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NUTRITIONAL STATUS OF UNDER 5 YEARS AT ANGANWADI CENTERS UNDER ICDS PROGRAMME IN PROJECT AREA OF HAYATHNAGAR, RANGAREDDY DISTRICT

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ABSTRACT
ICDS is a unique and single largest integrated scheme of child development launched on 2nd October 1975. It is a centrally sponsored program implemented by department of women and child development, Ministry of human resources development of india.On an experimental basis it was initially started in 33 blocks of the country .The success of the scheme motivated the government to extend the scheme to 2424 blocks by 1990. Material and methods: examine physical health status of beneficiaries. To examine physical health status of beneficiaries Community based cross sectional study will be done at Hayathnagar ICDS project area which cover Rangareddy district. Hayathnagar consists 8 sectors. These sectors were distributed in urban and peri urban locality to serve people. We selected 2 Anganwadi centers from each sector randomly. Total 16 Anganwadi centers studied. Those who are not present but enrolled in Anganwadi centre will be excluded. Results: In the present study, 50.14% children were males and 48.76% were females. Majority (37.9%) of them belonged to 2 to 3 years age group. In 2 to 3 years and 4 to 5 years age group, male children exceeded females. majority (81.2%) of children were Hindu, followed by Muslims (16.5%) and only (2.3%) children belonged to Christian religion. mean age in months for males was 30.72±10.8 and for females was 28.92±10.8. Mean weight in kgs for males was 11.6±1.6 and for females 11.1±1.6 and mean height for the males was 90.4±6 and for females was 88.8±6.8. In this study majority of the children belonged to class II (41.2%) and class III (36.7%) according to modified BG Prasad classification. More number of female children (10.8%) were thin built compared to male children (8.5%)

Keyword: anganwadi beneficiaries, nutrition, health status

1. INTRODUCTION
ICDS is a unique and single largest integrated scheme of child development launched on 2nd October 1975. It is a centrally sponsored program implemented by department of women and child development, Ministry of human resources development of india.[1]On an experimental basis it was initially started in 33 blocks of the country .The success of the scheme motivated the government to extend the scheme to 2424 blocks by 1990.[2]

Anganwadis provide basic health care in villages. The services package includes 1.Supplementary nutrition 2.Immunization 3. Health check up 4.Referral services 5.Treatment of minor illnesses 6. Nutrition and health education to women 7. Pre-school education to children in age group of 3 to 6 years 8. Convergence of other supportive services like water supply, sanitation etc.[3]

The "ANGANWADI CENTRE " literally means a courtyard play centre located within village or slum area which is the focal point of delivery of services at community level. The organization and management of this totally indigenous scheme has been unique. The scheme has an army of honorary functionaries and it has successfully utilized the existing health personnel and institutions in the country. It has been developed jointly by Indian scientist, administrators and planners under the experienced political leadership and commitments. It has been almost exclusively financed by Indian funds.

Undoubtedly, the impact of this scheme made a big difference in the health and development of the vulnerable groups in India. Various studies to assess the impact of ICDS on nutritional status of 0-3 and 0-6 years old children has confirmed a decline in moderate and severe under nutrition and increase in the proportion of children with normal or grade 1 undernutrition.[3,4,5,6] Immunization coverage and antenatal care increased significantly after its implementation.[7]

In-spite of these improvements there still exists some lacunae in its implementation as evidenced by the evaluation studies conducted by National institute of public cooperation and child development.[8]

2. OBJECTIVES

a) To determine nutritional status of beneficiaries

b) To examine physical health status of beneficiaries

3. METHODOLOGY:

Community based cross sectional study will be done at Hayathnagar ICDS project area which cover Rangareddy district. Hayathnagar consists 8 sectors. These sectors were distributed in urban and peri urban locality to serve people. We selected 2 Anganwadi centers from each sector randomly. Total 16 Anganwadi centers studied. Those who are not present but enrolled in Anganwadi centre excluded. Beneficiaries will be interviewed with pretested proforma.

Study variables include socio demographic data, weight, height, Body Mass Index, immunization history, awareness regarding health checkups and referral services etc will be included.

Ethical consideration from institutional ethical committee obtained.

Statistical analysis done by using MS Excel, SPSS 17. Data will be presented in descriptive tables and appropriate statistical tests will be applied at required tables.

4. RESULTS

In the present study, 50.14% children were males and 48.76% were females. Majority (37.9%) of them belonged to 2 to 3 years age group. In 2 to 3 years and 4 to 5 years age group, male children exceeded females. majority (81.2%) of children were Hindu, followed by Muslims (16.5%) and only (2.3%) children belonged to Christian religion. mean age in months for males was 30.72±10.8 and for females was 28.92±10.8. Mean weight in kgs for males was 11.6±1.6 and for females 11.1±1.6 and mean height for the males was 90.4±6 and for females was 88.8±6.8. In this study majority of the children belonged to class II (41.2%) and class III (36.7%) according to modified BG Prasad classification. More number of female children (10.8%) were thin built compared to male children (8.5%). There was no statistical significance observed $p>0.05$. 91.7% of male and 89.1% of female children were normal in built. In the present study, 2.8% of female children had thin and sparse hair compared to 2.3% in male children. Dyspigmented hair was seen in 1.4% of female and 1.8% of male children respectively. The difference between male and female was not statistically significant ($p>0.05$). In the present study diffuse pigmentation on face was seen in 11% of male children compared to 9.4 % in female children. The difference was not statistically significant. 0.5% of female children and 1.4% of male children had naso-labial dyssebacea. The above table shows that prevalence of pale conjunctiva was more in female children (18.9%) compared to male children (14.7%). Overall prevalence of pale conjunctiva was 16.56%. Pale conjunctiva depicts anemia clinically. Presence of other conjunctival abnormality like conjunctival xerosis was 3.68%. The difference was not statistically significant. In the present study 97.75% of children had normal cornea. Dry cornea was seen more in male children (1.8%) compared to female children (0.5%) and stastically it was found to be insignificant ($p>0.05$). The present study revealed that 0.5% of male children had angular stomatitis, cheilosis which was same compared to females (0.5%). The difference between male and female was not statistically significant ($p>0.05$). There was no enlargement of thyroid and parotid gland after examination of all the Anganwadi children. It is evident from above table that 18.4% of female children had pale tongue compared to 16.1% of male children. Presence of pale tongue was more in female children than in male children which was not statistically significant. Presence of other tongue abnormality like red and raw tongue, fissured tongue and geographic tongue was only 0.5%. In the present study, 85.79% of children had normal teeth. Caries teeth were more in female (9.9%) children compared to male children (9.2%). The difference between male and female was not statistically significant ($p>0.05$). 4.6% of male children had teeth with mottled enamel which was more than female children (2.8%). In the present study, presence of dry and scaly skin in children was 7.67% of which 7.79% and 7.5% were males and females respectively. Proportion of male children with dry and scaly skin was more compared to female children which were statistically insignificant ($p > 0.05$). Presence of other skin abnormality like follicular hyperkeratosis, dermatosis and petechiae was absent. The above table revealed that 2.8% of male children and 3.8% of female children had Koilonychias and Platynychia. The difference between male and female was not statistically significant ($p>0.05$).

In the present study, no child had nutritional edema. Presence of nutritional edema is seen in kwashiorkor. Ricketic changes were absent in all the children. In the present study while 50% of class IV, 33.5% of class III and 29.4% of class II were malnourished children, whereas only 26.02% of class I were malnourished. Hence it has been observed that malnutrition was seen more commonly in the lower socio-economic status. no child was found to be severely malnourished in this study. The difference between male and female was not statistically significant ($p>0.05$). male children were nutritionally more wasted than

female children, which is an indicator of short-duration malnutrition which was not statistically significant. The results revealed growth retardation, that is stunting which is malnutrition of long duration was observed more in male children compared to female children which was not statistically significant. prevalence of malnutrition was less in children of father and mother educated up to graduation. In this study we did not find any significant association between mothers working status and nutritional status of children. The results of prevalence of malnutrition in children of educated mother showed statistically significant ($p<0.05$) value. (Table no 1)

Discussion:

In the present study, 50.14% of children were males and 48.76% were females. Majority (37.9%) of the children belonged to 2 to 3 years age group and majority (81.2%) of children were Hindu. 41.2% and 36.7% belonged to class II and III socio economic status respectively.

More number of female children (10.8%) were thin built compared to male children (8.5%). There was no statistical significance observed ($p>0.05$). 91.7% of male and 89.1% of female children were normal in built.

According to the study conducted by Jood S *et al*, [9] in Haryana State children were thin built and 50% of them were normal built. The study done by Mandal GC *et al*, [10] showed prevalence of thinness among boys to be 84.8% and in Girls 85.6%.

In the present study, no child had nutritional oedema. Presence of nutritional oedema is seen in kwashiorkor. Ricketic changes were absent in all the children.

Table 1: Relation between mothers literacy, fathers literacy, mothers occupation status and their children's nutritional status as indicated by weight for age

CHARACTERISTICS	NORMAL		UNDER WEIGHT		TOTAL	
Father's education	**Number**	%	**Number**	%	**Number**	%
Illiterate	15	5.1	8	5.9	23	5.3
Primary school (1 to 4)	50	16.9	16	11.9	66	15.3
Middle school (5 to 7)	88	29.8	42	31.1	130	30.2
High school (8 to 10)	96	32.5	42	31.1	138	32.1
College (PUC/diploma)	33	11.2	22	16.3	55	12.8
Graduate	13	4.4	5	3.7	18	4.2
TOTAL	295		135		430	100
Mother's education						
Illiterate	7	2.4	14	10.4	21	4.9
Primary school (1 to 4)	33	11.2	14	10.4	47	10.9
Middle school (5 to 7)	111	37.6	50	37	161	37.4
High school (8 to 10)	96	32.5	36	26.7	132	30.7
College (PUC/diploma)	30	10.2	18	13.3	48	11.2
Graduate	18	16.1	3	2.2	21	4.9
TOTAL	295		135		430	
Mother's occupation						
House wives	235	79.7	107	79.3	342	79.5
Working mother	60	20.3	28	20.7	88	20.5
TOTAL	295		135		430	

The study also revealed that, 2.8% of female children had hair lack lustre hair compared to 2.3% in male children. Diffuse pigmentation on face was seen in 11% of male children compared to 9.4% in female children.

In contrast to present study, findings of study conducted by Jood S *et al,* [9] showed that 16.67% of preschool children had hair with lack of lustre and 83.33% of them had normal hair, while the study conducted by Sachithananthan V *et al,* [11] in Chenni city revealed lustreless hairs in 26.9% of children and discoloured, dry, sparse hair in 28.4%. Hence the prevalence of hair abnormality in the present study was less compared to other studies.

The prevalence of pale conjunctiva in the present study was more in female children (18.9%) compared to male children (14.7%). Overall prevalence of pale conjunctiva was 16.56%. 18.4% of female children had pale tongue compared to 16.1% of male children.

According to study conducted by Awasthi S *et al*[12] in Uttarpradesh, 70% of preschool children were anemic, while the study conducted by Behera TR et al [13] found that 51.4% of 1 to 5 year children were anemic in which 2.1% had severe anemia.In the study conducted by Jood S *et al,* [9] 8.89% of preschool children had pale conjunctiva and 4.4% of them had Bitot's spots.

According to NFHS-3 prevalence of anemia in India was 69.5% and in Karnataka was 70.4%.

Dry cornea was seen in more male children (1.8%) compared to female children (0.5%). In the present study there was no Bitot's spot in any of the children, which may be due to good coverage of National vitamin A prophylaxis program in the study area.

According to Nutrition News Journal of ICMR Jan 2008[14] prevalence of Bitot's spots among 1-5 year children in Karnataka was 0.7%, while pooled prevalence of Bitot's spots among children of eight southern states of India was 0.8%. In the present study, 0.5% of male and female children had angular stomatitis. Caries teeth were found to be more in female (9.9%) children compared to male children (9.2%). 4.6% of male and 2.8% of female children had teeth with mottled enamel.

In the study conducted by Sachithananthan V and Chandrasekar[15] in Tamil Nadu,18.9% of children had dental caries while 23.5% had mottled and discoloured enamel.

Thyroid and parotid gland examination was done in all Anganwadi children in the present study and no enlargement of glands wasfound.

The present study also showed the presence of dry and scaly skin in children to be 7.67%. Among these 7.79% were males. 2.8% of male children and 3.8% of female children had koilonychia, platynychia. According to the study conducted by Jood S *et al* [9] 10.0% of children had koilonychia.

Anthropometric nutritional status was assessed by WHO criterion (SD classification) and also NCHS standard using weight for age, height for age, weight for height BMI for age indices and MUAC. The prevalence of nutritional deficiency was also investigated by clinical signs. The results revealed that the prevalence of underweight was 23.95% [moderate and severe], stunting was 31.86% [moderate and severe], wasting 20.46% [moderate and severe] and MUAC (13.34% -moderate). Boys were more malnourished than girls. Prevalence of overweight and obesity based on BMI-for-age for the sexes combined was 4.6% and 0.23% respectively.

A study conducted by Krishna Agarwal K *et al* (2001)[16]in Jabalpur showed prevalence of malnutrition to be 52.09% in the rural areas in children 1 to 5 years based on mid arm circumference while the study done by Kishori B and Mishra S (2007)[27] revealed only 33.31% of children having malnutrition. Hence in the present study, proportion of malnourished children was less compared to other studies.

The study by Shakur MS *et al,* [17] in Bangladesh showed prevalence of PEM around 51.97% while Deshmukh PR and Dongre AR *et al* ,[18] showed the prevalence of underweight and severe underweight for children 0 – 6 years were 47.4% and 16.9% respectively in their study.

According to the study by Rasania SK and Sachdev TR [19] overall prevalence of underweight was 71.5% among children and the study done by Mishra RN *et al* [20] found that 75% of pre-school children were malnourished with 2% suffering from severe degree of malnutrition.

In an another study conducted by Biswas S *et al* [21]revealed that among the children, 48.20%, 10.60% and 48.30% were having stunting, wasting and underweight, respectively.

A study done by Khor GL *et al* (2009)[22] showed that the overall prevalence of underweight and stunting of the children were 12.9% and 17.2% respectively. These levels included 2.4% severe underweight and 6.0% severe stunting and prevalence of overweight based on BMI-for-age for the sexes combined was 6.4%.

In a study conducted by Singh MB *et al,* [23] the results showed stunting in 53% of children, underweight in 60% and wasting was present in 28% of children. Vitamin A and B complex deficiencies were found in 0.7 and 3.0% of children, respectively.

In the present study, 50% of class IV, 33.5% of class III and 29.37% of Class II were malnourished children, while only 26.02 % of class I were malnourished. Hence it was observed that malnutrition was seen more commonly seen in the lower socio-economic status.

In the study conducted by Harishankar *et al,* [24] 69.23%, 24.79% and5. 98% of malnourished children belonged V, III and I respectively.

According to the study conducted by Awasthi S *et al,* [11] 67.3 % of preschool children were underweight and 87.6% were stunted.The study by Bains K and Brar JK (2009), [25] reported 21% of moderate and15% of severe stunting in children.

Our results revealed that the children of literate mothers and literate fathers had better anthropometric measurements than children of illiterate mothers and illiterate fathers which was similar to the findings of study done by Arya A *et al,*[26] We also found

that there was no significant association between mothers working status and nutritional status of children.

5. IMPLICATIONS:

Nutritional and immunization Status of beneficiaries will indicate work and utilization levels of anganwadi centre. Evaluation of referral services and services provided at anganwadi centers will give satisfactory levels, compliance towards the system and level of community participation.

Undergraduate will expose to a national health programme which is running so many years for upliftment of nutritional status of community. While doing study student will learn basic research methodology.

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