

ORIGINAL ARTICLE

Utilization of Integrated Child Development Services (ICDS) Scheme by child beneficiaries in Coastal Karnataka, IndiaSaranya Sivanesan¹, Ashwini Kumar², Muralidhar Madhav Kulkarni³, Asha Kamath⁴, Avinash Shetty⁵¹Post Graduate; ^{2,3,4}Associate Professor; ⁵Professor & Head, Department of Community Medicine, Kasturba Medical College, Manipal University, Manipal, India

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Abstract

Background: India's main early childhood development intervention the ICDS Scheme has been sustained for 40 years and has been successful in some ways. However, nearly half of the children under six years are still under nourished. The program in reducing the proportion of undernourished children over the past decade has been modest and slower in India than what has been achieved in other countries with comparable socio-economic indicators. **Aims & Objectives:** 1. To study the utilization of services offered to children under ICDS, 2. To assess the perception about the services. **Materials & Methods:** A community based cross sectional study was done among mothers of 271 children in the age group three to six years registered in anganwadis. **Results:** Median duration of absenteeism to anganwadi was five months during the last six months enquired. About 95.9% of registered child beneficiaries utilized supplementary nutrition services and only 48.7% mothers of child beneficiaries were attending nutrition and health education sessions. Among mothers who were aware of growth monitoring, only 73.6% of their children's weight was checked regularly. About 60% of mothers were not happy with the quality of food served to their children in the anganwadi. Among children adherent to anganwadi, 72.5% children's weight remained normal. **Conclusion:** Only 75% children were regularly attending. Median duration of adherence to anganwadi services was only 12 months and the most common reason for not adhering to the services is due to their simultaneous enrollment in other private nursery school.

Keywords

Utilization; children; ICDS; Anganwadi; Coastal Karnataka

Introduction

Children are the backbone of any country and their health is of prime concern of the government too. As 27 million children are born in India every year, it is home for largest number of under-six year children. (1) The National Health Policy of India emphasizes the Government's commitment to improve the health status of the most vulnerable groups of the society: children and women. (2) Over the last two decades the health scenario in India has improved

substantially but still the Maternal and Child Health (MCH) indicators are not satisfactory. Even now about 28% of children are born with Low Birth Weight (LWB) in the country. About 43.5% under-five children are underweight; 47.9% are stunted; while 20% are wasted. (3) Full immunization coverage among children in the age group 12 – 23 months is only 65%. (4) Around 28% of anganwadi enrolled children in India were found to be malnourished. (5) Only 31.1% of the intended child beneficiaries received supplementary nutrition out

of total eligible children in the country. (6) In Karnataka, about 35.2% under-five children are underweight; 36.2% are stunted and 26.1% are wasted and in Udupi District, about 22.3% under-five children are underweight; 21.1% are stunted and 20.9% are wasted. (7)

Under nutrition affects cognitive and motor development and undermines educational attainment; with adverse implications like poor analytical skill, poor performance in school and hence likely school dropout. (8)

Over 40 years in implementation, the achievement of ICDS in tackling under-nutrition among children remains a matter of great concern. (9) It has been found repeatedly that there is discrepancy in expected and actual delivery of services due to programmatic and operational gaps. If the focus of program was to decrease child mortality, under-nutrition, and to improve health of mother and children, it is very essential to register every eligible beneficiary and ensure optimal utilization of quality services. (10)

Aims & Objectives

1. To assess the utilization of ICDS services from the child beneficiaries in the age group three to six years.
2. To assess the perception of mothers about the services.

Material & Methods

The community based cross sectional study was carried out during the period October 2013 to March 2016 in the field practice area of Department of Community Medicine, Kasturba Medical College, Manipal University, Manipal, South India among child beneficiaries in the age group three to six years.

Inclusion Criteria: The children who were registered at least for six months prior to the study in the anganwadi centres (AWCs).

Exclusion Criteria: The children who did not fulfill the inclusion criteria were excluded.

Ethical Clearance: Ethical Committee approval was obtained from the Institutional Ethics Committee (IEC), Kasturba Hospital before the commencement of study vide letter no. IEC 494/ 2013. Along with permission from the Child Development Project Officer (CDPO), Udupi project was obtained before the start of the study.

Sample Size: According to the previous study done by Kumar P *et al* in 2008, utilization rate by children between three to six years was 74.85%. (11) Applying

the formula of sample size for estimating a Prevalence $n = 4pq/l^2$, where $p =$ Utilization rate of previous study, $q = 1-p$, $l = p \times 0.10$ for 10% relative precision, 130 children in age group three to six years. Based on previous study done by Kumar A *et al*, intra cluster correlation coefficient of 0.05 was observed resulting in a design effect of 2. (12) Accounting for a design effect of 2, 260 children in age group three to six years was the minimal sample to be achieved with no non-response rate.

Since we wanted representation from all the AWCs, the list of enrolled beneficiaries was incomplete in the planning phase; sampling method adopted was similar to National Immunization Coverage evaluation of selecting approximately equal number of beneficiaries from each centre. In total 38 AWCs were present in the field practice area, among that only six AWCs belonged to the urban area. A total of seven children in the age group three to six years were selected from each AWC. However, in the course of the study, there was one extra beneficiary from whom data was collected from five of the AWCs which was realized after the completion of data collection. A pre-tested semi structured questionnaire was used for collecting the relevant information from mothers of children three to six years. (Figure 1)

Consent: Written Informed consent was obtained before interviewing the mothers of children.

Data Collection: House to house visit was conducted and mothers of child beneficiaries were interviewed. Details regarding socio-demographic factors and utilization and perception about ICDS services like supplementary nutrition, pre-school education, nutrition and health education, immunization, health checkups and referral services were obtained from all the mothers of child beneficiaries. To assess the socio economic status, Modified Udai Pareek scale was used for rural areas and Kuppuswamy Scale for urban areas. (13, 14) Regarding supplementary nutrition, details of food received any interruption in utilization, their perception and reasons for underutilization were collected from the mothers. The children who were regularly attending AWCs without interruption for more than 15 days were considered to be regular. Growth pattern was observed through growth chart available with mothers.

Data analysis: Data was entered and analyzed in Statistical Package for Social Sciences (SPSS version 15.0 as it is licensed with the Manipal University.

Results were expressed in percentages and proportions with 95% confidence interval. Statistical tests like Chi square test and Fischer's exact test were used to assess significance of categorical variables and Non parametric test like Kruskal Wallis test was used to assess significance of median duration of utilization. Statistical tests employed to determine the association with a p value of ≤ 0.05 was considered as statistically significant.

Results

In the study population, there were 1220 eligible children of which only 843 (69.1%) were registered in anganawadi. Among the registered children only 744 (60.9%) children were availing services. The present study included 271 children in the age group three to six years, which was 32.1% of the registered children in that age group in the study population. (Figure 2) Amongst them 57.6% of the subjects were females. Among their mothers interviewed, 6.7% were illiterate and about 64% were matriculate and above and majority of them (77.7%) were home makers and 56.5% belonged to Below Poverty Line (BPL) families. A larger proportion of the study subjects in rural areas belonged to middle class (66.7%) and in urban areas belonged to upper lower class (7%). (Table 1).

The most common service utilized by the study subjects were supplementary nutrition (95.9%), followed by pre-school education (83.4%) and health check-up (66.1%). Almost 99.3% study subjects were immunized for age. Out of 163 mothers who were aware of growth monitoring, only 73.6% of their children's weight was checked on a monthly basis. Only 48.7% mothers of children were attending nutrition and health education sessions regularly.

A larger proportion of child beneficiaries (53.5%) belonged to the age category 36 to 47 months. Only 204 (75.2%) children were regularly attending AWCs. Among children in the age group 36 to 47 months, the median duration of utilization of ICDS Scheme was about eight months and median duration of absenteeism was about three months. The children in the age group 48 to 59 months had median duration of utilization of ICDS Scheme for about 18 months and median duration of absenteeism was about five and half months. Overall among the study subjects, the median duration of utilization was 12 months. The difference in median duration of utilization of ICDS services based on age category was statistically significant. The children belonging to

BPL families were utilizing services for longer duration compared to APL families, but were not found to be statistically significant. (Table 2) The median duration of absenteeism during the last six months enquired was five months

The most common reason for non-utilization was found to be mothers of the study subjects don't require the services offered in the AWCs and the most common reason for absenteeism was observed to be the study subjects' simultaneous enrollment in private nursery school. Nutritional status remained well within normal range in only 72.5% study subjects who had a median duration of utilization for about 1 year 5 months with inter quartile range (IQR) 0.5 to 2 years; deteriorated in 14.7% of study subjects who had median duration of utilization for 11months. Longer the duration of utilization, better the nutritional status of children, but that association was not found to be statistically significant.

In the present study only about 43.3% mothers of children were happy with the quality of food served to their children in anganwadis. About 82.5% mothers of children were of opinion that the food served was in adequate quantity. Majority of mothers were satisfied with the nutritional and pre-school education component of ICDS. (Table 3) Nearly 50% mothers were not aware of components like nutrition counselling, health, advocacy and village health and sanitation committee.

A larger proportion of the study subjects' mothers were aware of supplementary nutrition (95.4%), followed by pre-school education (84%), immunization (76.2%), growth monitoring (58.7%), nutrition and health education (46.1%), health-checkups (37.5%) and referral services (6.9%).

Discussion

In the present study, a larger proportion of the study subjects (57.6%) were females, was found to be in contrast to the study done by Patni MM *et al* and Surwade JB *et al* reporting 57.7% and 54.9% respectively were males. (15, 16) Most of them were following Hinduism, similar to the study by Patni MM *et al* reporting 97.1%. (15) A larger proportion of study subjects' mothers were educated up to High School (37.2%) followed by middle school (23.4%), found to be in contrast to the study by Das R *et al* reporting larger proportion of the study subjects' mothers (60.1%) being educated up to primary school. (17) A larger proportion of the study subjects'

mothers (77.7%) were housewives in conformity with the study done in Agartala. (17) It was found that around 57% study subjects belonged to BPL families similar to the study done by Patni MM *et al* reporting 63.3%. (15) It was also observed that a larger proportion of study subjects (66.7%) belonged to middle class unlike the study by Pandey V *et al* with (74.6%) belonging to lower class. (18)

A similar study by Helena K *et al* among child beneficiaries reported 92% children had received supplementary nutrition, 93.8% (2.5 years to less than 6 years) children were imparted pre-school education. Only 59.7% children had undergone growth monitoring. About 25.3% were under nourished. The reasons quoted for not receiving nutritional services were anganwadi workers were not cooperative, child doesn't like the taste of food served and mothers were not interested in taking food. (19)

Among the study subjects a larger proportion (53.5%) belonged to the age group 36 to 47 months. It was found to be in similar to the study by Patni MM *et al* reporting 41.3%. (15) On the contrary, a study by Mridula D *et al* reported 22.17% children in the same age group. (20) Among the study subjects, 29.2% belonged to the age group 48 to 59 months, similar to the study by Mridula D *et al* reporting 20% children in the same age group and in contrast to the study by Patni MM *et al* reporting 58.7% children. (20, 15) The study done to assess utilization of ICDS in urban and rural areas of Latur district among pediatric beneficiaries by Surwade JB *et al* affirmed 55.5% children in the age group three to six years. (16) The study findings of Patni MM *et al* were similar to the present study, regarding BPL or APL not having any impact on availing services by the child beneficiaries. (15)

The study by Das R *et al* reported 53.8% sent their children to private nursery school similar reasons among non-utilizers in the present study (58.2%). (17) The study by Sharma M *et al* reported beneficiaries were not willing to avail services (25%) similar to the present study and uncooperative AWWs (75%) which was not observed in our study. (21) The study done to assess nutritional status of under-five children beneficiaries of ICDS Program by Kumar A *et al* reported no association between nutritional status of children and duration of adherence to nutritional services as seen in the present study. (22)

The study done to assess the perception about ICDS scheme in rural population of Lucknow by Pandey V *et al* noted the quality of supplementary nutrition food served in anganwadi was of bad taste (46.4%) and not properly cooked (33.3%). (18) The study by Desai *et al* stated the reasons for not consuming supplementary nutrition because of bad taste (46.2%), not aware of services (7.7%), family being out of station (7.7%) and child's unwillingness to attend AWC (7.7%). (23)

The study by Patni MM *et al* reported supplementary nutrition was of adequate quantity (80%) and quality was satisfactory in only among 63% beneficiaries. (15) The study by Biswas AB *et al* had reported quantity and quality of supplementary nutrition was acceptable to 88% and 72.7% mothers respectively similar to our finding. (24) The study by Ram PV *et al* had found majority (63%) of mothers of children had average level of satisfaction followed by (36%) poor satisfaction level about ICDS services which was found to be in contrast to our observation. (25)

In the current study, majority (84.2%) of mothers of children were aware of any ICDS service, about (78.3%) were aware of supplementary nutrition followed by pre-school education (40.2%) and growth monitoring (36.3%). Similarly, Rapid Survey On Children (RSOC) India had reported among mothers of children in age group three to six years, majority (91%) were aware of supplementary nutrition, followed by Immunization (59.8%), pre-school education (49.9%), Health check-up (30.5%), nutrition and health education (18.6%) and referral services (13.4%). Only about 9.7% were aware of all the services and RSOC Karnataka fact sheet had identified among mothers of children in age group three to six years, majority (95.9%) were aware of supplementary nutrition, followed by Immunization (61.7%), pre-school education (46.8%), Health check-up (32.9%), nutrition and health education (22.9%) and referral services (18.9%). Only about 16.8% were aware of all the services. (26)

Conclusion

The children in the age group three to six years were attending anganwadi centres for a median duration of only 12 months out of expected 36 months as children in the higher age groups were attending private nursery schools. Amongst the children whose weight was recorded and plotted accurately about three fourths children's weight remained well within normal range. About two thirds of the mothers of

children were not happy with the quality of food offered to their children and only about half of the mothers of children attended the nutrition and health education sessions.

Recommendation

The needy eligible children only should be registered and ensured that they attend the AWC regularly. The child's weight recorded and plotted by anganwadi workers should be regularly cross checked by the Supervisors. There is a need to improve the quality of food provided at the AWCs as per the expectations of majority of the mothers. Nutrition and health education sessions should be made more participatory so that the mothers will actively involve and learn good practices of nutrition.

Limitation of the study

Utilization rate being high even for general health services among the study population with high literacy rate, generalizability of the present study findings need to be done with caution

Relevance of the study

The study underlines the need for identifying all the eligible children falling under each smallest unit of the program – anganwadi centres and ensure that they receive good quality nutrition and health education as envisaged in the program.

Authors Contribution

All the authors had made substantial contributions to conception, design, data collection, analysis and interpretation of data; drafting the article, revising it critically for important intellectual content; and final approval of the version to be published.

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Tables

TABLE 1 SOCIO DEMOGRAPHIC CHARACTERISTICS OF CHILDREN THREE TO SIX YEARS IN THE STUDY

S. No	Factor (N = 271)	Category	n (%)
1	Gender	Male	115 (42.4)
		Female	156 (57.6)
2	Religion	Hindu	235 (86.7)
		Muslim	34 (12.6)
		Christian	2 (0.7)
3	Literacy of mother (n=269)*	Illiterate	18 (6.7)
		Pre Matric	80 (29.7)
		Matriculation	100 (37.2)
		Matric and above	71 (26.4)
4	Occupation of mother (n=269)*	House wife	209 (77.7)
		Unskilled	23 (8.5)
		Semi-skilled	19 (7.1)
		Skilled	13 (4.8)
		Professional/White collar	5 (1.9)
5	Ration card	BPL	153 (56.5)
		APL	93 (34.3)
		No card	22 (8.1)
		SC/ST certificate	3 (1.1)
6	Socio Economic Status	Rural - Upper	1 (0.4)
		Middle	181 (66.7)
		Lower	42 (15.5)
		Urban – Upper middle	11 (4.1)
		Lower middle	17 (6.3)
		Upper lower	19 (7)

*2 mothers were expired

TABLE 2 AGE WISE DISTRIBUTION OF CHILDREN THREE TO SIX YEARS IN THE STUDY (N=271)

Age Category (months)	Children attending AWC n(%)			Children regularly attending AWC n (%)			Median duration of utilization among children regular to AWC (months) *
	BPL	APL	Total #	BPL	APL	Total #	
36 - 47	72 (47)	63(67.7)	145(53.5)	57(47.1)	48(70.6)	110(40.6)	8(6 – 12)
48 – 59	48(31.4)	22(23.7)	79 (29.2)	37(30.6)	17(25)	60(22.1)	18(18 – 24)
60 – 71	33(21.6)	8(8.6)	47 (17.3)	27(22.3)	3(4.4)	34(12.5)	30(26 – 36)
Total	153(100)	93(100)	271 (100)	121(100)	68(100)	204(75.2)	12(6 – 21)

*Kruskal Wallis test was applied, p value < 0.001. # Total includes BPL, APL and the remaining no card also

TABLE 3 PERCEPTION OF MOTHERS OF CHILDREN ABOUT ICDS SCHEME IN THE STUDY (N=271)

Services	Satisfactory n (%)	Average n (%)	Poor n (%)	Don't know n (%)
Pre-school education	179 (66.1)	45 (16.6)	19 (7)	28 (10.3)
Supplementary nutrition	215 (79.4)	36 (13.3)	2 (0.7)	18 (6.6)
Nutrition counselling	97 (35.8)	20 (7.4)	2 (0.7)	152 (56.1)
Health	119 (44)	22 (8.1)	2 (0.7)	128 (47.2)
Advocacy	91 (33.6)	22 (8.1)	2 (0.7)	156 (57.6)
Village health and sanitation committee	77 (28.4)	18 (6.7)	2 (0.7)	174 (64.2)

Figures

FIGURE 1 FLOW CHART OF THE SAMPLING TECHNIQUE

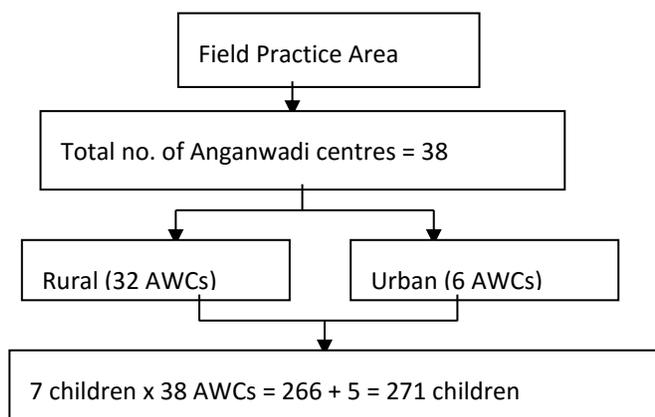


FIGURE 2 FLOW CHART OF THE STUDY POPULATION IN 38 ANGANWADI CENTRES

