

*Evaluation of Food Service in Selected Creches
Associated to Tea Plantations And The
Impact of Selected Inputs*

BY

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A THESIS SUBMITTED TO THE AVINASHILINGAM INSTITUTE FOR HOME SCIENCE
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IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF SCIENCE IN FOOD SERVICE MANAGEMENT AND DIETETICS

MAY 1995

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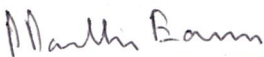
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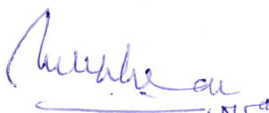
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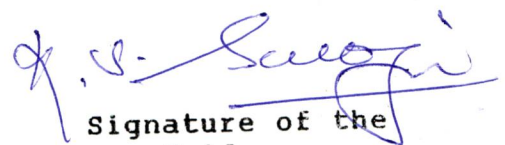
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Certified as Bonafide Research Work.


Signature of the
Head of the
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Introduction

INTRODUCTION

India's population is generally termed 'young' since children constitute about two fifth of the population. As per 1991 census, India's child population comprises about 14 per cent of all children in the world.

Children are the budding flowers and they hold the future of our country in their tiny hands. They are a rich national treasure, biggest human assets for the development of a nation and reflect the prosperity and hope for future. The need for special protection and provision of ample opportunities for the growing minds and bodies of children under the age of 5 has been perceived by great many people and organisations in recent years.

Adequate food is the most important requisite for children's growth. It is more crucial during the first 5 years of life when rapid growth is occurring and the child is entirely dependent on his mother for food. Insufficient food will not only result in undernutrition in terms of inadequate weight gain but will also hinder growth.

Millions of young children today in the developing world live in poverty. Often their mothers have to leave them for many hours a day. During the last several decades the number of working mothers increased by 73 per cent. Many

of these women work out either to provide sole support for the family or to supplement the family's income. Both in the industrially developed and less developed countries women are burden with cumulative inequalities as a result of discriminatory socio-economic practices. The situation is much more worse particularly in the case of rural women. With a view of helping the working mothers, a new scheme of the creches (day-care centres) was initiated for feeding the children and providing other health care facilities (Swaminathan, 1989).

The services of creches were sponsored initially by the government through grant-in-aid activities in rural areas. Day care is a child welfare service employed when family care for the child must be supplemented for some part of the day.

According to Child Welfare League of America (1984) creche is a service for families provided on behalf of children and their parents and designed to supplement daily parental care. The purpose of creche is to supplement for the care and protection children receive from their parents.

Creche is a term used in recent years to specify high quality care of children of working parents during the working hours. The basic principle in creches is to provide an adequate supplement to family care. Creches are social

necessity for working mothers and low income groups (Jain, 1982).

According to Factory Act 1948, every industrial establishment employing certain number of women workers has to provide services of a creche for the babies of working mothers. While the mothers are at work the children could be looked after by a suitably trained nurse or an ayah. The need for creche is being increasingly recognised with rapid industrialisation in the country (Chowdry, 1980).

The major scheme for day-care in the unorganised sector is the scheme of assistance for creches for working mothers launched in 1974, which is intended to provide day-care for the children (0-6) of women labourers below the poverty line. In practice, however, the scheme has not developed or rendered services along the lines originally envisaged. To begin with the quantitative coverage, after nearly twenty years, is inadequate. To date, it is estimated that there are only about 10,000 creches in the entire country, mostly concentrated in 6 or 7 states, catering to about two and a half lakh children aged 0-6 years, as against an estimated need for day-care for 4.5 crores children in the same age group (Swaminathan, 1991) though the Ministry of HRD (Human Resource Development) in its Annual Report for 1991-92 states that there were 12,500 creches serving 3 lakh

children. Children below 2 years are known to be very few in creches. The under two's may form less than 10 per cent of children in creches as against 40 per cent of all children aged 0-5 years (Swaminathan, 1990).

A large majority of pre-school children in developing countries consume inadequate diets and suffer from malnutrition. Only 1 per cent or 2 per cent of the world's children exhibit visible signs of malnutrition. But an estimated 190 million children under age five are chronically malnourished (UNICEF, 1994). There is an urgent need to institute supplementary feeding programmes in the developing countries. Such supplement should be based on locally available foods. Such as legumes, oil seeds and nuts and the foods provided should form a fully nutritious diet and not a mere supplementary diet. The diet of small children should be marked by a variety of foods in sufficient quantity. Balanced nutrition for pre-school 0-5 years should be part of an overall strategy of preventive health care of which the main components would be adequate nutritious food, environmental sanitation and immunisations. Only hope of receiving all these are from institutional sources of which the creche is the best known organised form outside the family.

Creche should be used as a focal point for the delivery of health care to the children and health education to the mothers (Deve, 1985).

In order to elicit information of the food service in the creches operating in (Rural areas) Tea Plantation areas. The investigator undertook this study.

The objectives of the study are to

- A. Evaluate the food service in selected five creches.
- B. Evaluate the meal pattern and dietary practices in the creches.
- C. Impart nutrition and health education to the mothers of the children in the creches.
- D. Impact of the education imparted.

Reviews of Literature

II REVIEW OF LITERATURE

Review of literature pertaining to the topic "Evaluation of Food Service in Selected Creches Associated to Tea Plantations and the Impact of Selected Inputs" is discussed under the following headings :

- A. Nutritional Needs of the Children
- B. Creches - Necessary for Working Mothers
- C. Food Service in Creches
- D. Impact of Nutrition Education

A. Nutritional Needs of the Children

The infant and the Pre-school (0-5) children are extremely vulnerable. They succumb readily were the diet is poor in quality and quantity and infectious diseases and infestations are wide-spread. The rate of growth and development of infants and preschool children depend to a large measure on the adequacy of the diet consumed by them. Frequent attacks of infectious diseases affect their growth and increase the requirements of various nutrients (Swaminathan, 1990).

The acute condition of Protein Energy Malnutrition leads to morbidity and mortality too, the main cause being lack of adequate amount of calories and protein content in the children. Children particularly of the pre-school age are prone to get kwashiorkor as a result of diet

limitations, total amount of calories ingested, all depending upon total amount of food intake (Gopal, 1983).

The rate of growth and the activity of the children are more accurate predictors of the nutritional needs. Desirable food behaviour for a life time have their beginnings (Robinson et al., 1986).

Mahanti (1993) points out that the welfare of the entire community depend on the health and welfare of the child in every nation.

Gan et al. (1994) conducted a study on the nutritional status of kadazan children in Malaysia children below 6 years of age was studied. The percentage of stunted children 67.6 per cent of boys and 66.8 per cent of girls, 12.3 per cent of boys and 8.3 per cent of girls were wasted. Long term under nutrition has been found to be a major problem because of poverty and lack of access to certain foods in the remote village.

On the basis of unit body weight, the infant as well as the young child has need for greater amounts of nourishing food than an adult. The active and healthy child needs food for energy and repair of wear and tear of tissues. In addition, extra nourishment is required to provide for the continuous increase in size of every part of his body.

Protective nutrients regulates the various functions of the body and keep the young one in perfect health (Venkatachalam and Rebello, 1994).

The years between 1-6, growth is generally slower than in the first year of life but continues gradually. Activity also increases markedly during the second year of life as the child becomes increasingly mobile. There is an increased need for all nutrients, but the pattern of increase varies for different nutrient in relation to their role in growth of specific tissue (Srilakshmi, 1993).

B. Creches - Necessary for Working Mothers

Cook (1980) conducted surveys in several countries and concluded that, employed women's most frequent source of worry was the kind of care their children were receiving while they worked. The cost of good child care is prohibitive for many families, as a result the quality of care received by many children depends on Government and work place policies.

With the tremendous rise in the number of women entering the labor force during the last several decades routine substitute care has become common for infants and very young children. The proportion of working mothers with babies one year of age and younger has increased faster than

that of any other age sector (U.S. Department of Labour, 1986).

In a family when both father and mother returns to work, their employers, willingness to allow part time work and flexible working hours may affect the amount of time they spend caring for their child (Zigler and Frank, 1988).

The working women in Resettlement colonies of Delhi confess that they do not have enough time to look after their children since they are employed at places far away from their residence, they spend more hours for employment and mobility, infact they are away from home for the whole day. Consequently they cannot pay much attention to children's health and all round development (Babu, 1989).

Rao (1990) reported that creches are required for children of working mothers. From these services some care and security to the children could be provided where there will be people to help them with their medical and nutritional services for the physical well being of the children.

According to Subhash (1992) the working mother should try to put the child in a nearby creche or nursery school when he is about 3 years old. Now a days, day care centres for children or creches are becoming common.

C. Food Service in Creches

Day care centres offer full day child care. They usually serve the children of working mothers who are quite poor. Funds for such care are provided by state or public agencies. Good day care programmes are delightful custodial day care services are still a stain on the conscience of some communities and need to be remedied and modified for the welfare of the children (Hendrick, 1984).

Approximately one fourth of the daily calorie requirements and one half of the daily protein requirements of the child are met at the day care centers and balwadies assisted by the Board by giving them fortified food (Jain, 1982).

According to Rajor (1986) day care centers can be thought of a second homes for children. Physically children thrive well in day care centers children eat 2 or 3 meals a day. They are given the right food for their age and level of development.

Kahn et al. (1987) found that the need for food services as an art of these child care programmes. It is about meals and snacks served, staff involved in food service level of sanitation, records on purchase, preparation and serving a food have been the major source of information about food service in child care centers.

According to Philips (1987) more important issue is the quality of the available care away from home, sound day care can create conditions for healthy development. What seems to be important is warm and frequent interactions between adults and children. Space, materials that are varied. Some signs that parents can use to evaluate quality of child care are an adult/child ratio, small group size, care givers with training in child development or early childhood education and space designed for children.

Patankar (1989) states that child care management is a vital for any feeding programmes. Matters such as logistical supply time, proper storage of food stuffs, the mechanics of food preparation, distribution, organising, the feeding center, supervision and record keeping are the essential links in the management chain. Timely flow of sufficient quantities of critical inputs like food supplements vaccines, drugs and educational materials should be ensured.

Briely (1990) found that a variety of individuals are involved in all food service operations in child care settings. Food was offered several times during the course of the day as expected.

Schurter (1990) conducted a survey on child care centers, use wide range of food service delivery system. The

majority of the centers used on site meal preparation and service. Seventy one per cent served lunch and 87 per cent snacks.

Brand (1990) reported that meal service is one provision that characterizes full day child development programmes. Short day programmes typically serve only a mid-morning or mid afternoon snacks providing young children with adequate nutritive for growing.

Vania et al. (1994) conducted a survey on feeding programmes in creches in Rome. mean daily energy supplied by lunch for 2 types of establishment was 672 and 858 kcals. Plate waste was estimated by simple weighing method. Children in the creches had a mean energy intake was 18 to 35 gms total carbohydrate 67 to 117 gms total fat 14 to 34 iron 1.6 to 5.1 mg.

Impact of Nutrition Education and Other Inputs

The purpose of nutrition education are to create an awareness in and helping individuals, families and groups to identify problems related to the food consumed, nutritional and health status and deficiency diseases, motivate and develop frame work for learning (Devadas, 1979).

A major factor responsible for the success of any programme is community participation which is very seanty in

the existing programmes. The effective implementation of child development programmes requires massive community education and involvement of people, specially the mother's so that there is proper utilisation of the existing services (Widge, 1985).

Deve (1985) surveyed on infant feeding practices. Mothers have insufficient or negligible knowledge regarding infant feeding. They hold on to certain beliefs and practices not because they know the advantages of those practices but because of their roots in the traditions.

The basic purpose of health education is to exchange to behaviour of people in a desirable directions so that they could enjoy a happy and full life without suffering from diseases, infirmity and handicap. For successful and effective community health education need to keep in mind the fundamental attribute which aid in changing people's attitudes (Rajalakshmi, 1992).

Brown et al. (1991) conducted nutrition education to improve the diets of lactating mothers and weaning has only limited impact, primarily because the families could not afford to buy the food needed for infants of weaning age. The educational messages were developed by the communities themselves and the teaching approach was family oriented.

The need for making nutrition education an integral part of general education is increasingly being realized today because of the spectre of malnutrition (Gupta, 1993).

Woznica et al. (1994) made a survey among three hundred and nine rural, urban women to evaluate their knowledge of breast feeding and infant care and seek their opinions about the child care. The results showed that the principles of infant feeding and the attitudes of mother's have changed independently of changes in living conditions. Mothers show definite demands regarding neo-natal care. Their stay in the hospital could afford a good opportunity for comparing their knowledge of infant care and infant feeding with the current recommendations.

Health education being one of the most cost effective tool of achieving the objectives of primary health care, it forms an integral part of the project or programme (Pal, 1989).

According to Swaminathan (1993) the nutrition education as a means for improving the nutrition of the community in the developing countries, has been increasingly realised during recent years. Lack of knowledge of the dietary requirements and the nutritive value of different foods is the main contributory cause for the widespread occurrence of malnutrition among preschool children and the vulnerable

sections of the population in the developing countries. Nutrition education should be practical and adopted to suit the socio-economic conditions, food habits and local food resources. It should include effective demonstrations feeding in which mothers take active part. It should form a part of the community development programmes.

Health education is to motivate people to take action towards a desirable practice and keep the movement sustained (Parthasarathy, 1992).

Baroova (1994) conducted a survey on health and nutrition education. It was carried out by contacting the mothers individually and also in groups. Education centered primarily on topics like personal hygiene, proper infant and child feeding practices, goodness in being literate, relation between food and health and economic upliftment and vice versa etc. Posters, leaflets, pamphlets in local languages were used during education session. The result of this study were found education purporated through different methods were found to be effective as 100 per cent mothers showed positive response to it. Mothers were urged to become literate so, they understood the meaning of 'quality life'. Through various sessions mothers were motivated to visualise the long term effect of being literate in terms health and economy on the whole, the situation was indicative of wide scope of nutrition education for sustainable welfare.

Methodology

III METHODOLOGY

The method involved in the study of "Evaluation of Food Service in Selected Creches Associated to Tea Plantations and the Impact of Selected Inputs" is carried out under the following headings.

- A. Identification of the Creches and Selection of and Samples.
- B. Evaluating the food service in the creches in terms of:
 - a) Socio economic and dietary survey of the families of the creche children.
 - b) General information about the creches.
 - c) Meal pattern and dietary practices in the creches.
- C. Imparting Nutrition and Health Education.
- D. Impact of the Selected Inputs-Nutrition and Health Education.

A. Identification of Creches and Selection of Sample

The Tata Tea plantation areas near the town Munnar were selected for the study because no research study was undertaken in this area among children and also by the investigator is familiar with the area of study. The study was conducted in rural areas namely Anaimudi Central Division, Anaimudi Division, Perriavurrai Division,

Sholamally Top Division, Sholamally Lower Division, in which the Tata Management had creches and was willing to extend their full co-operation.

A total number of 180 children of 0-5 years of age from five creches were selected by convenience sampling method. Convenience sampling is also called as 'Chunk method'. Chunk refers to that fraction of population being investigated which is selected neither by probability nor by judgement but by convenience (Gupta, 1993).

B. Evaluating the Food Service in the Creches in Terms of

a) Socio economic and dietary survey of the families of the creche children

Socio economic and dietary survey constitute an essential part of any complete study of nutritional status of individuals or groups providing essential information on nutrient, intake levels of sources of nutrients, Food habits and attitudes. Diet Surveys of communities will yield data regarding the extent of dietary deficiencies and quantity and type of foods required for over coming them. The surveys will also yield information regarding the economic and social factors influencing food consumption pattern (Swaminathan, 1994).

Socio economic and dietary survey of the selected families were assessed through an interview schedule

(Appendix I). Socio economic dietary survey was shown in Plate I. According to Kothari (1994) Interview schedule requires a person known as the interviewer asking questions generally in a face to face contact to other persons.

b) General information about the Creches

General information about the creches was assessed by an Interview schedule Appendix (II). Regarding the information about location of the centre, space provided for the particular area, number of children enrolled in the creches, Number of feeding per day. Purchasing the food items, cooking methods, equipments available in the creches, fuels used for cooking personnel in the creches, all aspects of hygiene and sanitation practices in the creches and community work provided by the creche workers.

c) Meal pattern and dietary practices in the Creches

Daily meal pattern and dietary practices in the creches were assessed by an Interview schedule Appendix (II). For gathering the information about Daily Meal pattern in the creche. Amount of foods given to the children, Type of feeding, Total number of feeding per day. Foods given to the children in the creches was shown in Plate II.



Plate 1.

SOCIO ECONOMIC AND DIETARY SURVEY

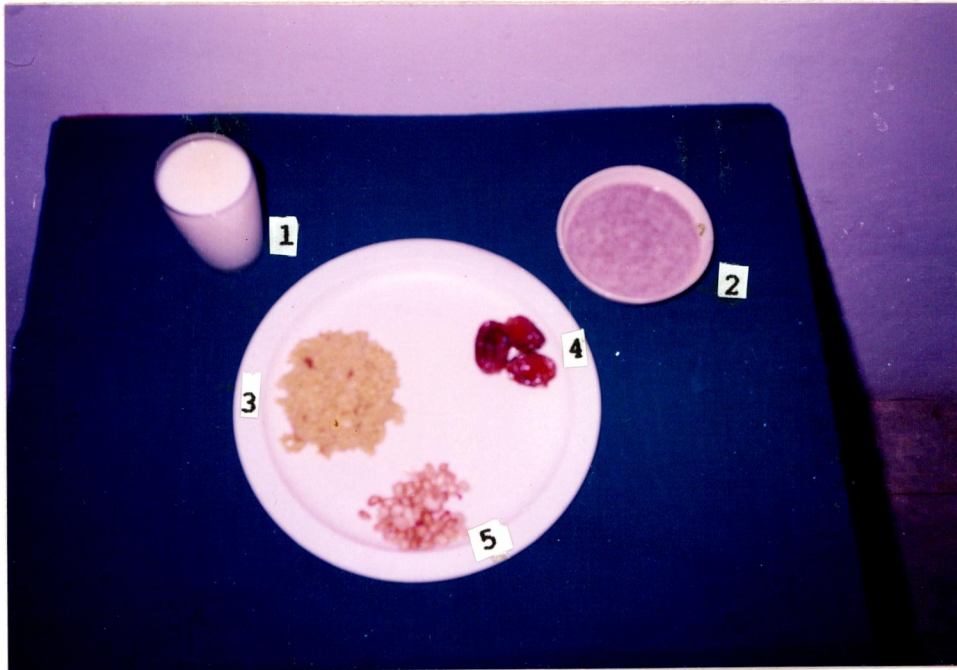


Plate 2.

FOODS GIVEN IN CRECHES

- | | |
|------------------|---------------|
| 1. Milk | 3. CSM Uppuma |
| 2. Ragi Porridge | 4. Dates |
| | 5. Groundnut |

C. Imparting Nutrition and Health Education as Inputs

Health and nutrition education aims at effective communication of certain basic health and nutrition message with a view to enhancing the mothers awareness of the child's needs and her capacity to look after these within the family environment (Madhubala et al., 1991). Hence, nutrition and health education was imparted to all the mothers of the children in the creches, using charts, posters demonstrations and group discussions. The education imparted was shown in Plate III.

D. Impact of the Selected Inputs - Nutrition and Health Education

Impact of the selected inputs was assessed by a check list. Check list is a type of questionnaire in the form of a set of categories for the respondent to check. Responses for the check list items are thus a matter of fact not of judgement (Sukhia et al., 1974). Before giving education a check list (Appendix IV) was administered and the impact of the health and nutrition education was assessed through the same check list after the education.



Plate 3.

IMPARTING NUTRITION AND HEALTH EDUCATION

Results and Discussion

IV RESULTS AND DISCUSSION

The results and discussion of the study 'Evaluation of Food Service in Selected Creches Associated to Tea Plantations and the Impact of Selected Inputs' are presented and discussed under the following headings.

- A. Socio Economic and Dietary Survey of the Families of the Creche Children.
 - B. General Information About the Creches.
 - C. Meal Pattern and Dietary Practices in the Creches.
 - D. Impact of the Selected Inputs - Nutrition and Health Education.
- A. Socio Economic and Dietary Survey of the Families of the Creche Children

The socio economic and dietary survey was conducted on one hundred and eighty children from one hundred and eighty families and Table I presents the Family size of the selected families.

TABLE I
FAMILY SIZE OF THE SELECTED FAMILIES

(N=180)

Number of family members	Number of families	Percentage of families
1 - 3	59	33.0
4 - 6	85	47.0
7 - 9	34	19.0
10 and above	2	1.0

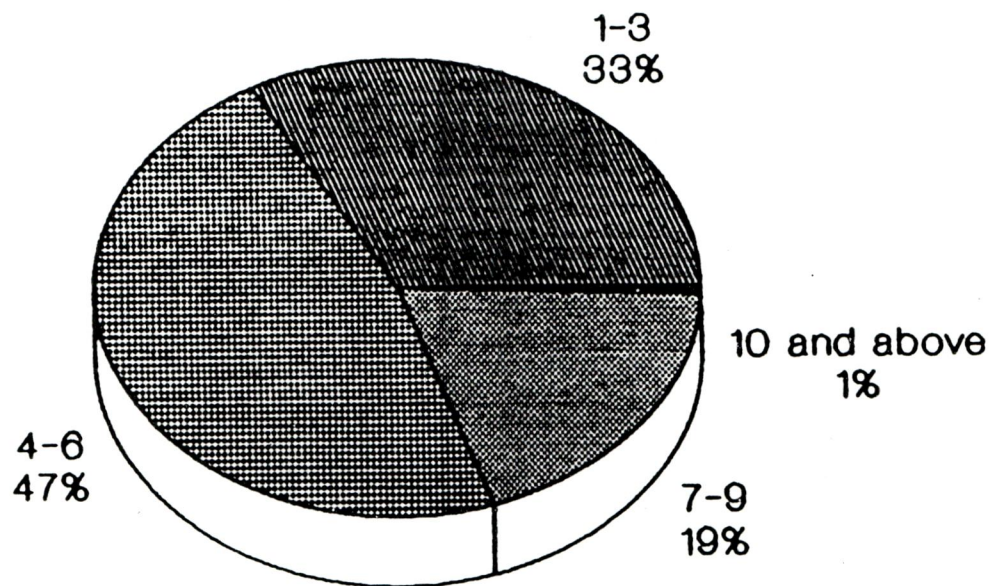


Fig. I. FAMILY SIZE OF THE SELECTED FAMILIES

Family size is one of the factors which affects the nutritional status of a person. The above Table I and Fig. I shows that 33.0 per cent of the families had 1-3 members, 47.0 per cent of the families had 4-6 members, 19.0 per cent of the families had 7-9 members and 1.0 per cent had more than ten members.

Occupational status of the selected families.

Regarding the occupational status of the selected families among the one hundred and eighty families 80 per cent were tea pluckers, 15 per cent were factory workers and 5 per cent had other occupations.

TABLE II
MONTHLY INCOME OF THE SELECTED FAMILIES

		(N=180)
Income level (Rs.) per month	Number	Per cent
* Below 1250	30	17
1250-2650	130	72
2650-4450	20	11
4450 and above	-	-

* Classification given by HUDCO (1994)

Among 180 families surveyed, 17 per cent of the families monthly income were found to be below 1250, 72 per cent of the families were earning between Rs.1250-2650 and

the remaining 11 per cent were found to be between Rs.2650-4450. This Table II indicates that majority of the selected families belong to middle income group.

Dietary Pattern of the Target Families

Food consumed by the selected families

All the 180 families mainly consumed rice. Children consumed ragi in the form of ragi porridge. The families included green gram dhal and red gram dhal more often in their diet. They also consumed green leafy vegetables in the form of parruppu keerai and cabbage. They included roots and tubers like potato, carrot and beetroot in their diet. Once in a way they consumed other vegetables like brinjal, drumstick, tomato, beans, peas and broad beans. Banana (Nandhram) was popular in these families. Eggs were consumed by children very often. Fleshy foods were included once in 15 days. They consumed milk daily in the form of tea.

Method of Cooking the Food Items

Rice and dhal are mostly cooked by boiling method. Many of them strained the water after cooking the rice. Vegetables, roots and tubers were also cooked by boiling method and also by shallow fat frying. Steaming method was adopted for iddlis, ragipittu and banana.

Diet given to children during illness

During fever or cold 31 per cent of them were not given any food, 69 per cent were given rice kanjee or bread. For diarrhoea 53 per cent of them were given sugar, salt solution. Milk is avoided in the case of diarrhoea. Sometimes black tea was given during diarrhoea.

B. General Information About the Creches

Location of the creches

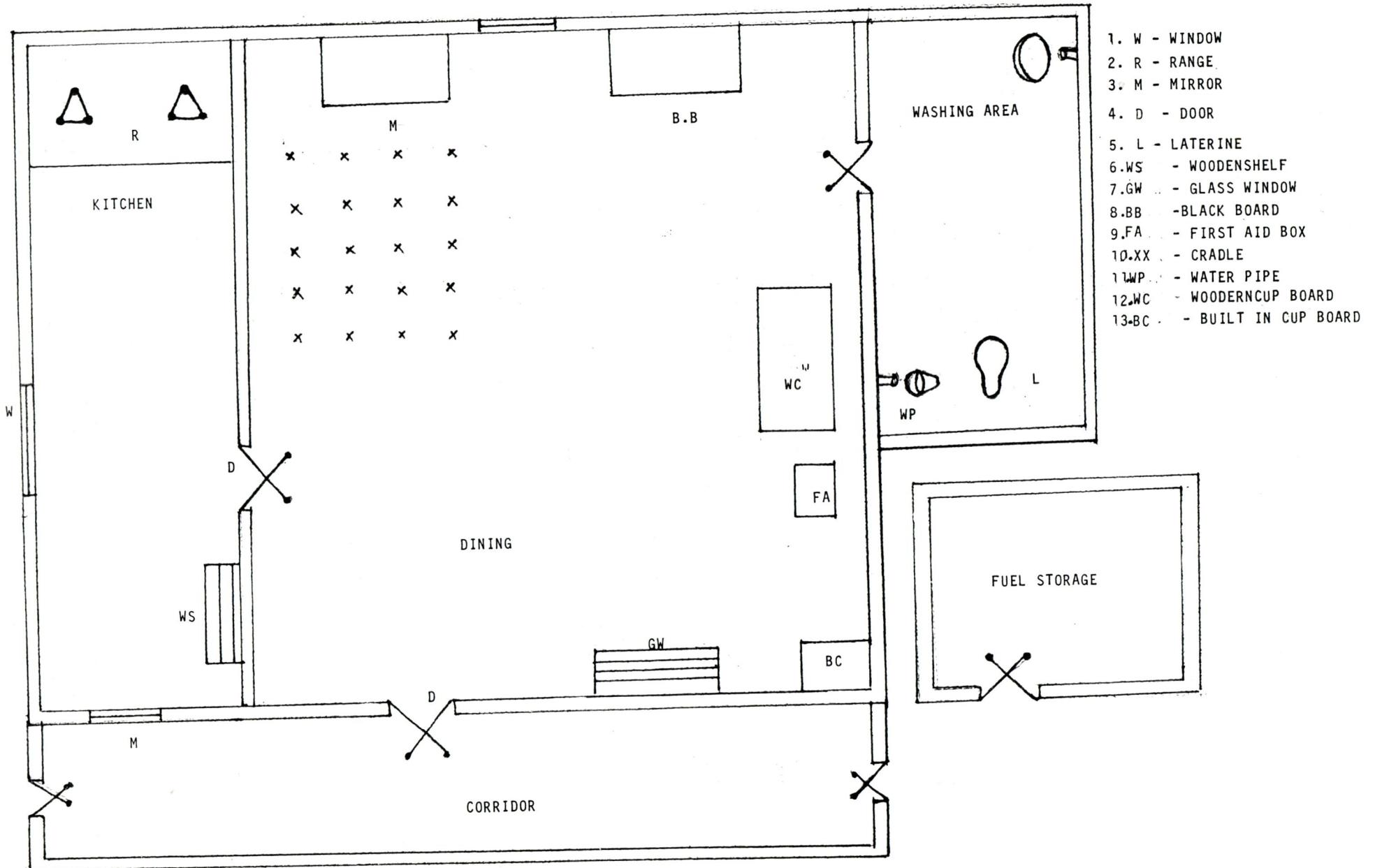
The creches were provided by the Tata Management in order to take care of the Tea pluckers children. The building of the creches were well ventilated and also proper lighting facilities were provided. The creches had sufficient space, in doors and outdoors for all the activities needed. They also had facilities for cooking, cleaning, washing, bathing, toileting, sleeping and playing.

TABLE III

SPACE PROVIDED FOR PARTICULAR ACTIVITY OF THE CRECHES

Area	Size sq.ft.
Kitchen	180
Dining room	400
Washing area	100
Fuel storage	150
Bathroom and toilet	120

FIGURE II



FLOOR PLAN OF THE ONE OF THE SELECTED CRECHE

The Figure II indicates the floor plan of a selected creche with facilities provided for various activities.

TABLE IV
NUMBER OF CHILDREN ENROLLED IN THE SELECTED FIVE CRECHES

N=180				
Age group	Number of children		Percentage of children	
	Male	Female	Male	Female
0-1	18	20	10	11
1-2	16	15	9	8
2-3	16	19	9	11
3-4	26	20	14	11
4-5	20	10	11	6

The above Table IV reveals that 10 per cent of the male children, 11 per cent of the female children were 0-1 year old. Nine per cent of the male children, 8 per cent of the female children were 1-2 years. Nine per cent of male children, 11 per cent of female children were from 2-3 years. Fourteen per cent of the male children, 11 per cent of the female children were 3-4 years and 11 per cent of the male children, 6 per cent of the female children were 4-5 years old. Fig. III shows the number of children enrolled in the selected five creches.

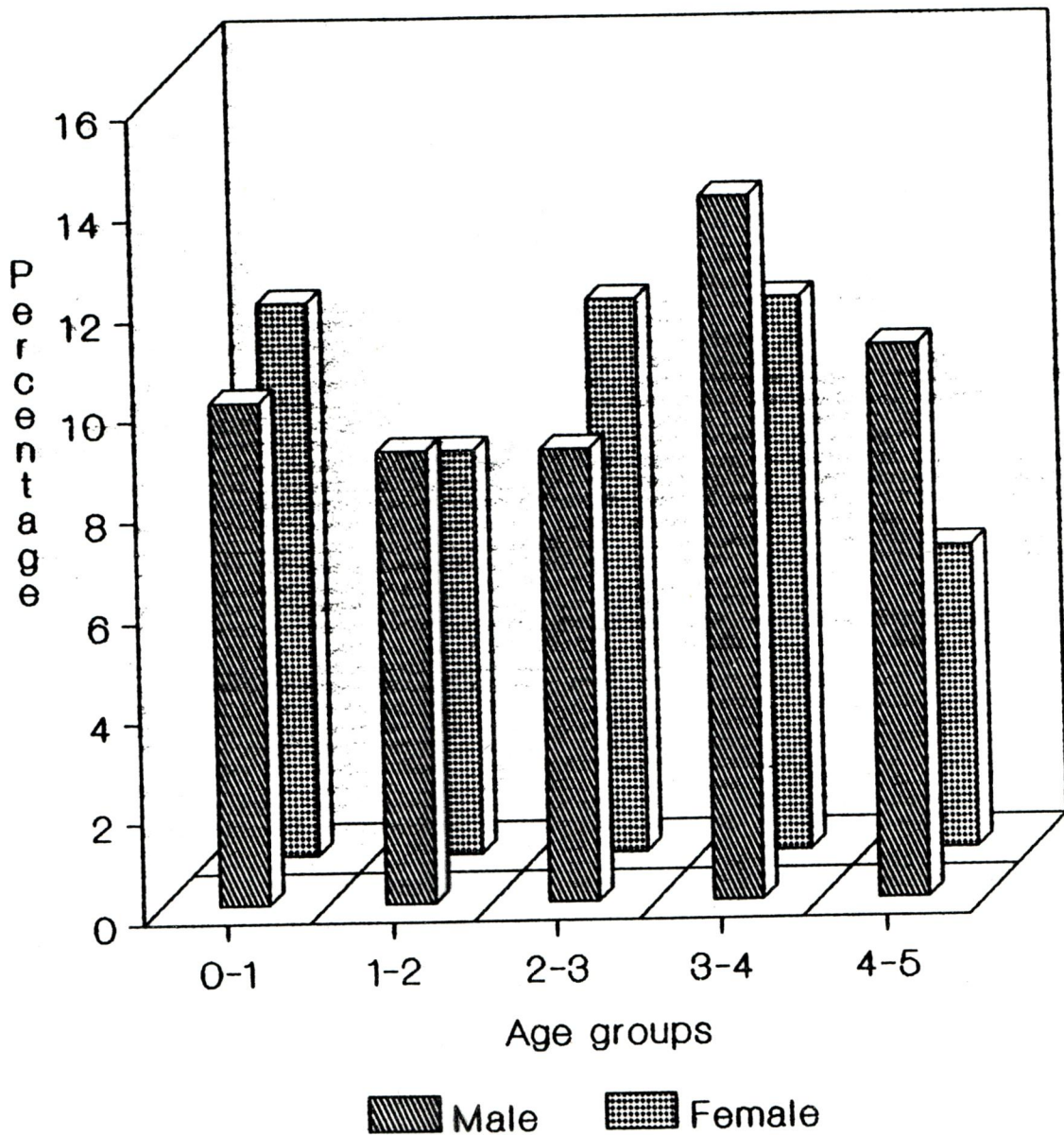


Fig. III. NUMBER OF CHILDREN ENROLLED IN THE SELECTED FIVE CRECHES

Total Number of Feedings per day

For 0-1 year children, they did not provide any food from the creches. But nursing breaks were given to lactating mothers twice a day to feed these children in the creches. For 1-5 years children the number of feedings per day was 2 times (morning and afternoon).

TABLE V
QUANTITY, MODE OF PURCHASING AND FREQUENCY OF PURCHASING THE FOOD ITEMS

Food items	Quantity of food/ child	Mode of purchasing	Frequency of purchasing
Ragi	50	Retail	Daily
Groundnut	15	Retail	Daily
Jaggery	25	Retail	Daily
Milk	300	Retail	Daily
Dates	30	Retail	Daily
CSM	80	Retail	Daily
Oil	10	Retail	Daily

The above Table V shows that all the food items were found to be purchased by retail purchasing and the frequency of purchasing was daily purchasing. The quantity of ragi purchased per child was 50 gms, the quantity of groundnut was 15 gms, the quantity of jaggery was 25 gms. Regarding

milk purchasing it was 300 ml/child. The quantity of dates was 30 gms. The quantity of CSM uppuma and oil was 80 gms and 10 gms respectively.

As per the Plantation Labour Act and Kerala Labour Welfare Rules 1977 nutritional supplements were given by the Tata Company to the children in the creches.

Special foods given to children

Special food Corn Soya Meal is given by World Food Programme to avoid protein calorie malnutrition among the children in the creches. Every year they are changing the food items which is rich in protein and calorie.

Diet given to children during illness

If the children develop fever or cold no special food was given in the creche. For diarrhoea, Oral Rehydration Solution (ORS) 4 pinch sugar + 1 pinch salt with 200 ml of water was administered.

TABLE VI
EQUIPMENTS AVAILABLE IN THE CRECHES FOR FOOD SERVICE

Area	Name of the equipments	Numbers
Pre-preparation	Milk Can (vessel with lid)	1
Preparation	Milk boiler	1
	Laddles	3
	Basin	1
Serving	Plates	30
	Tumblers	30
	Laddles	2
Cleaning	Basin	1
	Cup	1
	Water tub	1

fuels used for cooking purpose		

Mainly the fuel wood was used for cooking purpose. It was stored in a separate fuel storage room.

Records Maintained in the creches

Records maintained in the creches were:

Attendance Register, Milk Purchasing Register, Provision Purchasing Register and Daily Programme Register,

Personnel

Educational qualifications of the creche workers.

Regarding educational qualifications of the creche workers only 3 persons studied upto high school, 4 members studied upto middle school and 2 members studied upto elementary school.

TABLE VII
DETAILS OF TRAINING UNDERTAKEN BY THE CRECHE WORKERS TO TAKE
CARE OF THE CHILDREN

N = 9

Number of Times.	Health & Sanitation Training	Promote-Breast feeding training	First aid Training
1-2	2	9	9
3-4	5	-	-
5 and above	2	-	-

From the above Table VII it was seen that two members had undergone two times health and sanitation training, 5 members had undergone three to four times and 2 members underwent five and above times the same type of training. All the creche workers had undergone Promote-Breast feeding training at one time and all the creche workers had undergone first aid training for 2 times.

Sanitation and hygiene provided in the creches in all aspects

All the equipments used in the kitchen and for serving were sterilized with soap and hot water. The foods were prepared with clear water and were covered with lids to prevent the flies. Attenders in the creches washed their hands before and after cooking and their finger nails were

cleaned and they wore clean uniforms. For children also. Tata Management provided uniforms. They teach the young children to practice personal hygiene. Every morning the children were checked for personal cleanliness on their arrival to the creche. The cleanliness of the creche and its surroundings were under the control of a sweeper. The foods were provided to the children at the right temperature.

Services provided to the community

Pre-natal care of pregnant women

For the pregnant mothers they provide ante-natal health checkup. Monthly check up from one to seven months. Fortnight check up from seven to nine months and weekly check up after ninth month of pregnancy. High risk pregnancies were referred to the company's general hospital where they get specific treatment. Immunization to mothers was given by the health staff and medical officer.

Post-natal care of nursing mothers and new born infants

Post-natal care was provided to the nursing mothers by health staff. The general health and well being of the mothers was checked and the importance of breast feeding is given to the mothers. On specific days under-5-clinics provided health check up for the children. Immunization was performed to the mothers and children.

C. Meal Pattern and Dietary Practices in the Creche

TABLE VIII

DAILY MEAL PATTERN FOLLOWED IN THE SELECTED CRECHES

Age group	Mid morning	Mid afternoon
0-1	-	-
1-2	Milk	Milk
2-3	CSM uppuma, dates, milk	Ragi porridge, groundnut, milk
3-4	CSM uppuma, dates, milk	Ragi porridge, groundnut, milk
4-5	CSM uppuma, dates, milk	Ragi porridge groundnut, milk

It can be seen from the Table VIII that the children ranging from 0-1 year did not receive any food from the creches, but nursing breaks were given to the lactating mothers twice a day to feed the children in the creches. The children from 1-2 years received only milk from the creches. Each children received 300 ml of milk everyday. The children 2-5 years received CSM uppuma, dates and milk in the morning and Ragi Porridge, Groundnut and milk in the afternoon.

TABLE IX
TYPE OF FEEDING PROVIDED TO THE CHILDREN IN THE SELECTED
CRECHES

(N=180)

Type of feeding	Member of children	Percentage of children
Breast feeding	60	33.3
Self feeding and spoon feeding	120	66.7
Bottle feeding	-	-

It can be seen from the Table IX that 33.3 per cent of the children in the creches were given breast feeding. Nursing breaks were given to the lactating mothers twice a day, 66.7 per cent of the children in the creches had food by self feeding and spoon feeding. The practice of bottle feeding has been abolished in all crèches as a means of community based baby friendly hospital initiative. Fig. IV shows the type of feeding provided to the children in the selected creches (2-5 years).

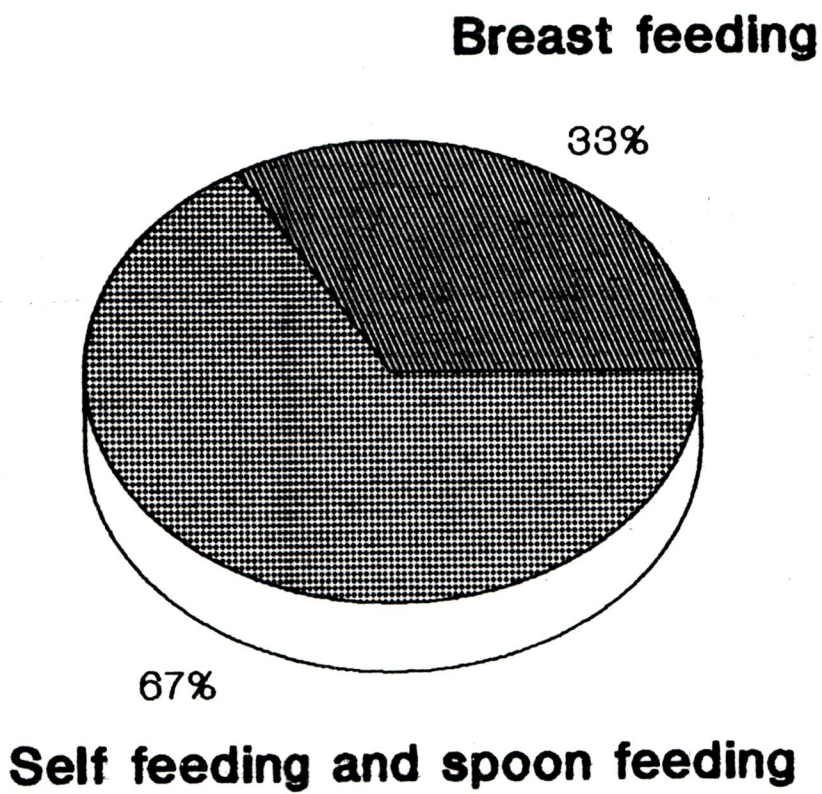


Fig. IV. TYPE OF FEEDING PROVIDED TO THE CHILDREN IN THE SELECTED CRECHES

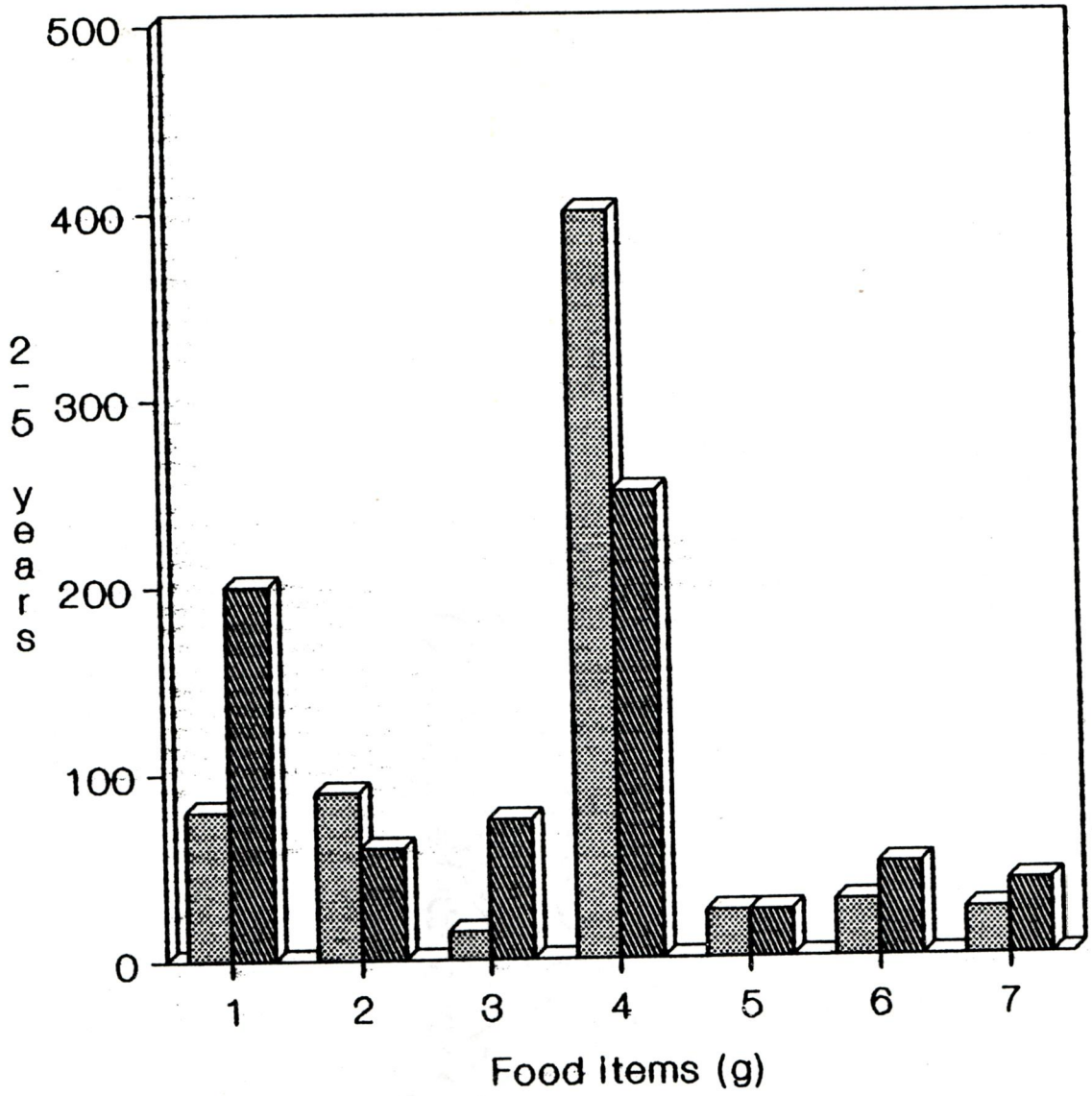
Food intake of the selected children

TABLE X
MEAN FOOD INTAKE OF THE SELECTED CHILDREN FROM CRECHE AND
HOME DIET (2-5 Years)

Food items (g)	Children (2-5 years)	RDA (2-5 years)
Cereals	80	200
Pulses	90	60
Green leafy vegetables and other vegetables	15	75
Milk	400	250
Nuts and Oils	25	25
Fruits	30	50
Sugar and Jaggery	25	40

The Fig. V shows the mean food intake of the selected children from creche and home diet (2-5 years). The cereal intake of the children was less than the recommended dietary allowances given by ICMR (1987) cereal intake was deficit by 120 gms and the intake of pulses were more than the recommended allowances which was excess by 30 gms. The green leafy vegetables and other vegetables intake was found to be less than the recommended allowances and was deficit by 35 gms. The milk consumed by children exceeded by 100 gms when compared to the recommended allowances. Nuts and oil intake of the children was same as that of the recommended allowances the intake of fruit was found to be less than the quantity recommended and was deficit by 20 gms. Regarding sugar and jaggery intake it was less than the quantity recommended and was deficit by 15 gms.

**Fig. V. MEAN FOOD INTAKE OF THE
SELECTED CHILDREN FROM CRECHE AND HOME
DIET (2-5 Years)**



Children RDA

- 1. Cereals
- 2. Pulses
- 3. Green leafy vegetables and other vegetables
- 4. Milk
- 5. Nuts and oils
- 6. Fruits
- 7. Sugar and Jaggery

TABLE XI

MEAN NUTREINT INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

Food consumption	Protein (g)	Fat (g)	Energy (K.cal)	Calcium (mg)	Iron (mg)	B-carotene (mg)	Thiamine (mg)	Riboflavin (mg)	Vit. C (mg)
Creche	34.03	29.16	1028	600	5.86	568.8	0.42	0.68	6.9
Creche and home	41.96	33.56	1238	747	8.96	1092.5	1.03	1.16	41.7
RDA	30	25	1690	400	18	1600	0.9	1.0	40.0
Excess or deficiency	+11.96	+8.56	-452	+347	-9	-507.5	+0.13	+0.2	+1.7

Nutrient Intake

Fig. VI, VII, VIII, IX and X shows the major nutrient intake of the selected children from creche and home diet (2-5 years). Regarding the protein intake, the children consumed more than the recommended allowances given by ICMR (1989) by 11.86 gms. This may be due to the intake of corn soya meal and milk. The fat intake was found to be more than the recommended allowances by 8.56 gms. This may be due to the intake of milk. Regarding energy intake it was found to be less than the recommended allowances by 452 kcals. Calcium intake was found to be double the amount of recommended allowances. This may be due to the intake of milk which is rich in calcium. Iron was found to be less than the recommended allowances which was deficit by 8 mg. This shows the inadequate intake of iron rich foods. B-carotene was found to be less than the recommended allowances and was deficit by 502 ug. This shows the avoidance of vitamin A rich foods in their daily diet. Thiamine, riboflavin and vitamin C were found to be more than the recommended allowances given by ICMR by 0.13 mg, 0.2 mg, 0.17 mg respectively.

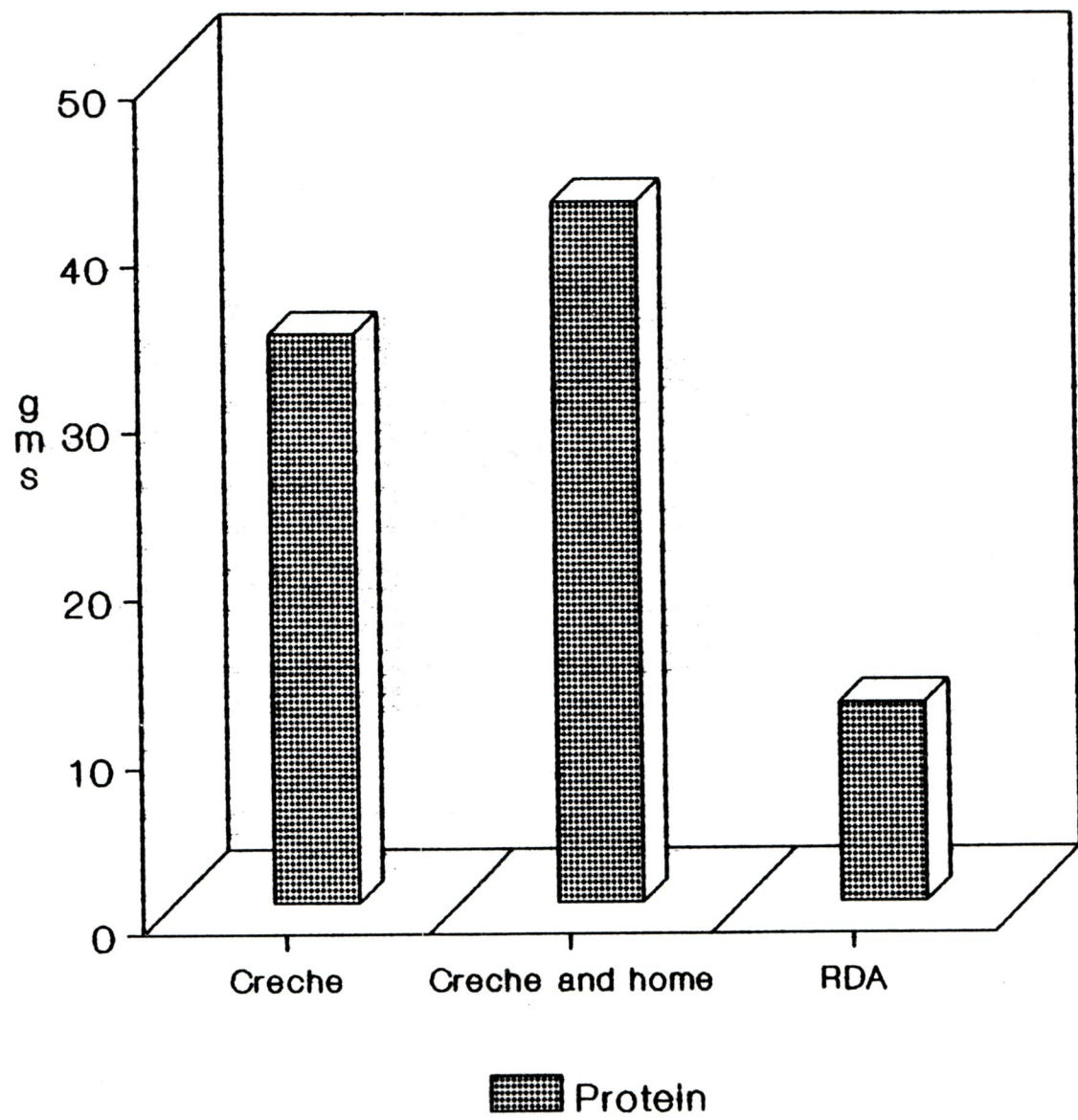


Fig. VI. MEAN PROTEIN INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

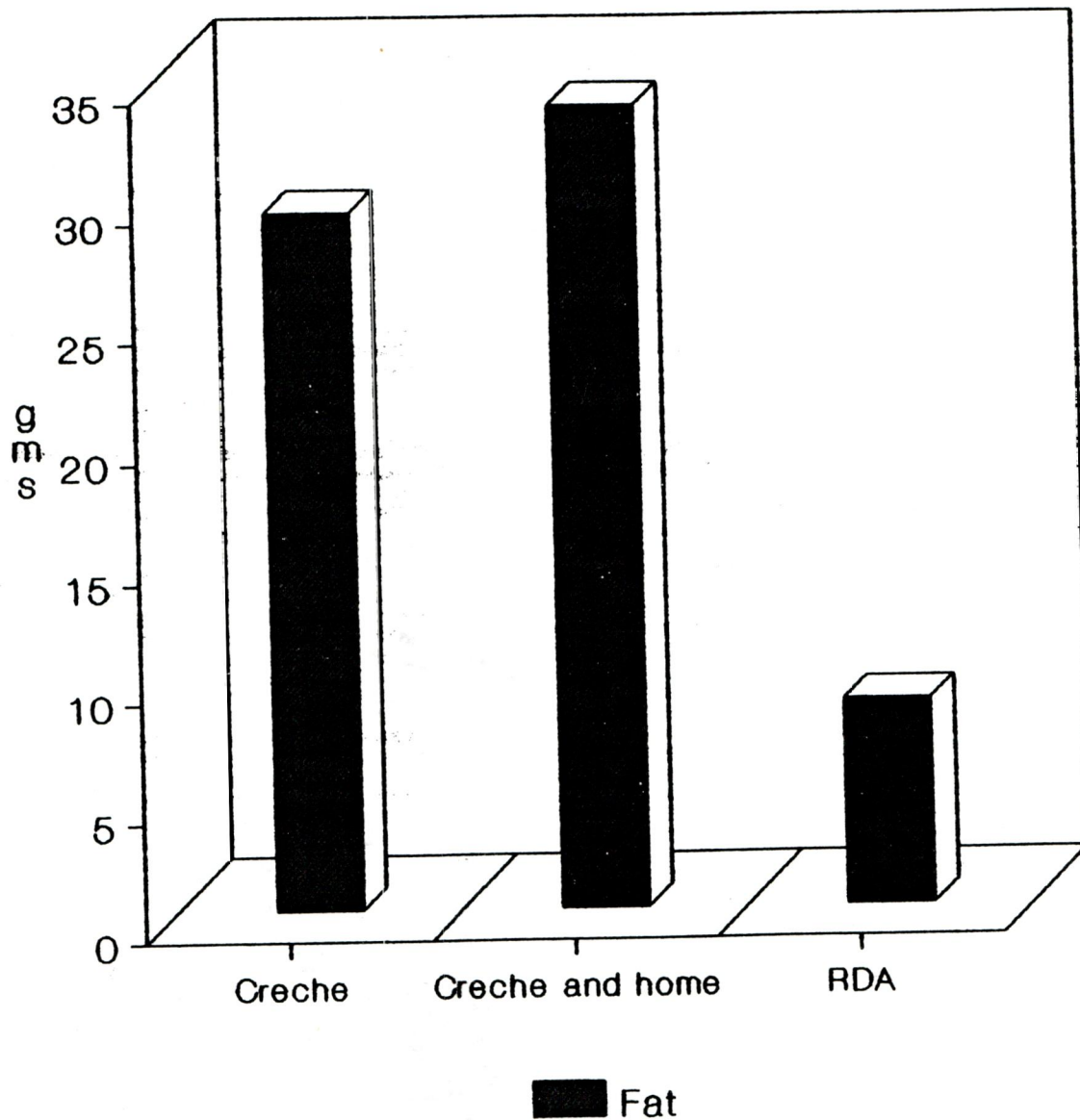


Fig. VII. MEAN FAT INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

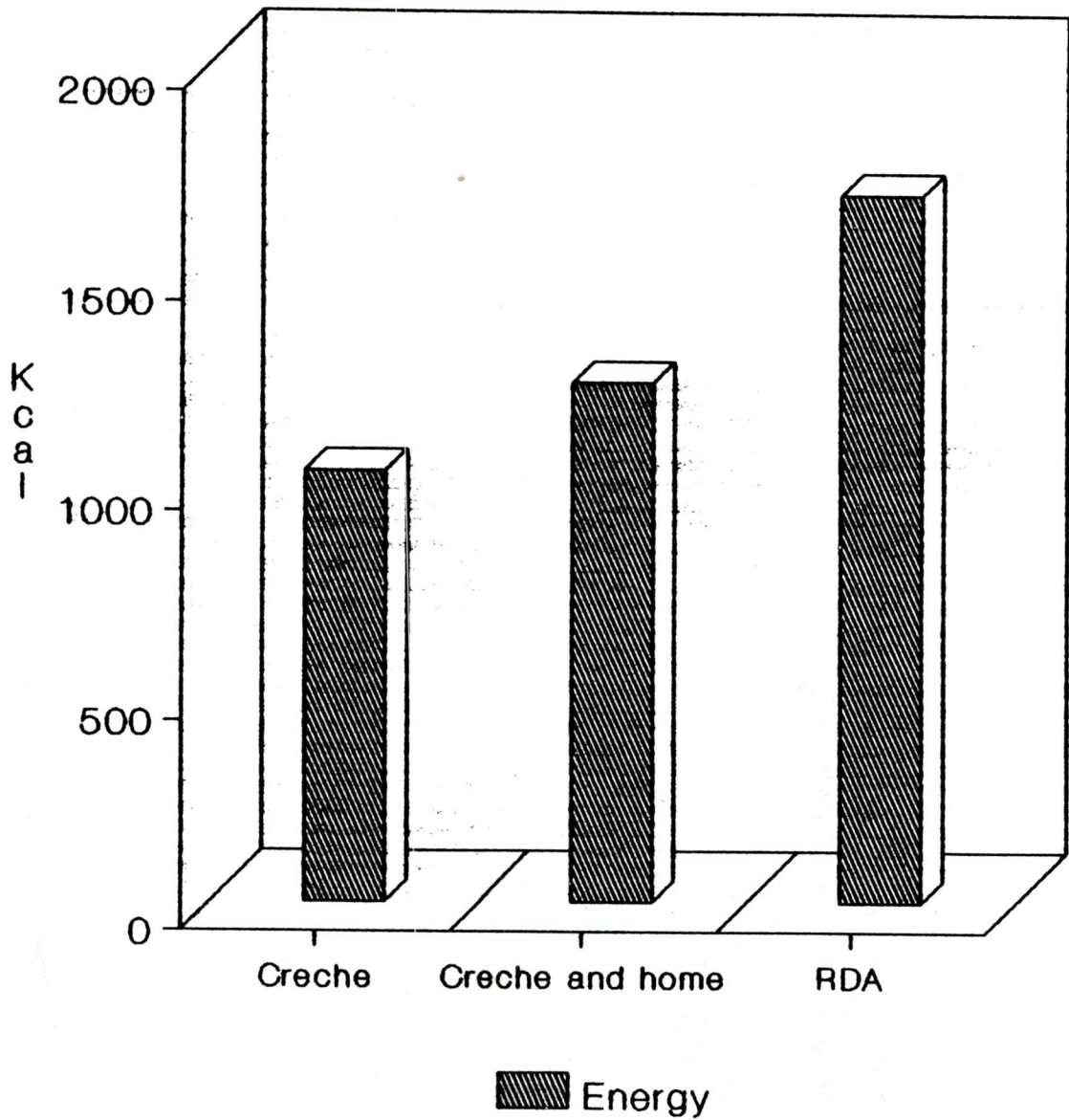


Fig. VIII. MEAN ENERGY INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

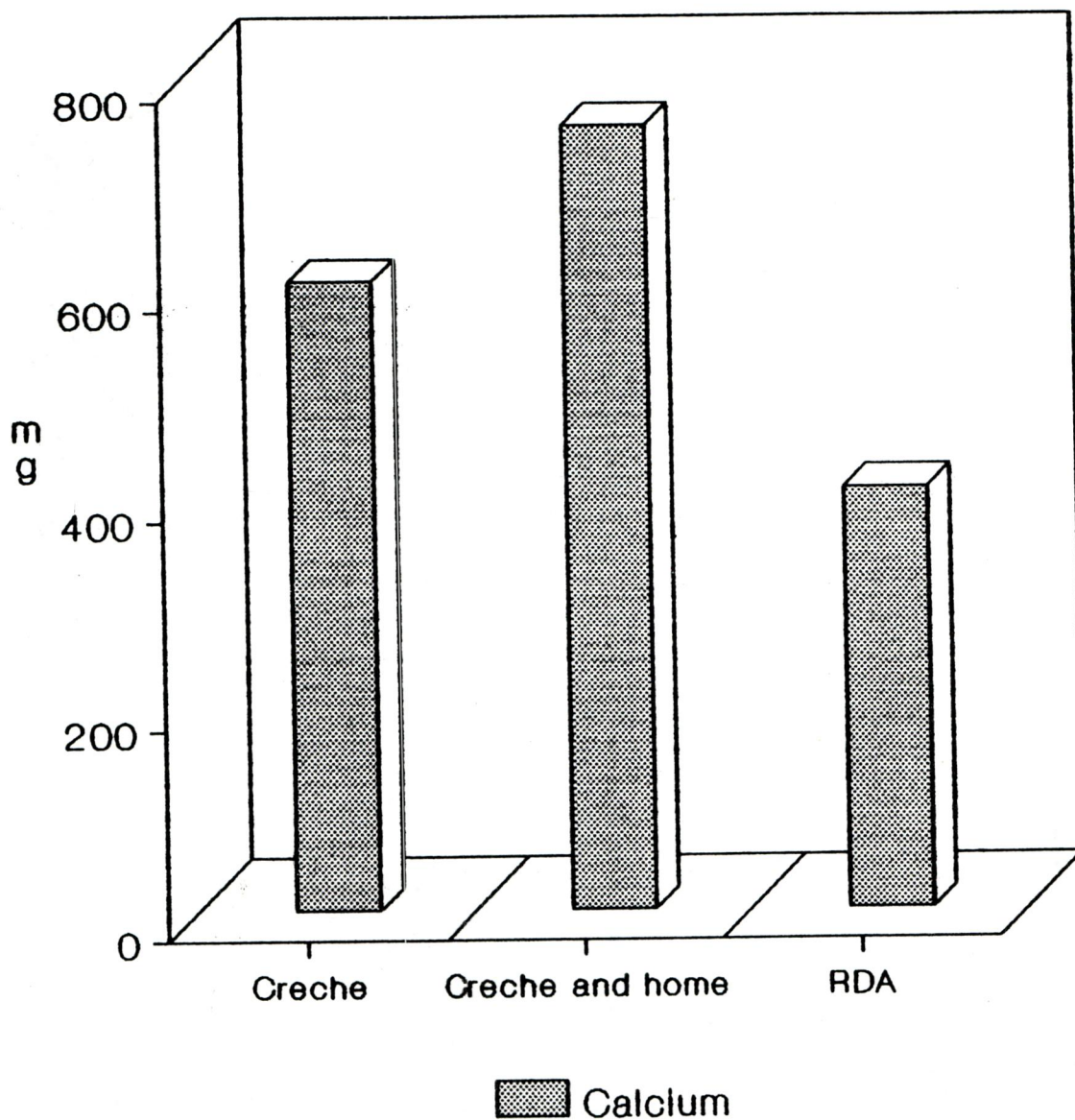


Fig. IX. MEAN CALCIUM INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

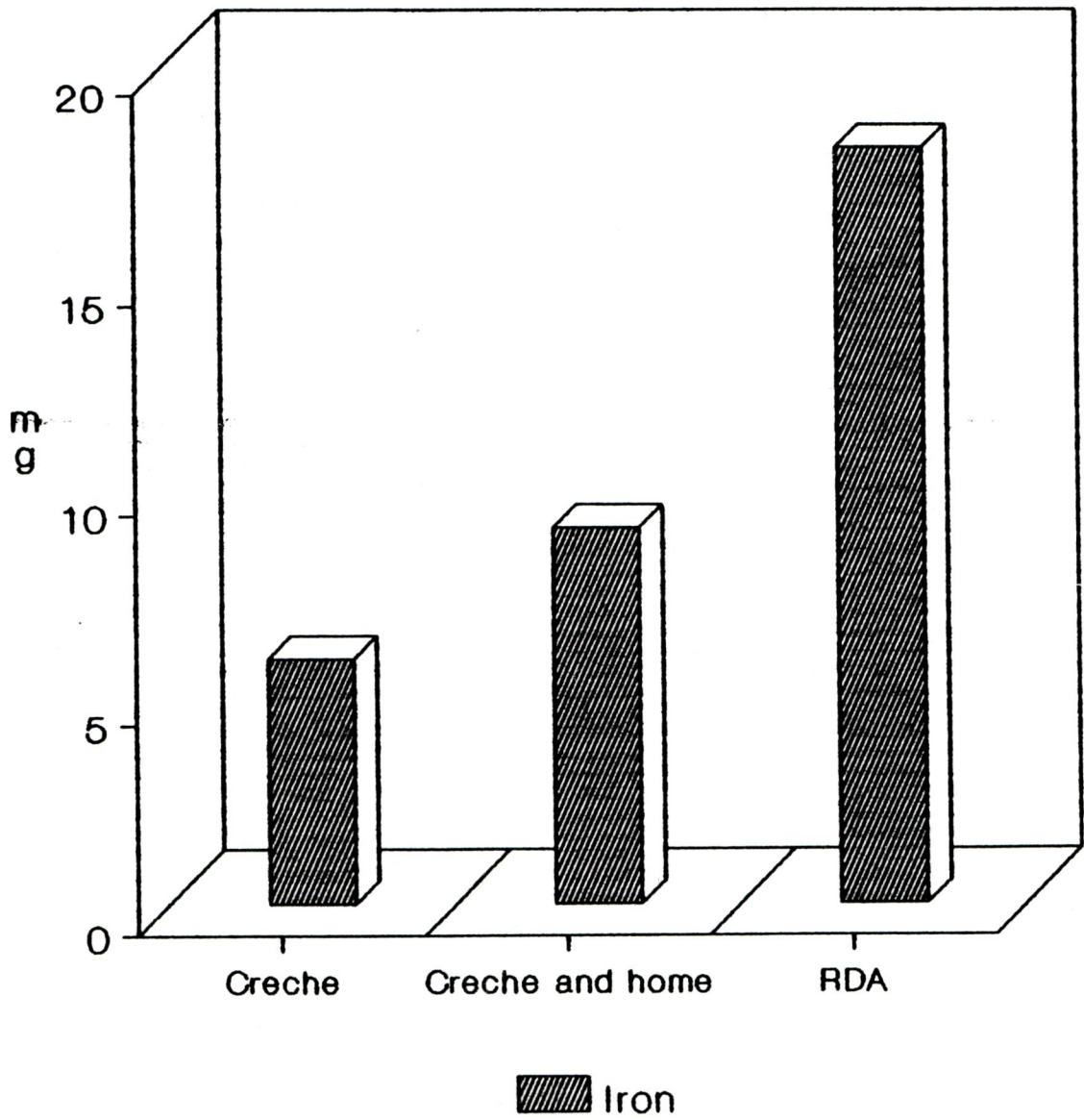


Fig. X. MEAN IRON INTAKE OF THE SELECTED CHILDREN FROM THE CRECHE AND HOME DIET (2-5 Years)

TABLE XII
NUTRITION AND HEALTH KNOWLEDGE OF THE MOTHERS BEFORE AND
AFTER THE NUTRITION AND HEALTH EDUCATION

Nutritional facts	Awareness			
	Before		After	
	No.	%	No.	%
1. Vegetables used for cooking should be cut as big as possible	-	-	50	100
2. Vegetables should be washed before cutting	6	12	50	100
3. Nutrient loss is minimised when vegetables are cooked in closed vessels	-	-	50	100
4. Green should not be cooked in closed vessels	-	-	50	100
5. Water used for boiling vegetables should be incorporated in cooking	-	-	50	100
6. Papaya and carrot should be included to have clear vision	5	10	50	100
7. Drumstick leaves and dates are rich in iron	-	-	50	100
8. Iron deficiency leads to anaemia	-	-	50	100
9. Breast milk is the best milk for babies	50	100	50	100
10. Breast milk gives the babies all the required nutrients needed for their growth	15	30	50	100

(Table XII Contd.)

11.	Weaning foods should be given to the babies at the age of 4th month	20	40	49	98
12.	Bottles used for feeding babies should be washed with hot water	7	14	50	100
13.	Babies suffering from Diarrhoea should be given excess amount of water	4	8	50	100
14.	The ratio of 'sugar and salt' in ORS given excess amount of water	-	-	48	96
15.	Spicy foods should be avoided for babies at the time of diarrhoea	8	16	50	100
16.	Mashed foods should be given for babies during fever	5	10	50	100
17.	In order to know the growth pattern of babies, the baby should be weighed every month.	10	20	50	100
18.	Do not stop the feeding if the child is sick	2	4	50	100
19.	Nutrition education help us to lead a healthy life	-	-	50	100
20.	Immunisation is necessary for both pregnant mothers and children	50	100	50	100

The nutrition and health knowledge of the mothers of the children in the creches before and after education were

found out by administering the questionnaire. Their responses before and after session indicated positives impact of the education given to the subjects.

The method of cooking green leafy vegetables and other vegetables was not known to the subjects before the education was given and there was 100 per cent positive response after the education. None of them know about vitamin A rich foods and iron-rich foods before the session and 100 per cent positive response after the session.

The importance of Breast feeding, correct method of weaning the children, common ailments and their prevention and cure, were already known by 19 per cent of the mothers through the medical facilities provided by the Tata Management. After the education session, the percentage was increased to 100 per cent.

Summary and Conclusion

V SUMMARY AND CONCLUSION

A study was conducted on "Evaluation of Food Service in Selected Creches Associated to Tea Plantations and the Impact of Selected Inputs", five creches were selected in Munnar to gather informations regarding the operation of food service. One hundred and eighty families were selected to gather information regarding their socio economic conditions and dietary habits. The food and Dietary Practices of 180 children in the five selected creches were obtained by using an interview schedule. Fifty mothers of the children were given nutrition and health education and the impact was evaluated.

The results of the study revealed.

1. The main occupation of the selected families were Tea pluckers. Seventy two per cent of their monthly income ranges from Rs. 1250-2650, 17 per cent of their monthly income ranges from below Rs. 1250, 11 per cent of their monthly income ranges from Rs. 2650-4450. All the 180 families were nuclear family.
2. The food consumed by the selected target families was rice and mainly children consumed ragi in the form of ragi porridge.
3. The daily meal intake of the selected families were found to be monotonous. Method of cooking cereals,

- pulses were boiling and shallow fat frying was used for vegetables, roots and tubers.
4. Rice kanjee and bread during fever or cold was provided by 69 per cent of the families. Milk was avoided in the case of diarrhoea.
 5. The location of the creches was well ventilated and lighted.
 6. Out of 180 children, 10 per cent male children and 11 per cent female were below 1 year of age, 9 per cent male children and 8 per cent female children were between 1-2 years, 9 per cent male and 11 per cent female were between 2-3 years, 14 per cent male 11 per cent female were between 3-4 years, 11 per cent male and 6 per cent female were between 4-5 years.
 7. The children between 0-1 year were nursed by the mothers twice a day during the nursing breaks. Children between 1-2 years were fed with only milk, 2-5 years received CSM uppuma, dates, milk, ragi porridge and groundnut.
 8. The food items were found to be purchased by daily purchasing from the retailers. The quantities of the food items purchased per child was ragi 150 gms, groundnut 15 gms, jaggery 25 gms, milk 300 ml, dates 30 gms, CSM uppuma 80 gms oil 10 gms.

9. Special food corn soya meal is provided by world Food Programme.
10. During Diarrhoea Oral rehydration solution was administered.
11. The fuels used for cooking purpose in the creches was wood.
12. Attendance Register, milk purchasing register, provision purchasing register and daily programme register were maintained in the creches.
13. Regarding educational qualifications of the creches workers 3 persons were studied upto high school, 4 persons studied upto middle school and 2 persons studied upto elementary school.
14. All the creche workers were trained for their job and special training on Health and Sanitation, Promote Breast Feeding and First Aid.
15. Sanitation and personal hygiene of the children was given great importance in the creches.
16. For pregnant mothers anti-natal health check up was provided and the high risk pregnancies were referred to the company's general hospital. On special days under 5 clinics - provided health check up for the children. Immunisation was performed to the mothers and children.
17. Thirty three per cent of the children were given breast feeding and 66.7 per cent were given self feeding and spoon feeding. Bottle feeding was not encouraged.

18. Food intake of the selected children from the creche and home diet were evaluated. It was observed that the intake of cereals, green leafy vegetables and other vegetables, fruits and sugar and jaggery were found to be less than the recommended daily allowances. Pulses and Milk were found to be more than the recommended allowances. Nuts and oil intake was found to be same as that of the recommended allowances. Regarding nutrient intake protein, fat, calcium, thiamine, ribo flavin and vitamin C were more than the recommended daily allowances and Energy, Iron, B-carotene were less than the recommended allowances.
19. The evaluation of Nutrition and Health Education administered to the mothers by the investigator, reveals that the method of cooking green leafy vegetables and other vegetables and about vitamin A rich food and iron rich foods was not known to the subjects before the education and there was 100 per cent positive response after the education.
20. The importance of Breast feeding, correct method of weaning, knowledge on common ailments and their prevention and cure, were already known by 19 per cent of the mothers through the medical facilities provided by the Tata Management. After the education session the percentage was increased to 100 per cent.

Recommendations

1. Similar studies can be carried out in creches associated with other non-government organizations.
2. The facilities provided by the non-governmental creches can be compared with that of governmental creches.

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Appendices

APPENDIX I

AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN

COIMBATORE

DEPARTMENT OF FOOD SERVICE MANAGEMENT AND DIETETICS

Socio-Economic and Dietary Survey

1. Name of the interviewer :
2. Name of the interviewee :
3. Name of the child :
4. Date of Birth :
5. Sex :
6. Name and address of the Head of the family :
7. Income of the Head of the family :
8. Composition of the family :
Type of family : Joint/Nuclear
Vegetarian Non-vegetarian
9. General information :

S. No.	Name of the member	Relation to head of the family	Age in years	Education	Occupation	Income per month
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10. Food Consumed by the Families

Foods	Daily	Weekly	Monthly
Cereals			
Raw rice			
Boiled rice			
Wheat			
Maida			
Ragi			
Sago			
Bajra			
Maize			
Others (specify)			
Pulses			
Redgram dhal			
Blackgram dhal			
Bengalgram dhal			
Greengram dhal			
Horsegram dhal			
Cowgram			
Others (specify)			
Roots & Tubers			
Potato			
Carrot			
Yam			
Other (specify)			
Green leafy vegetables			
Paruppukeerai			
Amaranthus			
Others (specify)			
Other vegetables			
Beans			
Brinjal			
Ladies finger			
Tomato			
Others (specify)			

Fruits

Plantain
Guava
Papaya
Grapes
Apple
Orange
Others (specify)

Nuts & Oils

Gingelly oil
Groundnut oil
Coconut oil
Vanaspathy
Others (specify)

Fleshy foods

Mutton
Chicken
Fish
Egg
Beef
Dried fish
Others (specify)

Milk & Milk Products

Milk
Curds
Butter milk
Ghee

Sugar & Jaggery

Sugar
Jaggery
Palm Jaggery

Prepared foods

Biscuits
Pickles
Pappads
Sweets

Beverages

Tea
Coffee
Others (specify)

11. Daily Meal Pattern

Days	Break fast	Lunch	Tea	Dinner
First day				
2nd day				
3rd day				

12. Methods of Cooking

- Cereals :
- Pulses :
- Green leafy vegetables :
- Vegetables :
- Eggs :
- Meat :
- Fish :
- Others :

13. Diet given to children during illness

	Foods given	Reason	Foods avoided	Reason
Fever				
Diarrhoea				
Vomitting				
Cold				
Others				

APPENDIX II

AVINASHILINGAM INSTITUTE FOR HOME SCIENCE AND HIGHER EDUCATION FOR WOMEN

COIMBATORE

DEPARTMENT OF FOOD SERVICE MANAGEMENT AND DIETETICS

Information About Food Service in Creches

General information

1. Name of the Creche Worker :
2. Age :
3. Residential address :
4. Year of Joining in the job :
5. Educational qualification :
6. Name and address of the creche :
 - a. Centre number
 - b. Place :
7. Date & Year of Establishment of the centre :
8. Have you received any training to take care of the children?
If yes :

Type of training	Duration	Year	Place or Institution
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9. Details about the creche

1. Location of the centre

a. Owned building

b. Rented building

2. Space provided for particular area

Area	Size
Kitchen	
Dining room	
Fuel storage room	
Washing area	
Bathroom and toilet	

3. Is the centre properly ventilated?

Yes : No :

4. Is the centre properly lighted?

Yes : No :

Details about the children

1. Number of children enrolled in the creche

Boys : Girls : Total :

2. Mention the age group of children in creche

Age group (year)	Number of children	
	Male	Female
0 - 1		
1 - 2		
2 - 3		
3 - 4		
4 - 5		

Total :

Details about the Meal Pattern

1. Meal provided in the creches?

Age group	Morning	Afternoon	Amount
-----------	---------	-----------	--------

2. Total number of feedings :

Age group	Number of feedings
-----------	--------------------

3. Methods of buying the Foods

Food items	Whole sale	Retail
Cereals		
Pulses		
Greens		
Vegetables		
Milk		
Eggs		
Fleshy foods		
Others		

Details about Cooking the Food Items

a. Methods of cooking

Food items	Pressure	Boiling	Steaming	Frying	Stewing
Cereals					
Pulses					
Greens					
Vegetables					
Milk					
Egg					
Meat					
Fish					
Others					

Personnel in the creche :

S.No.	Nature of work	Number of workers
1.	Purchasing	
2.	Cooking or preparation	
3.	Store keeper	
4.	Cleaning	
5.	Care of children	
6.	Any other (specify)	

Details about the purchasing of foods:

1. Frequency of purchasing the food items

Food items	Amount (g)	Daily	Weekly	Monthly
Cereals				
Pulses				
Greens				
Vegetables				
Milk				
Eggs				
Fleshy Foods				
Others				

Details about the food provided to the children

a. Type of feedings according to the age group

S.No.	Age group (years)	Breast feeding	Self feeding	Spoon feeding	Bottle feeding
1.					
2.					
3.					
4.					
5.					

b. Special Foods given

S.No.	Age group	Foods given	Reason
1.	0 - 1		
2.	1 - 2		
3.	2 - 3		
4.	3 - 4		
5.	4 - 5		

c. Diet given to children during illness

S.No.	Foods given	Reason	Avoided	Reason
1.	Fever			
2.	Diarrhoea			
3.	Vomitting			
4.	Cold			
5.	Others			

Equipments available in the creches for food service

Area	Name of the equipments	Numbers
a. Pre-preparation		
b. Preparation		
c. Serving		
d. Cleaning		

Fuels used for cooking purpose

- a. Gas
- b. Electricity
- c. Coal
- d. Wood

Details about Hygiene, sanitation and safety

1. Is all the equipments used in the kitchen and serving sterilized?
2. What are the various measures taken to ensure food safety while cooking
 - a. Using gloves
 - b. Using hairnets
 - c. Personal cleanliness
3. Is the foods are given in right temperature to the children?
4. Is all the personnels in the creches are trained under any programmes?

If yes,

Name of the work	Name of the training	Duration	Year	Place or Institution
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Services provided to the community

1. Do you provide health check up for the pregnant mother

Yes : No :

If yes, how often

2. Do you provide immunisation to Mother and Children?

Yes : No :

If yes,

When?

3. Do you provide any nutrition and health education to the mother?

Yes : No :

If yes,

4. Do you provide health check up for the children?

Yes : No :

If yes, how often.

APPENDIX III A

NUTRITIVE VALUE OF THE FOODS GIVEN TO CHILDREN (2-5 YEARS) IN CRECHES

Food Stuffs	Amount (g)	Protein (g)	Fat (g)	Fibre (g)	Carbohy- drate (mg)	Energy (Kcal)	Calcium (mg)	Iron (mg)	B- carotene (ug)	Thiamine (mg)	Riboflavin (mg)	Vit. C. (mg)
Ragi	50	3.65	0.75	1.8	36	164	172	1.95	21	0.21	0.095-	-
Groundnut	15	3.93	5.97	0.46	4.0	85.5	11.5	0.46	-	0.58	0.019	-
Milk	300	9.60	12.30	-	13.8	201	360	0.60	540	0.15	0.57	6
Jaggery	25	0.10	0.025	-	23.7	95.75	20	0.66	-	-	-	-
Dates	30	0.75	0.12	1.17	22.74	95.1	36	2.19	7.8	-	-	0.9
CSM	80	16	-	-	-	299	-	-	-	-	-	-
Oil	10	-	10	-	-	88	-	-	-	-	-	-
Total		34.03	29.16	3.43	100.2	102.8	600	5.86	568.8	0.418	0.684	6.9

APPENDIX III B

NUTRITIVE VALUE FOR HOME DIET GIVEN TO CHILDREN (2-5 YEARS)

Food Stuffs	Amount (g)	Protein (g)	Fat (g)	Fibre (g)	Carbohy- drate (mg)	Energy (Kcal)	Calcium (mg)	Iron (mg)	B- carotene (ug)	Thiamine (mg)	Riboflavin (mg)	Vit. C. (mg)
Rice	30	1.92	0.12	0.06	23.7	103.8	2.7	0.3	-	0.063	0.015	-
Greengram dhal	10	2.45	0.12	0.08	5.9	34.8	7.5	0.4	4.9	0.047	0.021	-
Paruppu- keerai	15	0.36	0.09	0.18	0.42	4.05	16.65	2.22	343.8	-	6.190	26.1
Milk	100	3.20	4.10	-	4.6	67	120	0.20	180	0.5	0.19	-
Total		7.93	4.4	0.32	34.62	209.65	146.9	3.1	258.7	0.61	0.48	34.8

APPENDIX IV

அவினாசிலிங்கம் மணையிலி பல்கலைக் கழகம்
கோயம்புத்தூர்.

ஆரோக்கியம் மற்றும் சத்துணவுக் கல்வி

1. சமையல்க்கு பயன்படுத்தும் காபிகறிகளை

- (அ) பெரிய துண்டுகளாக நறுக்க வேண்டும்.
- (ஆ) சிறிய துண்டுகளாக நறுக்க வேண்டும்.
- (இ) வட்டமாக நறுக்க வேண்டும்.

2. காபிகறிகளை கழுவிய பிறகு நறுக்க வேண்டும்

ஆம் இல்லை

3. காபிகறிகளை பாத்திரத்தில் முடிவைத்து சமைக்கும் போது அவற்றில்
உள்ள சத்துக்கள் வெளியேற்றப்படுவதில்லை

ஆம் இல்லை

4. பச்சைக் கீரை வகைகளை பாத்திரத்தில் முடி வைத்து சமைக்க
வேண்டுமா?

ஆம் இல்லை

5. காபிகறிகள் வேக வைக்கும் தண்ணீரை

- (அ) கீழே கொட்டிவிட வேண்டும்.
- (ஆ) சமையல்க்கு உபயோகிக்க வேண்டும்.

6. தெளிவான கூல் பாரிவைக்கிச் சேரித்துக் கொள்ள வேண்டிய உணவுப்
பொருட்கள்.

- (அ) அரிசி, கோதுமை.
- (ஆ) முருங்கைக்காய், கத்தரிக்காய்.
- (இ) கேரட், பப்பாளி.

11. தாமிர்பாஸ்டல் இணை உணவு எந்த மாதத்தில் இருந்த கொடுக்க வேண்டும்.

(அ) 1 வருடத்திற்கு பிறகு.

(ஆ) 6 மாதத்தில் இருந்த.

(இ) 4 மாதத்தில் இருந்த.

12. புட்டிப்பால் கொடுத்தால் புட்டியை

(அ) ஒவ்வொரு முறையும் வெந்நீரால் கருவவேண்டும்.

(ஆ) ஒரு நாளில் இரு முறை கருவ வேண்டும்.

(இ) ஒரு நாள் விட்டு ஒருநாள் கருவ வேண்டும்.

13. குழந்தைக்கு வயிற்றல் போக்கு உட்கொடுப்போது

(அ) நிறைய தண்ணீர் கொடுக்கக் கூடாது.

(ஆ) நிறைய தண்ணீர் கொடுக்க வேண்டும்.

14. வயிற்றல் போக்கில் போது கொடுக்கும் "உயிரிக்காக்கும் கலவை"யின் விகிதமானது

(அ) 4பங்கு உப்பு 1 பங்கு சர்க்கரை.

(ஆ) 4பங்கு சர்க்கரை 1 பங்கு உப்பு.

(இ) 4பங்கு சர்க்கரை 4 பங்கு உப்பு.

15. குழந்தைக்கு வயிற்றல் போக்கில் போது தவிர்க்க வேண்டிய உணவு

(அ) நீர்

(ஆ) தயிர்

(இ) மசாலா நிறைந்த உணவு

16. குழந்தைக்கு காரிச்சல் ஏற்பட்டால் கொடுக்க வேண்டிய உணவு

(அ) குடான உணவு

(ஆ) குளிர் பானங்கள்

(இ) மசித்த உணவு

17. மாதம் ஒரு முறை குழந்தையை எடை எடுப்பதால்

(அ) குழந்தையின் உடல் வளர்ச்சியை அறியலாம்

(ஆ) குழந்தையின் அழகை அறியலாம்

(இ) தாயின் உடல் வளர்ச்சியை அறியலாம்

18. குழந்தைக்கு ஏதேனும் உடல் நலக் குறைவு ஏற்பட்டால் உணவு
கொடுப்பதை நிறுத்திக் கூடாது

சரி

தவறு

19. சத்தினால் கலிவியினால் நமக்கு உடலாகும் நன்மை

(அ) நம் உடலை அழகு படுத்த முடிகிறது

(ஆ) நம் உடலை நோய்களிலிருந்து காக்க முடிகிறது

(இ) பயனேதும் இல்லை

20. தடுப்பூசி கரிப்பினித் தாய்மார்களுக்கும் குழந்தைகளுக்கும் மிகவும்
அவசியம்

ஆம்

இல்லை