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Original Research Article

Nutritional assessment of children in the selected anganwadis in field practice area of RVM medical college: A cross-sectional study

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ABSTRACT

Background: Malnutrition stands as one of the most prevalent conditions impacting the well-being of children. It heightens a child's vulnerability to infections, delays recovery, and increases mortality rates. Nutrition significantly influences the physical, mental, and emotional development of children.

Materials and Methods: A cross-sectional descriptive study was conducted among five anganwadi centers in Mulug Mandal, Siddipet which comes under the field practice area of R V M Medical College. The study focused on children under five years of age who attended the Anganwadi centers during September 2023 to November 2023.

Results: Out of 100 participants majority children had normal weight(63%), followed by underweight(18%), above normal(15%) and lowest proportion of color category of weight of the child is severely underweight (4%). There was a statistically significant association of weight with knowledge about growth chart among mothers.

Conclusion: To prevent or minimize the problem of malnutrition, various nutrition intervention programmes have been introduced, from time to time, in India.

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1. Introduction

The first six years of a child's life are crucial for their physical and cognitive development, laying the foundation for a healthy and productive future. Adequate nutrition during this period is paramount, as it directly impacts growth, immune function, and overall well-being. In many developing nations, Anganwadi Centers play a pivotal role in addressing the nutritional needs of young children. This study seeks to delve into the assessment of nutritional status among children aged 6 months to 5 years attending Anganwadi Centers, aiming to identify prevailing challenges and propose targeted interventions.¹

Anganwadi Centers, synonymous with the Integrated Child Development Services (ICDS) program, serve as

community-based hubs providing a range of services, including supplementary nutrition, health check-ups, and pre-school education.² Given their widespread presence and accessibility, these centers serve as key platforms to monitor and address the nutritional status of children in the critical early years. Understanding the nutritional landscape within these centers is essential for designing effective strategies to combat malnutrition and ensure optimal child development.

This assessment will encompass a comprehensive analysis of various factors influencing nutritional status, including dietary practices, socio-economic conditions, and healthcare access. By evaluating the prevalence of malnutrition, stunting, underweight, and micronutrient deficiencies, the study aims to identify vulnerable populations and formulate targeted interventions. Additionally, it will explore the efficacy of existing nutritional programs and the challenges faced by caregivers

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in adhering to recommended practices.³

The findings from this assessment are anticipated to contribute significantly to evidence-based policymaking, facilitating the development of tailored interventions that address the unique needs of children in the specified age group. Ultimately, the goal is to enhance the effectiveness of Anganwadi Centers in promoting optimal nutrition and fostering a healthier start for children in their formative years.

The destiny of a nation is shaped by its emerging generation. There is a revived recognition that the factors influencing chronic diseases in one's later years and overall health are established during this crucial stage.

2. Objectives

1. To study the nutritional status of under 5 children attending Anganwadis.
2. To study the association between Sociodemographic factors and weight for age of under five children attending anganwadi.

3. Materials and Methods

A cross-sectional descriptive study was conducted among five anganwadi centers in Mulug Mandal, Siddipet which comes under the field practice area of R V M Medical College. The study focused on children under five years of age who attended the Anganwadi centers during September 2023 to November 2023. The research utilized complete enumeration until the desired sample size was achieved.

3.1. Study population

Under 5 children attending anganwadis in Mulug mandal.

3.2. Inclusion criteria

All children under the age of five receiving immunization services at two rural health centers.

3.3. Exclusion criteria

1. Children having chronic illnesses or are undergoing treatment in hospitals.
2. Children whose mothers were absent on the day of interview.

3.4. Sampling technique

A thorough examination is conducted among children under the age of five, who were attending anganwadis having had no history of chronic illnesses. Demographic details were collected from mothers. This enumeration continued until the desired sample size is reached.

3.5. Study period

September to November 2023.

A pre-designed semi-structured questionnaire was administered to mothers of children below age of five years old attending anganwadi centers in Mulug mandal after conducting a pilot test. Sociodemographic information, including the age, education, and occupation of both the mother and father, were collected. To assess knowledge, the ICDS growth chart approved by the Government of Telangana, adopted from WHO, was utilized. This chart is presently in use, and mothers are expected to be familiar with it. Weight measurement was conducted using Salter's scale, specifically an "Indian Standards Organization" certified Salter weighing scale, with minimal clothing and without footwear, ensuring accuracy up to 100 grams. Education sessions were conducted to inform mothers about the proper use and interpretation of the growth chart. Emphasis was placed on the significance of maintaining an individualized chart for each child. Mothers were made aware of the importance of a consistently rising line and the potential risks associated with a flat or declining line.

3.6. Statistical analysis

Descriptive statistics was employed to summarize quantitative variables, including age and weight. Qualitative variables will be presented in terms of proportions along with a 95% confidence interval. To examine the disparity in mothers' knowledge regarding the understanding of the growth chart between the two centers under investigation, the Chi-square test or Fischer's exact test was utilized.

4. Results

Table 1 reveals that majority of the respondents (61%) are boys and rest are girls (39%). Majority of children (53%) included in the study belonged to <6 months age group followed by 6 – 12 months age group (19%), 13-26 months (16%), 27-39 months (8%) and lowest proportion children 4% in 40-59 months. Majority are nuclear family (74%), followed by joint family (19%) and rest are third generation family (7%). Majority of mothers (48%) included in the study belonged to 21-24 years age group followed by 25-28 years age group (25%), 29-32 years (15%), <20 years (9%) and lowest proportion 3% in >32 years. Majority mother's education status is high school (43%), followed by Intermediate (25%), primary education (17%), Under graduation is (9%) and Illiterate are (6%). Majority mothers are having 2 children (48%) followed by 1 child (36%), 3 child (12%) and more than 3 child (4%). Majority of mothers are house- wife (90%), followed by semi professionals and clerical shop as occupation is (3%) and lowest proportion of mothers occupation is labor and professionals (2%). Majority of father's occupation is Labor (68%), followed by semiprofessionals (18%), clerical shop

as occupation is (8%) and lowest proportion of father's occupation is professional (6%).

Table 1: Distribution of socio-demographic details of the study participants

		Frequency (n=100)	Percentage
Age of the child (in months)	< 6 months	53	53
	6 - 12 months	19	19
	13 - 26 months	16	16
	27 - 36 months	8	8
	40 - 59 months	4	4
Gender	Boys	61	61
	Girls	39	39
Type of family	Nuclear	74	74
	Joint	19	19
	Three generation	7	7
Number of children in the family	1	36	36
	2	48	48
	3	12	12
	>3	4	4
Mother 's age (in years)	<20	9	9
	21-24	48	48
	25-28	25	25
	29-32	15	15
	>32	3	3
Education of mother	Illiterate	6	6
	Primary school	17	17
	High school	43	43
	Inter	25	25
	Graduation	9	9
Education of Father	Illiterate	8	8
	Primary school	17	17
	High school	44	44
	Inter	26	26
	Graduation	5	5
Mother's Occupation	Professional	2	2
	Semi professional	3	3
	Clerical/shop	3	3
	Labour	2	2
	Housewife	90	90
Father's occupation	Professional	6	6
	Semi professional	18	18
	Clerical/shop	8	8
	Labour	68	68

Out of 100 participants majority children had normal weight(63%), followed by underweight(18%), above normal(15%) and lowest proportion of color category of weight of the child is severely underweight (4%). There was a statistically significant association of weight with knowledge about growth chart among mothers. (Table 2).

Table 2: Weight for age of children according to color category

Color category of the child		Frequency	Percentage
Green [Normal]		63	63
Yellow [Under weight]		18	18
Red [Severely Under weight]		4	4
Above Green [Above Normal]		15	15

There was a statistically significant association of weight with mother's occupation, education of father's, and knowledge of mothers knowledge about growth chart among mothers and not statistically significant association of weight with Father's occupation, Gender, mother's age and age of the child (Table 3). There was a statistically significant association of weight with knowledge about growth chart among mothers (Table 4).

5. Discussion

According to a study conducted by Bhavsar S, Mahajan H, Kulkarni R on Assessment of the Nutritional Status and Immunization Coverage of Anganwadi Children in Rafiq Nagar, Mumbai it was found that 75% children had ICDS grade I malnutrition, 78% were normal according to W.H.O grading for malnutrition and 50.4% had weight for height less than 5th percentile.⁴ In a study conducted on Various Anthropometric Methods of Assessment of Nutritional Status in Under Five Children by Pandve HT, Singru SA was found that 49% were normal and 49% were mildly malnourished according to Gomez classification for weight for age.^{5,6} In this study it was observed that 32% of children were moderately underweight and 4% were severely underweight.

In a study conducted on Various Anthropometric Methods of Assessment of Nutritional Status in Under Five Children by Pandve HT, Singru SA was found that 24% had mild stunting and 22% had moderate stunting.⁵ In a study conducted on Assessment of Nutritional Status of Rural Anganwadi Children of Aligarh under the ICDS (Integrated Child Development Services) and Rural Health Alim F and Jahan F it was found that out of 76.4% children who received supplementary nutrition, majority 49.4% of the children were of normal height for their age according to Water low Classification and those who did 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

Table 3: Association of weight with Sociodemographic factors of the study participants

		Undernourished		Normal		Total		P value
		No.	%	No.	%	No.	%	
Mothers Occupation	Professional	1	0.00	2	0.00	2	100	0.016*
	Semi professional	3	100.00	0	0.00	3	100	
	Clerical/shop	1	33.33	2	66.67	3	100	
	Labour	0	0.00	2	0.00	2	100	
	Housewife	17	18.89	73	81.11	90	100	
Father's occupation	Professional	1	16.67	5	83.33	6	100	0.628
	Semi professional	2	11.11	16	88.89	18	100	
	Clerical/shop	2	25.00	6	75.00	8	100	
	Labour	17	25.00	51	75.00	68	100	
Gender	male	14	22.95	47	77.05	61	100	0.774
	female	8	20.51	31	79.49	39	100	
Mother's age	<20	4	44.44	5	55.56	9	100	0.460
	21-24	10	20.83	38	79.17	48	100	
	25-28	5	20.00	20	80.00	25	100	
	29-32	3	20.00	12	80.00	15	100	
	>32	0	0.00	3	100.00	3	100	
Father's education	Illiterate	5	62.50	3	37.50	8	100	.012*
	Primary school	6	35.29	11	64.71	17	100	
	High school	8	18.18	36	81.82	44	100	
	Inter	3	11.54	23	88.46	26	100	
	Graduation	0	0.00	5	100.00	5	100	
Age of the child (in months)	< 6 months	10	18.87	43	81.13	53	100	0.632
	6 - 12 months	6	31.58	13	68.42	19	100	
	13 - 26 months	4	25.00	12	75.00	16	100	
	27 - 39 months	2	25.00	6	75.00	8	100	
	40 - 60 months	0	0.00	4	100.00	4	100	

Table 4: Association of weight with knowledge about growth chart among mothers

		Undernourished		Normal		Total		P value
		No.	%	No.	%	No.	%	
Seen Growth chart	Yes	7	41.18	10	58.82	17	100	0.036*
	No	15	18.07	68	81.93	83	100	

their age.⁷⁻⁹

Whereas in this study it was observed that 30% of children had moderate stunting and 12% had severe stunting.

In a study conducted on Assessment of the Nutritional Status and Immunization Coverage of Anganwadi Children it was found that 56% were above the age of 3 and 23% were between 2-3 years.¹⁰ In this study it was observed that 44% children were 3 years old and 26% were 4 years old. It was found 64% of children were females and 36% males.¹⁰

6. Conclusion

In order to mitigate the issue of malnutrition, India has implemented several nutrition intervention programs over time. While the ICDS program has proven effective in enhancing the nutritional well-being of children, there is room for further enhancement in its implementation.

Revisions in the comprehension and utilization of the services are necessary for continued progress.

7. Source of Funding

None.

8. Conflict of Interest

None.

9. Recommendations


Promoting the education of mothers and caregivers regarding on the importance of enhanced nutritional intake and growth charts as children grow older, implementing effective child-rearing and feeding practices, and enhancing hygiene and sanitation are fundamental for ensuring the well-being of the child.

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