

Nutritional status of Anganawadi children: An assessment of government intervention in Mysore district of Karnataka, India.

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Abstract

In general, both the improved socioeconomic condition and the wide coverage of health and nutrition programmes play an important role in determination of health and nutritional status of a community. Mysore district is considered as one of the most developed district of the state and recorded a significant decline in poverty from 2004-05 to 2009-10. But findings of the July2012 government mass survey indicted the huge amount of severe underweight among 0-6 year's children in the district. This paper studies the effect of intensive nutrition supplement programme which is been implemented in July-2012 to improve the nutrition status of pre-school children0-6 years of age, pregnant and lactating women. Government has changed its course of action and working nature of Anganawadi centres in the state Nutritious food distribution to pregnant and lactating women started all over the state. Vigorous quantitative and qualitative monitoring and day to day observation of preschool children started in Anganawadi centres. It was decided to measure the weight of every child quite regularly and to record it properly. To study the effect of the programme on Anganawadi children, out of 2100 severe underweight children 250 children from all taluks of the district were selected and their changes in Weight is considered to measure the effect of the supplement programme. t-Test and ANOVA is used to test significance of the supplement programme The Paired t- test results show that there is significant difference in the weight of the children after the implementation of the programme. Since the p- value is 0.000 in the case of all taluks as against the set p- value of 0.025(two tailed). The anova result indicate that with the f value 1.143 and p value 0.247 as against 0.05, there is no significance difference in the effectiveness and effect of the supplement programme implemented in all taluks selected for the study. One year of government efforts has increased average weight of the children and brought down the severity of the underweight problem in Mysore District.

Keywords: Anganawadi,comprehensive, malnutrition, supplement, underweight.

Introduction

Nutrition of pre-school children is of top importance because the foundation for lifetime health, strength and knowledgeable energy is laid during this period¹. But in our country Nutrition got late attention of our governments. Because of this indifference towards our future citizens the prevalence of underweight children in India is among the highest in the world.

The prevalence of underweight among children below six years varies substantially across different subgroups of the Indian population. The rural underweight prevalence exceeds that of urban areas². Underweight prevalence is slightly higher among girls, 48.9% (18.9%), than among boys, 45.5% (16.9%). Thus, most at risk for underweight are girls whose families are poor, and live in rural areas. Both underweight and severe underweight prevalence is much higher among scheduled castes 53.2%, Scheduled tribes 56.2% than among other castes. Muslim children nutrition status is worse than other communities, but better than scheduled caste and scheduled tribe children³.

Karnataka as a state has achieved improved health indicators over the past decade. However, state where nutrition and development lagging far behind. According to some reports over 68,000 children in Karnataka are malnourished. A study in Raichur District revealed that 2,689 children had died in this district in just 2 years between 2009 and 2011. There are of course wide variations among districts of the state in both levels and trends in underweight.

After the media exposure and court intervention state government took up the nutritional status of pre-school children as well as pregnant and lactating women issue very utterly. A detailed survey was conducted in the month of July-2012 all over the state. As a result of findings from the survey government has changed its course of action and working nature of Anganawadi system. The food pattern given to the children changed all over the state. Vigorous quantitative and qualitative monitoring and day to day observation started in Anganawadi. It was decided to measure the weight of every child quite regularly and to record it properly.

The Karnataka Nutrition Mission (KNM) established and aimed to eradicate the problem of malnutrition in the State in the shortest possible time by introducing innovative strategy changes. While it will specifically target children between 0- 6 years, to Reduce Underweight and under-nutrition among children, adolescent girls and women in the shortest possible time, by following the inter-generational, lifecycle approach.

Literature Review

The nutritional status of children has attracted attention of many scholars from different disciplines resulting in a huge and diverse literature from different standpoints. Some of the important contributions are mentioned here.

Christina Florentini (2010.) pointed out that 'despite consistent economic growth in India, level of child malnutrition remains high. Susmita Bharati et al (2001) are to assess the spatial distribution of nutritional status of Indian children; the study shows that there are gender differences and three-dimensional variations in the nutritional status of children in India. Elangovan and Shanmugan (2002) analysed the immunization and nutritional status among children aged under- five in a major districts in India, it reveals that Children in rural areas in India die due to infectious and communicable diseases. Radhakrishna and Ravi (2004) studied that the malnutrition levels are uneven across the Indian states. Some middle-income states such as Kerala and Tamil Nadu have comparatively better

¹Unicef-2005

² NFHS Survey-3

³Justice Saachar Committee Report

nutritional achievements than higher income states like Maharashtra and Gujarat. Jane Kabubo-Mariara (2006) studied that rural children are likely to suffer more malnutrition than urban children, while boys are more likely to be malnourished than girls. Mohammad Imran(2012) in his study revealed that , despite vast infrastructure in ICDS Programme, the nutritional status of women and children remain the same, reasons include poor education on nutrition, inadequate training of Anganawadi workers and poor supervision. Irudaya Rajan and Navaneetham (1994) assessed the impact of mother's education on utilization of maternal and child health services with data sources from three districts of Kerala. Results show ededucated mothers use better antenatal and post-natal care, which results in better health of the mother and child.

Research gap

A great deal of research has been conducted on the issue of Nutritional status at different levels, The absence of studies on malnutrition at Regional level is a Conspicuous and this absence at , explains the lack of effective strategies of addressing the issue. This is the reason why the present study intends to focus on the problem of underweight at Micro level, keeping in with this objective the present study proposes include in its preview the District of Mysore and to concentrate on various dimensions of malnutrition as they exist within this area of study.

Selection of the Study area:

Mysore district is considered as one of the most developed district of the state and recorded a significant decline in poverty from 2004-05 to 2009-10⁴. according to District Level Health Survey -3, in the matters of institutional deliveries (70.1-90%), the reception of T.T injection by mothers, and vaccination of children (age 12-23 months) which are considered as an important Indicators of Health and nutritional status of women and children recorded achievement and also Mysore have highest girls literacy rate (67.06%)⁵. But findings of the July2012 government mass survey indicted the huge amount of severe underweight among 0-6 year's children in the district than any neighbor districts like Mandya, Chamarajanagara. This dichotomy leads to this study.

Integrated Child Development Scheme in Karnataka began as one of the pilot projects in the T. Narasipura Taluk for the first time in Karnataka but the findings of the July 2012survey indicted the huge amount of severe underweight among Anganawadi children in the district. The government introduced an intensive programme to eradicate the problem of malnutrition in preschool children, pregnant and lactating women. The present study intends to evaluate the quantifiable results of the intensive nutrition supplement programme meant to enhance nutritional status of Anganawadi children in Mysore district.

Objectives of the study

1. To study the effectiveness of the supplement programme on severe underweight children implemented in Mysore district
2. To study the weight variations of severe underweight children after intervention.

⁴Karnataka Economic survey-2011-12)

⁵ Census -2011.

Description of Data Sources:

The present study used secondary data collected from department of women and child development, government of Karnataka which is in charge of implementation of supplement programme in the district.

Statistical analysis:

To study the effect of the programme on weight of severe underweight children after one year of implementation two tailed Paired t-test is used. To analyse significant difference in the effectiveness and effect of the supplement of the programme between different taluks of the district ANOVA is used.

Sample Size:

There were 2100 severe underweight children in the Month of July-2012 in Mysore district 42.43% were boys and 57.44% were girls. 25% belonged to scheduled caste, 21% scheduled Tribes and 6% minorities 48% others. 93% severe underweight children were located in rural areas and remain 3% were in urban area. Nanjanagudu Taluk had highest number of 405 severe malnourished children and Mysore urban had lowest 125 children.

Out of 2100 children 250 severely underweight Anganawadi children were included in the study. The sample was further distributed as 200 children from rural area (50 SC, 40 ST and 110 other community children From Rural Anganawadi Centers) 50 from urban Anganawadi centers (27 Muslim, 05 other, 15 SC and 03 ST Children) among 110 boys and 140 girls 40, 25, 35, 40, and 35 Children from K.R.Nagara, Periyapatna, Hunsuru, T.Narasipura, Nanjanagudu and H.D.Kote Taluk were selected. Who are located and distributed in 58 Primary health centres jurisdiction.

Table-1 shows average weight of urban and rural area children before (2012) and after (2013) supplementation. The average weight of urban children was 8.452 k.g in 2012 and it is increased to 9.187 k.g. in 2013. Changes in average weight of SC, ST, Muslim and Other community children is explained below:

Table-1-Weight of Rural and Urban children.

Urban Children			communities	Rural Children		
average weight in 2012(Before)	average weight in 2013(after)	difference		difference	average weight in 2013(after)	average weight in 2012(Before)
8.51	10.18	+1.67	Muslim	+1.25	9.97	8.72
8.06	9.42	+1.32	Others	+1.3	9.8	8.5
8.81	9.22	+0.41	SC	+0.84	9.27	8.43
<u>8.43</u>	<u>7.93</u>	<u>-0.5*</u>	ST	+1.6	9.98	8.38
8.49	9.71	+1.22	BOYS	+1.18	9.80	8.62
8.42	9.64	+1.2	GIRLS	+1.26	9.65	8.39

Source: Department of women and child development

Muslim and other community children gained weight substantially than SC and ST children in urban area after the supplements. The average weight of rural children was 8.507 k.g in 2012 and it is increased to 9.755 K.G. in 2013. Average increase in weight of all other community children is almost equal other than SC Children in 2013.

TO study the effectiveness and effect of the supplement programme, t-test is used to compare the changes after the supplements. Paired t-test is used to study the effect of supplement programme. Further, ANOVA is used to study and compare the effect of the supplements and within and between taluks.

To test the effectiveness and effect of the supplement programme the following hypothesis is framed:

Ho: There is no significant change in the weight of children before and after the implementation of the programme:

H1: There is a significant change in the weight of the children before and after the implementation of the programme:

To test the above hypothesis, the paired t-test is applied and the results are as under:

paired sample t -test Talukwise

Pairs	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
Mysore urban – Mysore urban	-1.41400	.51081	.07224	-19.574	49	0.000
K.R.Nagara - K.R.Nagara	-1.00500	1.41783	.22418	-4.483	39	0.000
Hunsuru - Periyapatna	-1.21400	.70653	.09992	-12.150	49	.000
T. Narasipura – T. Narasipura	-1.11143	.68846	.11637	-9.551	34	0.000
Nanjanagudu - Nanjanagudu	-1.29500	.39089	.06181	-20.953	39	0.000
H D Kote – H D Kote	-1.28000	.63838	.10791	-11.862	34	0.000

P=0.01

Paired sample t test for all Taluks

2012 B/W Taluks

P=0.01

Pairs	Mean	Std. Deviation	Std. Error Mean	T	df	Sig. (2-tailed)
AFTER - BEFORE	-1.2284	0.7917	.0501	-24.534	249	0.000

The Paired t- test results show that there is significant difference in the weight of the children after the implementation of the programme. Since the p- value is 0.000 in the case of all taluks as against the set p- value of 0.025(two tailed), The study points out that between 2012 and 2013 due to distribution of new food pattern like boiled egg, glass of milk to children and distribution of pulses and cereals to pregnant and lactating women resulted in substantial improvement in weight of severely underweight children. The null hypothesis 'There is no significant change in the weight of children before and after the implementation of the programme' is rejected and the alternative hypothesis 'There is a significant change in the weight of the children after the implementation of the programme' is accepted.

To test the difference in the implementation of the programme between various taluks the following hypotheses are used:

Ho: There is no significant difference in the effectiveness and effect of the supplement programme between different taluks;

H1: There is a significant difference in the effectiveness and effect of the supplement of the programme between different taluks

The ANOVA test is applied to test the above hypothesis and the results are as under:

ANOVA

B/W Taluks-2012

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	206.098	63	3.271	1.174	.206
Within Groups	518.302	186	2.787		
Total	724.400	249			

ANOVA

B/W Taluks-2013

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	196.012	61	3.213	1.143	.247
Within Groups	528.388	188	2.811		
Total	724.400	249			

The above results show that with F value of 1.143, significant difference of 0.247 as against 0.025(two tailed test), the null hypothesis 'There is a significant difference in the effectiveness and effect of the supplement programme between different taluks' is rejected, and the null hypothesis 'There is no significant difference in the effectiveness and effect of the supplement programme between different taluks' is accepted.

Results and Discussion:

It can be inferred from the results that there is a considerable improvement in the weight of the children belonging to different taluks after the implementation of the programme. The supplement programme has helped these underweight children gain weight resulting in improvement of their health. Also it can be inferred from the above results that the programme implemented in different taluks of Mysore district has had same effect benefitting the children

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