

Assessment of Nutritional Status of Rural Anganwadi Children of Aligarh under the ICDS (Integrated Child Development Services) and Rural Health

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ABSTRACT A survey was conducted to assess the nutritional status of children (0-3 years) among 16 *Anganwadis* in 5 villages in Aligarh, Uttar Pradesh (U.P.) registered under the ICDS scheme. A self-prepared structured interview schedule was used. To get the qualitative information of the study anthropometric measures include 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 300 children, only 229 (76.4%) of children received supplementary nutrition through ICDS out of which 188 (62.7%) children were normal while 41 (13.7%) were underweight. Based on Waterlow's classification out of 300 children, only 229 (76.4%) of children received supplementary nutrition through ICDS out of these children 148 (49.4%) were normal while 81 (27%) were stunted. It can thus be concluded that majority of children were normal who received supplementary nutrition through ICDS.

INTRODUCTION

Nutrition plays a key role in physical, mental and emotional development of children and much emphasis has been given to provide good nutrition to growing populations especially in the formative years of life. Globally, more than one-third of child deaths are attributable to under nutrition. According to the Census of India (2001), the child population (0-6 years) was 15.9% of the total population. The prevalence of underweight children in India is among the highest in the world, and is nearly double that of Sub-Saharan Africa. The 3rd National Family Health Survey findings showed that 45% of less than 3 year old children were malnourished. If this continues, India would be raising a generation which is debilitated and unable to contribute effectively to the productivity of the country. To tackle the problem of malnutrition and

the ill health of mothers and children, the Government of India has launched the Integrated Child Development Services (ICDS) program. It is the world's largest early child development program. It was initiated in India in 1975 with the objective of improving the nutritional status of pre-school children in addition to other services. 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 worlds less developed countries" (WHO 1995). 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 impact of ICDS on child nutritional status. Emphasizing on the above significance of positive impact of ICDS on children and their nutritional status, the present paper was conducted to evaluate the nutritional status of children aged between 0-3 years registered in government sponsored maternal and child care *Anganwadi* centers in India.

METHODOLOGY

A survey-based study was conducted in the month of January-June, 2011, among 16 *Anganwadis* in 5 villages in Aligarh, Uttar Pradesh (U.P.), registered under the ICDS scheme. A self-prepared structured interview schedule was prepared and pretested in the field. In the present study anthropometric measurements (height and

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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*. There were 345 children present at the time of the visits. However 45 children, who did not attend the *Anganwadi* centers, were excluded from the analysis, but for them 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 (Khanna 1997).

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

Data of 300 children were analyzed using the Statistical Package for Social Sciences (SPSS) version 16.0.

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 1 data shows that only 76.4% of children had received the supplementary nutrition through ICDS and 23.6% 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. Swaminathan (1990) conducted a study 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.

Table 1: Percentage distribution of children who received/ did not receive supplementary nutrition through ICDS (N=300)

Supplementary nutrition through ICDS	No.	Percentage
Received	229	76.4
Did not receive	71	23.6
Total	300	100.0

Table 2 shows that based on Gomez' classification, out of 23.6% children who did not receive supplementary nutrition, majority 14.3 % of their children was underweight. On the other hand, out of 76.4 % children, who received supplementary nutrition majority 62.7 % 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 χ^2 was 48.9 and table value of χ^2 at 5% level of significance and 1 degree of freedom was 3.841. 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 3 indicates that based on Waterlow's classification out of 23.6 % children who did

Table 2: 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-300

Supplementary nutrition through ICDS	Health status of children					
	Normal		Underweight		Total	
	No.	(%)	No.	(%)	No.	(%)
Received	188	62.7	41	13.7	229	76.4
Did not receive	28	9.3	43	14.3	71	23.6
Total	216	72.0	84	28.0	300	100.0

$\chi^2=48.9$ at d.f 1; $P < 0.05$

Table 3: Percentage distribution of health (height) of children according to Children who receive/ did not receive supplementary nutrition through ICDS (Waterlow's classification) (N=300)

Supplementary nutrition through ICDS	Health status of children					
	Normal		Stunted		Total	
	No.	(%)	No.	(%)	No.	(%)
Received	148	49.4	81	27	229	76.4
Did not receive	38	12.6	33	11	71	23.6
Total	186	62.0	114	38	300	100.0

$\chi^2=2.84$ at d.f 1; $P > 0.05$

not receive supplementary nutrition, 68% children were stunted. Out of 76.4 % children who received supplementary nutrition, majority 49.4% 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, that is, 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 χ^2 was 2.84 and table value of χ^2 at 5% level of significance was 3.841. 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).

DISCUSSION

Adequate food and good feeding practices are essential for the normal growth of a young child. Studies conducted by Alhaji et al. (2002) show 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. Study done by Tamanna et al. (2010) shows that the nutritional status of children did not vary from normal to 3rd degree

malnourishment. Nearly 45.8% were normal, 1.8% were over nourished and 2.2% were 3rd 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 these population was being served by ICDS. 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.

CONCLUSION

To prevent or minimize the problem of malnutrition, various nutrition intervention pro-

grammes have been introduced, from time to time, in India. Although the ICDS program has been successful in improving the nutritional status of children (0-3 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 188 (62.7%) children was normal while only 41 (13.7%) were underweight who had receive supplementary nutrition through ICDS.

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