Efficacy of Gramasiri Programme with Regard to Nutritional Status of Pre-school Children

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ABSTRACT

A Study to know the effect of Gramasiri programme on nutritional status of pre-school children (0-3 years) in Guntur district was carried out in 8 villages (4 Gramasiri and 4 Non-gramasiri villages) selected randomly, belonging to Bapatla Mandal. The results of the study revealed that, the mean heights and weights of Gramasiri children were higher than Non-gramasiri children. The mean weight/age and height/age (as percentage of standard) measurements of Gramasiri children were significantly greater than Non-gramasiri children. But the mean weight/height percentage of standard of Non-gramasiri children were found to be higher than Gramasiri children.

Key words : Children, Gramasiri, Nutrition

Health and nutrition needs of the children are crucial to the development of the nation since they are the biggest investment for development. Malnutrition is the scourge of the nation caused by a variety of factors such as poverty, low food production, population explosion, ignorance associated with traditions, customs and beliefs in relation to food habits, poor environmental sanitation, poor availability of health services etc. Pre-school children are among the most vulnerable sections of the population from the nutritional standpoint. Nutritional disorders are the chief killers in this age group.

Though the goverment adopted special policies for children to provide nutrition, sanitation, education and health services and infrastructure to deliver them, it has not had the necessary impact on the services rendered to children. In recent years the government has introduced a variety of schemes of grants in aid for voluntary agencies to support programmes of welfare and development in the country. A number of voluntary organizations have taken initiative in launching programmes and projects in the field of child welfare and development including mother and child care.

Voluntary organizations have been playing a significant role in promoting the nutrition and health related activities of the goverment. They not only support, but also reach inaccessible areas in a better way because of the selfless devotion involved in their activites. Gramasiri is also one of the voluntary organizations located at Bapatla Mandal, Guntur district. It is an integrated programme with nutrition, health and economic inputs.

MATERIAL AND METHODS

Out of eight Gramasiri villages in which Mother and Child Health programme is in operation in Bapatla Mandal, four Gramasiri villages were selected randomly. Four Non-gramasiri villages that are adjacent to Gramasiri villages were selected as control. From the selected villages 30 families were selected from each village. And from each family one child was selected. Thus 120 children from Gramasiri families and 120 children from Non-gramasiri families were selected. Care was taken to see that the sample selected consisted of 40 children of 0-1 years, 40 children of 1-2 years, 40 children of 2-3 years from both Gramasiri as well as Non-gramasiri families. Care was also taken to see that equal number of male and female children were included both from each age group in the sample.

Assessment of nutritional status

Nutritional status of pre-school children was assessed using nutritional anthropometry. Heght/age, weight/age and weight/height were the parameters used. The weight of the child was taken using Salter's weighing scale. Weight of the child with minimum clothing without shoes was recorded with an accuracy up to 100 gm. Height of the child was measured using infanto-meter to the nearest 0.1 cm. Children were graded into different nutritional grades by using Gomez classification as well as Waterlow's classification. The reference standard used for heght/age, weight/age and weight/heigh were NCHS standars. The data collected were tabulated and statistically analyzed using, two sample t-test and Z- test. Mean and standard deviation were determined for each parameter.

Table 1. Average height and weight of different age groups of children

Variable	Gramasiri (N=40)	Non-gramasiri (N=40)
Height(cm)		
0+ Age group	67.4	65.8
1+Age group	75.4	71.5
2+Age group	88.5	83.3
Weight(Kg)		
0+ Age group	67.4	65.8
1+ Age group	75.4	71.5
2+ Age group	88.5	83.3

Table 2. Average height and weight of male and female children

Variable	Gramasiri (N=40)	Non-gramasiri (N=40)
Height(cm)		
Male	78.1	74.1
Female	76.1	72.9
Weight(Kg)		
Male	10.7	9.9
Female	9.9	9.2

Table 3. Mean anthropometric measurements (as percentage of standard) of pre-school children by age

Variable	Age group	Gramasiri (N=40)	Non-gramasiri (N=40)	z-Value
Height/ age	0+	96.1	93.0	4.20**
	1+	93.7	88.4	4.97**
	2+	96.1	89.5	6.59**
Weight/ age	0+	98.1	90.8	5.32**
	1+	92.3	81.1	7.78**
	2+	94.3	88.2	4.78**
Weight/ height	0+	108.3	108.9	0.34NS
	1+	103.9	104.6	0.22NS
	2+	99.1	105.5	2.12NS

** - Significant at 1% level, NS-Non-significant

Table 4. Mean anthropometric measurements (as percentage of standard) of pre-school children by sex

Variable	Sex	Gramasiri (N=40)	Non-gramasiri (N=40)	z-Value
Height/age	Male	95.3	89.8	6.98**
	Female	95.3	90.9	5.31**
Weight/ age	Male	94.9	86.5	6.31**
	Female	95.2	86.9	6.59**
Weight/ height	Male	104.6	107.1	1.24NS
	Female	102.9	105.6	1.03NS

** - Significant at 1% level, NS-Non-significant

Table 5. Mean height/age, weight/age, weight/height(as percentage of standard) of pre-school children by age and sex

Variable	Age group	Sex	Gramasiri (N=40)	Non-gramasiri (N=40)	z-Value
Height/age	0+	M	95.7(2.7)	92.6(3.3)	3.25**
		F	96.5(3.3)	93.4(3.8)	2.73*
	1+	M	94.3(4.4)	89.0(3.9)	3.99**
		F	93.2(4.7)	87.8(5.8)	3.19**
	2+	M	95.9(3.6)	87.7(5.9)	5.28**
		F	96.3(3.2)	91.4(3.7)	4.55**
Weight/age	0+	M	.98.5(8.8)	91.3(3.9)	3.38**
		F	98.6(7.3)	90.4(5.1)	4.14*
	1+	M	92.2(5.4)	80.9(7.5)	5.44**
		F	92.3(5.5)	81.2(7.1)	5.57**
	2+	M	93.9(5.6)	87.2(6.6)	3.53**
		F	94.6(4.9)	89.3(5.2)	3.33**
Weight/ height	0+	M	109.4(9.9)	109.6(9.4)	0.09NS
		F	107.2(8.7)	108.4(9.9)	0.39NS
	1+	M	102.7(6.2)	102.8(18.3)	0.02NS
		F	104.9(5.4)	106.3(20.0)	0.29NS
	2+	M	101.6(7.3)	108.9(10.2)	2.61*
		F	96.6(22.3)	102.2(6.4)	1.06NS

Figures in the parentheses are the standard deviations   * = Significant at 5% level   ** = Significant at 1% level, NS - Non-significant   M = male, F = Female

Table 6. Distribution of children according to
         Gomez classification

	Gramasiri		Non-gramasiri (N=40)	
	No	%	No	%
Normal	102	85.0	49	40.8
I Grade	18	15.0	60	50.0
II Grade	0	0	11	9.2
III Grade	0	0	0	0

Table 7. Distribution of children according to
         Waterlow's classification

	Gramasiri		Non-gramasiri (N=40)	
	No	%	No	%
Normal	111	92.5	68	56.7
Stunted	9	7.5	52	43.3
Wasted	0	0.0	0	0.0
Stunted & Wasted	0	0.0	0	0.0

RESULTS AND DISCUSSION

The mean body weights and heights of different age groups and sex groups of children studied are presented in Table 1.

Mean anthropometric measurements (heght/age and weight/age % of standard) of all age groups and sex groups of Gramasiri children were found to be higher than Non-gramasiri children and the difference was significant at 1% level except in females of 0+ age group, which was found to be significant at 5% level. In contrast to these, weight/height measurements of Non-gramasiri children were found to be higher than Gramasiri children. However, this difference was not found to be significant except for males of 2+ age group, which was found to be significant at 5% level.

It is inferred from the table that 85% of children belonging to Gramasiri group were found to be normal and the rest 15% were found to be in Grade 1 malnutrition. Where as in Non-gramasiri group 40.8% were found to be normal, 50% were found to be in Grade 1 and 9.2% in Grade II malnutrition. Grade III malnutrition was not found in both the groups.

It is evident from the table that, 92.5% in Gramasiri group were normal and 7.5% were stunted where as the corresponding figures in Non-

gramasiri group were 56.7 and 43.3 per cent, respectively. None of the children in both the groups fell under wasting or wasting and stunting categories.

This reveals that the nutritional status of Gramasiri children was better than the nutritional status of Non-gramasiri children. This can be attributed to the benefits of Gramasiri services like supplementary feeding, preventive and curative health facilities, ante-natal and post-natal care, and nutrition education that the mothers received. Results of the present study are in accordance with the results of studies of other intergrated programmes-Suhasini, 1986; Sanjoy *et al.,* 1987; Gupta, 1989; Ramana, 1989; Chawalit, 1989; Kodyat, 1989; Maribe, 1989; Neumann, 1989; Mtalo, 1989; Patterson, 1989 and Madhavi 1990. Which revealed that provision of integrated services to women and children improves the nutritional status of children.

However, the mean weight/height percentage of stadard of Non-gramasiri were greater than Gramasiri children among all age and sex groups. This could be because, with continuing dietary deprivation and consequent progressive reduction in linear growth (stunting), the children reach a point where their inadequate nutrient intake is sufficient to maintain them at a body weight appropriate to their stunted stature.

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