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Research Article

Nutritional

Nutritional status and immunization coverage of the Anganwadi children in the Urban Training Health Centre of Travancore Medical College, Kollam

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Introduction: Adequate nutrition is an indispensable component of healthy life and access to healthy diet and optimum nutrition are key components of physical, mental and social development for a child. **Objective:** To assess the Nutritional status among the anganwadi children in the Urban Training Health Centre and to observe the details of the immunization coverage among the same population. **Materials and Methods:** The present cross sectional study was conducted in seven anganwadi centers, which are selected by convenient sampling. Nutritional status and immunization status was assessed among all the children by a pretested structured questionnaire and analyzed by applying SPSS. **Results:** Undernourished children in the Anganwadis under study were 15%. DPT booster (16-24months) and DT Booster (5-6 years) were 75% and 3% respectively. **Conclusion:** We recommend that the low coverage of DPT booster must be immediately corrected in a situation where diphtheria outbreaks are reported from different parts of Kerala.

Keywords: Nutritional Status, Immunization Coverage, Anganwadi

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Introduction

Adequate nutrition is an indispensable component of healthy life and access to healthy diet and optimum nutrition are key components of physical, mental and social development for a child. Globally, more than one- third of child deaths are attributable to under nutrition. According to the Census of India (2011), the child population (0-6 years) was 13.12% of the total population [1]. Malnutrition is the syndrome that results from the interaction between poor diets and disease and leads to most of the anthropometric deficits observed among children in the worlds less developed countries [2].

Considering the importance of childhood nutrition and growth monitoring Government of India had launched Integrated Child Development Services (ICDS) program. Anganwadi, which literally means 'courtyard' in Hindi is the operational unit of the ICDS program. ICDS program has made a significant impact on childhood nutrition in India. National Family Health Survey (NFHS-4), first phase survey reported that fewer children are dying in infancy and early childhood [3].

The present Study was conducted to evaluate the health and nutritional status of children aged between 0-6 years registered in all the *Anganwadi* centers in the field practice area of Urban Training Health centre of Travancore Medical college Kollam, Kerala.

Materials and Methods

The present study is a cross sectional study conducted in the field practice area of Urban Training Health centre of Travancore Medical College Kollam. The centre is located 10 kilometers from the medical college in an area called Jonakapuram. The area is a beach side area with predominantly fishermen colony.

The study was conducted from 1st February to 31st March 2015. A total of 7 Anganwadi centers were located in the field practice area of Jonakapuram. All the children enrolled in these centers constituted the study population. Study design: - cross sectional study. Study settings – community setting. Study population - all the children enrolled under the selected Anganwadis.

Sampling Method: Convenient sampling

Inclusion Criteria: all the children attending the selected anganwadis.

Exclusion Criteria: Children ill at the time of the survey or those whose parents were not willing to participate.

Growth charts (Used under ICDS Programme) for all the children were verified and health records were analyzed. Parents of the children were called and enquired about the physical and mental health status, feeding habits and history of hospitalization.

Immunization cards for the children were verified and it was crossed checked with the immunization records kept in the anganwadis. The anganwadi teachers were interviewed during the crosschecking. After contacting the anganwadi teacher the parents of the children of each anganwadis were invited to participate in the study. Informed consent were taken from all the parents.

Data Collection Tool: Data was collected by a pretested structured questionnaire. Statistical Analysis: Data was entered in Excel and analyzed by SPSS 20.

Results

A total of 100 children participated in the study. 47% of the children were males and 53% were females. Majority(83%) of the children belonged to 2-5 years age group. 71% of the children's mothers had educational level above high school level. 69% of children's father's education was up to high school level.

90 % of children's father's occupation was manual labor mainly fishermen. Nearly 59 % of children are from joint family. Remaining are from nuclear families. 48 % children belongs to families come under APL category while the remaining 52% belongs to BPL category.

86% of the children were full-term babies, while the rest 14% were preterm babies. 14% of the babies were preterm babies 52% of them had history of Caesarian section while 48% had the history of normal delivery. 24% of babies were low birth weight babies. The distributions of the birth weight of the children are shown in figure 1.

Only17% of the children under study was getting exclusive breast feeding. Ragi and banana powder were the most common type of foods used for the weaning purposes. This may be due to lack of information or low educational status and lack of health awareness.

25 % of the children under study had at least one episode of diarrhea 4 month prior to the survey. Pallor was present among 11% of the children. 30.6% of children under study had at least one episode of acute respiratory infection in last six months prior to the survey. Deworming was done for 90 % of the children.

Immunization coverage among the children under study was presented in table 1. DPT booster (16-24 months) was given to only 75 % and DT booster (5-6 years) was given to only 3% of children. The measles coverage was 95 % and vitamin A supplementation was given to only 88% of children. The children missing the DPT boosters are at high risk of developing diphtheria in early childhood.

OPV booster (16- 24months) was also not satisfactory because only 74% of the children were getting the OPV booster dose. According to the Standardized Growth charts used under the ICDS program 85 % of the children were following the normal growth pattern while 15 % of the children were undernourished among them 3% was severely undernourished.

The distribution of the growth in these children is shown in the figure -2. Language and communication problems were seen in 7% of children. Learning problems were seen in 6% of the children. At the time of the survey 89 % of the children's growth charts (used in ICDS) were updated and rest 11% were not.

Table 1: Vaccination Coverage among the Anganwadi children

Vaccine and Dose	Coverage (%)
BCG	100%
DPT-1	99%
DPT- 2	100%
DPT-3	98%
DPT Booster(16-24 months)	75%
DT (5-6 years)	3%
OPV-0	100%
OPV-1	99%
OPV-2	100%
OPV-3	97%
OPV Booster (16-24 months)	74%
Hepatitis B1	99%
Hepatitis B2	100%
Hepatitis B3	96%
Measles	95%

Figure 1: Distribution of the birth weight of the children under study

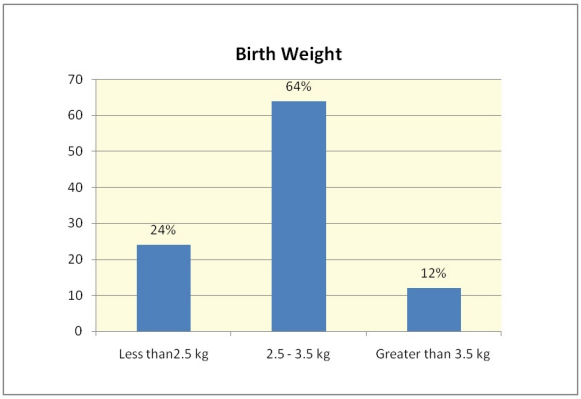
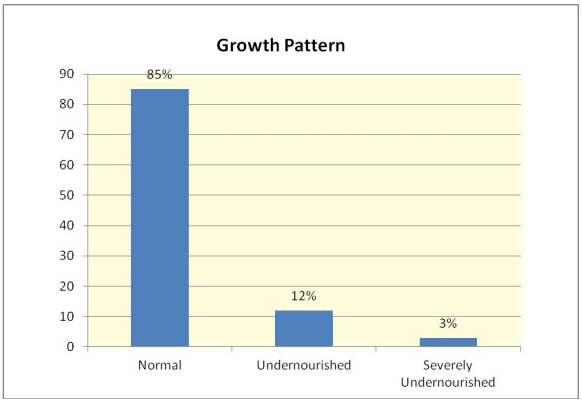


Figure 2: Distribution of the growth pattern among the children under study



Discussion

Urban training Health Centre of Travancore Medical College is situated in Jonakapuram where maximum numbers of families belong to the lower socio economic class. The present study was aimed to find out the nutritional status and immunization coverage of the children from all the anganwadi situated in the field practice area of the Urban Training Health Centre.

A total of 100 Anganwadi children were enrolled for the period of 8 months. From records analysis it was seen that a significant proportion of children were low birth weight babies (24%) others are normal and above normal. 15 % of the children were undernourished during the time of the survey. 30.6 % of children under study had at least one episode of ARI in last six months. 25 % of the children under study had at least one episode of diarrhea 4 month prior to the survey. This emphasizes the fact that acute diarrheal disease and acute respiratory infection are the main cause of preventable morbidity in the low income groups [4].

Although the primary doses for immunization were up to the mark but a significant proportion of children are missing the booster doses.DPT booster (16-24 months) was only 75% and DT booster (5-6 years) was only 3%. According to WHO-UNICEF estimates DPT 3 coverage was only 66 % whereas according to National Family Health Survey-3 the DPT - 3 coverage was 52 - 55% [2,5].

Sailaja Bitragunta et.al conducted a similar study to determine the vaccination coverage and epidemiology of diphtheria in Hyderabad and neighboring districts where they found similar results for persistence of diphtheria. They concluded diphtheria mainly affected children 5–19 years of age, girls and women. Coverage of primary vaccination was adequate in the city whereas, coverage for the boosters was low [6].

Some of the investigators noted that after 3 doses of primary vaccine, protective levels of antitoxin develop in 94% to 100% of children. However, without booster doses, over time toxoid-induced antibody drops below protective levels [7,8]. As diphtheria is an endemic disease in India and national data shows 2.61% of case fatality rate better immunization coverage for the DPT and DT booster is the need of the hour [9].

Undernourished children in the anganwadis under study were 15 %. 12 % were under weight and 3% were severely under nourished. This pattern of under nutrition among the anganwadi children corroborates with the fact that with the decline incidence of the undernourishment of preschool children in India the great majority of protein energy malnutrition are now intermediate in nature i.e. mild to moderate category which frequently goes unnoticed [10].

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