 3. Percentage distribution of health status (weight) of children according to Children who receive/ did not receive supplementary nutrition through ICDS (Gomez' classification weight for age) N=400**

Supplementary nutrition Health status of children through ICDS	Health status of children					
	Normal		Underweight		Total	
	No.	%	No.	%	No.	%
Received	250	62.5	50	12.5	300	75.0
Did not receive	40	10.0	60	15.0	100	25.0
Total	290	72.5	110	27.5	400	100.0

$\chi^2=46.7$  at d.f 1;  $P<0.05$

**Table 4. Percentage distribution of health status (weight) of children according to Children who receive/ did not receive supplementary nutrition through ICDS (Waterflow's classification weight for age) N=400**

Supplementary nutrition Health status of children through ICDS	Health status of children					
	Normal		Stunted		Total	
	No.	%	No.	%	No.	%
Received	200	50	90	22.5	290	72.5
Did not receive	80	20	30	7.5	110	27.5
Total	280	70.0	120	30.0	400	100.0

$\chi^2=2.01$  at d.f 1;  $P>0.05$

## DISCUSSION

Adequate food and good feeding practices are essential for the normal growth of a young child. Studies conducted by Alhaji *et al.* (2002) showed that 150 million (26.6%) were underweight, while 182 million (32.5%) were stunted all over the world. More than half of the world's undernourished people live in India. Mishra *et al.* (1999) in their study found that about 54% children were underweight, 52% were stunted, while 17% were wasted. The study done by Tamanna *et al.* (2010) shows that the nutritional status of children did not vary from normal to

3<sup>rd</sup> degree malnourishment. Nearly 45.8% were normal, 1.8% were over nourished and 2.2% were 3<sup>rd</sup> degree malnourished. So, we need to give highest priority to child health and nutrition if we hope for a brighter future of our country. The height for age index shows about 229 (76.4%) of children received supplementary nutrition through ICDS. Out of these children 148 (49.4 %) were normal while 81 (27 %) were stunted. The extent of severe under-nutrition was higher in Uttar Pradesh and Rajasthan while severe under-nutrition of a chronic nature



was higher in Orissa. Further operational research is needed to find out the reasons for the substitution of the supplementary food for breakfast or lunch, the exact caloric content of *Anganwadi* food given to the children. Garg *et al.* (1997) in Ghaziabad, Bhandari *et al.* (1993) in Rajasthan, found that prevalence of malnutrition in children below the age of five years was higher in spite of the fact that this population was being served by ICDS [12].

A limitation of this study was not accounting for the registered *Anganwadis* children who did not attend the *Anganwadis* centers, but for whom supplementary food was provided. This could have opened another dimension for the study [13-16].

## CONCLUSION

To prevent or minimize the problem of malnutrition, various nutrition intervention programmes have been introduced, from time to time, in India. Although the ICDS program has been successful in improving the nutritional status of children (0-6 years), further improvements can be made in the functioning of the program. Changes need to be made in the understanding and utilization of the services. The study shows the high extent of undernourishment and less than satisfactory performance of ICDS, about 250 (62.5%) children were normal while only 50 (12.5%) were underweight who had receive supplementary nutrition through ICDS.

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