Hand Book

ON

Community and Social Service

Tmt. RAJAMMAL P. DEVADAS,
M. A., M. Sc., Ph. D. (Ohio State), D. Sc. (Madras)
Principal

SRI AVINASHILINGAM HOME SCIENCE AUTONOMOUS COLLEGE FOR WOMEN
COIMBATORE-641011

1979

AVINASHILINGAM

BOOK

ON

Community and Social Service

Tmt. RAJAMMAL P. DEVADAS,
M. A., M. Sc., Ph. D. (Ohio State), D. Sc. (Madras)
Principal

SRI AVINASHILINGAM HOME SCIENCE AUTONOMOUS COLLEGE FOR WOMEN
COIMBATORE-641011

1979

INTRODUCTION

Our central and state governments are greatly interested in rural development. The major thrusts in the VI plan are on Integrated Rural Development (IRD) Their interest must be utilised to reinforce CSS and improve nutrition in the rural areas.

The CSS programme as a curricular component has come to stay. It must be taken up whole heartedly. It is academic and interdisciplinary in nature. It is not bound by any narrow barriers of traditionalism or "discipline". What is needed is the will to do Community Service. When there is a sense of commitment, it will be possible to bring about the required changes. CSS is based upon the teachings of Gandhiji and Rajaji's concept of basic education, and life long education. The Adiseshiah Committee has recommended. Socially Useful Productive Work (SUPW) for the +2 stage, to give impetus to Vocational courses. The Committee recommended strongly that courses designated hitherto and academic should not be called 'academic', but 'general' because vocational courses are also academic Instead, they should be called vocational education and general education. Our nation is now poised to implement the recommendation of the Adiseshiah Committee. The Colleges also have an important role in it. Let us discharge our role excellently.

The CSS programme need the whole hearted involvement of college administrators, principals, staff and students. They need to spell out and impliment CSS programme as part of their moral commitment for the well, being of the community in their neighbourhood

and the nation. Only such understanding, commitment and dedication can create a conviction for continued, meaningful association with CSS.

Providing continuously successful experiences and satisfaction of achievements is one of the most important motivative elements. Successful positive experiences would depend on the selection of suitable programmes and their effective implementation. Successful implementation would in turn, depend on the skills and methods, soundness of planning, guidance and leadership.

It is important to train the students in the skills necessary for CSS, such as meeting people and establishing rapport, use of different educational methods, use of Audio visual aids, various techniques of group mobilisation. Also the staff should equip themselves with good knowledge of nutrition, personal and environmental, hygeine, efficient management of home, child care, organisation and running of balwadies, programmes for women and children and so on.

This handbook sets forth the procedure and subject matter oriented component of CSS in abstraction by expertise in the field of Food and Nutrition, Child Developement, Home Management, Extension Education has been written in a hope to render a helping hand to the teachers involved in CSS to render their services more effectively and efficiently.

In orienting subject matter to CSS there are many inter disciplinary implications. Each discipline must plan its CSS work in such a way that it will receive as much strength as possible from its inter - disciplinary status. Each discipline should share with other disciplines, its experiences, problems, achievements and needs.

CONTENTS

Nutrition, Health and Well-being

Effective implementation of the Community and Social Service requires knowledge of the immediate problems of the community. Malnutrition is one of the most pressing problems of the nation. Disciplines which deal with nutrition have a special role to play to overcome this problem, since Community and Social Service is part of the academic requirements in integrating nutritional knowledge with CSS.

Food is defined as anything solid or liquid which when consumed gets digested and nourishes the body in one or more of the following three ways :

1. Furnishing energy for the body.
2. Furnishing materials for building up and repairing tissues and
3. Regulating several body processes.

According to these functions, foods are classified into three groups :

1. Energy giving.
2. Body building and Repairing and
3. Protective and regulating foods.

Nutrients are the constituents of the food which nourish the body in one or more of the three ways mentioned above. Shortage of anyone or more nutrients is detrimental to health and wellbeing. It results in hidden hunger or malnutrition.

Nutrition is defined as all the processes that food undergoes in the living body to release the nutrients for utilisation by the body from the moment food is ingested until the products of digestion are removed from the body. Depending upon the adequacy or otherwise of the nutritional process, there could be adequate nutrition, malnutrition and/or undernutrition.

Malnutrition means 'wrong' nutrition. It is described as hidden hunger or 'latent hunger'. *Undernutrition* is one aspect of malnutrition, marked by inadequate dietary energy as its characteristic.

Diet is the organisation or formulation of different food preparations combined as a pattern for consumption as meals.

Dietetics is the science of diets. It is the application of concepts of food and nutrition into organised forms of diets for the community, family or individual as well as diets in diseases and special conditions.

Health — The World Health Organisation has defined health as a condition of optimum well-being of mind, body and spirit. It is the possession of a sound mind and wholesome emotions in a healthy body. A healthy person forms healthy relationship with every one who comes in contact with him. Health is a supreme quality which helps a person to live most and serve best. From the moment of conception, health should be promoted. Promotion of health must be the major goal of life. ''நோயற்ற வாழ்வே குறைவற்ற செல்வம்'' expresses this thought beautifully. People can attain health by practising health habits, making health a major goal in life and working in close co-operation with the health team in the area.

Factors which influence health

Three important factors affect health :

1. Heredity.
2. Environment.

and 3. Adjustments to environment.

Heredity is what is transmitted to children by parents such as colour, structure and other attributes through the genes and chromosomes. These cannot be changed.

Environment has many components-the physical environment, immediate home environment and social environment. Physical environment consists of soils, rivers, plants, houses, fields and all the physical components which constitute the physical setting for the individual. The home environment is composed of parents and relatives and other people. The social environment is created by the people in the community. All these naturally interact and react on the individual. An individual is never static. A person who does not react to environment cannot be considered as a living person. How a person interacts with his environment to obtain optimum health depends upon his or her own habits, attitudes and goals, which are imprinted in childhood in the home.

Signs of good health

The easily noticeable signs of good health are

Personality

Pleasing personality

Physical fitness

Emotional stability

Harmony with others.

Physiological

Healthy appearance of hair
Bright eyes
Smooth skin
Clean nose
Mouth and lips without cracks
Strong teeth and gums, neck, chest, hands, abdomen, legs, feet, posture and correct weight.

From the functional point of view, health can be observed by pulse, respiration, vision, hearing, muscle-tone, appetite, sleep and elimination of body wastes.

From the emotional point of view, good health means enthusiasm for work and play, ability to concentrate, ability to think, ability to make decisions, ability to get along with people, freedom from worry and nagging and taking interest in matters of importance.

Signs of malnutrition

The following are the signs of malnutrition:
Under weight
Over weight
Poor posture
Flabbiness
Pale skin
Lack of strength and energy
Laziness
Fatigue
Boredom
Depression
Irritability
Poor appetite
Constipation
Cold and cough
Bleeding gums
Night Blindness
Over sensitiveness to light
Disturbances in digestion
Lower resistance to diseases and slow recovery from diseases

In CSS, when students approach the village people, they should not have a fault pointing attitude, but a helping, respecting attitude. Hence when the symptoms of malnutrition are detected they find out the causes and concepts respectfully, because people in the villages attribute abnormal conditions, to evil spirits.

The vicious circle of malnutrition operates in the rural / urban areas. When health weakens a person is obliged to take leave on loss of pay, thereby losing or reducing his income. This leads to a low standard of living with its direct implication on food habits and health and the circle goes on. The vicious circle must be broken by a virtuous circle.

Figure 1. VICIOUS CIRCLE OF MALNUTRITION

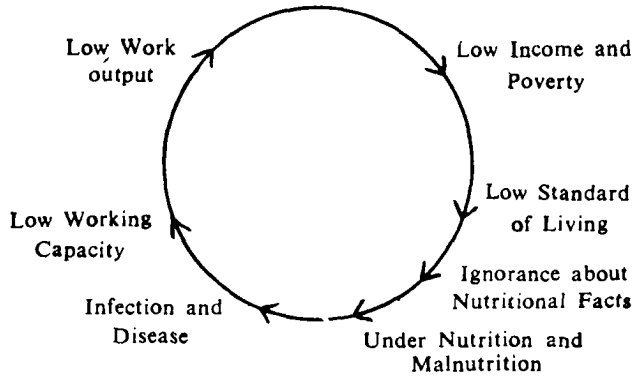
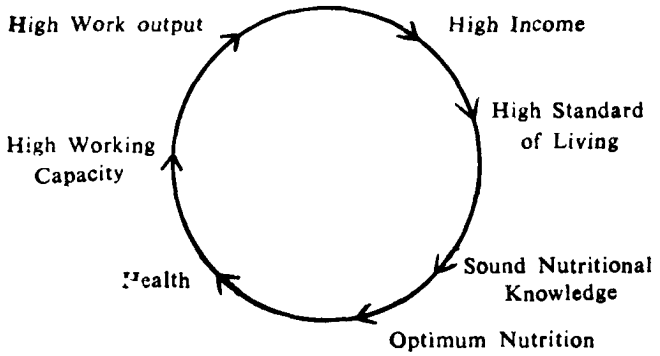


Figure 2. VIRTUOUS CIRCLE OF GOOD NUTRITION



National development means all round development. For that development, the starting point is good health. Therefore, all necessary steps must be taken to overcome ill health and promote optimum health.

How to conduct nutrition education?

Nutrition education can be imparted through :

1. Songs, drama, puppet and dance.
2. Youth clubs, Girls' clubs, and Mother's clubs in the villages.
3. Study of the pattern of malnutrition in the adopted villages and taking remedial steps. (Maintain a diary regarding the diseases and the people who are affected by them).
4. Find ways of raising the income for which the Economics and Commerce departments can chalk out plans.
5. Each department can share with the other departments problems and solutions.
6. Enthuse the organisers of school lunch programmes to include greens, carrot and some raw vegetables in their menu.

Assessment of Nutritional Status of The Community

"Nutritional Status" in very simple words is the level of nourishment. It may be good or poor depending on the intake of dietary essentials and on the body's ability to utilise them. Nutritional status of an individual is affected by various factors such as geographical location, agricultural produce, food supply, processing, and distribution and economic conditions of the individual.

The purpose of assessing the nutritional status of the community is to map out the extent of under-nutrition and malnutrition, prevalent in the community. Based on this information, efforts can be taken towards programmes for improvement. An indirect method of assessing the nutritional status is to interpret a variety of vital statistics on morbidity and mortality rates in a particular region. For example, Age specific mortality rate, Morbidity rates and Nutrition related diseases may be used.

The direct methods of assessing nutritional status are Clinical assessment, Nutritional Anthropometry, Biochemical Tests and Food and Nutrient Consumption.

1. Clinical Assessment

This method is the observation of the physical signs of nutritional deficiencies in the hair, face, eyes, mouth and skin. A well nourished person is alert and active with firm muscles, bright eyes and a smooth elastic skin, while a poorly fed person is inert and

lethargic, emaciated and perhaps with a rough and dry skin. The Indian Council of Medical Research (ICMR) has formulated a rapid clinical Assessment form as given below in Table I which can be used in field surveys.

Table I

RAPID CLINICAL ASSESSMENT FORM

GRADE I	**Healthy and Free from any Deficiency Symptom**
GRADE II	a) Poor Musculature b) Deficient in Subcutaneous Fat c) Mild Anaemia
GRADE III	
GROUP I	*Highly Significant of Malnutrition*
	a) Nutritional Oedema (Dependent Parts or Generalized) b) Gross Muscular wasting c) Marked Anaemia d) Xerosis of the Cornea
GROUP II	*Significant of Malnutrition*
	a) Red and/or Raw Tongue b) Glazed and Atrophic Tongue c) Angular Stomatitis and Cheilosis d) Bleeding Gums e) Excoriation of Eyelids f) Night Blindness g) Early Rickets
GROUP III	*Less Significant*
	a) Xerosis of Conjunctivae d) Bitot's spots c) Dry and/or Rough skin d) Crazy Pavement Skin e) Hyperkeratosis f) Stigmata of Past Rickets (Enlarged wrist Pigeon-Shaped Chest etc.)
	Signs of Doubtful Nutritional Origin
	i. Dental caries ii. Discolouration and/or pigmentation of conjunctivae

SPECIAL REMARKS IF ANY

Date: *Signature of Examining Officer*

2. Nutritional Anthropometry

Nutritional anthropometry is concerned with the measurement of body size at various ages and special conditions. This is a simple objective, practical and reliable method of assessing the nutritional status. The measurements made in an individual are height, weight and arm circumference. In children below 2 years of age, circumference of head and chest are also measured.

Following are the simple procedures to take body measurements.

Height

In children upto 2 years height or rather length is best measured by the infantometer with the child lying supine. For the old children height can be measured more simply by using a fibre glass tape pasted to a wall. The child should stand with bare feet on a flat floor against the wall with feet paralleled and with heels, buttocks, shoulders and back of the head touching the wall. Then the height is measured using a right angled object (eg. a wooden scale) to the nearest 0.2 cm.

Weight

To measure weight, a lever balance is the best to use. It is preferable to record weight in the morning. The subject is made to stand at the centre of the platform with minimum clothing, without footwear, and without touching anything. For field surveys if spring balance is used, the balance should be checked with standard weights for accuracy.

Mid upper arm circumference

The middle of the upper arm is measured with a fibre glass tape while it is hanging relaxed at the side of the body.

Head and chest circumference

A fibre glass tape is used to take head circumference. The subject's head is steadied and the greatest circumference measured. To measure the chest circumference the tape is passed along the nipple line and measurement is made to the nearest 0.1 cm.

In a normal, well-nourished child, rapid growth takes place during the first year of life. Table II is the pattern of growth in healthy child upto 5 years of age.

Table II

HEIGHTS AND WEIGHTS FOR AGE

Age	Height increments cm	Height cm	Weight increments kg	Weight kg
At birth	25/year	50		3.0
6 months			3.0	6.0
12 months		75	3.0	9.0
2 years	12	87	2.5	11.5
3 years	9	96	2.0	13.5
4 years	7	103	2.0	15.5
5 years	6	109	2.0	17.5

From the 6th year onwards till the 9th year, the average yearly increment is 4-5 cm in height and 2 kg. in weight. Till the 9th year, there is no sex difference. Between 9-15 years, girls grow faster than boys with the peak period of growth at 12 years. Boys grow fast between 11-17 years with the peak period of growth at 15 years.

The growth curves come to a plateau by 16 and 18 years for girls and boys respectively.

Normally, the arm circumference increases rapidly from birth to 1 year from about 11 to 16 cm. Between the 1st and 5th birthdays, it remains fairly constant at about 16 to 17 cms.

At birth, the head circumference is about 2 cms more than the chest circumference. By about 6-9 months, the two measurements become equal after which the chest circumference becomes more than the head circumference.

How to assess nutritional status through nutritional anthropometry?

The growth pattern of the child can be followed and compared with local reference standards for height for age and weight for age. The danger signs are when the growth line of the child does not follow the normal growth curve and remains straight or worse still, actually shows a downward trend. When the weight is up to 80 per cent of the desirable weight it is considered to be satisfactory. According to the degree of weight deficit in comparison with the local references tandards, children can be classified into the grades or degrees of malnutrition. Table III gives the interpretations for the degrees of malnutrition.

Table III

DEGREES OF MALNUTRITION

Degrees of Malnutrition	Percentage of desirable weight
I Degree of Malnutrition	71—80%
II Degree of Malnutrition	61—70%
III Degree of Malnutrition	under 60%

Mid upper arm circumference below 80 per cent of normal i.e. about 12.8 cm indicates moderate to severe malnutrition among preschoolers. For a quick nutrition survey, a bangle with an internal diameter of 4.0 cm can be used. If it goes over the child's upper arm, the child is severely malnourished.

By about 6 to 9 months, in a healthy child, the chest head measurements become equal, afterwhich the

chest circumference overtakes the head circumference. In malnourished children, crossing of the head chest measurements will be delayed by 3 to 4 years. In field conditions, a simple string will do for doing this type of assessment. A string may be used to measure the circumference of head and chest when the chest circumference is less than the head measurement; it is an indication of malnutrition.

3. Biochemical Tests

Biochemical tests are objective tests of nutritional assessment. In practice in field surveys, tests are confined to blood and urine. Since biochemical tests require laboratory facilities, equipment and chemicals, they can be conducted only on a limited sample.

In field conditions, haemoglobin estimation can be done with ease. Anaemia, among vulnerable groups is a major public health problem in our country. Anaemia is said to be present when the concentration of haemoglobin in blood falls. There are wide ranges of haemoglobin concentration in healthy persons and adult men have slightly higher values than adult women and children. Table IV gives figures below which anaemia may be said to exist.

Table IV

HAEMOGLOBIN LEVELS BELOW WHICH ANAEMIA MAY BE SAID TO EXIST (WHO 1968)

	Age	Hb g/100 ml
Children	6 months to 6 years	11
	6 years to 14 years	12
Adults	Men	13
	Women	12
	Pregnant Women	11

4. Food and nutrient consumption

Dietary surveys and food consumption surveys can give valuable information on food and nutrient consumption of individuals and population groups. An estimate of the various foods consumed by the individuals compared with the allowances recommended by the ICMR will indicate the adequacy or otherwise of the diet. The nutritive value of the food consumed can also be calculated and compared with that of the ICMR recommended nutrient allowances. This may indicate the particular nutrient deficient in the diets. The food and nutrient allowances recommended by the ICMR are available in reference no. 4, cited here.

After assessing the nutritional status of the population, it is essential that necessary steps should be taken to alleviate malnutrition and indicate preventive measures for the future.

REFERENCES :

1. Jelliffe, D. B. The Assessment of the nutritional status of the Community WHO Monograph Series No. 53, WHO. Geneva, 1966.
2. Methodology of nutritional surveillence. Report of the Joint FAO/UNICEF/ WHO Expert Committee. Tech. Rep. Series, 593, WHO, Geneva, 1976.
3. Gopalan, C. and Vijayaraghavan, K. V. Nutrition Atlas of India, 1971.
4. Gopalan, C, Ramasastri, B. V., Bala Subramanian, S. C. Nutritive value of Indian Foods, National Institute of Nutrition, Indian Council of Medical Research, Hyderabad, 1976.
5. Shanthi Ghosh, 'The feeding and Care of infant and young Children' Voluntary Health Association of India, UNICEF, 1977.

Meal Planning to Suit Different Groups of Society

A balanced diet is a diet which is balanced in quantity and quality, containing in right amounts all the nutrients essential for growth, development, regulation of body functions and maintenance of health. The important factors to be considered in the formation of adequate diets are:

I Knowledge of the daily-nutritional requirements of the individuals and groups for whom the diets are planned;

II Selection of food which will supply these requirements within the limitations of cost, availability and custom;

III Planning meals for efficiency, convenience and maximum satisfactions;

IV Preparation of meals utilizing proper methods; and

V Serving meals attractively.

I. Knowledge of the daily nutritional requirements

Foods may be broadly classified into cereals, pulses, nuts and oil seeds, vegetables, fruits, milk and milk products and flesh foods. They contain in general, proteins, fats, carbohydrates, vitamins, mineral salts and water. Most foods contain all these factors in varying proportions. Certain items of foods such as oils and ghee contain exclusively fat and others such as cane sugar contain exclusively carbohydrates. Depending on the relative abundance of the nutrients present in the

food, it is termed as protein rich food, or vitamin rich food and so on.

Proteins, fats and carbohydrates form the main bulk of foods and furnish energy, besides fulfilling some other important functions. Vitamins and mineral salts do not supply energy but they play an important part in the regulation of several essential functions in the body. A well balanced diet should contain all these factors in correct proportions and in adequate amounts.

II. Selection of foods

A balanced diet must contain all nutrients in the quantities needed.

III Meal (Menu) Planning

Utilising the available foods, menus to suit different incomes and tastes must be planned. The aim of meal planning is to distribute judiciously the nutrients among the meals of the day. Generally there are three main meals in a day-breakfast, lunch and dinner. The types of meals—light, medium or heavy depend upon the family.

Points to be considered while planning the meals

The points to be considered while planning the meals are:

1. Size of the family
2. Age of the members
3. Sex
4. Their activities and requirements
5. Income
6. Customs
7. Seasons
8. Locality
   and
9. Special conditions.

1. Size of the family

Meal pattern must fit the family. Planning meals for the family group entails consideration of the needs of each individual. Deviation may be made from it to meet the requirements of the children or the aging member.

2. Age of the members

It is obvious that people of different ages need different quantities of food. A little baby needs much less than school child and the latter needs less than a grown man. But it is more important that they should have their protein, calcium, iron, vitamins and energy that a man should have. Age is a relevant factor to be considered, since, appetite, taste, growth needs, amount of exercise and food tolerance differ according to age.

3. Sex

The food needs of men and women vary and therefore it needs to be considered.

4. Their activities and requirements

The occupation of the members of the family should also be taken into account while planning. Men engaged in hard physical labour involving active muscular work such as farming and other agricultural operations, need more energy than who carry on office work. Women working in farms and as housewives at home need extra food energy.

5. Income

The amount of money available for food is another important consideration. Food is the largest single item of expenditure in the case of many families.

As much as 70 to 80 per cent of the monthly income of people in low income groups is spent on food. Balanced diets can be provided at different cost levels if economy is practised in the purchase of foods.

6. *Customs*

People are bound together by the principles, customs, and traditions which govern their communities. Their food practices are deeply imbedded in their culture which controls the choice of food. While income, food availability, home food production and marketing facilities direct the preferences of the consumers, customs dictate the manner in which food will be procured, stored, planned, cooked, served and eaten.

7. *Seasons*

When planning the meals, one should give careful consideration to what foods are in season and should vary the dishes on the menu every day. New foodstuffs should be introduced, depending upon the season and should be cooked and served attractively. Many foods high in nutritive value, namely ragi, greens, papaya, tomato, nellikkai are available at relatively low costs. Seasonal foods produced locally, being more plentiful, are less expensive.

8. *Locality*

Dietary practices depend largely upon the type of food produced in the community. In localities where rice is produced in large quantities, it is the chief cereal in the daily life. The same is true for highly perishable fruits and vegetables. The wide variation in dietary patterns throughout the world depends largely upon the available food supply.

9. Special conditions

Food have different priorities depending on whether it is served to infants, sick children, girls during puberty or pregnant women. A woman's needs are generally less than those of a man but if she is pregnant or nursing a baby then her needs are greater than a man's because of the physiological changes that takes place in the body.

A good menu

In a good menu, the foods should be combined to be attractive, pleasing in colour, form, textures and flavour and should give satiety and nutritive value for the money spent. Combination of different flavours, colours, texture and forms of food will help to stimulate the appetite and intake of food.

Some ideas for such menus are given below.

IV. Preparation of Meals

Cooking to Conserve Nutritive Value

Nearly all food stuffs, with the exception of fruits and some leafy vegetables which are used either as salads or in chutneys, need to be cooked.

LOW COST MENU WITHIN RS. 1.25/DAY FOR AN ADULT MAN WEIGHING 55 Kg. AND DOING MODERATE WORK

Day's Menu	Remarks
Breakfast	
Ragi Pittu, (Sweet and Savoury) Coffee.	Other variations could be Ragi Roti, kali and dhosai (with minimum amount of oil).
Lunch	
Rice Pulikuzhambu with brinjal and drumstick. Buttermilk and seasonal fruits	Other variations could be mashed (Kattukiraikal) with dhal curry with cowgram and brinjal, rasam with horsegram, cooked horsegram with seasonings, could be pounded. Fruits in season such as watermelon guava can be included.

LOW COST MENU WITHIN RS. 1.25/DAY FOR AN ADULT MAN WEIGHING 55 Kg. AND DOING MODERATE WORK

Day's Menu	Remarks
Tea	
Boiled and seasoned Topioca, Roasted groundnuts, Wheat porridge with Jaggery.	Other variations could be puffed rice with roasted Bengalgram, Boiled sweet potato puffed cholam.
Dinner	
Bajra adai Cowgram chutney Pappaya.	Bajara could be prepared as Rice (Kambuchatham), or other millets such as samai, varagu and thinai could be prepared as rice.

MEDIUM COST MENU RS. 2.25/DAY FOR AN ADULT MAN WEIGHING 55 Kg. AND DOING MODERATE WORK

Day's Menu	Remarks
Breakfast	
Parathas Dhal Banana Coffee	Other variations could be wheat rava uppuma, rava iddli, wheat dhosai.
Lunch	
Rice Sambar with drumstick and brinjal Amaranth porial Guava Curds	Variations could be seasoned rice, such as tomato rice, brinjal rice, coconut rice, lime rice, sambar rice and green leafy vegetables such as araikeerai, paruppu keerai could be used.
Tea	
Ragi Pakoda Boiled sweet potato Coffee	Sundal made out of green gram, Bengal gram and any seasonal fruit can be given.
Dinner	
Chapathi with fenugreak leaves. Kootu with green gram dhal, and chocho - marrow. Milk.	Other millets such as maize, cholam could be used either in the form of roti or dhosai or could be prepared as rice.

HIGH COST MENU WITHIN RS. 3.50/ DAY FOR AN ADULT MAN WEIGHING 55 Kg. AND DOING MODERATE WORK

Day's Menu	Remarks
On getting up	Milk
Breakfast	
Iddli Onion sambar Banana Milk Egg	Variations could be dhosai, sevai, paruppu adai, appam, poori, with side dish such as chutney and potato masal can be used. In the place of milk, any beverage such as Horlicks, Ovaltin or Bournvita could be used.
Lunch	
Rice Mutton or Vegetable Biriyani, Mutton or Vegetable Kuruma (for feasts) Onion salad Vegetable- mint chutney Curds	Variations could be ghee rice, or plain rice along with other cereal preparations such as poori or chapathi, Rice desserts, or pudding, ice cream can be given.
Tea	
Diamond cuts Grapes Coffee	Sweets such as halva, toffees with nuts and savouries such as fried cashewnuts, bonda, bajji can be used. Seasonal fruits can be given.
Dinner	
Parathas Greengram dhal with tomato. Pears, oranges, or other fruits. Milk.	

Culinary practice varies from district to district and even from house to house. Cooking increase the wholesomeness of food by destroying harmful bacteria and parasites. It improves the taste, flavour and palatability, increases digestibility.

Cooking involves one of the two following processes—wet methods of treatments like boiling and steaming and dry methods of treatment like frying, roasting and baking.

Ordinary cooking causes little loss of protein fat and carbohydrates in cereals, pulses and meat. However in vegetables, there may be water soluble vitamins and minerals lost on boiling in water, particularly when cooking soda is used in cooking and the cooking water rejected. Therefore the following precautions would help to save more nutrients for the consumer:

1. Use minimum amount of water in cooking and utilize the cooking water in Kolambu or rasam.
2. For roots and tubers it is desirable to cook with the skins or peel them after cooking.
3. Vegetables may be cut into big pieces.
4. Boil the water and add the foods and cook for as short a time as possible.
5. Do not add soda to hasten cooking.
6. Foods once cooked should not be reheated.

V. Serving Meals

Proper serving of meals is as important as their preparation. Everything likely to come in contact with food must be clean. The place where the food is served must be made beautiful, attractive and comfortable. This dose not mean extra expenditure because cleanliness and beauty can be obtained in-expensively with a little imagination and effort. A spotless kitchen with a smokless fire place, a clean place with colourful pottery and flowers and rangoli patterns will go a long way to make the meals inviting and appealing.

Serving of food at suitable temperatures will increase the appreciation of its taste. The atmosphere of the dining place must be cordial. When meals are served in peaceful surroundings and often amidst

enjoyable conversation with no hurry or strain, appetite is stimulated and digestion and metabolism are greatly facilitated.

Improving Existing Diets

The broad lines in which improve diets for groups of persons can be formulated are:

a) Introduction of a second cereal or mixed cereal diet with substitution of even a part of the staple cereal, rice or wheat by millets like ragi or bajra serves to provide a diet with increased nutritive value at practically no extra cost or even cheaper;

b) Increased intake of pulses wherever feasible;

c) Increased use of green leafy vegetables in the diet and

d) Introduction of cheap flesh foods, two to three times a week if possible.

Wise shopping

The following suggestions will help in economical buying.

1) Do your buying yourself as far as possible.

2) Buy foods locally produced in their seasons.

3) Buy in weekly fairs and markets. Avoid rush hours.

4) Buy in quantity-preserve the seasonal foods for off-season use.

5) Select fresh foods.

6) Buy from co-operative centres and super markets.

Food storage

All perishables must be kept in the coolest part of the house

Meat should not be kept for more than a few hours.

Milk must be boiled, cooled and kept covered in a cool place

Eggs should never be washed except before using. Heated oil should not be revised many times or stored for a long time.

Cereals and pulses should be cleaned first and then stored.

Use of Janata refrigerator and haybox will help to conserve nutrients.

BIBLIOGRAPHY

1. Devadas, R.P. Text Book of Home Science, Directorate of Extension, 1969.
2. Diet Atlas of India, Indian council of Medical Research. Special report series No. 48. Nutrition Research Laboratories, Hyderabad-7., 1971.
3. Aykroyd, W. R. Gopalan, C. and Balasubramanian, Sc., The Nutritive value of India Foods and the Planning of Satisfactory Diets, 1971. Indian Council of Medical Research, Special Report Series No. 42. Nutrition Research Laboratories, Hyderabad-7.
4. Visweswara Rao, K. Owe Diet Over a Decade, Nutrition, 1967, 2-5.
5. Champakam, S., Lessons in Nutrition, Nutrition 1. 1967, 11-77.
6. Balasubramanian. S, C., Improving the Indian Diet Nutrition 1, 1966, 2-8.

Nutrition education Contents and scope for all age groups

The importance of nutrition education as a means for improving the nutrition of the community in the developing countries has been increasingly realised. In India, the village is the backbone of the Indian economy, since the rural communities compose 80 per cent of the population. However, the villages in India present a picture of hunger and malnutrition, arising out of poverty and lack of education and consequent low standard of living, poor food intake and nutritional status, disease and reduced capacity to work. These form a vicious cycle, in which malnutrition is crucial. When to break this cycle is the challenge before national leaders, planners and educators. Nutrition education has a great role to play in this aspect. 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 other vulnerable sections of the population in the developing countries. Nutrition education should be practical and adapted to suit the socio-economic conditions, food habits and local food resources. It should include effective demonstration feeding in which mothers take active part. It should form a part of the community development programmes.

Several factors such as low productivity, poverty, population explosion, ignorance and poor environmental sanitation appear to cause and aggravate malnutrition. Ignorance is perhaps the most important single factor underlying malnutrition and malnutrition could be

prevented to a considerable extent if available foods are better utilized. For this purpose nutrition education is necessary at all stages and levels.

What is nutrition education?

Albanese defines nutrition education as a means of translating nutritional requirements into food and adjusting the food choices to satisfy nutritional, cultural, psychological and economic needs. Nutrition education is the process by which beliefs, attitudes, environmental influences and understanding about food are converted into practices which are nutritionally sound and consistent with an individual's needs, purchasing power, available food sources and socio-cultural background. Effective nutrition education results not only in the requisition of knowledge and skills, but also desirable changes in the eating habits of the learners.

Nutrition education cannot function in a vacuum or in a setting in which learners are passive listeners to irrelevant lessons. Agricultural scientists find out ways of increasing food production and planners and economists work out equitable distribution of food produced but the nutritionists have to concern themselves in educating people how best to utilize the food which has been made available to them.

Objectives of Nutrition Education

The aims and objectives of nutrition education are to impart knowledge that enable people to make proper choice of food, keeping nutrition in mind. The fundamental objective of education in nutrition is to help individuals to establish food habits and practices that are consistent with the nutritional needs of the body and adopted to the cultural pattern and

food resources of the area in which they live. Education in nutrition facilitates the optimum use of the additional food supplies which are made available through increased agricultural production, improved methods of food processing and marketing. For this purpose, it is essential to have an understanding of the simple principles of good nutrition and basic food values and a knowledge of locally available foods and their nutritive value.

Who needs nutrition education

All categories of people need nutrition education-old and young, rich and poor, educated and uneducated, rural and urban, masters and workers and at all levels-the administrators, teachers, pupils, social workers etc. But the content of the programme depends on the needs of the individual and the community. Of all groups, the school going children appear to be potentially the most receptive group. They are impressionable and life time food habits are established if proper attention is paid to what is taught to them. Furthermore, they can also influence the attitudes of their parents.

Who is to teach?

Nutrition education can be imparted only by those who are trained to teach nutrition and have the requisite skill and knowledge. The teacher should be aware of the local conditions, customs, superstitions, food habits and values with regard to the foods. He must realise that the best method of ushering in changes is to first make the people want to change. The nutrition educator should have the leadership ability to recognize and utilize human resources available to him.

What to teach?

What needs to be taught and communicated would largely depend upon the needs of each group, community or individual. A knowledge of the feeding habits is essential before effecting any changes that may be needed. Sound cooking methods, prevention of food waste, sound weaning practices and principles of supplementation with low cost local foods may form the core of the programme. A knowledge of how to increase food production through raising gardens, effects of deficiencies, feeding programmes available in the locality and food sanitation, is also essential.

Methods suitable for teaching nutrition education

In order to capture and sustain the interests of the learners and to effect learning, a variety of teaching methods must be used. Teaching methods are the devices used to create the situations in which communication can take place between the teacher and the learner. Leagans (1961) and Ritchie (1967) have listed various methods suitable for teaching nutrition.

i. Individual contacts : Farm and home visits

ii. Group contacts : General meetings, method demonstrations, result demonstrations, story telling, competitions and songs.

iii. Mass contacts : Campaigns, exhibitions, study tours and excursions, distribution of literature, leaflets, folders, circulars, letters and newspapers, filmshows, radio and television, dramas, skits, songs, mythological, stories and folk lore such as, villupattu in Tamil Nadu, burrakatha in Andhra Pradesh, poikal kudirai (imitation horse) and folk dances.

i. Individual contacts

Farm and home visits : Farm and home visits are helpful both to the workers and the people to gain a first hand knowledge and better understanding of rural problems.

ii. Group contacts

a. General meeting

General meetings refer to meeting of heterogenous participants, wherein, certain information is passed on for their consideration and future action.

b. Method demonstrations

Demonstration is the oldest and most effective form of visual education making atleast two impressions one on the sense of vision, and the other on the sense of hearing. The lecture- demonstration is a means of presenting material, visually and audibly to a selected group of people.

Result demonstration helps to convince the people, the values or results of new practices or improved practices. Result demonstration is effective because it builds confidence, localises research, appeals to the eyes, develops local leadership and strengthens teaching.

Story Telling

Disseminating nutritional knowledge through stories is one of the effective means of promoting nutrition, while telling the story, the grandmother advises the children on good food habits and their effects on health. She counsels the young home maker on the need for food on pregnancy, lactation and for bringing up children. Her advices are followed by all age groups.

Competitions

Competitions serve as a method of re-emphasizing the principles taught and as a means of evaluation. This method inculcates learning and helps to develop leadership.

III. Mass Contacts

In the mass media, a large number of people can be reached.

a. Campaigns

This method is advantageous only for certain types of activities. It helps to reach a large number of people.

b. Exhibitions

This method is one of the best media for reaching illiterate populations and for appealing to the public. But it requires much advanced preparation and investment.

c) Radio Programmes

Radio programmes help to reach thousands of people within a prescribed time. Radio programmes provide varieties of opportunities to teach knowledge and skill and are powerful means of receiving correct and authentic information. They stimulate people to develop their abilities and talents.

d) Film shows

These have been most useful to collect large groups of people in the villages. Film shows have a consuming appeal, if they are technicolour and in the language of the region.

Apart from these methods, several ancient methods are available for communication in our country such as

puppet shows, villupattu, kathakalakshepam, kummi, poikal kudhirai other folk dances and dramatisation. These have been very effective and appropriate, especially with the illiterate groups. They have facilitated the oral transmission of a message from generation to generation. Even today, these methods are found to be more attractive than modern techniques because of familiarity and sentimental appeal.

Food Production activities

To be able to produce food and serve the preparations from one's own produce in the family meal, is a great pride for parents. Provision of seeds, of high yielding varieties, explaining how to cultivate them and produce nutritious vegetables and fruits and helping the people in designing and maintaining the garden in its initial stages, all help in establishing the ground for a perpetual project. Gardening has been found to be an effective method, wherever water and other facilities are available.

Place and time for nutrition education

The important and favourable sites for nutrition education are home, schools, hospitals, feeding centres canteens and rural areas depending on the group to be taught.

Programmes must be planned in a manner that will motivate people to adopt intelligently daily food consumption practices consistent with health but within the limits of available food and economic resources.

The elements important in planning are:

1. The goals must be clearly defined.
2. Planning must be continuous.

. 3. The people participating in the plan should take part in all phases of the processes, and

4. The plan should provide for the evaluation of the results of action.

Nutrition education should be planned on a appraisal of the knowledge of nutrition, food habits including customs, beliefs and attitudes and food intake of the people concerned.

Our educational approach is made through various organised groups representing various sections of the community. They include: (1) Young school going children; (2) Mothers and housewives who belong to Mahila Mandals and women's clubs; (3) Professionals like doctors and paramedical staff manning the primary health centres and (4) District - level officials of various departments of the State Government - viz. agriculture, fisheries, animal husbandry - who are responsible for district level planning and allocation of budget.

Considerable efforts need to be put in by all agencies working in an integrated way. These changes can be brought about only by planned programmes including nutrition and health education.

Evaluation and Follow up

— Personnel and agencies used

— Various levels of administration

Evaluation is a critical component of any nutrition education programme. It is a process of determining the strength, weakness, worth or value or meaning of a programme or situation or teaching method in relation to some predetermined standards or criteria. It serves as a check list indicating the success or failure of any programme and the change that has been taken place during and after the implementation of the programme and thus paves the way for further action.

It is not easy to measure the impact of nutrition education on population groups. Bench mark data are necessary of beliefs, habits, prejudices and their relationship as accepted by nutritionists are to be the indicators of the level of nutrition education. Changes in the parameters before and after is used as a measure of impact of nutrition education programme. Similarly beliefs of foods and 'utility' are given scores and changes in the score 'before and after' is also considered as a measure of impact of nutrition education programme.

The verbal responses of the population before and after education may not serve as a measure of awareness unless they are probed further to find out whether they have become part of their behaviour.

As regards follow up, two measures are clearly essential. First, after an evaluation report is released, a

series of discussions must be held, with all concerned along with selected rural people, to review the findings. But second, the discussions should be requested to formulate a set of concrete recommendations for the needed changes in future.

Personnels and agencies involved

In view of the clear cut differences in socio-economic, literacy and intellectual status, it must be immediately recognised that there can be no single method by which all segments of the population can be effectively reached. It is necessary to segment the population into those that are affluent and those that are relatively poor, backward and illiterate.

Health Agencies

The health agencies are the obvious channels for reaching the vulnerable groups of population and in addition, they enjoy a prestige and influence among the population which would be turned into best advantage. The health set up, as it now exists, consists of a network of Primary Health Centres (PHCs) each of which caters to about 100,000 people. Each PHC has one or two medical officers, a compounder, two health visitors and auxiliary nurse midwives (ANM). In addition, there are health inspectors, basic health workers, block extension educators, and other supporting staff.

It is generally agreed that, so far, nutrition work done in the states by their Nutrition Departments could be considerably improved both in quality and quantity. With the strengthening of these Nutrition Departments, now by the State Units of N. N. M. B,* it may be expected that impact could be made. However,

* N. N. M. B.— National Nutrition Monitoring Bureau.

between the State Nutrition Officer on the one hand and the District Health Officer with a network of Primary Health Centres on the other, there is so far little direct contact with regards to nutrition work, that can be done. It is necessary to bridge this gap and the Home Science graduate trained in the field of food and nutrition may be ideally suited to act as liaison officer at the technical level. This will ensure better implementation of Nutrition programmes being carried out in states.

In short, the personnel who can be involved in nutrition education programmes are:

1. Medical officers of Primary Health Centres
2. Para medical - staff
3. Teaching staff of Rural Development
4. Block Development Officer
5. Extension Officers
6. Mukhya Sevikas
7. School teachers - primary, middle and high school teachers.
8. Balwadi teachers/Anganwadi Balasevikas.
9. District level officers of various Departments. (Agriculture, Animal Husbandry, Fisheries)
10. Leaders of the Mahila Mandals.
11. Associate Women Workers in rural areas.

In nutrition education work, coordination between the different type of workers is essential. Help and full participation from the village leaders are required, for success. The persons who can help and type of help expected are given below:

I. Village Leaders and Members of Panchayat should

1. Participate in all the meetings.
2. Explain the purpose of the programme to the public and encourage their full participation.

3. Help towards the participation of women members by encouraging their wives and colleagues.
4. First adopt the improved practices taught by the extension workers.
5. Organise village meetings atleast once in a month.
6. Abolish the prevailing misconceptions and prejudices among the people.
7. Introduce the workers (Nutrition education workers) in such a way that the rural families will have faith in them.
8. Help in the distribution of supplements.
9. Have direct contact with the people.

II. *Gram Sevaks need to*

1. Assist in agriculture, poultry and fishery.
2. Help in arranging for meetings.

III. *Gram Sevikas must*

Conduct demonstrations in cooking.
Help in distribution of foods.
Teach women.
Help in kitchen gardens.
Help in organising women's groups.

IV. *Mukhya Sevikas and extension officers need to*

Supervise the distribution of work or foods.
Maintain records.
Conduct demonstrations.
Plan and coordinate the work.

V. *Agriculture officers need to*

Help in planning the gardens.
Distribute seeds and fertilisers.
Provide grain storage facilities.
Offer guidance in food production.
Give technical assistance.

VI. *Animal Husbandry Officers need to*

Give technical help in poultry keeping and dairy.

VII. *Teachers have to help in*

Care of Balwadi children.
Organising midday meals.
Educate them, through different methods.

Apart from these, there are numerous voluntary organisations in the country, which receive grants for Nutrition and Welfare programmes from Central and State Social Welfare Boards. They command the respect of the villagers and are thus in a position to serve as communicators. These organisations namely Women's Voluntary Service, Kasthuriba Gandhi National Memorial Trust, Bharat Sevek Samaj, and others like Rotary, Lions etc. run preschool centres and undertaken nutrition programmes.

There is a vast scope to improve the nutritional awareness of our people through nutrition education programmes. At present, considerable effort is being made through Home Science Colleges, Directorate of Extension Services, Departments of Rural Development, Education, Labour and Social Welfare, Central and Social Welfare Boards, Agricultural Universities, and National Laboratories such as the National Institute of

Nutrition, Central Food Technological Research Institute, the United Nation's Agencies particularly, UNICEF and the US Agency, CARE.

Governments, educational institutions, Planners, implementors and all concerned should realise the need and help to pass on the message of nutrition, where it is most needed.

REFERENCES

1. Proceedings of the Nutrition Society of India, No. 21, 1977, pp. 7, 9, 19.
2. Proceedings of the Nutrition Society of India, No. 4, 1968, p. 38.

Health Education

At the outset a film on rural sanitation is screened. It is followed by a talk on health education. The ultimate purpose of any education is to bring about a change in the behavioural pattern of an individual and not merely the acquisition of knowledge. But it is very difficult to change the behaviour of an individual. Transfer of knowledge alone cannot change the people. What is needed is a change in the attitude of the people.

As verbal communication is found to be ineffective in bringing about a change in the behaviour of an individual, various other channels of communication should be tried. Film is a very effective medium of communication because what we see we remember better and what we do we remember most. Our experience in the village shows that there is a lack of both knowledge and attitude in the villagers. Our work in the village should be directed towards bringing about a change in both.

The Government has several programmes like improving the maternal and Child Welfare Centre, Water supply and Sanitary conditions and the nutritional status of the village people. These programmes help in improving the health of the nation. The primary Health Centres look into the child and maternal welfare, sanitary conditions and the like. But the villagers are not aware of these facilities. So it is our duty to point out to them the facilities that are already existing.

The importance of the rural Balwadi for the inculcation of good health habits is unquestionable. The fundamental principles of health and hygiene can be explained in the Balwadies with the help of the blackboard, posters and diagram. It does immense good to expose the children to pictorial representations which help to educate people on health habits. Flash cards and flip charts can also help in imparting health education. Various other visual aids can be prepared to help in the dissemination of health education. Local leaders can play a significant role in imparting health education.

Environmental Sanitation

Great philosophers have stressed that health is the greatest of all possessions, a priceless treasure, but a treasure that is rarely appreciated until it is lost. A healthy mind in a healthy body is a self evident truth. Health is one of the fundamental requirements of man. It is the foundation on which other skills and attributes of a person are built up. To lead a healthy life, a society's primary requirement is a clean and sanitary environment. The health status of a community is a measure of human resource available for production of food, separation of industries and for maintaining the standard of living. It is closely related to the environmental sanitation.

The environmental sanitation has a direct bearing on the health status of the people living in rural areas. Diseases like diarrhoea, dysentry, typhoid, cholera and other infectious diseases which are prevalent in rural areas can be reduced considerably if the environmental sanitation is improved.

Prevailing Sanitary Condition

There is hardly any sanitation in the village where 85 per cent of our population lives. The village houses do offer some protection to dwellers against sun and rain but they have no provision for latrines, protected water supply and removal of waste of different kinds. Since latrines are unknown and in discriminate in villages heaps of solid. Waste and garbage are comman sights in villages and slums which lead to pollution of soil and insanitary surroundings.

The true proof of good sanitation in any village or slum is the absence of many communicable diseases. To bring about this state and therefore to keep the people in a state of productive efficiency, it is imperative to provide health service to the people.

Health promotion is a complicated interrelated problem dependent on various factors such as availability of nutritious food, good drinking water, sanitary surroundings, education and so on. The leaders of the nation have often pointed out that the health problem in our country is a stupendous one. This problem is grave in the out skirts of villages where Harijans mostly illiterate and poor live in their own settlements. The main reasons for their unhealthy living may be their social customs, traditions, believes and above all their ignorance and poverty. Therefore it is very apt to give maximum attention to the basic sanitation of the rural families. Further health and sanitation should form an integral part of any developmental activities.

The problem of environmental sanitation for rural people includes

1. Provision of safe and adequate drinking water supply.
2. Prevention of soil pollution and the use of sanitary latrine.
3. Proper disposal of refuse and animal dung.
4. Safe disposal of waste water.
5. Improvement in the housing condition and animal shed.

1. Provision of safe and adequate drinking water supply

The provision of an adequate, suitable and safe water supply is essential for the comfort and health of

the people. In India the high incidence of infections, due to intestinal diseases such as cholera, typhoid and dysentry, is due mainly to the use of unsafe water supplies. These diseases are preventable if water supplies are wholesome and protected from contamination. Therefore the provision of safe water is of vital necessity in the programme of promotion of public health.

In the rural and semiurban areas ground water, that is shallow wells is the sole source of water supply. These wells are likely to get polluted by surface washings, soiled ropes, buckets and droppings of birds. Leaking drains, septic tanks, cesspools and sewage pipes are other sources of danger if they happen to be near the well, within the dangerous limit.

Protection of wells

The following points should be noted for protecting the well against health hazards:

1. There should be no cesspool, septic tank, soakage pit, latrine, urinal, sewage drain or any leaking drain within 50/100 feet of the well.
2. The well must be lined with stones or bricks set in concrete or cement to a depth of at least 10 feet below the ground surface.
3. The sloped cement concrete platform 6 feet wide, with a channel, circular drain of the height not less than 2 feet above the highest water level, should be around it. A dust-proof top cover must be provided with a 2 feet square manhole with lock arrangements and the edges of the manhole cover rendered suitable to prevent spilage, or rain

water entering the well. No ablution, bathing or washing of clothes should be permitted on the platform of the well. The surroundings of the well must be kept tidy clean, dry and if possible fenced.

Purification of water

Prevention is always better than cure. Hence it is safe to use water from doubtful sources for cooking and drinking purposes only after it is purified. The best method which is more practicable for every household, is to boil the water required for drinking purposes. The water must actually boil for atleast 5 minutes.

Sanitary latrine

In the villages and small towns in India the disposal of night soil is unsound and is perpectual menace to the health and life of the Nation. Majority of the people are in the bad habit of depositing the excreta or urine on the surface of the soil in any place of the house compound, streets, lanes, surface drains and surroudings of the villages and towns. Such a practice not only leads to the prevalence of bad odour in the populated areas but contaminates water supplies and dust with dangerous germs and provides sources from which the flies, wind can carry infection to our food or drink.

In order to save all this human wastage and suffering, the disposal of the night soil should be by accepted hygienic methods. Several types of house or community latrines are available. A type suitable to local conditions should be selected.

The following paragraphs explain about the bore hole latrine.

Bore-hole latrine

This is much cheaper and more convenient than the earth-closest but its chief requirement is that there should be deep soil for the bore. The site selected for the bore should be on an elevation and if such a site is not available one should be made artificially by filling earth and making the surface slope down all slides.

A hole of 16 inches diameter is drilled vertically into the soil by a steel instrument called an earth auger. When the bore is completed, a seat, either of wood, stone or brick masonry, or specially moulded concrete with 7″ wide hole in the centre should be fixed for squatting and a small chamber with valves of bamboo malling or coarse cloth, and roof framed on the top as shown in figure 1.

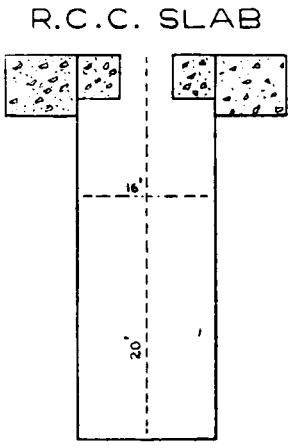


Fig. 1

BORE HOLE LATRINE

Bore hole latrine does not require earth and ashes to be sprinkled on the faeces nor it is necessary to exclude ablution water from it. When filled up to two feet below the top, it should be completely filled with earth and a heavy stone kept on its top. After 2 or 3 months the bore-hole should be emptied by the same instrument. The bore-hole is automatic in action and if not overloaded does not give out any foul odour.

Proper disposal of refuse and animal dung

One of the chief causes of untidiness and insanitation in the villages is the ill managed collection and disposal of the rubbish and crude methods employed for its conversion into manure. Such an insanitary state of affairs not only leads to insects breeding and consequent ill health of the people, but results in a great economic loss by depriving the villagers of strong farm manure for their fields. The method of proper disposal of the rubbish and its conversion to manure is easy and simple.

Compost pit

Composting is a very convenient method of disposing of cattle dung both on a small and large scale. For treating the dung of one or two animals excavate a pit 2′ × 2′ × 2′ to 2½′ deep atleast 30 feet away from a well in a corner of the compound at such a place that the wind from it will not normally blow in the direction of the house. The earth dung out should be stacked in heaps on all the four sides. A layer of refuse such as waste fodder about 3″ thick should be spread at the bottom or its top are of dung thined with water so that it will easily flow from a bucket should be evenly spread out it in a layer not exceeding 2″ in thickness. On the top of this another layer of vegetable refuse, or if this

is not available, dry earth from the heap should be spread in a layer of about two inches so as to cover it completely. At the end it should then be covered with six inches layer of dry earth and left to itself. In the course of about a month in summer and two months in other seasons, the entire contents of the pit will be converted into humus ready for use in the field of garden.

Cowdung gas plant

Cowdung gas is obtained through the fermentation of cattle dung anaerobically. Dried cattle dung cakes burn with a lot of smoke and 11 per cent efficiency. Cowdung gas plants can be constructed in the village houses with the help of Khadi and Village Industries Commission. The gas can be used as a fuel, in kitchens for cooking, heating and lighting. But more important is the residual slurry which can serve as a rich source of organic manure so urgently needed in our rural areas.

Safe disposal of waste water

In rural areas, no attempt is made to lead the water away from the house at all and, in consequence it soaks into the foundation of the wall and the floors of the house causing bad smell and damp to rise and mosquitoes to breed.

The proper way of disposing of the sullage water is given below :

The soakage pit is made in the following way

1. Dig an 2.4m. wide, 2.4m. long and 2.4m. deep hole in the ground.
2. Fill the hole with stones, brick pieces, other loose material and some river sand.

3. Cover the top with straw and then with soil.
4. Dig a small trough from the place where the water is thrown out to the soakage pit.
5. Place a tele pipe or bamboo stick in the trough so that the water will run freely into the soakage pit.
6. Keep the trough clean and do not allow it to got filled up with filth.
7. Build a 'grease trap' to prevent the soakage pit from clogging up.

Improvement in Housing condition

Housing is a health problem of first order and is one of the most important unsolved public health problems. A vast majority of the houses in our villages are woefully deficient in the essential physical and social requirements of a residential house. Over crowded, structurally unsound, insanitary and infested with vermin, they lack the simplest arrangements for cooking and storage of food and safe water supply for drinking and washing.

The existing housing conditions in our village are not conducive to healthful living. The houses have been constructed in a haphazard manner without any proper planning. No provision exists for drainage and latrines. Cattle and other animals are often kept in the same room in which the people live in themselves.

To remedy the conditions mentioned above houses should be constructed in accordance with an approved plan. Houses should be built on a dry and preferably on an elevated ground so as to avoid dampness otherwise it would be necessary to provide a high plinth. There should be atleast two rooms not less than

4.5m x 3.6m with a minimum height of 3.6m. Three should be cross windows in each room for adequate light and ventilation and the total window space should not be less than 1/8th of the areas of the room. The house should have a separate room for cooking purposes and this should be fitted with smokeless chulla. There should be a courtyard with provision made for bath and sanitary latrine. The rooms for cattle must be separate and at a little distance from living rooms.

Such a house will ensure healthful and happy living.

Conclusion

Environmental sanitation in rural areas should form an integral part of the nation building programme. An all-out effort should be launched to attain a healthy environment in the villages. Rural sanitation can never be a success without people's involvement. The authorities need to keep pace with the peoples participation. It is here the planning is most vital. Health and well-being of rural population is the utmost importance if the nation has proper and be of self-supporting.

Work Simplification Principles and Use of Labour Saving Devices for Better Home Management

The household activities are varied, demanding a major portion of the homemaker's time. Household surveys have revealed that homemakers spend a major portion of their time in performing household duties especially preparing meals for the family and related activities such as purchasing, cleaning and storing food materials and cleaning utensils used in the preparation, serving and eating meals. Food preparation and related activities are important tasks as the food consumed determines the health status of the family members. But prolonged hours of work, inconvenient working height and inefficient equipment effect the worker leading to physical and mental fatigue. Once fatigue sets in, the individual will not be able to utilise the remaining time available in a profitable way in productive activities. This may lead to the deterioration of health of the worker followed by lack of harmony and unhappiness in the home. Hence it is imperative that work in the home is simplified to enable the worker to spend a minimum amount of time for the performance of household activities. The performance of work in a simplified way may also enthuse the worker to utilise the time thereby conserved in such activities which would help her increase the family income or in social welfare activities or in any task which may bring about added happiness in the family. Hence, it is important to have a good look at the work simplification principles, to

understand and apply them while performing the household activities. They are many. To suggest a few:

1. Use both hands whenever possible.
   eg. While removing hot utensils from fire.
2. Use rhythmic movements.
   eg. While mopping the floor and washing clothes.
3. Use only the muscles which are meant to do a specific activity eg: While carrying heaving articles from the floor, use the leg muscles instead of using the back muscles.
4. Organise any work effectively by careful planning eg: While preparing breakfast and lunch in the morning.
5. Organise the work area by keeping the articles needed for a particular work within easy reach which will avoid unnecessary up and down movements.
6. Store items in one row. Label all containers. Have definite space for each item and store them in the place allotted.
7. Frequently needed articles should be placed at convenient heights. Occasionly used items may be placed on the top shelves and heavy items on the low shelves.
8. Collect all the items required for an activity in one trip eg. The items needed for cooking lunch may be collected in a tray from the store-room and brought to the kitchen.
9. Avoid frequent starts and stops.
10. Involve others at home in the performance of household activities or distribute work carefully among the family members considering carefully their abilities, skills and talents.

11. Develop proper attitude towards work.
12. Use labour saving devices.

Following the above principles will help the worker to find the household tasks pleasant and less time consuming.

Among the principles mentioned, use of labour saving devices assumes great importance. Any device which would help the worker conserve her time and energy is considered as a labour saving device. The common popular labour saving devices are: pressure cooker, mixie, wet grinding stone and so on. But unfortunately they are expensive and only families with better financial background can afford these items. Moreover careful handling is necessary to avoid breakdown of these equipments. To help women in the rural areas and urban slums, less expensive, easy to operate devices are necessary. Hay box a less expensive device for cooking cereals and pulses and mud device presently known as Janatha refrigerator may be of great service to all women who are in need of low cost devices to conserve their time and energy.

Hay box

Hay box may be made using a deal wood box or a card board box. The box should be made of a material which is a non conductor of heat. This box should be lined with hay on all the three sides to a thickness of four to six inches. A depression should be made in the centre of hay for keeping the cooking utensil. A clean gunny bag or an old clean towel should be cut to suit the size of the box and stitched on the three sides. In this cushion hay should be filled to get atleast four inches thickness and the fourth side stitched.

For cooking rice using hay box, proportion of water needed should be accurately determined. Different types of rice require different quantities of water. Generally rice and water in the proportion of 1 : 3 is satisfactory.

Measure the quantity of water required for the quantum of rice to be cooked. Boil the water using any fuel. When the water boils, add the cleaned, washed rice and keep the vessel covered with a suitable lid (without any dents) until the whole contents boil. Allow this to boil for five minutes. Immediately transfer the utensil into the hay box and cover with the hay cushion. Keep the box covered. Within one hour, the rice will be well cooked. Since the 'Kanji water' is not discarded, the rice cooked this way is considered to be nutritious. The rice kept in the hay box at 7 a. m. will be hot enough to consume at 1 p. m. Since rice does not stick to the bottom, cleaning of the cooking utensil is easy. Since the fuel is burned only for less than ten minutes to bring the rice to the boiling temperature there is an enormous saving of fuel. Moreover the homemaker does not have to attend to the rice kept inside the hay box. This gives her extra time to look after other activities.

Hay box is an ideal device for the household. A cardboard or deal wood box, hay and an old towel or gunny bag are the only items required. Hence this can be suggested even to low income families.

To avoid cockroaches and other insects inside the hay box, the needs to be taken out and sundried once a fortnight. Besides rice, pulses and root vegetables may be conveniently cooked using hay box. Hay box may not be suitable for cooking other

vegetables since there is a possibility of losing the vitamins due to prolonged cooking in the hay box.

Hay being an insulator, preserves the heat of the boiling contents in the cooking utensil which helps in the cooking process.

Janatha refregerator

This is a container made of mud which consists of the following parts: a container with a lid, a mud pot rest to be placed inside the container and a mud plate to keep vegetables.

Take water to a height of one and a half inches in the container. Place the pot rest inside the container and place the mud plate with vegetables. Care should be taken to see that the mud plate with vegetables does not touch the water in the container. Cover with the mud lid. It will be better if this lid has a few perforations for proper air circulation. The whole set may be placed over a pot seat to avoid turning over in case of round base.

The water inside the container keeps the interior of the pot cool which keeps the vegetables fresh for a long period. Vegetables stored in this device retain freshness for more than five to six days without any loss of their nutrients. The device needs to be cleaned using coconut fibre or any other fibrous material once a week and fresh water used to retain the coolness inside.

This device is considered as a boon to the homemakers.

Use of such devices in the home helps the homemaker save her time and energy.

Pest Control

The insects competing with man for his food, damaging his property and coming in the way of his comfort and pleasure are termed as household pests. This group of insects / creatures include mosquitoes, cockroaches, flies, bed bugs, cloth moths, silver fish, white ants and grain or furniture weevils. It may include the rodent pests like rats, mice etc.

The insect enemies can be divided into three groups based on the mode of action.

a) *Blood suckers:* mosquitoes and bed bugs.

b) *Infectors of food:* flies, cockroaches and ants

c) *Destroyers of property:* Silver fish, white ant, cloth moth, grain and furniture weevils.

III Effects of household pests

1. They are direct or indirect causes of diseases that man suffer-from Malaria, Filaria, Dengue fever. Cholera, Diarrhoea, Dysentery and even Typhoid can be transmitted by them.

2. They pollute our foods. The dirt and filth in the surrounding is deposited on our food by flies and cockroaches. Infection is caused through the agents. Mainly some pests cause great damage to our food items. Six rats can eat up a day's ration of man. It is estimated that 15 per cent of food products are purely eaten away by rats. The weevils cause damage to grains and flours by building nests in the grain. The flour is

puddled together while storing. The infestation with ants makes the whole food unwholesome and is wasted.

3. Pests cause destruction or damage to our property. The starched clothes after long storage get irregular holes. The woolen garments have varying size of holes-black nests of the weevils may be seen over them. Books and starched clothes and photographs are eaten away by silver fish having a taste for starched gummy items. The wooden furniture also becomes a nesting place for furniture weevils. The action of white ants (termites) over wooden structure leads to destruction.

4. Bed bugs suck the human blood for their meals. They need the blood meal once in five days. So is mosquito who suck blood from individuals and thereby injecting the disease producing germs into another healthy person.

5. Pests are great nuisance especially during sleep and rest. Their bite causes itching and swelling, lessens sleep, causes tiredness, leads to low health, thereby causing low efficiency and low production.

6. They are indirect causes of accidents. The bamboo or wooden poles may be deceptive in outside appearance. The inner area may be completely eaten away by termites. Giving pressure over it, at times even leaning against it may cause accidents to human beings.

The very sight of certain pests may cause allergic accidents to individuals. And if they fall in the food, the food may become even poisonous ... Thus the ill-effects are many.

Sources and causes

In the house

Lack of cleanliness and lack of maintenance: throwing of filth anywhere; open garbage bin, dirty kitchen and store, nail holes, cracks and crevices in the wall or floor, closed or undisturbed dark areas, storage shelves, cabinets, bedsteads, starched items, gummy substances, bound books, starched clothes, photographs framed without metallic back support, Improperly stored food items, scattered food particles, exposed food items especially sweets etc.

In the exterior

Cesspools of water, stagnant drainage, improperly maintained garden, manure heaps, compost pits, garbage, poultry litter, unsealed lavatory pans, decomposed food and so on.

Control measures

1. Hygiene

Maintaining absolute cleanliness is essential in the house, fill up cracks and crevices; remove the rubbish and garbage into the waste bin; keep the bin covered; do not spill food items; cover up food items; look into the drainage for free flow of sullage water, clean the surroundings especially the washing area, bathing area, the well area and garden, poultry and cow shed, and have compost pits, and soakage pits whenever necessary. White washing and repair whenever required is essential.

2. Chemicals

Borax, pyrethrum powder, paris green, sulphur di-oxide, gasolene, benzene, naphthalene, gammaxene, chloride of lime, D. D. T. flit, phenyl, creosote,

wood preservatives, resin (wax), patent mixtures like tick-20, odomos, mosquito repellent coil etc. are certain chemicals helping in the eradication of particular pests, the use of which should be ascertained from experts since some are poisonous and need special precautions while using. Fumigation with the help of technical personnel is essential if test infestation is heavy.

3. Simple devices

Using fly flap (using 8 parts of resin with castor oil-mixing by boiling), fly bat; fly trap (using sugar and formaline), rat trap, long needles, brushes, wire meshed covers for food and storage cabinets are essential.

4. Simple precautions

Burning incense - neem leaves, thulsi leaves, camphor, having proper ventilation in the house, avoiding dark corners for relaxing and working, avoiding coir, or wire netted furniture, drying things in the sun, using boiling water in the kitchen, drain holes, or on cots (cockroach or bug haunts); using newspaper covers for starched clothes while storing, proper 'tinning' at the back while framing photos, using tar or paint for wood while installing in earth, destroying ant and termite maunds with kerosene or tar and use of kerosene and kerosene oil emulsion* for controlling mosquitoes, bed bugs and cloth moths.

* 1. 15 parts of warm water.
2. 3 parts of shreaded soap.
3. 82 parts of warm kerosene.

Dissolve the soap in hot water, warm the kerosene away from the fire by keeping a bottle of kerosene in a utensil of hot water. Add the hot,

soapy water gradually to the warmed kerosene. Bottle it, and when required use as a spray or wash.

Reconstitute it as one part of emulsion with 20 parts or less of water.

5. *Education*

Educating everyone about the menace

the diseases spread

and the simple control measures.

What can one do in CSS village to wage war against pests?

1. *Identify the problem*

Students can locate the problem whether it is cockroach, mosquito or rat menace. Locate the source or cause.

2. *Create a sensation*

Develop a sensation in them that pests are harmful to human beings. Play cards, pamphlets, posters, exhibitions, dramatization, films etc. may help.

3. *Educate them*

Educate the family members about the evils, simple household measures as filling cracks and crevices, pouring, boiling water at the drains through which the kitchen wash water, bath water etc. find a wayout, covering starched clothes with newspaper, using furniture polish, using kerosene oil emulsion, use of wire meshed cover, use of traps etc. The need for cleanliness should be stressed. Help them to use the simple precautionary measures.

4. Get technical help

The Panchayat, Health Departments, Pest Control India Limited, CFTRI, Public Relation Office, AV Departments etc. can help the villagers at various stages.

5. Enlist - Co-operation

Enlist co-operation from the villagers since it is a problem to them, Prevention is always better than cure. Note the result and follow up.

The Programme and Curriculum of the Balwadi

The preschool stage is the most crucial period in one's life. The child at this age is full of enthusiasm to explore and learn from the surroundings. Whatever is learnt at this time is not easily forgotten. Further, research has clearly shown that children who attend balwadies are better than those who never attend it in all the areas of development.

The balwadi provides maximum learning opportunities for children within the age group of $2\frac{1}{2}$ and 5 years through informal experiences and different types of play. The programme of any balwadi is determined by the objectives of preschool education. The universal objectives are promoting the physical, motor, social, emotional, intellectual and moral development of preschool children.

(i) Physical development is promoted through active play which brings about increased blood circulation, appetite and good health. At home, opportunities for free movements are limited. In addition proper eating and elimination habits are taught. Health check up along with health education promotes physical developments in a well protected and safe school area.

(ii) Motor development includes both the large and finer muscular co-ordination. Through running, jumping, climbing, skipping and hopping the large muscles are exercised and activities such

as drawing, painting, clay modelling, cutting, pasting, printing and threading promote finer muscular co-ordination.

(iii) Emotional development includes free expression of positive emotions such as love, joy, sympathy and curiosity and expressing negative emotions such as fear, jealousy and anger in socially acceptable manner. Care must be taken to see that children express their negative emotions also as control of them may lead to deviant behaviour. Through relevant stories, songs, dramatization and other experiences, children's positive emotions must be promoted.

(iv) Social development takes place when the child discovers whether he is a leader or a follower, learns to wait, takes turns, shares the toy and teacher with other children, respects others, be fair in play, be responsible and learns social skills to be well adjusted with his peers and teacher.

(v) Intellectual development is promoted through opportunities to concentrate, think, explore, recall, compare, contrast, question, answer, read and write.

(vi) Moral development includes a clear concept of what is right and what is wrong for a child. In addition the children must be taught to develop a right relationship with God.

Factors influencing the programme and curriculum of a balwadi

In addition to the objectives mentioned above the strength of the school, the age group of the children,

the building, outdoor space with shade, the personal aptitudes of the teacher and her professional qualification determine the curriculum to a great extent.

Principles governing the formulation of a curriculum

1. There must be a variety of activities to allow freedom of choice for children.
2. There must be a balance between outdoor and indoor play, individual and group play, as well as free and guided play.
3. Have as many first hand experiences as possible.
4. When children are fresh, provide active play and when they are relatively tired, provide quiet play.
5. Let the programme be flexible and meet the needs and interests of children.
6. It must enable easy transition from one activity to another and easy rearrangement of the room.
7. Start with simple activities and proceed to more complex ones.

Long and short term planning

The whole year's activities come under curriculum. Make a list of themes for the whole year starting with the simple and familiar ones. Some examples of the themes are family, flowers, vegetables, fruits, birds, animals, health and hygiene, national leaders, plants, trees, water and water living things, milk and milk products and community workers such as doctor, policeman, postman, gardener, carpenter, engineer, teacher and milkman.

After selecting and arranging the themes in order to synchronise with the different festivals and functions, plan for and note down the relevant places for field trip and other special experiences. The next step is planning for every week, drawing a suitable programme including activities such as readiness programme, outdoor play, organised games, prayer, informal discussion, indoor play, creative activities, science experiences, dramatization, music, story, washing up and nap time.

Care must be taken to see that these activities are arranged to suit the needs and maturational level of the children.

Parent education programmes

The parent teacher association helps the child in his overall growth and enables the parent as well as the teacher to learn from each other and guide the child effectively. The parents can be met casually when they come to school to leave or take the child, or individually on specified days or by conducting parents' meeting or parent education classes. Choosing topics of interest and relevance are of utmost importance. The parents develop an appreciation for the school's efforts to help the child and also participate now and then according to their talents to enrich the school's programme for which proper motivation needs to be given by the teachers.

Play equipment for a balwadi

Play and play material is one of the basic needs for all children. Play gives children emotional satisfaction. It keeps them occupied and prevents boredom. Play materials give a child a sense of achievement. It helps the child to sublimate his aggressiveness and

primitive instincts and keeps a child happy reducing his anxieties.

Play is of intellectual value. It helps children to practice and develop their new skills. It teaches them to use their hands and to co-ordinate them with their eyes. Play helps children to concentrate, observe and experiment. It teaches children how things work and how things are made. It helps to teach them to take care of their possessions. It aids children in their relationships, with others. It helps them to co-operate with others, to learn, to be honest and to lose with equanimity. It teaches them the team spirit. Out door play gives healthy exercise in the fresh air and improves health and strength.

Selection of equipment

Childhood is the age of toys. Toys are the tools of play. They need to be carefully chosen for they are an important part of learning. In selecting toys, parents, teachers and other adults must bear in mind the following facts.

1. The price of the play materials should be proportionate to the value of play and to the life of the toy. An expensive toy which remains in use a long time is often cheaper and more economical.

2. They should be suitable to the age level and maturity of the child.

3. The size of the toy must be proportionate to the control, competence and safety of the child. Up

to the age five, the child needs simple large play materials. As his manual dexterity matures, he will be able to handle smaller things.

4. Toys should be sturdily built and durable. Durability is very important. Permanent toys must be able to withstand hard wear and tear only thus can a child in time, establish that important personal relationship with a toy which allows it to be a real companion. It is also important that children learn little by little to deal with delicate objects and be protected from the sorrow of having a toy break when it is really not their fault.

5. One of the basic principles involved in the selection of toys is safety. Though there is no absolute safety against accidents and injury, reasonable precautions should be taken to avoid dangerous toys and materials. In the choice of toys, it is always important to see that the toys themselves or parts which can be detached are not sharp enough to hurt the child, that the toys or detachable parts of the toys are not so small that they can be inhaled or swallowed, that they are not easily flammable and that the paint does not come off when they are taken to the mouth.

6. Simple toys usually hold more challenge than the complicated ones and have more different uses. The construction and the mechanism of the toys must be easy to understand and manipulate.

7. In the choice of play meterials, attention should be given to equipment that involve the use of large and small muscles and things that

stimulate imagination, creativity and concentration. Children like best, toys with which they can imitate familiar adult activities.

8. Flexibility and versatility are not less important. Toys which lend themselves to a variety of uses, allow him to work out his own ideas and develops independence and self confidence.

9. There should be variety in the selection of toys since at the preschool years an ever increasing range of objects interests the child. Variety would delight the child.

10. The number and quantity of toys are often ignored. Depending upon the number of children to be admitted in a school, sufficient number of toys must be selected to give them satisfaction and enjoyment.

11. The greater the number of objects from the real world that are represented on a small scale, the better is the value of a toy in widening and deepening the experience of the world. A child who has not travelled by train cannot do much with a rocket model. Selection of toys must be made having in mind the children to whom they are to be given.

12. The adaptability and suitability to local conditions in terms of climate must also be considered.

13. The area, storage space, type of housing and architecture also play an important role in determining the use of selected toys.

14. The material from which the toy is made is of significance. Warmth and graspability is the

reason why most toys should be of wood or fabric. A rich sensory experience can be provided by offering equipment of a variety of textures.

15. Form and colour of a toy should never be ignored. Children enjoy simple decorative toys and toys of primary colours (red, yellow and blue) which form a basis for the development of sensitivity of different colours.

In a developing country like India very few preschools can afford to have expensive equipment and materials in school. Instead of selecting sophisticated and expensive equipment, the teacher should always go in for sturdy and easily replaceable play things. No doubt much depends on the imagination, resourcefulness and creativity of the teacher. If resourceful, she can have a good collection of equipment and work materials for children's activities from the things to be found around in the environment. The teacher should be constantly in search of new equipment and materials that are challenging to children. She should be well informed about what indigenous materials are available in the surroundings and what could be bought from the market.

It is not just enough if the equipment is procured for the school. The proper placement and arrangement of equipment would facilitate its use. All the materials should be placed on low open shelves, so that children may take out the play materials themselves whenever they need them. In this way, the children will also learn that there are fixed places for things to be kept and that they may take out any material they like from the storage places but they should put things back in

their proper places when the play is over. This in turn helps the children to learn to use and care for the equipment and materials.

Proper care and maintenance and replacement of worn out equipment deserve constant attention from the teacher. At the end of each term, the teacher should condemn worn out equipment and try to replace it. She should repair and repaint the old and broken ones to give them a new look and to make them attractive again. She can take the help of parents who are good with tools for this repair work.

How to Interview a Villager ?

When we go to a village, we would like to know about the background of the village. To get this information, we are in need of meeting a village leader or a school teacher. Developing rapport in that village starts from our first visit to the village. In the first visit, we meet the school teacher and ask him/her, 'May we know who are the local leaders, whom can we contact for getting informations about this village?'. This is the first step in starting our interview, as a means for the rapport establishment.

Contacting a village leader

As the next step, we meet the village leaders. The village people need respect and they appreciate simplicity. When we enter into the house of the village leader, we have to wish him cheerfully knowing the village language, (terminology and tone) the conversation should start with self introduction. The purpose of the visit to the village should be given slowly, in a simple language. During the conversation, if the interviewer (the village leader) starts talking to convey some informations, we have to be very polite and listen to him. This is very important in conducting an interview. Step by step, we should get all the informations or details about the village, thank him properly, depart from the village in such a way that the school teacher and the leader will expect you very often to their village.

Preparing an interview schedule

Having our objectives in mind, the purpose of conducting an interview with the villager, the schedule

must be prepared. It should be approved by the experts and consist of questions organised in such a way to get clear informations, in an orderly manner from the individual respondents. If ready made interview schedules are given to us, it is well and good. But, we have to make ourselves orientated to the schedule, way of posing the questions, type of answer expected and method of filling up the same. To get the sequence the questions will be placed in different parts, but when we pose questions, there must be sequence.

Conducting an interview

Now, we are entering the village Poochiyur with the objective of collecting data from the individual families to start Adult Education Programme. One of the students Saraswathy, is trying to interview a home maker, Tmt. Meenakshi. As Saraswathy enters into the house, she looks into the Door Number and notes down in her diary. She closes the diary and calls 'Amma, Amma,' very softly. The sound of Saraswathy is heard by the owner Tmt. Meenakshi but it carries the respect and politeness of Saraswathy. Tmt. Meenakshi comes out and asks "Yes, what do you want?" Saraswathy conveys the message, about the purpose of interview, where she comes from and also informally asks her whether she is disturbing her by coming like this. When we are curteous, the village people show interest in us. Tmt. Meenakshi spreads a mat and asks Saraswathy to sit and talk. It is a tradition in the villages to give drinking water to the visitors, as it is a basic need.

Now, how to start the interview? Saraswathy asks Tmt. Meenakshi about her general family background. If she starts some stories also, it is Saraswathy's responsibility to listen to her. We have

to learn a lot from the experiences of the village people. As our interview is to be informal and the villagers will be interested in their own welfare, let us start in the same direction. There is a kitchengarden in the house, the kolam in the courtyard is beautiful; the house is clean and neat; the children are coming from the school; a little baby is in the house; start the conversation with any one of these.

Then enter into the informations that we need to put up in the schedule. Saraswathy starts with the studies of the children, then goes to the number of children. Though the first question in the schedule is name of the head of the family, occupation and income, she starts with children, their age and education, occupation of the head of the family and about the various sources of income. Questions regarding Family Planning cannot be directly asked but the opinion can be asked. For example, Saraswathy asked Tmt. Meenakshi about the number of children in the family. The reply is with a laugh and humour, It is enough with two children ; Don't you think so? So, with one question, Saraswathy gets two answers - number of children and the positive attitude of the respondent towards small family size. It is the insquisitiveness of the interviewer to get correct answers and understand one answer from the other. She/he should be able to conceive informations from the facial expressions of the respondents and references given by them during the conversation.

The questions that we pose should be indirect, that is, it should not wound the respondet's hearts. For our own Adult Education Project, in collecting information, Saraswathy cannot ask Tmt. Meenakshi 'Upto which class have you studied.' Instead of that

she can ask the number of illiterates in the family and how many will be willing to join in Adult Education class. Tmt. Meenakshi says 'Amma, I want to learn. I did not get an opportunity to go to school. All others in the family are literates; children are studying.' We are happy in getting enough informations in the field of study, in a positive manner.

The interviewer should not be going on writting while the respondent is giving information. But, she / he can listen to them carefully by noting down the facts (eg. income) and points in a word and elaborate it later. Informations like caste can be known from the conversation and discussion but not directly. Certain facts will not be correct in the first statement of the respondent, eg. income. But, by asking them the sources of income and observing the way of living in the family.

Observation is very important in conducting an interview. Close observation will help the interviewer to get certain answers or posing the questions in a correct form. Saraswathy wants to know whether the head of the family, is in the habit of reading dailies. She observes that there are newspapers, heaped on the teapoy and learnt the information that there is the habit in the family. Then Saraswathy puts the next question 'What are the dailies you get ?'

Thus, Saraswathy tactfully manages the interview beautifully but Tmt. Meenakshi refused to leave her without giving a cup of coffee. But Saraswathy is very capable of managing the situation, 'saying Amma, this is not my last visit to your house, I am not going to leave you.' When you are regular for the Adult Education classes, I will definitely come

and dine in your house. I will be with you for three more years as your adopted child.' Tmt. Meenakshi heartily laughed and promised to come for the class, showed the next door, who is her friend and introduced the family to Saraswathy.

This is a successful interview as Saraswathy is able to get informations, Tmt. Meenakshi is able to give informations willingly and the rapport developed is going to be permanent as a motivation for the interviewer and interviewee.

Never shudder at problems; But face them with great courage!

The problem of the people are perennial and multivaried. But a sympathetic approach to the problems will themselves reveal the extent and method of solving them. Problem must be part of life, since they add colour to life, challenge to the tasks, and satisfaction in solving them with shrewedness and intelligence.

Identification of the problems

When the extension workers go to the field, they would face with problems at the first, instance. It would facilitate them to establish rapport with the identity their problems, locate their infrastructure, imitate leadership and enhance co-operation. The close association, frequent visits, meeting of the local women, local official and non-official leaders would be real eye openers for the extension workers to get a bird's eye view of the local problems. It would also help to feel the pulse of the people - rural and urban.

There are other formal methods of identifying the problem.

QUESTIONNAIRES

Interview schedules
Case histories
Rating sheets
Attitude scales
Baseline surveys
Annectodal methods
Leadership surveys.

Analysis of answers school records, panchayat records, and such other statistical methods would clearly reveal the longstanding, felt and unfelt needs of the people. The felt needs of the people could very well be assessed by keen and concentrated observation and interest of the extension workers.

To obtain utmost success in the identification of the problem of the people, the workers must act as friends, philosophers, guides and good administrators in the field situations. They must instil in the minds of the people that they are committed, sincere, interested in work and have aptitude and attitude in solving the problems which would take them a long way in attending the objectives, set.

Problems Highlighted

Our planners and leaders have been planning since independence to identify the problems of our India. But due to various national demands like refugee reflux, population explosion and other national calamities, the targets set could not be achieved.

Our Five Year Plans, Community Development Programme and other national developmental programmes have invested large amounts of money, men and materials for meeting the growing needs of the Indian citizens. But as a characteristic feature of a developing country, we have the following threatening problems as challenges to the extension workers.

1. Population explosion
2. Unemployment and underemployment
3. Illiteracy and Ignorance
4. Malnutrition and poor health status

5. Problems in Agriculture
6. Growth of slum and suburbs
7. Social problems like prostitution, juvenile delinquency, crime etc.
8. Inadequate infrastructures-primary health centres, balwadies, hospitals, schools, clubs and other institutions.

Concerted efforts have been taken to eradicate these problems. But still, it is the role of extension workers to strive sincerely to alleviate these problems, and educate the people to help them to solve the problems by themselves.

The following are the various agencies and organisations at our resort which have meaningful programmes and plans to identify the problems of the people, analyse them and solve them in a phased manner.

Fighting against the Problems

1. Population Education programmes have been planned in an intensive manner by Government of India. It is the bounden duty of the extension workers, to enlighten the people on the availability of resources, namely Primary Health Centre, District Health Office, Maternity and Health assistants to equip with scientific information on the population education, family welfare programmes, family planning and other norms of family living.

2. The extension workers should extend their help in locating the income generating projects and assist the people in adding on to their income. The unemployment figures had been in rise for the past 20 years inspite of multivaried income

generating projects and schemes. Hence projects and industries which would be based on local products, materials and resources would be worth initiating. The Khadi and Village Industries, Small Scale Industries Board, Nationalised Banks, Sarvodaya Sangh, Small Farmers and Marginal Farmers Development Agency and many other organisations are at our resort to seek self-employment projects. But simultaneous efforts must be taken for marketing the products starting co-operative stores and assuring the quality of the products. Educated members of the community should be motivated to work on a co-operative basis and helped to attain dignity of labour.

3. Most crucial problem of the hour is illiteracy. Researches have proved that illiteracy is the sole reason for slow adoption of any new innovation in science and technology. Programmes like Non-Formal Education, Integrated Rural Development etc. are striving to bring in scientific advancements in the rural areas. But still we have the menace of illiteracy with 60 crores. Now, historically, we have embarked on the National Adult Education Programme with rich resources and finance. It is the right time for the extension workers to tap all the agencies, voluntary organisations, governmental institutions, colleges and schools and other centres to undertake functional literacy programme. This will not only bring in improvement in literacy level but also enhance the standard of living. Hence extension workers should aspire to impart functional literacy to the people through the local schools, voluntary organisations, mahila mandals, clubs and other available institutions. It is a great challenge to

the present workers. It is also a good opportunity for the educated minority to share this knowledge, experience and skills to the less privileged and feel satisfied that they have done their best to the improvement of society which had moulded to such great heights.

4. Poor health status, malnutrition, deficiency and infectious diseases, have made our people to have less work efficiency and thus less production in all sectors. Researches have highlighted the correlation between work efficiency, higher production and maximum turn out in case of healthy workers in a conducive atmosphere with high intelligent quotient.

   Hence, it is no doubt, that such an organised effort to improve the health and nutritional status of the people would go a long way in reaching the obejectives of extension work. It would be achieved by utilising the local Extension Officer for Social Welfare for the mahalir manram programmes, balwadies, parent, teacher Association, Institutions like Block Development Agency, Central Social Welfare Board, Voluntary Organisations, Home Science Colleges, Agricultural Universities, Primary Health Centres, Mobile Health units and other agencies working in the field of health and nutrition. The people must be motivated to make use of the services rendered by various organisation in the villages and towns.

5. Agriculture is the backbone of our country. But we had been facing problem in all angles of Agriculture, i. e., in failure of monsoon, poor methods of cultivation and storage, poor quality

seeds, non-availability of fertilisers and pesticides, lack of technical guidance at the appropriate time and so on. But now we have at our proposal, various natural schemes like SFDA, MFAL, DPAP, CADA, IRD and many other centres like Agricultural Universities, Farmer's Training Centre, Farm Women Discussion Group, Rural Radio Forums, co-operative stores for marketing, advanced storage facilities like-through Save grain campaign, India and so on. Now it is undoubtedly the duty of the extension workers, to make the people aware of the schemes of these agencies, motivate them to partake in it and thus obtain the benefits. People must be educated through posters, charts, exhibitions, melas, literature, films and slogans on the amount of development and innovations in Agriculture. "The realisation of improvement in agriculture would bring forth all types of development in the people" is the slogan for extension workers to work intensively.

6. Growth of slums and suburbs is a menace in Indian cities. It is mainly due to the mobility of rural population, development of industries and over crowding in the cities. It leads to many subsequent problem like poor housing, health status, population explosion, unhealthy habits, environmental pollution and many other social problems like juvenile delinquency, prostitutions, pick pocketing, crime, drinking, gambling and other social evils. In course of time, these problems may lead to the total destruction of society and personality of individuals.

The extention workers have to play a great role in the arrest of the growth of slum and thus arising of the

social evils. Moral Education and value orientation would only help in the personality development. The people must be made to feel that they have a great role in moulding the future of the society through developing a proper healthy individual in the family.

The extension workers should establish healthy and adequate number of social institutions like clubs, mandals, recreational programmes and inter-communal, inter-religious meets to strengthen the bonds of brotherhood and bring about a healthy sound social atmosphere.

Conclusion

The problems in our developing country could be very well be eradicated if every individual becomes a real extension worker and do his mite for the betterment of the society. But concerted, and continuous spirit, committedness, interest, enthusiasm, knowledge, wisdom and vision are a must to achieve this goal.

Techniques of Working with Adults

Progress is not made by doing more of the same in the same way, but by substituting for the old practice, a new and more rewarding one. People can always be stimulated to improve themselves and their living conditions through educational approaches. In this fact lies the greatness and potential of Indian villagers. They can and will help themselves when given the opportunity under conditions of freedom, encouragement and educational leadership.

Basic Elements

The basic elements lie at the core of Extension Education for Community Development which the Extension educator must always deal with as they constitute the key to his success at influencing people.

These elements are :

1. Man himself - Physiological & Psychological
2. Man's environment - Physical, Economic and Social
3. Man created devices for improving his welfare

To make the image of man as realistic as possible let him be viewed as a typical Indian villager. In this role he may also represent numerous other village people in the newly developing countries of Asia. It should be kept sharply in mind that villagers are the central concern of programmes for rural development. They are the persons for whom such programmes are created and maintained. Changes that villagers make in their way of thinking and of acting are the criteria by

which rural development programmes, ultimately must be judged.

Assets in Adults

Adults should be viewed as individual human personalities. Adults must be seen as possessing many inherited traits, tendencies and capacities that create for us which shape what they think, what they do and how they do it. They m u s t be recognised as independent units in a social and economic system, must be viewed as a power influencing this system and in turn being influenced by it. They must be seen as constantly interacting with the forces in their environment they must be visualised as possessing a personality, the product of inherited traits which is shaped by forces in the environment in which they exist.

Adults should be viewed as possessing extensive mental power

Adults must be viewed as having the mental capacity to learn, think, reason, understand, remember, forget, judge, decide and to exercise other mental abilities. The adult's mind should be recognised as the central system that elivates and controls their behaviours.

3. Adults should be viewed as possessing emotional powers

a. capacity to feel various emotions. These include love, hatred confidence, fear, sadness, happiness, resistence and acceptance. All people experience these emotions. They are expressions of attitude. Emotions are powerful determinants of human behaviour.

b. Desire to resist many acts and conditions:
These include innovation. imposition, poverty, disease, ignorance, strangeness, scorn, force and

unfriendliness. An understanding of the role of these common desires in determining people's behaviour is crucial to effective extension educational approaches.

c. Desire to improve many things like skills, food, clothing, health, home, family, economic status, creativeness, friendship, independence, leadership, usefulness and of other things and conditions. Adults should be viewed as possessing great potentialities and physical skill.

This ability is not only the result of man's physical make up and but of his ability to learn to apply his physical skill effectively.

In summary the adults must be viewed as possessing an extensive capacity for developing themselves and shaping their environment.

Methods of approaching Adults

Communication and Extension methods are the tools of approach and they increase the effectiveness of extension work. For becoming an extension worker, one must first know, "what methods are available to him," secondly he should know "when to use a given method" and thirdly 'he should become efficient' in using each method.

Approaches in Communication and Extension

Individual approach through	Group approach through	Mass approach through
1. Personal visits	1. Demonstrations	1. Film & slides
2. Personal letters	2. Training the leaders	2. Flash cards
	3. Discussion meetings	3. Printed material
	a. Group discussion	4. Models & exhibits
	b. Panel discussions	5. Radio
	c. Symposium	6. Recorded Talk
	d. Forum	7. Charts, diagram etc.
	e. Group interview	
	f. Dialogue or public conversation	
	g. Workshop	

Audio visual aids are of great use in making the learning more effective and long lasting.

Visual aids can broadly be divided as, Projected and non-projected aids.

I	II
Projected still aids	Non Projected
Fimstrips	Projected movies pictures
Slides	II
Opaque projected material etc.	Black board
	Pictures
	Posters
	Charts
	Flash cards
	Flip books
	Flip charts
	Flannel graphs
	Picture strips
	Exhibits

Non-projected aids are easy to make, easy to carry and can be made with locally available inexpensive material. The projected material requires electricity or power generator which may not be available to many extension workers in interior villages in countries like India.

Before the people can or will respond to a programme, they must know about its objectives, understand its contents and gain skill in adopting the changes recommended. There are many agencies which would extend helping hands to the extension workers in equipping them with required audio-visual aids.

1. Block development agency with various development staff and Extension Officer for Agriculture, Co-operation, Panchayat, Animal Husbandry, Social Education Officer, Extension Officer Social Welfare, Gram Sevak and Sevika who are technically

competent, well versed extension work and equipped with relevant, simple and indigenous audio-visual aids. If the Block is under Applied Nutrition Programme, they would have additional benefits as supply of seeds, eggs, fertilisers and conduct of special feeding programmes. The Extension workers should carry these benefits to the individual member in a society and motivate him to make best use of them.

2. The concern District Health Officer, Field Publicity Officer, Small Savings Officer would be of great use in disseminating the information on family welfare, health, nutrition, deficiency diseases, immunisation, savings, family planning through relevant literature, posters, charts, films and many such aids. It is the duty of the extension workers to tap these resources as per the demands from the public.

3. The Collector's Office, Agricultural University, Home science College, Women's Welfare Office, Local Clubs and Voluntary Organisations like All India Women's Conference, Women's Voluntary Service, Bharatiya Grameen Mahila Sangh, Rotary, Lions, Jeycees, Y's Men's Clubs should be utilised for socio-economic projects, aids and other materials.

Efforts must be made to utilise all the infrastruc-
like Rural Development Departments, Directorate
griculture, Field Publicity Office, Save Grain
ign such Governmental and non-Governmental
sations.

Working with adults need great vision, interest, aptitude, tactics, knowledge and committedness. The effort could be made success only by respecting them,

understanding them and creating in them a feeling that we have come to learn from them. Hence the success of extension work depends upon the ability of the extension workers in approaching the adults in the best way possible.

REFERENCES:

1. Krishnamachari, V. T. Community Development in India, Government of India, New Delhi, 1958.
2. Directorate of Extension, Ministry of Agriculture, Government of India, Extension Education in Community Development, New Delhi, 1961.
3. Devadas, R. P., Teaching Home Science, All India council of Adult Education, New Delhi, 1958
4. Devadas, R. P., Meaning of Home Science, Home Science College, Coimbatore, 1958.
5. Devadas, R. P. Text Book of Home Science, Home Science College ICAR, New Delhi.
6. Kelsey, C. D., Hearne Ce, Co-operative Extension work, Conntocla Publishing Association, Associates, Itheica, New York, 1955.