REPORT OF THE COMMUNITY NUTRITION PROJECT CARRIED OUT IN THE VILLAGES OF DEVIYAMPALAYAM AND PUDUPUDUR IN THE PERIANAICKENPALAYAM BLOCK, COIMBATORE DISTRICT WITH SPECIAL REFERENCE TO THE DIET AND NUTRITIONAL STATUS OF CHILDREN FROM THE AGE 3 to 11 YEARS

By

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I INTRODUCTION

The importance of food in its relation to health had been recognised by our ancients from time immemorial. The Vedas mention that bodily disease may be brought about by irregularities in food and drink (1954)[1]. Modern Science of nutrition has shown that diet has a far reaching influence on health and has set up criteria for adequate nutrition. Today the Government of India has laid out definite policies to raise the level of nutrition of people. For outlining the nutritional policies in any country, data on the foods consumed by people are necessary. The starting point towards raising the level of nutrition must be the knowledge of what people eat, and how far the existing diets are satisfactory. Diet surveys are helpful in obtaining such data.

Diet survey is an enquiry into the foods consumed. The relation between diet and health was the original basis for assessing the physiological requirements of food. Later refined clinical and bio-chemical methods have been developed. The dietary survey is still of fundamental importance in the investigation of relationship between food and health. According to the Food and Agricultural Organisation of the UN (FAO) (1953)[2], a large proportion of the world's population is inadequately fed.

The chief purposes of dietary surveys are:

(i) to understand the food consumption patterns and dietary habits of population, families and individuals.

(ii) to help in outlining Nutrition Education programmes.

(iii) to get an insight into the ways of living of rural people.

(iv) to make detailed studies of the nutrition of particular groups.

Diet surveys may be conducted for many groups such as: studies covering entire population, family enquiries and individual enquiries (1957).[3]

Many methods may be followed to conduct diet surveys such as Group method and Individual method as shown by Carrol *etal* (1954),[4] the dietary history method as used by Young *etal* (1952),[5] seven day records, and the Twenty four hours recall method. The Questionnaire method described by Leitch and Aticen (1951)[6] is used widely to obtain an approximate picture of the dietary habits of large sections of the population within a short time in a particular area, to obtain information on sources of food supply, methods of storage and cooking habits.

This study was conducted in four phases:

A. Surveying the food consumption patterns of the village families.

B. Assessing the nutritional status of the particular group selected.

C. Conducting a programme of Nutrition Education.

and D. Evaluating the impact of the nutrition education programme.

II

A. Surveying the Food consumption Pattern of the Village Families:

1. Developing the Diet Survey Schedule:

A diet survey schedule was carefully planned jointly by the five senior M.Sc. students of the Food and Nutrition class of the Sri Avinashilingam Home Science College, keeping the purposes of dietary surveys in view. Care was taken to outline and define clearly its scope and purview and also to ensure its workability. The survey form was pretested with a group of families near the College campus, modified in the light of the experience in pretesting and finalised. (Appendix I) ~~as shown in Appendix I.~~

In framing the schedule for this study, the diet survey forms used by the Indian Council of Medical Research were useful.

The survey involved study of four aspects - namely - (a) the village - to get the general background of the village and its environment (b) the families - to get the composition of the family, food habits, health status and such other details.

(c) the food habits of the families - to learn foods consumed, the methods of cooking, method of storing, incidence of wastage of foods.

and (d) the nutritional status of the particular group selected by the investigator.

2. Selection of the Method for the survey:

The 'interview' method was selected for this study because of its following advantages:

(i) The information secured is likely to be more correct than those secured by other methods .

(ii) Delicate situations could be handled more effectively.

(iii) Language can be adopted to the level of education of people.

As quoted by FAO (1950), interview and observations are both parts of the process of investigation. The interview technique is used in field work to watch the behaviour of an individual or individuals to record statements, to observe the concrete results of social or group interaction. It is therefore a social process, involving interaction between two persons. Preat Rice Webb ( ) regarded interview as an instrument of Research and discovery.

The objective of any interview can be generally stated as follows:

(i) to gain access to objective data.

(ii) to obtain opportunity for observation.

(iii) to determine facts which vary with particular person with particular circumstances.

(iv) to ascertain opinions, attitudes or beliefs.

Adequate planning and preparations were made in this study to overcome limitations of the interview method such as transporta-

tion and time, difficulties in approaching the families and ignorance and diffidence of the people.

3. Selection of the villages:

The FAO reports (1951) that the boundaries of the physical area to be covered by the investigation should be determined at the beginning of a survey. This enables the investigators to concentrate their efforts and focus their attention in one specific locality.

Two hamlets called Deviyampalayam and Puthupudur situated in Perianaickenpalayam Community Development Block, were selected because they were already open to the influence of extension workers who found the rural families responsive.

4. Selection of the samples:

There are various methods available for sampling. They are (1957) stratified sampling which involves selecting people with some common characteristics. The second method is called as Area Sampling that is Random sampling of area in which people live. These sampling methods were not necessary in our survey which was aimed at covering the entire population of the two hamlets, so that each investigator could get a definite group to study the nutritional status.

Conducting the Interview

The investigators would go to the houses and open conversation with woman or man who was willing to give information.

FIGURE · 1

VILLAGE SCENE.

Conducting the Interview:(Continued)

Questions were asked and answers were given freely from both sides. Questions such as "How many children are there in the house?", "Are they studying and when do they take their meals?" were asked. The interviews were concluded with a few courteous remarks, greetings and assurances of repeating the visits again. The answers were not recorded then and there but held in memory and noted on the form at the earliest opportunity secured, often between the period of leaving their houses and entering the next. The forms for individual houses visited were serialised with the initials so that they did not get mixed up. Information regarding population and taxes were collected from the village karnam who had the records anf first hand knowledge about the two hamlets. Totally 156 families were surveyed by the five investigators.

The Dietary Survey Pattern:

For the weighment of foods it was decided to cover at least ten houses in which there were children.

These houses were selected by random sampling, by selecting every third house in which there were children. The weighing was done by weighing the raw foods before cooking in each family, for three consecutive days. All foods which were consumed in bulk were weighed. The condiments such as salt, mustard, turmeric were not weighed as they

FIGURE. 2

CONDUCTING THE INTERVIEW

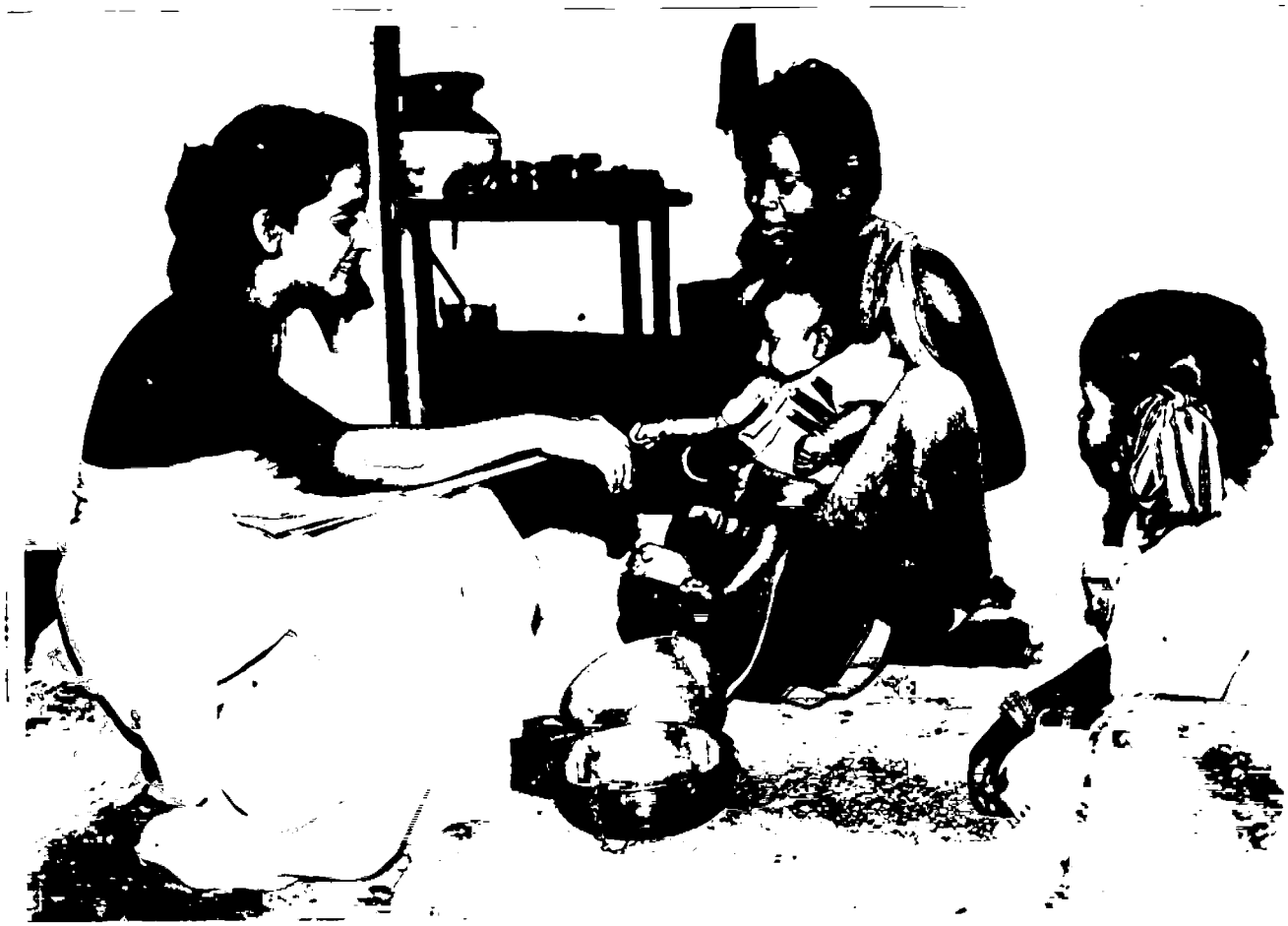
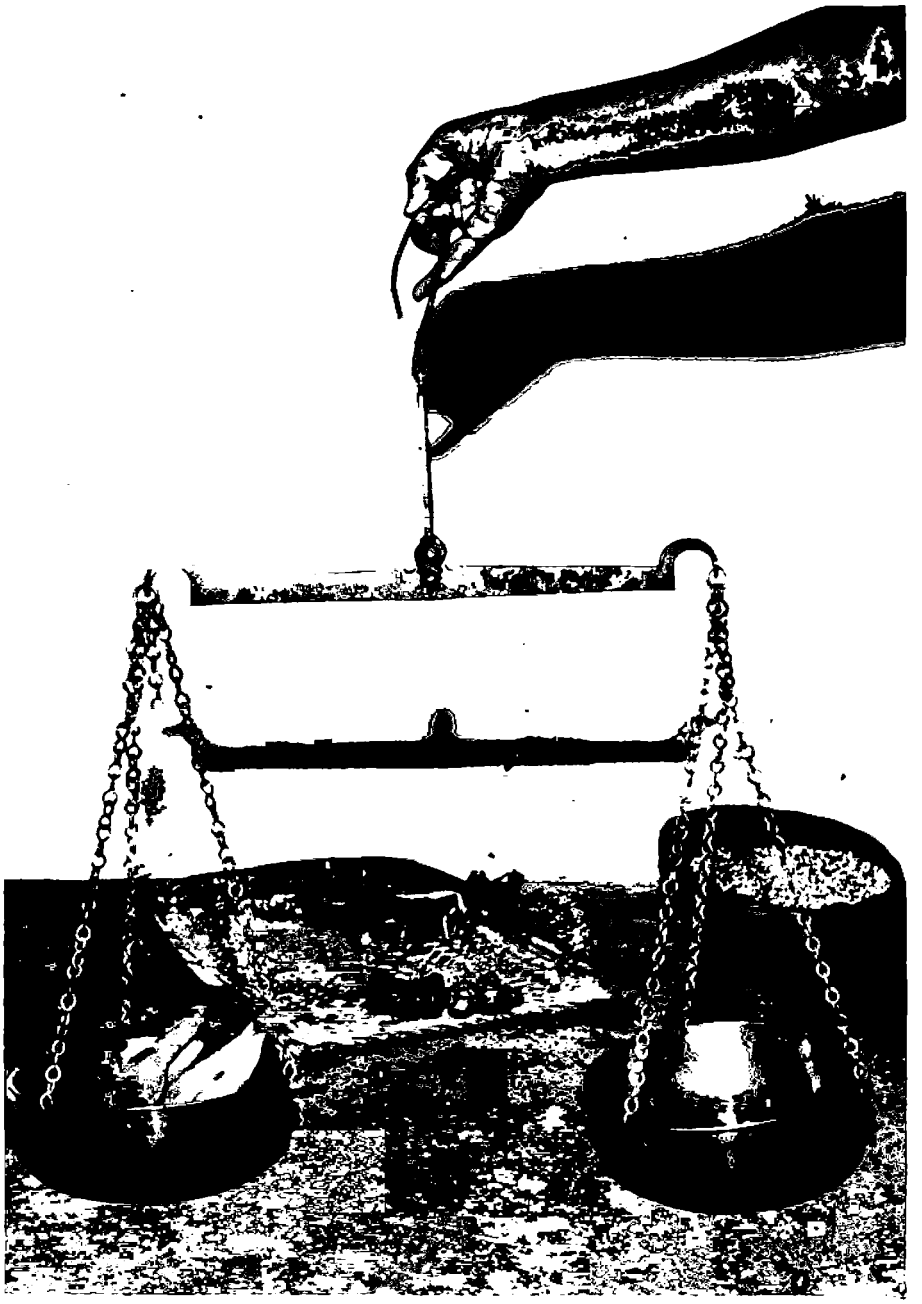


FIGURE - 3

WEIGHING THE FOODS



used in very small quantities.

In addition a survey on the feeding practices of children and the assessment of their Nutritional status were made. Questions about the type of food children get, and any special food served for them were considered. Nutritional status was assessed both by Anthropometry and clinical tests.

When all the data were collected from the allotted houses by the investigators, they were put together and summarised.

Location: The two hamlets namely Pudupudur and Deviyampalayam situated at the foot hill of 'Kuridi Malai' belong to the Gudualur revenue village, and were recognised as one unit during the British rule for the convenience of collecting taxes. They are located in the Perianaickenpalayam Community Development Block.

Deviyampalayam is also a small hamlet, covering an area of 15 acres and 15 cents and the whole area of the village including fields is 200 acres. Figure 1 shows the location of these two hamlets in relation to Periyanaickenpalayam. As can be seen from Figure 1 the hamlets are situated very near to each other with the same physical environment and facilities.

Schools and other Institutes:

The nearest Railway station to Gudualur Panchayat is

MAP INDICATING THE LOCATION OF THE SUVEY AREA.

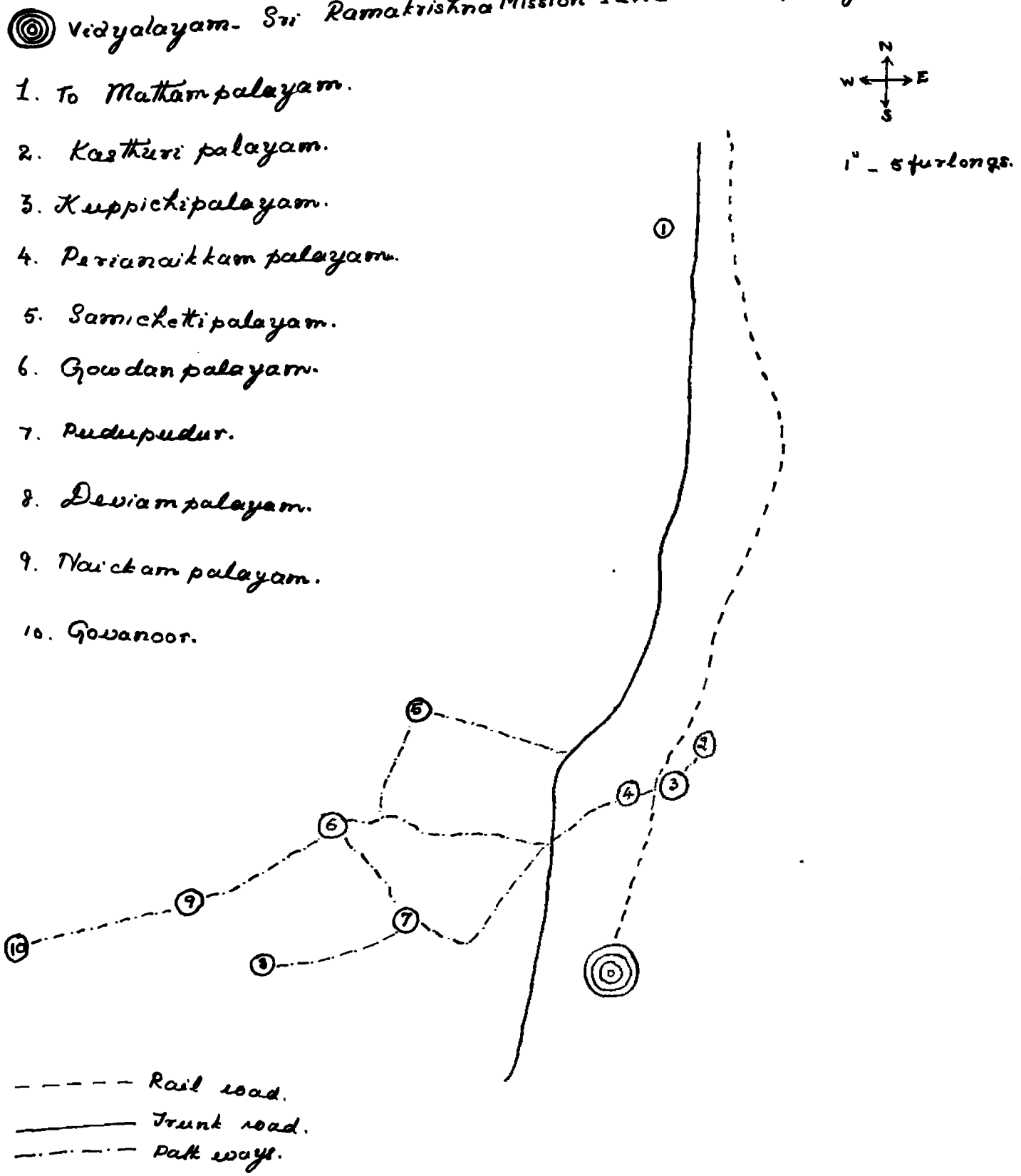


FIGURE-1

Perianaikenpalayam about 2½ miles away. The nearest health centre, post-office and bus-stop are also situated at Sri Ramakrishna Mission Vidyalaya of Perianaickenpalayam. Balwadis, primary school, secondary schools and Kala nilayam are attached to the Vidyalaya. Children of the nearby villages attend these schools. There are altogether three high schools in Perianaickenpalayam, Sri Ramakrishna Mission Vidyalayam, Swami Vivekananda High School and K.Rangaswami Naidu Trust Girls' High School.

Market Facilities:

The people in the village buy the provisions from the shandies at Perianaickenpalayam, which meets every Sundary. The Thudialur shandy in which cattle are also sold, meets on Mondays and is about 5½ miles away from the place. Karamadi shandi meets on Fridays and is about 7 miles away. If people cannot buy their provisions in one lot for the week they buy from retail stores daily, for higher prices.

Population and Birth rate:

The population of the two hamlets is about 7043 comprising of 3715 men and 3328 women according to 1961 census. 52 to 74 per cent were males and 47.26 per cent females. The Birth rate is found to be 2% for male children and 1.3% female children according to 1961 census. The Birth rate correlates with the sex distribution among adults.

Literacy: Among the 7043 people, only 1703 were literates, 1378 being men and 325 women.

Water Supply:

Water is drawn from the wells. The well to do families had pumps and pipes. Water pipes were laid in the streets but not used properly.

Charactor of Rural Economy:

The main source of income for the people was agriculture. The main crops of this village are sugarcane, cholam, ragi, cotton, paddy and tapioca. Sugar cane is cultivated in all seasons and cholam a non-irrigated crop is grown during March and harvested during June. Ragi is also a non-irrigated crop sown in August and harvested in November, Two varieties namely Karunganie and Cambodia of cotton are cultivated. The season for transplanting paddy is October to November and for harvesting March. Tapioca is grown all around the year without irrigation. On harvesting, the products are sold and that money is used to buy necessities when wages are paid in kind, they are also sold to buy provisions, or bartered for other commodities.

Farming is done mostly in the traditional methods without much mechanisation. New Agricultural implements are supplied by the Block Development Office. The Block Development Office also supplies good seeds for cultivation, lend

money for buying a pair of bullocks, digging wells or deeping existing ones. Facilities are also extended to provide good markets for the produce on cooperative lines which is a boon to the farmers as they can despense with the services of eaploring middleman. In these villages the owner tenant system still exists. The differences in economic level is wide.

Occupation:

The number of landowners is about 30 and the agricultural labourers are 218. Among these people interviewed,, family conditions of the mill workers and the mechanics were better than that of others. Generally all these people lived within their income.

Administration:

The administration of the village is carried by the Panchayat Union and the Panchayat Board President, who commands much respects from the people who obey this orders. Another person who is equally respected is "Oor Kounder" (ஊர் கௌண்டர்) when there is a communal gathering, this man makes any anouncements that he has to make and the people obey his orders. The village leaders exert considerable influence on the people. So those who approach the village people will be more successful if they first contact these leaders.

Family Systems:

(i) Sex distribution: The people in these villages are patriarcial whereby all the power of running the house is rested in the hands of the father and the mother is there to help him. The sons get married and if they wish, they remain as part of the joint family. The trend was for the joint family to break away, leading to individual families. It is noted that, formen as the age increases the number also increases steadily.

(ii) Size of the family: According to India 1962, the average size of thefamily is 5.1 persons for rural areas, and 5.0 persons for the whole nation. The average size of the families in this study was 4.4 persons per family, much less than the national average. The maximum numbers of families had on an average 3--4 members in a family.

(iii) Caste distribution: There were 20 Naidus who were land owners, 62 kurumba Gowders who were agricultural workers and 67 Harijans in the families.

(iv) Religion: One of the most important factors which influences the life of rural people is religion. All the people in these two hamlets were Hindus. In the 'cheri' the two deities worshipped were Veerabhadran and Bannari. The temples to which these people can go are the Badhrakali Ather Koil (பத்ரகாளி அத்தா கோயில்) at Mettupalayam, the temple in Bannari and the temple in Perur. During

the Adi festival, they go to the peak of the nearby hill called 'Kurudi Malai'. All except the Harijans go to the top (மலை) of the hill as it is considered to be very sacred.

In all the houses there were pictures of Gods and Godesses. No marbed difference was between "Saivities" and " Vaishnavaities". Religion is one of the main factors integrating the feelings of the people. In Pudupudur there is a "Vinayakar" temple with no "poojari". Any person who wants to worship can go inside the temple, pour pure water on the idol, and worship with flowers. There is also a small temple in Deviyampalayam. This temple is dedicated to one of the local deities and is at the entrance of the village. It is a coustamary belief that the temple should be situated at the outskirts of the village, so that God would protect them from any out side danger that may be fall. In Deviyampalayam also the temple does not have an appointed poojari.

(v) Festivals: As related to religion, festivals play a significant role in the lives of these people. Celebrations such as 'Adi festival' are celebrated on a big scale. The significance of Adi Festival is the anniversary of the elder people who are no more. They celebrate by buying new clothes and keeping this clothes near the wall where there are three lines drawn with oil and kumbum is placed over these lines.

A big plank is kept near this spot on which the new clothing and the specially prepared foods served on a big plantain leaf are placed. The menu on that special day includes raw banana, payasam, 'kachayam' and vadai. Rice is the special item on this day. The food served on another plantain leaf is placed on the roof, for the crow to come and eat. Other festival preparations are "mavu" a combination of rice and dhal flour to which faggery is added. Children usually go to the hill to gather flowers and they return late in the night or the next day. On the day of Adi festival, all the people come to the temple, distribute 'pori' and 'kaddalai' to the children and go up the 'kurudi malai'. During the nights dramas are enacted for entertainment. Considerable amount of meney is spent on festivals.

(vi) Customs,Traditions and Beliefs: Customs and Traditions play a very big part in the celebrations, such as buying new clothes, oil bath and white washing of the house. The house undergoes a process of spring cleaning. All the utensils in the house are clearely throughly.

Superstition plays a great role in the lives of rural people. Their belief in the existence of ghosts, that diseases are punishment of God, cause them to spend a good amount of their money towards allevating the superstitious fears.

(vii) Health status of mothers and children: From the status of health and mortality rates represented in ~~figure. From~~ figures -4- and -5- it may be seen for every hundred births, about 27 children died. The causes ~~senses~~ of death seemed to be negligence and ignorance rather than poverty. Sometimes children are not attended to when they cry; some times prosonous reptiles kill them or infectitions diseases prove fatal. Eventhough children are given some attention, they are not looked after properly. Births and deaths have become so common that the death of a child is easily reconciled malnutrition.

The foods given to children are not special. They get the same food as the adults. Most of them do not consume milk which is absolutely essential for supplying high class protein to maintain growth and for other vital functions. As the income increases, the number of children born and the number of children who die are lessened. The health status of women belonging to the lower strata of the family is lower than those of the higher strata because of the inadequacy of the quality of foods. According to Roberts (1960)[7] there is a definite correlation between the education of the mother and the number of children born.

(viii) Status of woman: Among the women 4.6 per cent were literate. The women did not enjoy an equal status with men. They also worked hard to support families. The depended

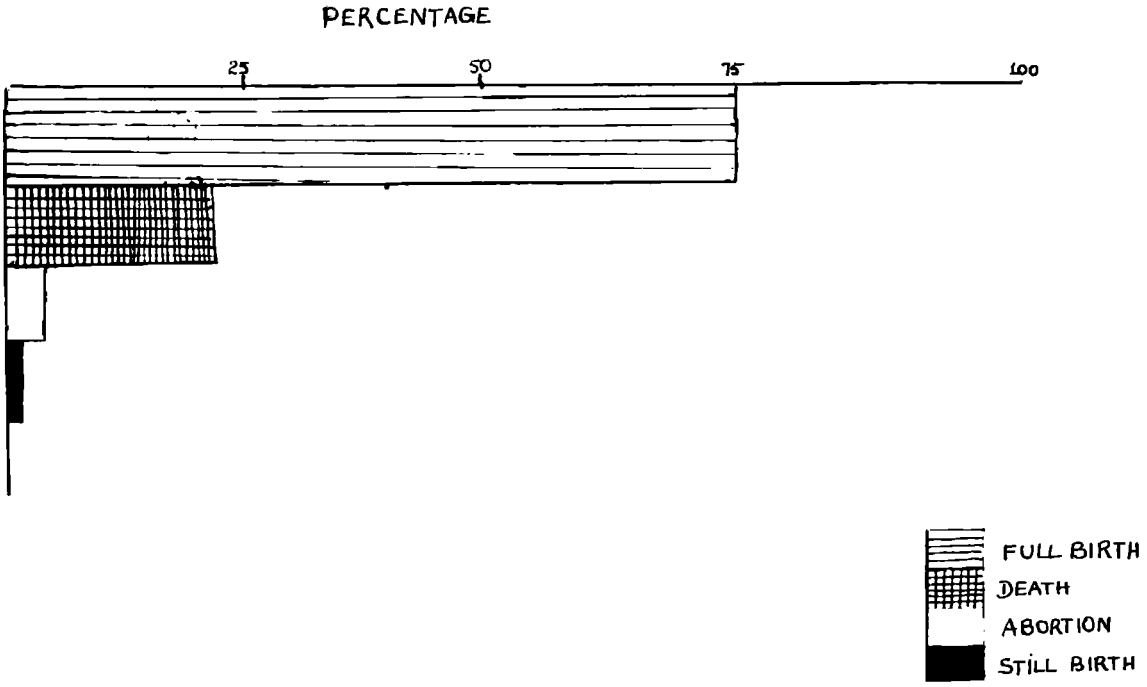


FIGURE - 5

PERCENTAGE OF CHILDREN BORN ALIVE AND DEAD

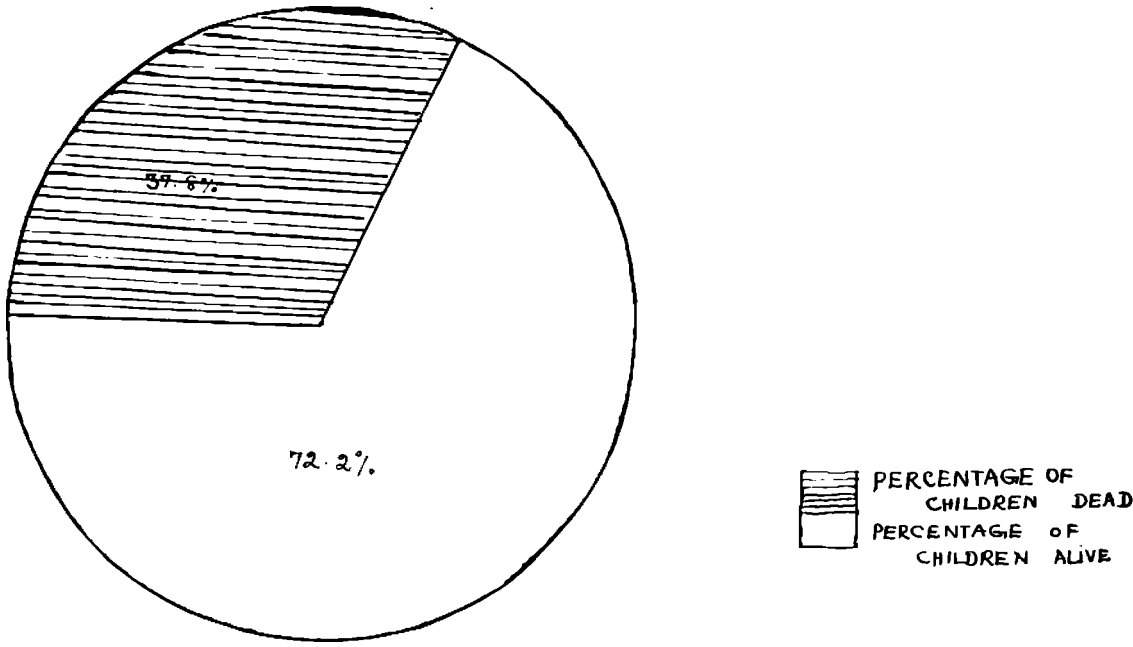


FIGURE - 6

on the men even to give information. They were in fact afraid to give some of the information which we wanted. Moreover men appeared more responsive than the women. The investigator had a strange experience when a woman who was very supicious accused her. But there were many women who were responsive and enthusiastic. There was an old lady in Pudupudur who gave us all the possible information and accompanied us to some houses. Some women even offered eatables and coffee. In general, the investigators were welcomed in most of the places. On the 15th of August all the investigators were invited to take part in the Independance Day Celebrations in Pudupudur. It was a worthwhile experience. One the rapport established the women became very friendly and they helped in carrying our scales also.

The women do not go to hospital for delivery. The delivery usually takes place in the house. The pre-natal care given to the women is not satisfactory, which may be a cause for the high infant mortality.

Children: Few children work in the fields on an yearly basis which is called as "பண்ணையம்". Their wages depend on their age, the number of days they work, in a year, the number of cattle they graze and the amount of payment they get in kind.

Income and Expenditure pattern:

Most of the people in the villages are labourers and their income is quite low. Maximum number of people in these villages earn around Rs.21--23/week. This would mean that these people do not get more than Rs.80--90/month. The average family figures also works out to be some where around Rs 4.9. The income figures of the village shows that the village income is higher than the national income.

Expenditure pattern: The average range of these families was 21 to 23 rupees. Out of 156 families surveyed nineteen families had this income. Fourteen families had the next highest income between 19 and 21 rupees. The average income per family was between Rs.7 and 8.4/week. An analysis for expenditure pattern showed that maximum amount of income was spent on food as high as 70--75 per cent by 24 families. The clothing expenditure of 38 families was 10-17 per cent to 15 per cent. As most of the families in these two villages owned their houses, only 36 families paid rent. 14 families spent Rs.2.5--2.7 per ~~cent~~/week on entertainment. as shown in (TABLE-1) That was the only recreational change they had in their lives. That was the only recreational change they had in their lives. The expenditure for medical aid was very little as these people do not go to doctors. Comparison of expenditure on food clothing and rent shows that the expenditure of the villages were higher than that of the national figures.

TABLE - I

Per centage of Income spent on Various items of Expenditure

Percentage	Food	Clothing	Rent	Transport	Entertainment	Education	Health	Miscellanious
0.5--1	-	-	-	7	8	14	12	4
1--3	-	14	18	52	63	14	18	17
3--9	-	35	9	23	28	9	23	9
9-15	1	66	1	9	8	6	5	11
15--20	-	28	1	2	4	-	1	1
20--25	1	8	-	1	2	-	-	-
25--40	7	3	-	-	-	-	2	1
40--60	49	-	-	-	-	-	-	-
60--80	60	-	-	-	-	-	-	-
80--100	33	-	-	-	-	-	-	-
100-120	5	-	-	-	-	-	-	-

From the above table we can infer that most of them prefer fleshy foods; among all the other foods, fats & oil ranks next.

Housing, Sanitation and Water supply:

The houses in the villages were usually single roomed, with varandhas, and a single multipurpose room used as a kitchen-cum-bed room living room. The houses of well to do people, are well built and well planned. They have made arrangements for drawing water from the well by motor pumps. They have built well, the drainage system. All the well to do houses possess cattle. It would result in great economy if cow dung gas plant is suggested for these houses.

While discussing the living conditions the sanitary condition of the village has to be discussed. The villages are in poor sanitary conditions. The streets do not have properly constructed drainages; the garbages are heaped in the street; there is no proper disposal of human excreta, as there are no properly constructed latrines. Most of the houses have ordinary choolas, therefore the walls of kitchens have become black. They white wash the house at least once a month. On the whole the houses looked neat and sweet and beautifully arranged. The cooking utensils are usually brass and mud pot. The grains are usually stored in tins and mud pots.

Household Activities:

The household activities are not carried out by women alone but others also helped her. The pattern in which the village women spend their time was studied by the investigators. The maximum number of families 65, spent 4 to 7 hours in washing utensils and 65 families spent 8--11 hours per week in going to shop. The women in these villages spent a major part of their time in going to work. They do not read any magazine or spin. Poultry keeping is not taken up by any one of them. When asked why, they said that the birds died immature. When asked, why they did not use smokeless choolas, many of them replied that because it was something different from the traditional choola.

Use of Equipment:

The working conditions and living conditions in these houses were not very convenient. The number of labour saving devices was studied. It is noted that among the 156 houses 155 houses had 'Aruvalmani', 7 had scrapers, 17 had churners, 3 houses had smokeless choola and 3 had knives. Only 2 houses had a raised platform for cooking.

X. Diets of the People

Among the people in the village only 3 families were vegetarians the rest are non-vegetarians. But the non-vegetarians differed from each other in the frequency of intake

of flesh foods. They eat beef, mutton, and pork and ham. But the latter are not very popular. Fish was not taken taken as it was not available.

TABLE II

Eating Pattern for the Flesh Foods in the selected Villages

	Frequency					
	once a week	Twice a week	Fort-night	Once a month	Bi-monthly	once in six months
Number of families	103	20	9	7	7	1

The staple food of the families in the village is given in Table III

TABLE III

The Staple Food

	Staple Food							
	Rice	Cholam	Ragi	Cholam and Ragi	Cholam and Rice	Rice and Wheat	Rice and Ragi	Cholam and Ragi
Number of families	21	79	6	29	14	2	1	4

From Table III it can be seen that 29 families take cholam and Ragi, 14 Cholam and rice and 79 Cholam alone.

Table IV shows the number of meals patterns of the families.

TABLE IV

DAILY MEAL PATTERNS

	One meal	Two meals	Three meals	Four meals.
Number of families	1	6	145	4

The people in the village usually cooked cereals in excess water and strained the cooking water, the pulses by absorption and Greens by straining. The time taken for cooking vegetables is given in Table V.

TABLE V

TIME TAKEN IN MINUTES FOR COOKING VEGETABLES

Food	5-10	11-15	16-20	21-25	26-30	31-35	36-40	41-45	46-50	51-55	56-60
Greens	28	35	12	5	18	-	1	10	-		
Other vegetables	19	20	21	18	45	13	13	14	8	2	3

It can be seen from the Table, the cooking of Greens take 11 to 15 minutes for 35 families where as other vegetables takes 26--35 minutes for 45 families.

Food Preservation is very rare in these villages as the inves tigator could hardly find 10 hourse among the 156 houses who knew hot to preserve foods. Table VI shows the per capita consumption unit for the food itmes of the people.

TABLE VI

CONSUMPTION OF FOOD STUFFS PER DAY IN GRAMS

gms.	FOODS									
	Cereals	Pulses	Leafy Vegetables	Roots	Other Veg.	Oil	Milk	Non-veg.	Fruits	Miscelle-aneous
1—10		2	13	14	20	22	16	15	7	18
10—20		3	19	31	18	40	6	30	10	13
20—30		25	15	27	21	31	2	38	5	5
30—40		29	18	26	17	12	1	26	1	4
40—50		8	10	5	12	8	1	14	2	-
50—60	2	14	6	15	10	4	1	7	3	5
60—70		10	3	4	7	6		6	2	2
70—80		3		4	3	2		2		
80—200	4	10	12	11	3	10		4	1	2
200—700	23	1	7	1			4			
700—1000	37									
1000—1600	36									
1600—2000	11									
2000—2200 and above	11									

The average consumption unit per family is 3.3 to 3.8. The average per capita consumption of cereals is between 962 and 970 grams per day.

1. Cereels

The average consumption of cereals is somewhere between 962-970 gms./day. The recommended allowance is 14 ounces but what people ate was 33.9--40 ounces/ day.

2. Pulse

The maximum number of people consume 30 to 40 grams of pulse day. According to Palwardhan, Bengal gram is consumed at the maximum amount. The average pulse consumption should be three ounces. The diet in the village provides, about 1.5 ounces, which is about 30--40 gms./day. The diets were thus lacking in good protien.

3. Leafy Vegetables

The maximum number of families consumed about 10--20 grams of leafy vegetables daily. All the families do not eat greens. The recommended allowance is 4 ounces/person/ day. The intakee of the villagers is far below this. This would cut short the amount of Vitamin A, Vitamin C and mineral intake . The often used Greens were kuppai keerai, Kozhimutai Keerai.

4 Other Vegetables: Roots were consumed in large amounts milk. It is great surprise that milk was not consumed at all and the other protective foods were also lacking in their diet. This can be improved only by Nutrition Education.

IV SURVEY OF THE DIETS OF CHILDREN AND THEIR NUTRITIONAL STATUS

From the previous Family Diet Survey it was made clear that the diets taken by the people were very stereotyped, and inadequate in quality in most cases and quantity in some cases. The investigator was interested in the diets of children and their nutritional status. With this purpose in mind the present survey was undertaken. An interview schedule was prepared to elicit information regarding the meal patterns and preferences of children the special foods served to them and their nutritional status. A weighment diet survey with ten families was also planned.

Among the 150 houses surveyed the houses having children from the age of three to eleven were selected. The total number of children in these houses was 50.

Technique of Survey

The investigator approached the mothers to obtain information on the age of children, their position in the family, previous history of illness, how the child spends his time and so on. Some questions were put to the children as to their likes and dislikes for cereals pulses etc. The diet survey among the ten selected families was carried out in the manner described below. The investigator went to the homes with a balance and weighed the raw ingredients viz.,

cereals, pulses, mutton, condiments, vegetables, oil etc. The weighment was repeated for three days to get a true picture of the dietary intake of the family.

The nutritional status of children in the houses where the weighed diet surveys were conducted, was assessed through some clinical tests and anthropometric investigations. A few other children were also assessed for their nutritional status by anthropometric and clinical investigations. The total number of children on whom the clinical tests namely the Red Blood Cell count, White Blood Cell count, differential leucocyte count, and haemoglobin estimation were done was 24.

Analysis of the Data

Among 50 children surveyed 22 were girls. Education had a big part to play in the life of these children.

TABLE VII

The number of school going boys and girls were:

	School going	Not school going
Boys	17	11
Girls	11	11
Total	28	22

From the Table VII we come to know that the number of boys going to school was higher than girls. Only eleven girls were going to school. It is a general belief in these villages that female children need not be sent to school, no education

was needed for just running a home. It was due to the tireless efforts of the village leaders, who urged the people to send their female children also to school, that 11 girls were in school. The reasons for not sending the children to school varied a lot. The reasons for not sending the children to school were: due to the age of children being below five; children had to look after the house; due to economic conditions and due to poor health. Thus children had to look after the house and the economic conditions made them stay at home.

The children who did not go to school spent their time in the following activities:

Housekeeping;
Twig collecting;
Looking after the children;
Grazing the cow;
and Working for daily wages;

It was found that out of the 22 children who did not go to school, six children stayed at home because they had to look after the house. 22.5% of children stayed at home because they had to go and collect twigs for fuel. These twigs were available at foot of the hill or in the fields. The labourers leave their young children about 6 months old children upto 1 year in their homes. So the elder ones had to look after the younger ones and therefore they could not go to school. Some children who were 10 and 11 years old also worked in the houses of land owners for wages. They were

paid annually, besides getting free food and clothing. One or two children who were quite young, about 3 years and 5 years old and did not have any work but roamed about and played with other children.

The next question was whether the children who go to school also help in the household activities. It was found out that 96% of children helped their mothers in some way or other in household activities as detailed below:

TABLE

Activity	No.of children
House cleaning	9
Looking after the younger ones	14
Running errands	9
Cleaning vessels	11
Part of cooking	12
Bringing water	7
Collecting twigs	14

From children spent 5 hours daily for looking after children while six spent 3 hours each. As much as eight hours were spent/week on collecting firewood.

An analysis of the meal pattern of the children showed that there are only two patterns prevalent as given below:

PATTERN I

Name of meal	Contents	Time of cooking	Time of serving
Break-fast	Old Chola Kali (kept in water)	-	7.00 a.m.
Lunch from home	Chola kali or Ragi kali + Kuzhambu (Dhal)	11.00	1.00 p.m.
School lunch	Rice +kuzhambu		
Tea	Poori & Tea (very rare)	4.00	4.30
Dinner			
Dinner	Remains of lunch or Kali and kuzhambu	7.00	8.30 p.m.

PATTERN II

Name of meal	Contents	Time of cooking	Time of serving
Break-fast	Iddli or Dosai + Coffee	6.00 a.m.	8.00 a.m.
Lunch	Rice, sambar, vegetable curry, rasam and curds or butter milk	11.00 a.m.	1.00 p.m.
Tea	Iddli or Dosai and coffee	4.30 p.m.	5.30 p.m.
Dinner	Rice, sambar, any kuzhambu, vegetables and curds	7.00 p.m.	8.30 p.m.

Pattern I was followed by the lower class people who were not economically well off. Among the 50 children surveyed 41 children were found to belong to this group. Pattern II was that followed by a few rich land owners in these villages.

In the first pattern the break fast item Chola kali or Ragi kali was cooked in the previous night and left over in the water for the next day. Among the 41 children in this group, 12 take school lunch. The rest come home for midday meals to eat Chola kali and Kuzhambu. In the evenings when children come home tired from school walking all the distance, they rarely find any tea awaiting them. Occasionally, when they are very hungry, they buy puri or bun. In the night when the mothers return from the fields and cook food,

which is usually kali, taken at about 8.30 p.m.

The second type of meal pattern is usually found in Urban homes. The morning break fast consists of Iddli or dosai and coffee and the lunch which is taken at home is around rice, kuzhambu, vegetables and buttermilk. The tea is light. The Dinner is similar to lunch. Usually the children receive a cup of milk in the night. The milk and milk products found in this pattern have no place at all in the first pattern due to unavailability and poverty.

As recorded by the Family Diet survey the cereals are strained after cooking so also the leafy vegetables. Pulses were usually boiled and eaten along with cereals. Milk and fruits were rare in the dietaries. Meat was a frequent item.

Only 8 out of 50 children that is 16%, get milk twice a day. These 8 children represent the higher status of the society. Fruits were not paid much importance as they were considered as luxury items. Cereals were the most frequent food item available to all. Pulses came next. The pulse used was mostly red gram dhal. Eventhough the protein requirement may be met by the bulk of the cereal consumed, and the little amount of pulse, the quality of the diets was inferior type.

Eighty per cent of the mothers did not serve any special foods to children. Twenty per cent said that they served some special foods to children on ~~three~~ two occasions as mentioned

below:

Occasions	Special foods	Age of child	Sex of child
Ear pricking ceremony	Rice, payasam, vadai etc.	5	Both sexes
Gouri Viratham	Sweets, payasam and Athirasam	11	Only girls

The Gouri Viratham is celebrated during the 10th or 11th years before the girl attains puberty. The girl is asked to fast in the morning and perform puja. In the night she is paid special attention and special foods are served to her. The whole house is cleaned and decorated and the house acquires a festive mood.

Some children bought foods from outside. The foods purchased were bun, puri, sweets, bread and iddli. The expenditure on these items per day varied from 6 nP. to one rupee.

Most of the children spent money on pori which does not contribute much to the nutritive value of dietaries.

It was necessary to find out whether the parents had anything to say about the foods being advocated or not advocated to children. Cereals, pulses, fleshy foods, fruits and milk, were advocated as they were thought to be a source of energy and strength. As hot and spicy were not considered good for health and also not easily digested they were not

recommended to children. Most of the mothers were not able to provide milk and fruits for their children eventhough they thought that these two were good for health. Vegetables were not taken by them in any considerable quantity since according to them, they provided only water.

To assess the food preferences of children, a six point scale was used and children were asked to express their preferences. The following table gives the number of children and their preferences.

TABLE VIII.

ATTITUDES OF CHILDREN TOWARDS FOOD

Attitude	Cereals	Pulses	Meat	Vegetables	Fruits	Milk
Likes very much	40	14	42	20	24	36
Likes	10	30	2	6	10	8
Neutral	-	6	-	10	10	2
Doesnot prefers	-	-	-	12	62	2
Hates	-	-	6	2	-	2

This Table VIII shows that majority of children, that is 42 out of 50 liked meat very much. Cereal ranked next to meat and inspite of non-availability of milk 36 children liked milk. Six children did not like to take meat and two children hated vegetables and milk. The attitude of children towards food appeared to have been influenced by availability, economic conditions and customs.

As a prelude to the clinical examination to asses the nutritional status the previous history of illnesses of the

children was recorded. This showed the condition of health enjoyed by children prior to the survey and the treatment given when they were ill.

Table IX shows the previous history of illness.

TABLE IX

Previous History of Illness among the children during the past years

Name of Illness	No.of children	Treatment given	
		Homeopathy	English
Fever	20	10	10
Chicken pox	15	-	-
Jaundice	6	2	4
Typhoid	2	-	2
Enlargement of the Spleen	4	2	2
Small pox	8	-	-
Dysentry	6	2	4

Table IX shows that maximum number of children had fever, chicken pox, small pox, dysentry and jaundice in the past years.

Among the diseases, night blindness and odema have cured a definite nutrition origin and can be used. The villagers are of the opinion that allopathic treatment is costly and also the problem of carrying the sickly child to the doctors. So considerable numbers of them prefered to have the village doctor to cure their diseases.

Assessing the Dietary Intake and Nutritional Status:

The dietary intake and the nutritional status of these children had to be correlated hence an analysis of their dietaries was carried out. ~~Nutritional status~~ Radhakrishna Rao (1960)[8] has evolved a score card to assess the nutritional status giving scores for a particular point such as presence or absence of oedema and other salient points concerned with nutrition. This score card is shown in Appendix II.

To analyse the diets of children the food for the three days was analysed for the essential nutrients such as calories, protein, calcium, vitamin A, riboflavin and niacin. The data for the diets of children are presented in Table X.

From the Tabéé we can derive general conclusions about the diets of children compared with that of the recommended allowances.

Calories. The recommended allowance of calories for the children compares quite well with that of actual amount of calories, supplied by the diet. In some cases the actual amount eaten is more than the recommended allowances. This shows a predominance of starchy foods such as cereals which takes the calorific value of the diet to a great extent. The calorie requirement of girls in the age group three to five is not met adequately, whereas in the age group five to seven the calorie requirements are met adequately for both the sexes. In the age group seven to nine boys get less of calories than the recommended allowances.

Protein: When compared with the recommended allowancesthe

TABLE X

Comparison of the Nutritional Intake of Children of age 3 to 11 with the Recommended Allowances

Age in years	Sex		Actual Intake / Recommended Allowance	Colories		Proteins		Calcium		Vitamin A		Rabo Flavin		Vitamin C	
	Boys	Girls		Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
3—5	-	2	Actual Intake	—	1115	-	.54.22	-	.70	-	2405	-	2.16	-	41.30
			Recommended Allowance	1200		3.5 G/kg.		1.0 to 1.5		3000 to 4000		2.2 to 3.3		30 to 50	
5—7	3	2	Actual Intake	1670	1480	84.50	.57.68	0.625	0.640	2650	1900	2.73	2.24	52.15	54.40
			Recommended allowance	1400		3.0 G/kg.		1.0 to 1.5		3000 to 4000		2.2 to 3.3		30 to 50	
7—9	6	3	Actual Intake	1651	1779	74.50	54.75	0.690	0.620	2130	2248	2.04	2.15	45.83	43.60
			Recommended allowance	1700		2.5 G/kg.		1.00 to 1.5		3000 to 4500		2.2 to 3.3		30 to 50	
9—11	4	4	Actual Intake	1785	1816	63.16	59	0.70	0.610	2280	1937	2.80	2.92	33.30	42.08
			Recommended Allowance	2000		2.5 G/kg.		1.00 to 1.5		3000to 4000		2.2 to 3.3		30 to 50	

protein requiremtnt is not at all sufficiently met. It is very unfortunate that even this amount of protein supplied is not of good quality as the animal foods are available or only once or twice in a week. Milk is an excellent source of protein is not at all available. Hence there is a deficiency of protein in quality and quantity. All the age groups without any exception get protein which is much below their requirement. The protein deficiency is evidenced by the incidence of some of the symptoms of kwashiorkor. Reduced haemoglobin level and red blood content also support the protein deficiency.

Calcium is also lacking in the diets of children. It is a well known fact that the South Indian dietaries lack in calcium. This has proved to be correct on the analysis of the diets of children. The conspicuous calcium deficiency is evidenced by some bone mal-formation and rickets.

Vitamin A: The vitamin A intake of children in age group three to five, is much below the allowance. In all the age groups the vitamin A was ~~also~~ lacking.

Riboflavin: and vitamin C were also lacking in the diets of children showing that the diets of children lack in all the essential nutrients.

The deficiencies were ~~readily~~ evidenced by the evaluation of the nutritional status which was carried ~~out~~ by methods described previously. The final rating as very poor, poor, fair, good and excellent based on the score card given in Appendix III, is given in Table XI.

FIGURE . 7

MANIFESTATION OF VITAMIN A DEFICIENCY

The rating of the nutritional status of fifty children using the score card are presented in Table XI.

TABLE XI.

RATING OF NUTRITIONAL STATUS OF FIFTY CHILDREN USING THE SCORE CARD.

Very poor	Poor	Fair	Good	Excellent
1-39	40-45	57-73	74-78	79-95
7	10	21	9	3

From Table XI ~~score card~~ we can see that ~~four~~ seven children were poor and three were rated excellent. Among the children , some of the deficiency diseases were very conspicuous as shown in the figure ?. The number of children diseased is given in Table XII ~~(or) in Appendix~~ .

TABLE XII

NUMBER OF CHILDREN DISEASED

Disease	Number of children.
Vascularisation of the cornea	4
Photophobia	3
Burning and itching sensation in the eye	6
Night blindness	2
Angular stomatitis	8
Cracked lips	10
Coated tongue	14
Bleeding gums	8
Lusturless hair	6
Sparse and Brittle hair	5
Crazy pavement	8
Oedema	2
Tacky cardia	3
Conjested lungs	1
Anorexia	4
Asthma	1
Hypertrophed Liver	2

Conducting a Nutrition Education Programme

Many problems are faced by the people of India in nutrition. These nutritional problems are long rooted ones and require careful study and amelioration. Hence the need for organised nutrition education programmes is great.

The results of the diet survey conducted in Pudupudur and Deviyampalaiyam presented in the previous chapter shows that the dietary habits and food practices of rural families are poor and that the people lack knowledge about good food.

The nutritional problems of the people were the following:

(a) Consumption of excessive cereal foods

(b) Inadequate intake of protective foods

(c) Low consumption of vegetables due to non-availability and lack of understanding about their nutritional values.

(d) Improper methods of storing, preparing, and cooking of foods particularsly in the case of greens, vegetables, and rice.

In order to solve these problems, a nutrition education programme was planned, organised and carried out.

Planning and organizing the Nutrition Education Programme.

The nutrition education programme, aimed to solve the

above said problems was planned as a group endeavour and individual endeavour. When planning, the materials to be used, the method of conduction, the group to which it was planned for, were taken into consideration. When planning the nutrition education programme the extension methods such as talks, demonstrations, exhibitions, film shows, flash cards, puppet shows were used. Through these proper extension methods, the knowledge from the laboratory was extended to the field.

Aim of the Talk and Demonstration:

The aim was to improve the diets of children who just take old "Kali" in the morning. So to provide them with good drink the preparation of ragi malt was suggested. The aids used for the talk on nutrition in childhood were the different charts showing requirements of children. The homemakers were urged to pay more attention to the nutritional requirements of their children was followed by demonstration.

The preliminary preparations for this lecture demonstration was:

(a) Collection of the materials required

(b) Preparation for the demonstration

The result demonstration was about preparation of ragi malt.

The Ragi needed for the demonstration was bought and cleaned and soaked in water. Then ragi was put in to

a damp cloth and left over night. The sprouted ragi was dried and ground in to fine powder. At every stage samples were prepared and these were used to show the audience the various stages of preparing the malt.

Ragi, one of the important and inexpensive of cereals is generally used to prepare ragi malt which is a nutritious drink. The audience were convinced that the drink ragi malt contained only ragi flower, jaggery and water. The ground powder was put in to a clean fine cloth and it was mixed with two fingers so that the it could be collected below without the black specks. The seived powder was be stored in clean tins or bottles. When ragi malt has to be prepared two spoons of the ragi powder were measured and put into a vessel containing cold water and stirred well, taking precautions to prevent clumping. Then the mixture was boiled till it was cooked. Then this mixture was removed from the fire and kept aside. The next step was to dissolve jaggary in water and boil it thoroughly avoiding stickiness. When this was ready, cooked ragi flour and the jaggary water were mixed and ragi malt was thus prepared and was served to the audience. The method involved in the preparation of ragi malt were explained to the people. At the end of the demonstration the educated children were supplied with instructions for preparing ragi malt.

Reaction of the audience:

The audience were anxious to get the following doubts

cleared: One of the person asked whether buttermilk can be used instead of water. One among them said that seiving ragi flour with a fine cloth was difficult to follow. But they generally welcomed this new drink.

The other talks and demonstration relating to the nutritional programme are given below:

(1) Talk on kitchen garden.

(2) Balanced Diet.

(3) Conservation of nutrients by improved methods of cooking.

(4) Use of jungle greens in the diet.

The demonstrations which were carried out are given below:

(1) Use of hay-box.

(2) Preparation of cheap protein rich food.

(3) Use of jungle greens in the diet and its food values.

(4) Methods of cooking vegetables.

Besides these another programme where all the investigators took part was planned and conducted. They were skit, exhibition and film show. The skit arranged was named as "Road to Good Nutrition". In this skit knowledge about nutrition and what nutrition can do to the welfare of the people and improve their dietaries was shown. This idea was brought out by showing a nutrition student improving the food practices in her village.

The exhibition conducted consisted of charts and models. The charts used were on -

(1) The need for balanced diet;

(2) Need for protective foods such as vitamins and minerals;

(3) Picture of rat fed on a deficient diet and another rat fed on a well balanced diet.

A small model of kitchen garden consisting of various vegetables such as greens, chillies, was worked out and displayed.

Thus the nutrition education programme was conducted to drive in certain points in the minds of the people by repeated demonstrations, talks and illustrations.

EVALUATION OF NUTRITION EDUCATION PROGRAMME

Nickell and Dorsey (1960) defines evaluation as a checking up and a testing which tells whether things are turning out as planned. It helps one to move forward more surely and more advantageously.

Evaluation is a scientific method of finding out the changes resulting from educational programmes.

Importance:

1. Useful in guiding educational programmes;
2. Helps in obtaining accurate information in producing the desired effect;
3. Useful in producing the desired changes in specific directions;
4. Helps in finding out the strength and weaknesses of extension programmes.

Evaluation should help in

1. determining progress;
2. finding out if objectives are reached and degree of accomplishment;
3. identifying effectiveness of methods and actions;
4. collection of reliable information which would facilitate in reporting to the public;
5. gaining satisfaction and confidence in the work.

Methods and procedures of evaluation:

Questionnaires

Interviews

Observations

Case Studies

Criteria for evaluation

Validity - Do the objectives measure what they are expected to measure?

Reliability - Can conclusions be drawn from the data collected?

Objectivity - Is it free from prejudice?

Practicability - Is it practicable?

Simplicity - Is it simple and specific?

Any evaluation programme should be planned previously as the yardstick to measure. So a proforma was prepared to evaluate the effects of nutrition education programme on the dietary habits of people. This proforma is given below:-

PROFORMA

Schedule for the Evaluation of the Nutrition Education Programme

1. Serial No. of the family:
2. Serial No. as given in Part II:
3. Name of head of the family:
4. Name of the home-maker:
5. The No.of persons in the family who attended the programme.

Persons	Performances
Husband	
Wife	
Children	
a. boys	
b. girls	
Other relatives	

6. What they have understood from the education programme:

Items	What they have learnt?
1. Demonstration	
a. Cooking greens	
b. Cheap protein food	
c. Hay box	
d. Infant food - Ragi malt	
e. Poormans refrigeration	
2. Exhibition	
3. Films	
4. Skit	
5. Talk	Kitchen garden; Balanced diet; Conservation of nutrients Ragi malt Importance of greens

C) Method of cooking followed

a. Washing the vegetables before cutting them.

b. Cutting the vegetables into large pieces

c. Cooking greens by absorption method.

d. Vegetables are preserved in a poorman's refregirator.

e. Rice is cooked by absorption methods.

f. Hay box is used to cook rice and other cereals.

g. Ragi malt is used to feed the children.

h. Cheap protein food.

D) a. Kitchen garden-already started
intend starting

They include greens often.

1.
2.
3.
4.
5.

The evaluation programme was carried out fifteen days after the education programme. This evaluation was carried out by interview method and the investigator went to the homes of the 25 persons who attended the evaluation programme and their impressions were recorded. The impressions and reactions of the people are given below.

The people were highly impressed that they should not throw away the water in which foods were cooked. They said that at present they do not cut and wash the vegetables as told to them in the skit and talk.

When asked about the Hay-box some of them felt that Hay-box was expensive for them at present. But they said they would definitely try to arrange for money and get it.

The mothers were not very willing to give ragi malt for their children as it would involve more work on their part. But the children were very enthusiastic about it and all of them liked the ragi malt very much. The children said that they would like to have ragi malt again. This shows that the food habits of elder people are not very easy to correct, but of the young children are easy to tackle..

Many people said that they are going to start a kitchen garden soon. The method of conserving nutrients were liked by many people as it applied to their conditions more

than any of the demonstrations.

As a prelude to the forthcoming huge nutrition programme this served as a good preliminary.

SUMMARY AND CONCLUSION

A socio-economic survey, family survey and diet survey conducted in the villages of Deviampalayam and Pudupudur gave the following results:

1. The people were fed inadequately.
2. Their diet was cereal abundant.
3. The vulnerable especially the children were suffering from malnutrition.
4. Their socio-economic status should be raised in order to meet these problems.
5. There were indirect forms of wastages which leads to leaching of the nutrients from the diet taken now.
6. Their nutritional status is quite low.
7. On the basis of these problem a Nutrition education programme was conducted. It aimed at educating people towards educating them to overcome certain problems. Then again an evaluation was carried out to evaluate the impact of nutrition education programme which revealed that the villagers are willing to improve if they are instructed properly.

The conclusions derived from the above study are:

1. The people in these two villages live in insanitary conditions which can be rectified easily.
2. The nutritional problems of the people such as the inadequate diet, both in quality and quantity. Non-availability of certain foods should be met to overcome the deficiency disease.
3. A nutrition education programme quite big both in its magnitude and s cope should be conducted to overcome their problems.

4. More than all these their economic conditions should be improved by introducing some cottage industries to raise their income.

5. Special attention to the children is needed as they are the growing ones. This can be provided by intensifying the school lunch programme.

6. To make the needs of the people "felt needs" education is needed.

7. To overcome the illness and malnutrition prevalent, medical aid is needed.

When these problems are adequately met, the villages of Deviyampalayam and Pudupudur will be villages inhabited by nutrition conscious people.

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APPENDICES

APPENDIX.I.

SRI AVINASHILINGAM HOME SCIENCE COLLEGE
COIMBATORE. 11

SCHEDULE FOR

(a) "SURVEY OF THE NUTRITIONAL STATUS AND PRACTICES OF THE FAMILIES IN THE VILLAGE OF DEVIAMPALAYAM IN COIMBATORE DISTRICT"

Part I -- GENERAL SURVEY OF THE VILLAGE

II M.Sc.Foods & Nutrition

1962--1963

1. Name of the Village: _____

2. Panchayat _____ 3. Block: _____ 4. District _____

5. Nearest

	Name	Distance from the village Miles/Kilometers
i) Railway Station		
ii) Health Centre		
iii) Post Office		
iv) Bus Stop		
v) Schools:		
a) Balwadi		
b) Primary School		
c) Secondary School		
d) High School		

vi) Shandy or market:

Name	Days for assembling	Distance from the village Miles	Kilometers

POPULATION

6. Population of the village (According to 1961 census)_____

7. Distribution of population according to Age Groups:

Type	Men	Women
1. Old folks (above 50 years		
2. Middle aged (21 to 50 years)		
3. Adolescence (12 years to 21 years)		
4. Children i) 5 to 12 years		
ii) 2 to 4 years		
iii) 1 to 2 years		
5. Infants (Below 12 months)		

8. SOME VITAL STATISTICS	Males	Females
i) Birth Rate ...		
ii) Death Rate ...		
iii) Infant Mortality Rate ...		
9. Number of families in the village:		
10. Number of houses in the village:		
11. Number of persons literate ...		

12. Main Industries of the village:

13. Main crops of the village:

Crop	Season	Remarks (on yield, marketing etc.)

14. Main articles bought to the village from outside for consumption:

Articles	Season	Reasons

WATERSUPPLY

15. Sources of water supply for:

	Well	River	Pond	Lake	Pipe	Others:
i) Drinking						
ii) Washing						
iii) Cattle						

Remarks about the source:

16. Occurrence of diseases in the last two years:

Disease	Period of occurrence	Remarks on effects

17. Method of collection and disposal of human excreta:

INCOME

18. Average Income of the village _____

19. Main sources of Income:

20. Extent of indebtedness:

ADMINISTRATIVE

21. Name of the Administrative Body: _____

22. Office bearers of the Panchayat or other administrative Body:

23. Role of women in administration:

24. Village Organizations:

a) Social:

b) Cultural:

c) Religious:

d) Recreational:

25. Agencies carrying out Rural Improvement Work:
(a) Agencies which had worked in the past :

Voluntary	Official	Period of work	Nature of work	Results

(contd..)

25(a) Agencies which had worked in the past (contd..)

Voluntary	Official	Period of work	Nature of work	Results

(b) Agencies currently working:

Voluntary	Official	Period of work	Nature of work	Results

26. Customs and beliefs about:

a) Deities:

b) Children

c) Pregnant Women:

d) Young girls:

Others:

27. Changes which have taken place in the last five years:

a) Cultural:

b) Social:

c) Educational:

d) Community Organization:

e) Agricultural:

f) Status of women:

g) Others:

kp

APPENDIX I

SRI AVINASHILINGAM HOME SCIENCE COLLEGE
COIMBATORE. 11

SCHEDULE FOR

(b) "SURVEY OF THE NUTRITIONAL STATUS AND PRACTICES OF THE FAMILIES IN THE VILLAGE OF DEVIAMPALAYAM IN COIMBATORE DISTRICT"

Part II -- SCHEDULE FOR THE FAMILY SURVEY

II M. Sc. Foods and Nutrition

1962--1963

P L W C A

Serial Number of the Family Surveyed: _____

1. Name of Head of Family: _____

Caste: _____ Religion: _____

Mother Tongue: _____

Address: Door No: _____

St. No: _____

2. Members of the Family:

Name	Age	Sex Male	Sex Female	Occupation	Income earned or contributed.

3. Income:

a) Total income of the Family through:

i) Occupation: _____

ii) Other Sources:

a) _____

b) _____

c) _____

d) _____

b) Distribution of Family Income on:

1) Food.

2) Clothing.

3) Rent.

4) Transport.

5) Entertainment:

6) Education.

7) Health (Medicines etc.)

8) Others:

c) Distribution of amount spent on Foods:

Food Item	Quantities	Expenditure

4. Household activities of women:

No	Name	Status in Family	Time spent on					
			Cooking	Washing vessels	Washing clothes	Attending children.	Spinning	Other activities.

5. Kitchen Gardens:

a) Does the Family have a kitchen garden?

b) Food Production from the garden:

a)

b)

c)

d)

LABOUR SAVING DEVICES

6. The labour saving devices used in the kitchen

		Yes	No
1) Smokeless Choola	...		
2) Hay Box	...		
3) Janatha Refrigerator	...		
4) Cutting devices	....		
5) Method of working	...		
6) Other devices:			

Remarks:

7. Health of the members:

a) Incidence of sickness in the last two years in the family:

Name	Sex	Age	Status in Family	Sickness	Duration

b) Health status of children and adolescents in the family.

Name	Age	Sex	Appearance	Remark

c) Health status of married women in the family:

Name	No. of children born	No. of children alive	No. of still births	No. of abortions	Present condition

d) Health status of adult men.

Name	Age	Appearance

kp

APPENDIX I

viii

SRI AVINASHILINGAM HOME SCIENCE COLLEGE
COIMBATORE.11

(*) SCHEDULE FOR A SURVEY OF THE NUTRITIONAL STATUS AND PRACTICES OF FAMILIES IN THE VILLAGE OF DEVIAMPALAYAM IN COIMBATORE DISTRICT

Part III -- FAMILY DIET SURVEY

II M.Sc.Foods & Nutrition

1962--1963

I. Vegetarian or Non-Vegetarian:

Name of Member	Vegetarian	Non-Vegetarian & Type	Frequency

II. Number of meals.

Name of meals	Content (Items of meal)	Time at which it is cooked	Time at which served

III. Staple foods for the family:

Food	Meals for which used.

IV. Methods employed for cooking:

Food	Boiling		Steaming	Frying	Roasting	Sauteing	Others
	with straining	Absorption					
1. Cereal							
2. Pulses							
3. Green leafy vegetables							
4. Other vegetables							
5. Roots							
6. Fruits							
7. Fish							
8. Mutton							
9. Eggs							

V. The Foods Eaten Raw:

Foods	Methods of preparation	Remarks

VI. Time taken for cooking of vegetables.

Foods	Method of cooking	Time taken	Remarks

VII. Food Preservation:

(a) Foods generally preserved

Name of the food preserved	Methods of preservation employed

b) Preserving Methods

Name of food preserved	Name of preserved preparation.	Quantity preserved for definite periods	Methods of Preparation.

VII b) contd.

Method of storage	Method of handling	Keeping quality	Utilization	Remarks

VIII. Wastage of foods.

Foods	Wastage during					Remarks
	Procuring	Preparation for cooking	Cooking	Serving	Eating	

IX. Use of left-over foods.

Foods	Methods	Quantity	Remarks

X. Method of storage of fresh foods.

Foods	Method of storage	Remarks

XI. Methods of handling the food at the following stages.

Foods	Stage	Method of handling	Remarks
	a) Cleaning		
	b) Preparation		
	c) Cooking		

Foods	Stage	Method of handling	Remarks
	d) Serving		

XII. Place where the food is served:

XIII. Disposal of:
a) Washings of cooking utensils:

b) Waste.

XIV. Preparations for special occasions:

Occasion	Special preparation	Significance

XV. Foods served for special conditions:

Name	Condition of the person	Foods given	Reasons

XVI. The consumption units of the members of the family.

Names of members	Age	Sex	Consumption units

Total consumption Units:

XVII Total food consumption per day per person.

Foods	Total weekly consumption of family.	Average consumption per person per day.
CEREALS		
1)		
2)		
3)		
4)		
5)		
Total		
PULSES:		
1)		
2)		
3)		
4)		
Total		
LEAFY GREEN VEGETABLES:		
1)		
2)		
3)		
4)		
Total		

	Total weekly consumption of family.	Average consumption per person per day.
ROOTS AND TUBERS:		
1)		
2)		
3)		
4)		
Total		
OTHER VEGETABLES:		
1)		
2)		
3)		
4)		
Total		
NUTS AND OIL SEEDS:		
1)		
2)		
3)		
4)		
Total		
FRUITS:		
1)		
2)		
3)		
4)		
Total		

	Total weekly consumption of family.	Average consumption per person per day.
MILK AND MILK PRODUCTS:		
1)		
2)		
3)		
4)		
Total		
FLESHY FOODS:		
1)		
2)		
3)		
4)		
Total		
CONDIMENTS:		
1)		
2)		
3)		
4)		
5)		
6)		
Total		
Miscellaneous:		
1) Sugar		
2) Jaggery		
3) Coffee		
4) Tea.		

APPENDIX.I.

SRI AVINASHILINGAM HOME SCIENCE COLLEGE
COIMBATORE.11

(d) Schedule for "Survey of the Nutritional Status and Practices of the Families in the Village of Deviampalayam in the Coimbatore District."

Part IV : Survey of Diet of Children.

Leela, R., II M.Sc. Foods and Nutrition

1962-1963.

1. Serial Number of The Family .....
   According To Part II.

2. Serial Number.....

3. Name of the head of the family.....

4. Names of children.....Petar Kamenar.....
   .....

5. Relation to the head of the family.....

6. Age.....

7. Sex.....

8. Occupation.....

Name	Age	Date of birth	Sex	Position in family	Attending school	Remarks
	8				✓	

2. If not school going the occupation of child.

Name	Occupation	Time Taken

3. Does the child help in house-hold activities.

Name	Activity	Time Taken

4. Information about patterns of meals of children.

Name of meal	Contents	Time of cooking	Serving Time	Remarks
Break-fast				
Lunch: a) From home				
b) School lunch				
Tea				
Dinner				

Any Remarks:

5. Method of cooking and serving.

Food	Method of cooking	Method of serving	Frequency
1. Cereals.			
a)			
b)			
c)			
d)			
2. Pulses.			
a)			
b)			
c)			
d)			
3. Vegetables			
4. Milk & Milk Products			
5. Fruits			
6. Fleshy foods			
7. Others			

Remarks:

6. Wastage.

Amount of Food Budget	Amount of Food Cooked	Amount of Food served to child	Amount of food eaten	Wastage

7. Foods for special occasion served to children.

Occasion	Name of Food	Age at which it is served	Amount	Frequency	Significance

8. Food taken out-side the home by the child.

9. Fads and fallacies about the diet of the child.

Fads and Fallacies	Source	
	Empty Tradition	Custom of Community

10. Foods advocated for the child.

Food	Reason

11. Foods not advocated for the child.

Food	Reason

12. Previous History of Illness of the Child.

Name	Disease	DURATION	Treatment

13. Disease of the child at present.

Disease	Duration	Treatment

Remarks:

14. Attitude of child towards food.

Attitudes	Cereals	Pulses	Meat & Egg	Veget-ables	Fruits	Milk	Others

Remarks:

CLINICAL INVESTIGATION

1. Assessment of Nutritional Status of Children:

I ANTHROPOMETRIC DATA.

1) Appearance:

a) Good.

b Fair.

c) Poor.

d) Very poor.

2) Stature:

a) Tall

b) Medium

c) Short

3) Body Build:

a) Obese

b) Medium

c) Thin

4) Height in centimetres:

a) Standing height

b) Sitting height

5) Weight:

6. Arm - Girth:

a) Flexed

b) Relaxed.

II. EYES.

1) Conjunctiva - Xerosis

a) Glistening and Moist.

b) Slightly dry on exposure

c) Dry and wrinkled

d) Very dry and Bitot's spot

2) Pigmentation.

a) Normal colour

b) Slight discolouration

c) Moderate Browning in patches

d) Severe discolouration

3) Discharge.

a) Absent

b) Watery

c) Excessive Lachrymation.

4) Cornea - Xerosis.

a) Absent

b) Slight dryness

c) Haziness and Diminished Transparency

d) Uberation.

5) Vascularisation.

a) Absent

b) Vasalarisation of cornea

6) Angular conjunctivitis.

a) Absent

b) Present

7) Formation of Eyes.

a) Normal

b) Deformed

8) Seeing Ability.

a) Short sight

b) Long sight

c) Adhgmatism

9) Vision.

a) Normal

b) Photophobia

10) Condition of eyes.

a) Normal

b) Burning and Itching.

11) 1. Mouth - Lips.

a) Normal

b) Angular stomatitis

c) Cracked

2. i. Tongue.

a) Normal

b) Coated

c) Magenter

ii. Surface of Tongue.

a) Normal

b) Fissured

c) Ulcerated

d) Glazed.

3. Gums.

a) Normal

b) Bleeding and Gingivitis

c) Pyorrhoeer

d) Puspocrats

4. Teeth.

Caries

Well formed

Deformed

12. HAIR.

    a) Normal

    b) Loss of Lusbre

    c) Depigmented

    d) Dry

    e) Sparse and Brittle

13. Skin.

    a) Normal

    b) Dry and Crazy pavement

    c) Phrynoderma

14. Oedemer.

    a) Absent

    b) In upper parts

    c) Oedemer in dpendent parts

15. Bones.

    a) Normal

    b) Malformed

    c) Well integrated

    d) Loose

16. Heart Sound.

a) Normal

b) Murmerish

c) Galloping

d) Tacky cardia

e) Brady cardia

17. Lungs.

a) Normal

b) Congested

c) Whizzing

18. Abdominal system.

a) Appetite.

a) Normal Appetite

b) Anorexia

2) Stools.

a) Normal

b) Diarrhoea

c) Constipation

19. Tonsilitis.

a) Present

b) Absent

20. Congenital Disease.

a) Sypbilis

b) Leprosy

c) Tuberculosis

d) Asthma

21. Any worms present in the stomach.

a) Ascaris

b) Lumbricoids

c) Auscisolyris

22. Liver Diseases.

a) Jamdic

b) Hepatitis

c) Hyper bophied Liver

d) Cirrohosis

23. Genitals.

a) Well formed

b) deformed

24. Activity.

a) Lethargic

b) Active

c) Very Active

25. Bio-chemichal Tests.

Red Blood Cells count

White Blood cells count

Haemoglobin Estimation

Differential Lencocyte count

9/8/62.

APPENDIX II

SCORE CARD FOR ASSESSING THE NUTRITIONAL STATUS.

PART II

CRITERIA	SCORE
EYES	
a. Presence/Absence of Vascularisation	0/1
b. Presence/Absence of Photophobia	0/1
c. Presence/Absence of Burning and itching sensation.	0/1
d. Presence/Absence of Night Blindness	0/1
e. Presence/Absence of Discharge from Eye	0/1
BONES	
a. Presence/Absence of Well integrated B Bones.	2½ /0
b. Presence/Absence of well formed bones	2½ /0
HEART SOUND	
a. Presence/Absence of Normal heart sound	1/0
b. Presence/Absence of Heart murmur.	0/1
c. Presence/Absence of Galloping rhythm	0/1
d. Presence/Absence of Tachy cardia	0/1
e. Presence/Absence of Brady cardia	0/1
CONDITION OF LUNGS	
a. Presence/Absence of conjested Lungs	0/2½
b. Presence/Absence of weezing in Lungs	0/2½
APPETITE	
a. Presence/Absence of anorexia	2/5
b.	

CRITERIA	SCORE
STOOLS	
a. Presence/Absence of Diarrhaea	1/2½
b. Presence/Absence of Constipation	2/2½
ANGULAR STOMATITIS	
a. Presence/Absence of Stomatitis	2/5
CONJENITAL DISEASE	
a. Presence/Absence of Syphilis	0/1
b. Presence/Absence of Leprosy	0/1
c. Presence/Absence of T.B.	0/1
d. Presence/Absence of Asthma	0/1
e. Presence/Abaence of Fits	0/1
LIVER DISEASE	
a. Presence/Absence of Jaundice	0/1
b. Presence/Absence of Hepatitis	0/1
c. Presence/Absence of Hypertrophied Liver	0/1
d. Presence/Absence of Cirrhosis	0/1
e. Presence/Absence of enlargement of Liver	0/1
BIO-CHEMICAL TESTS	
Boys R.B.C. Count	
R.B.C. - Count - above 5 million	2½
R.B.C. - Count - Below 5 million but within 4.5 million.	1½
R.B.C. - Count - Below 4.3 M.	1
Girls R.B.C.	
R.B. Count - 4.5 Million	2½
R.B. Count - Below 4.5 million but within 4.3.million	1½
R.B. Count - Below 4.3 million	1

CRITERIA	SCORE
W.B. Count	
W.B. Count - above 11,000	½
W.B. Count - 9,000 - 10,000	3
W.B. Count - 9,000 - 8,000	1
W.B. Count - Below 4,000	½
Haemeglobin Estimation:	
Haemeglobin level 14.2. Gms.	3
Haemeglobin level below 14.2 bul.within 12 Gms.	1½
Haemeglobin level much below 12	½
Differential Leucocyte Count:	
Polymorph	
Count much abobe 60	1
Count within 50 - 60	3
Count much below 50	1
Lymphocyte	
Count above 30	1
Count within 20 - 50	3
Count below 20	1
Eusonophil	
Count above 4	1
Count within 2 - 4	3
Count below 2	1