

**ASSESSMENT OF NUTRITIONAL COGNITION OF SELECTED
RURAL YOUTH AND THE NUTRITION RELATED PRACTICES
OF THEIR FAMILIES**

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**Thesis submitted in partial fulfillment of the requirement
for the degree of**

**Master of Science in Home Science
(Food Science and Nutrition)**

**Faculty of Agriculture
Kerala Agricultural University, Thrissur**

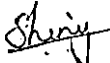
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DECLARATION

I hereby declare that this thesis entitled "Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families" is a bonafide record of research work done by me during the course of research and that the thesis has not previously formed the basis for the award of any degree, diploma, associateship, fellowship or other similar title, of any other university or society.

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Certified that this thesis entitled “Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families” is a record of research work done independently by Ms. Shiny, R.L. (2002-16-03) under my guidance and supervision and that it has not previously formed the basis for the award of any degree, fellowship or associateship to her.



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ACKNOWLEDGEMENT

I am indebted in depth of God Almighty for the numberless blessings that he showers upon my life. I bow my head before the mighty power for His eternal love and grace and for giving me the courage and strength to pursue this endeavour to completion.

I extend my profound and unbounded gratitude to my Chairperson, Smt. M. Rajani for her adroit guidance, friendly approach, co-operation and generous help evidenced during the preparation of the thesis.

My sincere thanks to Smt. N.K. Vimalakumari, Associate Professor and Head, Department of Home Science for her valuable suggestions, wholehearted help and constant encouragement during the course of the research work in the preparation of thesis.

I am really thankful to other advisory committee members, Dr. S. Syamakumari, Department of Home Science and Dr. N. Kishore Kumar, Department of Agricultural Extension for their utmost contribution for the completion of the thesis.

I avail this opportunity to express my profound sense of gratitude and special thanks to Prasanna teacher, Bela teacher and Nirmala teacher for their valuable help and suggestions.

I owe my thanks to Mr. C.E. Ajithkumar, Programmer, Department of Agricultural Statistics, for rendering his help in the statistical analysis of the data.

I extend my sincere thanks to the teaching and non-teaching staff of the Department of Home Science.

I acknowledge the Patron of this institute, The Dean for all the necessary facilities given to me during the whole courses of the study.

I would like to accord my sincere thanks to Bijuchettan for the neat and timely typesetting of the manuscript.

This thesis could not have been completed without the generous co-operation of my respondents, my heartfelt thanks to them.

I am unable to express my deep sense of gratitude to my dearest friends Darshana and Deepthi, who volunteered to offer their help during a period when the demands of their own research work were quite compelling.

I am extremely thankful to my seniors, Elizabeth, Shruti, Krishna, Sajitha, Jyothi, Benetha, Archana, Sheela and juniors, Priya, Nasheeda, Dhanya, Jose and Dhanya Prakash who had offered valuable help during the course of investigation.

Words fail to express my love and gratitude to Achan, Anma, Chettan, Mamman and Mami for what I am today. Constant encouragement and love given by my in-laws will be remembered for ever.

Last, but not least, I am expressing my deep sense of gratitude and love to my beloved husband, Saji for his unconditional love, co-operation, help, patience and sacrifice without which I may not be able to complete this research endeavour.

Shiny, R. L.

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Introduction

1. INTRODUCTION

Nutrition is the study of foods in relation to the needs of living organism. Adequate nutrition is one of the key factors which helps each person to attain his/her full potential as an adult and it depends to a great extent on the quantity and quality of foods as opined by Mittal *et al.* (2003). Food is a pre-requisite for nutrition. Some knowledge of the basic factors of nutrition is helpful to anyone who has to make food choices. By nutritional cognition it is meant both nutrition knowledge as well as nutrition attitude. Nutrition cognition is the outcome of nutrition awareness. It is basically the knowledge of nutrients in food and their role in physiological and biochemical reactions that determines the attitude towards food consumption pattern as stated by Hoorweg and Neimeijer (1989).

Kerala is predominantly an agricultural state with 13 per cent of the population living in rural areas. The agriculture sector provides a livelihood for 48 per cent of the labour force in Kerala. The projected labour force among youth under the 15-19, 20-24 and 25-29 years age groups is 45.03, 62.91 and 61.47 millions respectively (NFHS-2, 2001).

Youth occupy an abiding place in moulding the future of any country. Oatman (1993) eulogized the importance of youth by saying "The youth are the stuff of the country, the keepers of its traditions, its strength and weakness – in short the vessels of its continuity as well as progress". Any nation will certainly plunge into irrevocable damage if adequate attention is not paid to the potentialities of youth of the nation. About two third of the world population lives in rural areas and therefore the youth living in the area may be called 'Rural Youth' (Pathak *et al.*, 2000). Emphasizing the importance of youth in rural development the Food and Agriculture Organization (1995) stated that the rural youth are an

important untapped resource that must be developed so that they can contribute to rural development, particularly, in the field of agriculture.

Training of rural youth is a critical input for accelerating agricultural production on one hand and increasing employment and income of the farming community on the other (Korat, 1999). Empowered with such a knowledge and training, youth can greatly help in eradicating hunger from our country and the world over.

The nutrition knowledge of the rural youth would help in making appropriate shifts in the crop planning such as cereal – legume rotation or intercropping which in turn could help to provide a balanced diet where at present cereals alone are grown and consumed. Intercropping and mixed cropping could help to provide ingredients necessary to balanced nutrition. The present agricultural scenario calls for an alternate approach for our country to undertake accelerated broad based growth in food production through a strategic agricultural education that combine nutrition.

Nutrition education aims to compensate deficit in nutritional cognition and should achieve most effect in situations where ignorance plays an important role in the causation of malnutrition. Vijayalekshmi (2002) stated that one of the weakest links in the intervention programmes is the absence of proper nutrition education.

The relationship between nutritional cognition and nutrition related practices are known for their socio-economic implications. Umpteen number of nutritional status assessment studies targeting to vulnerable population are available. The youth population who are going to be the decision makers and productive force are obviously out of focus in both research and development programmes related to nutrition. Besides this, the period of youth is the time to develop value system related to knowledge for field application. While considerable research is documented on nutritional status of different age groups, nutritional

knowledge assessment studies are comparatively rare and with regard to rural youth, it is relatively scanty.

Against this background it would be relevant to investigate whether the rural youth are having right knowledge as well as desirable attitude towards optimum nutrition. Therefore the present study aims to assess and compare the nutritional cognition of selected rural youth belonging to farm and non-farm families. The nutrition related practices of families to which they belong is also assessed. The knowledge of nutrition and positive attitude towards optimum nutrition among the rural youth will lead them to produce nutritionally valuable foods in adequate quantities which in turn will help in combating malnutrition in the society.

*Review of
Literature*

2. REVIEW OF LITERATURE

Literature available on different aspects related to the present study entitled "Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families" is reviewed under following headings.

2.1 Concept of youth

2.2 Significance of nutritional cognition

2.3 Nutrition knowledge of rural youth

2.4 Attitude of youth towards nutrition

2.5 Dietary habits and nutrition related practices of rural communities

2.1 CONCEPT OF YOUTH

Rao (2000) reported that the existing definition of youth as per Government of India denotes all those in the age group of 15-35 years.

Pandey *et al.* (1999) stated that Aristotle is usually cited as the first source of characterization of youth in a tripartite age continuum – childhood, youth and old age.

Korat *et al.* (1999) opined that about two-third of the world population lives in rural areas and therefore the youth living in the area may be called 'Rural Youth'.

Intodia (1993) reported that youth is a period of late adolescence and early adulthood from 16-25 years.

According to Devadas and Jaya (1994) the period of youth is the time to develop value system related to ideas, friendship, fellowship, knowledge, labour and progress in all walks of life.

Youth is a transitional period of personality development and it bridges the years between childhood and adulthood (Delgado *et al.*, 1999).

Chieppa (2000) viewed that young adults are men and women in their late teens, twenties and thirties.

During the early adult years (15-34) people go through many life changes graduating from school, moving out of their parents, homes, entering the work force, getting married and having children (Donald and Jacob, 2000).

Saraswathi (1991) stated that the proportion of rural youth is higher than that of urban and the proportion of youth in the age group of 25-35 is the highest

Shivpuri (1999) reported that youth are the pillars of our nation and from the point of view of the quality of future generation they are the most crucial segment of the population. Their attainments and competence will be the major determinants of health and nutrition of the next generation. But this group of population has not been given due recognition in developmental and educational programmes as reported by Rao (2000).

2.2 SIGNIFICANCE OF NUTRITIONAL COGNITION

According to Hoorweg and Neimeger (1989) nutrition cognition means both nutrition knowledge and nutrition attitude. It is the outcome of nutrition awareness. It is basically the knowledge of nutrients in food and their role in physiological and biochemical reactions and the attitude towards food consumption pattern. Nutrition education aims to compensate deficits in nutritional cognition and should achieve most effect in situation where ignorance plays an important role in the causation of malnutrition (Kalyan, 2000).

Manson *et al.* (1997) in their study on nutrition education, behaviour and practices of rural Tamil Nadu reported that behaviour regarding diet and weaning can be changed more effectively within a

comparatively shorter time. There are two potential products of nutrition education. The first is to increase nutrition knowledge, while the second is to change attitude (Olson and Sims, 1999).

Changes in attitude towards food require knowledge, awareness of the beliefs that may be obtained from acceptance of new ideas and adjustments in food related habits, which ultimately lead to practices of what is being learnt (Rajammal and Chandramani, 1992).

A study done by Katherine (1995) found that among the socio-economic parameters family income and educational status influenced the gain in nutritional knowledge, attitude and practice.

Sandhu and Sharma (1996) in their study with 100 farm women inferred that existing level of knowledge about selected improved agricultural and nutritional practices was medium in 50 per cent farmwomen while it was low in 37 per cent and high in only 13 per cent.

Nutritional needs of the individual or a group are influenced by dietary practices, eating habits, economic situations, agricultural practices and food processing condition. Changes occurred in eating behaviour is the outcome of nutritional cognition as reported by Rekha (2002).

Jamal and Arya (1995) in a study conducted among rural women opined that in order to enable them to play their roles in the new sphere of economic life, it is imperative that their attitudes towards various practices are changed through information dissemination. There is great need for transmitting the latest knowledge on nutrition in an intelligent and compatible manner to the farmwomen.

According to Kalyan (2000) nutrition education properly conducted can have a profound influence on change in knowledge, attitude and practices related to food habits.

Nutrition education related interventions that have used in behaviour change perspective have been found successful in improving

levels of nutrition related knowledge and practices in many Asian countries like India, Indonesia, Thailand, Philippines and Vietnam (Anitha, 2003).

Uma and Khader (2003) conducted a study to determine the relationship between the respondents' background factors (family income, education level and family size) and knowledge, attitude and practices amongst outpatients in Alor Setar district in Malaysia. It was found that there was a significant relationship between knowledge and attitude and no significant relationship was seen between practices and attitude. The study also found that there was no significant relationship between knowledge and level of education. Likewise family income did not have a significant relationship with knowledge level. This study also proved that education level had a significant relationship with practices. However, there was no significant relationship between family income and practices as well as between family size and practices.

A study was designed by Alipoor (2000) to assess knowledge, attitude and practice related to nutrition among atherosclerosis patients. The results revealed that respondents with the highest scores on knowledge and attitude adopt best practice. It is also reported that their information sources are posters, magazines and newspapers.

Hemalatha and Prakash (2002) found that purposeful education programme had a positive impact on the knowledge, attitude and practice in the urban population, whereas in rural population, a definite change in the level of knowledge only could be noticed.

Papa (1995) reported that if knowledge intervention is made among the rural women, it is not only going to make the women think rationally but adopt new practices.

2.3 NUTRITION KNOWLEDGE OF RURAL YOUTH

The literal meaning of knowledge is to know something or in other words, an intimate acquaintance of facts (Jain and Singh, 1995). Bloom

(1956) defined knowledge as 'remembering by recall of any idea, material or phenomena.'

According to Antwal and Patil (1997) knowledge is one of the important components of behaviour which plays a significant role in the behaviour of an individual. Once knowledge is acquired it produces changes in one's opinion, thinking process, which would lead to further changes in attitude of the individual. Knowledge of nutrition can enable one to select an adequate diet (Bauer, 1998).

The results of the study done by Aneja *et al.* (1998) revealed that young rural women had more knowledge regarding nutritional aspects than older ones. Further more it is reported that purposeful education had also helped in increasing knowledge regarding nutrition.

Bhatnagar and Singhal (1994) found in their study that increases in knowledge of respondents were highly associated by their educational status.

Naidu and Rao (1994) is of the opinion that poor food habits and lack of nutrition knowledge are the two main causes of malnutrition.

Sizer and Whitney (2003) in their study found that nutrition needs are high during youth and choices made during these periods profoundly affect health both now and in the future.

According to Prakash (1999) rural areas were not totally exposed to nutrition knowledge and micronutrient deficiency spread both in lower income as well as upper income group.

People need information to make decisions about their livelihoods. Better information and knowledge exchange can play an important role in reducing poverty as reported by Srivastava (2001).

Many researchers agree that dissemination of nutrition knowledge; especially the applied aspects to the school children will help them to develop desirable food habits in their adulthood (Hussain, 1995).

A study conducted by Singh (1995) revealed that base level of knowledge was high as expected in community based workers and women who possessed reading skills as compared to the illiterate women who were not aware of many of the facts pertaining to nutrition. But gain in knowledge was highest in illiterate groups as they had the greatest knowledge gaps.

Rao (2002) remarked that unless the health and nutrition knowledge of the mothers were not improved better nutrition could not be achieved.

A study done by Deshpande *et al.* (2003) revealed that the rural women of the study sample had gained better knowledge pertaining to the causes of malnutrition, cooking practices with minimum loss of nutrients and preparation of various soy blend recipes.

A study done by Singh and Neena (2002) found that only a few farmwomen had rudimentary knowledge about nutrition, which could help the family to consume a low cost balanced diet. Therefore nutrition education has a paramounting role in improving the nutritional status of rural population

Jyothilekshmi and Jamuna (2004) reported that improving women's nutritional status and empowering them with education, knowledge and economic position is very essential.

Gangadharan (1993) opined that knowledge is a pre-requisite for adoption. Eventhough other factors are congenial, without proper knowledge one cannot adopt a technology.

Young adults require a knowledge base that enables them to make choices about nutrition and physical activity that are appropriate for their gender and circumstances(Johnson *et al.* 1998)

Youth is a unique intervention point in the life cycle. It offers a chance to acquire knowledge about optimal nutrition during adulthood that

could prevent or delay adult onset diet related illness later on (Kurz, and Jhonson, 1997).

Hemalatha and Prakash (2002) found in their study among young rural women that knowledge assessment showed positive impact in planning nutrition programmes.

Ikeda (1996) reported that youth had correct knowledge of their food intake, which was controlled mainly by their desire to keep in a better physical condition.

A study conducted by Sujatha (1990) found that as the age increased, the level of knowledge was found to decrease or in other words there is a reciprocal relationship between age and knowledge.

Khanna (1995) concluded that there were no differences in the knowledge between higher and lower age groups.

FAO (1995) trusts that nutrition education package contributes to a better understanding of food and nutrition issues and facilitates the development of appropriate dietary guidance. They also provide information on proper food preparation, nutritional value and bioavailability and other factors that affect micronutrient status especially of the young and to promote the consumption of foods that are rich in micronutrients.

Ramalingam (1999) opined that one of the important causes of poor maternal and child malnutrition in India is lack of knowledge of mothers. coupled with superstitions, which limit the food intake of mothers.

According to Neelakantan (1991) village people are ignorant particularly on matters of nutrition and they should be given the knowledge of nutrition and healthful living.

According to Otta (1995) higher maternal education level is related to higher awareness and adoption of better health measures. Mothers with

low educational level were found to have less knowledge about various nutrition related practices.

Results of a study done by Esfarjani (2002) on young girls in Tehran to determine their demographic status and their knowledge regarding nutritional needs showed that nutritional knowledge of the girls was not good enough and can cause nutritional deficiencies in a generation supposed to be the future mother. Therefore raising nutritional knowledge by using attractive modern technology for both parents and youth from the mass media especially TV programmes is highly recommended.

Chaudhary (2002) opined that the information seeking behaviour of the community for nutritional knowledge is almost non-existent particularly in developing countries. Most of the communities adhere to indigenous and traditional knowledge passed on from one generation to another.

Shantha and Sasikala (2004)) stated that integrating nutrition, health and environmental sanitation in the curriculum of the primary school children has increased their knowledge and developed good habits

According to Neelima *et al.* (2002) the important determinants of child health is the socio-economic status of the family especially income of the family and maternal education. Knowledge of the rural young mothers becomes more important for the proper care of the child.

Aneja *et al.* (1998) reported a significant difference in knowledge between literate and illiterate women respondents, becomes more important for the proper care of the child.

Frequent and repeated efforts should be done to enrich the knowledge of rural women in nutrition for children upto six years as opined by Pande (1998).

2.4 ATTITUDE TOWARDS NUTRITION

Saha and Kanchan (1995) defined attitude as a personal disposition which implies an individual, to react to some objects in a situation.

Prema *et al.* (1990) reported that results of research and experience of extension scientists and workers indicated that the attitude that an individual holds towards an innovation exercises significant influence on his/her accepting or rejecting that innovation.

Kuppuswamy (1994) stated that attitudes are learned in the course or experience which makes the individual behave in characteristic ways towards persons, objects, issues to which they get related.

Shanmugham (1992) found that school going rural boys had most favourable attitude towards nutrition in comparison with non-school going rural boys.

Neog (1991) suggested that the behavioural attributes of individuals such as attitude, beliefs and motives influence the practices of the individual.

A comparative study on dietary intake of urban and rural young women of Hisar district was conducted by Asha (1997) who revealed that rural mothers need to be more educated about the importance of protective and nutritious food for better health status of growing children.

Goel and Kumar (1998) conducted a study on the impact of nutrition education imparted through a combination of media to rural mothers in Pantnagar labour colonies and found that there exists a significant positive correlation between knowledge and attitude. They also found that education level of mothers positively influenced their attitudes towards desirable nutrition related practices.

A recent survey of food consumption pattern conducted by Donald and Jacob (2000) among rural Canadian young women revealed that their nutritional habits were not good due to their poor nutritional knowledge.

ICN (1992) suggested that the government should encourage the adoption of nutrition and consumer information and intervention programmes irrespective of differences in socio-economic conditions, language barriers and cultural beliefs and attitudes regarding food, health and disease.

2.5 DIETARY HABITS AND NUTRITION RELATED PRACTICES OF RURAL COMMUNITIES

The eating of particular set of food items by a person always depends on taste and availability of raw food materials is called food habits (Singh and Kaur, 1997). Food habits of an individual are the characteristic repetitive act that he performs under the impetus of need to provide himself with nourishment and simultaneously to meet an assortment of social and emotional goals (Gift *et al.*, 1972). The food habits of young adults are mainly influenced by urban life style, mass media and peers. Soft drinks and fun drinks kill the appetite and promote skipping of meals and finally results in nutritional deficiencies (Elizebeth, 2001). Urbanization has changed the family structure and life of people including food habits and living style (WHO, 1991). Devadas *et al.* (1990) analyzed the food habits of people and found that the food habits were mainly affected by environment, religion, superstition, ignorance and purchasing power. Studies conducted in Thiruvananthapuram by Jyothi (1993). Karuna (1993) and Ranganath (1996) in Kerala Agricultural University revealed that food consumption of low strata was observed to be habitual non-vegetarian type with rice as the staple food. The studies conducted by Johnson *et al.* (1994) on the pregnancy out come, dietary intake and anthropometric measurements and their relationship in the life

style practices revealed that daily diet of the woman comprised of energy rich food articles like cereals especially rice, fats and oil and sugar.

According to Eggert (1984) food preferences are formed as a result of complex interaction of many factors in an individual's environment. According to Bhat and Wahray (2000) street foods were considered as an important source of economical and nutritious food particularly by rural poor. Junk foods such as chocolate bars, potato chips, soft drink, fruit flavoured drink, cream filled cup cakes which are popular among young adults are described as having the opposite profile as they contained a lot of non-permitted colours but are valued because of its taste and convenience (Chapman and Maclean, 1993; Gayathri and Rani, 1993).

According to Patel *et al.* (1996) by acquiring nutrition related knowledge, skills and practices, young adults are well placed to pursue a healthy life and to work as agents of change for the improved nutrition of their families and community.

Mathew and Benjamin (1995) in their study on nutrition education, evaluation, beliefs and practices of rural Tamil Nadu reported that behaviour regarding diet and nutrition can be changed more effectively in a comparatively shorter time.

The dietary intakes of economically and socially deprived communities in developing countries usually consist of plant based staple foods *i.e.* cereals, fruits, vegetables and animal products are seldom consumed (Marsh, 1998)

Jaya and Sivaraj (1996) in their study pointed out that the educational programmes are most effective method of creating awareness in the aspects of nutrition related practices

Ramana (1995) reported that income of a household will exerted a profound influence on the family's dietary practices. Although sufficient

purchasing power may not always assure a nutritious diet it will nevertheless facilitates it.

Sachan and Mogra (2004) conducted a nutritional survey on 100 youth in the age group of 18-25 years. The findings showed that among them 42.27 per cent subjects liked eggs by chicken and meat were preferred by 37.11 and 13.40 per cent subjects respectively. Maximum percentage of subjects (72.67 per cent) showed their liking towards idli and dosa in contrast to poori / paratta or other fried foods which were liked by 27.33 per cent subjects. About 48.67 per cent subjects preferred cakes, pastries and other fried snacks in between the meals. Maximum percentage of subjects (54.67 per cent) were found to prefer a second helping of dessert at a feast. About 61.74 per cent subjects used ghee at table. Majority of the subjects (60 %) liked to eat a good feast with ice cream and desserts. Soft drink and carbonated beverages were preferred by 50.67 and 23.33 per cent respectively which shows the liking of young generation towards these drinks. Majority of the subjects (48 per cent) were having a habit of drinking of one to three cups or coffee / tea per day while 19.33 per cent were consuming greater than three cups per day.

A study done by Sehgal and Kawatra (1997) found that rural mother need to be more educated about the importance of protective and nutritious food for better health status of growing girls.

Hussain (1995) has opined that poor quality of diet results in poor resistance to infection and greater incidence of diseases, whereas good nutrition and health prevents infirmity, absenteeism owing to disease and increased ability for sustained work.

Meena and Malik (1999) are of the opinion that knowledge has strong relationship with extent of adoption. It is stated that adoption of any practice is not possible without knowledge.

Jul (1993) found that food production for direct home consumption is part of rural household economics. Given a choice, families provide themselves with enough space around their dwellings to plant crops and keep animals.

Chaudhary (2002) opined that intensive nutrition education for longer periods may help in furthering their knowledge which in turn might help them to adopt improved nutrition related practices.

Yeshpal and Sehgal (1995) reported that training brought about significant gain in knowledge and improvement in the cooking practices among rural women.

Bhargava and Kawatra (1999) conducted a nutritional survey on one hundred adult farm women in the age group of 20-40 years belonging to middle income group. The study showed that the diet consumed by the subjects were found to be inadequate with respect to cereals, pulses, green leafy vegetables and other vegetables while the consumption of milk and milk products, roots and tubers, sugar and jaggery fats and oils was higher compared to recommended dietary allowances.

Household food security or the ability of the household to secure either through their own production or to purchase adequate food for meeting the dietary needs of all its members at all times of the year, continues to be a major determinant of malnutrition as reported by Bayani (2003).

Laisamma (1992) found that green leafy vegetables are deleted by farm families probably because of their ignorance.

The local production of fruits and vegetables could potentially provide households with direct access to foods rich in beta-carotene (Kasturiba, 1999).

The food and dietary habits established over the years in different communities have been handed down from one generation to another for

generations and thus each community has its own attitudes and beliefs about foods, which reflect in their behaviour (Foster, 1992).

Positive change in nutrition behaviour is a gradual process initiated by education, food availability and personal choice and has been given low priority in most intervention program (Receveur, 1996).

A study done by Shanthakumari and Puttaraj (2003) revealed that the food intake of farm women showed all features of a traditional diet of low income group seen in India, though the trained groups showed a better intake than that of farm women without training. The energy and micro nutrient status were superior in farm women with training than farm women without training. Thus in the present study increased income along with nutrition education promoted a diversified food intake which in turn reflected a better micro nutrient intake thus promoting improved nutritional status among farm women.

Safian (2003) reported that nutrition counseling in the total process of providing individual guidance so that the client acquires the ability to manage his or her own nutrition care, which in turn result in successful behaviour change that results in more helpful behaviour.

A study done by Vijayalekshmi (2002) on 120 pregnant women in the age group between 25–30 years, who were in the last trimester of pregnancy found that majority of expectant mothers consume diets which were deficient in energy, protein, calcium and iron. In spite of better education and high mean percapita income, dietary intake was lower than the RDA. This is due to poor nutritional knowledge and ignorance about health of these women.

According to Bishnavi *et al.* (1999) the rural lactating mothers should be given knowledge on their increased nutritional requirements. They should be educated to include more of the locally available seasonal fruits and vegetables to improve their nutritional status.

*Materials and
Methods*

3. MATERIALS AND METHODS

This chapter deals with the methodology followed in this study entitled "Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families".

The methodology is discussed under the following headings.

- 3.1 Locale of the study
- 3.2 Selection of the subjects
- 3.3 Variables selected for the study
- 3.4 Research instruments used for the study
- 3.5 Methods of data collection
- 3.6 Data processing and analysis

3.1 LOCALE OF THE STUDY

The study was conducted in Neyyattinkara taluk of Thiruvananthapuram district. The taluk consists of four blocks namely, Parassala, Perumkadavila, Athiyannoor and Nemom. Respondents of the present study were drawn randomly from Parassala and Nemom block area.

3.2 SELECTION OF THE SUBJECTS

Multistage random sampling method was followed for the selection of subjects. In first stage, two blocks (Nemom and Parassala) were selected randomly from Neyyattinkara taluk. In the second stage, one panchayat was selected from each of the selected two blocks. One ward

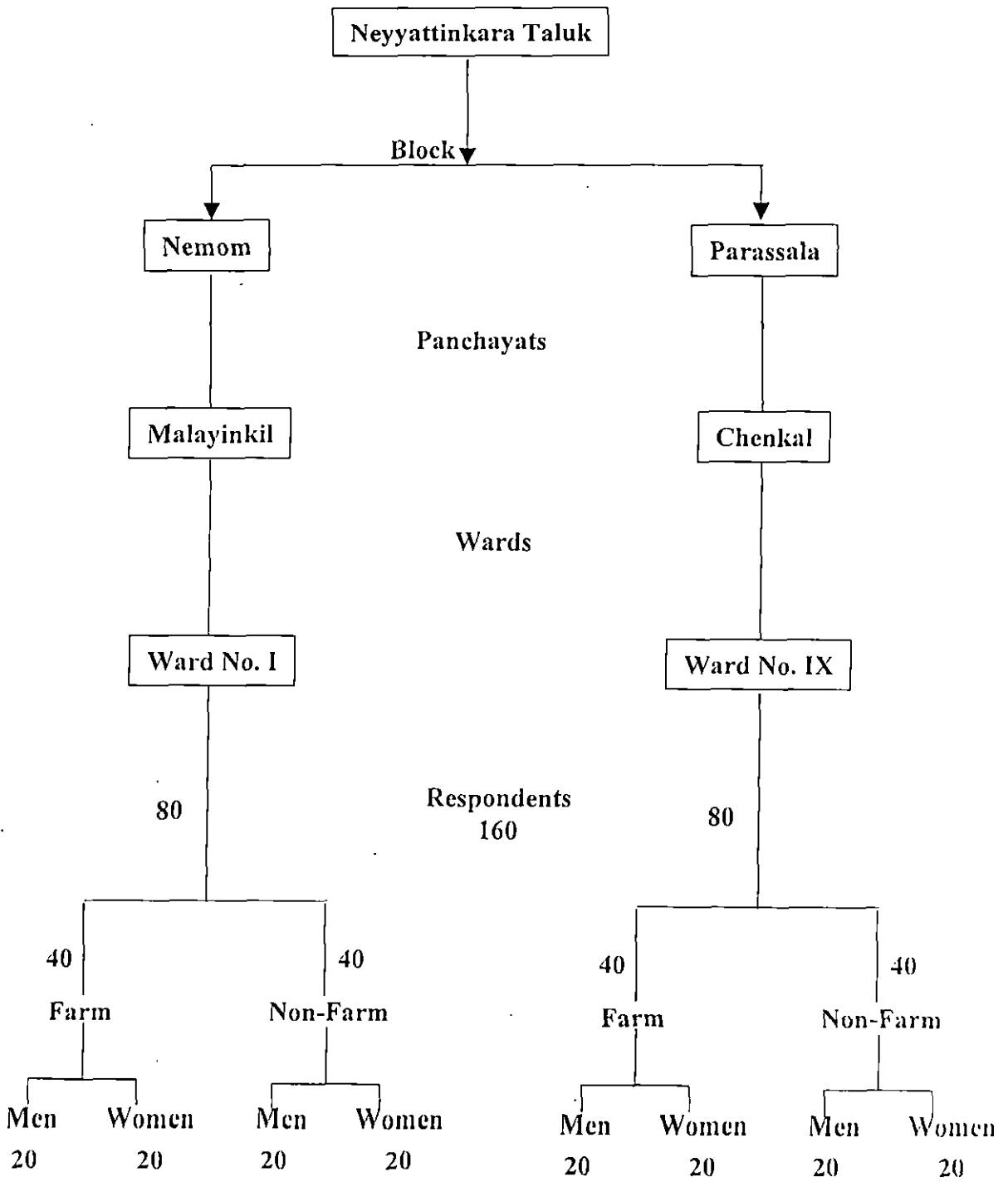


Fig. 1. Selection of respondents

each, namely, ward No. 1 and ward No. 9 were selected from Malayinkil and Chenkal panchayat respectively. At the final stage eighty rural youth from each of the selected wards constituted the study population as depicted in Fig. 1.

The subjects of the study comprised of 160 rural youth (both male and female) from two wards of selected two panchayats. Care was taken to see there was equal representation from farm and non-farm families and also male and female. Farm families has been operationalised as those family possessing atleast one acre cultivable land and utilising farm produce as means of livelihood whereas in the selected non-farm families their source of income was other than farming. Age was considered as criteria for selection of the study population and only those in the age group of 18–35 years were included in the study as subjects.

3.3 VARIABLES OF THE STUDY

3.3.1 Dependent Variables

Nutritional cognition is the outcome of nutritional awareness. It is basically the knowledge of nutrients in food and their role in physiological and biochemical reactions in the body and the attitude towards food consumption pattern. Hence nutritional cognition is operationally defined as nutritional knowledge as well as nutritional attitude. In this study nutritional cognition have been measured using the knowledge test and attitude scale developed for the purpose.

3.3.1.1 Knowledge on Nutrition

A test was developed to measure the nutrition knowledge level of farm and non-farm rural youth by adopting the procedure followed by Devi (1988) and Borah (1996) with necessary modifications.

3.3.1.2 Attitude Towards Nutrition

This was measured by developing an attitude scale using Likert method (1932). On the basis of the scores obtained it was decided whether the study subjects possessed favourable, neutral or unfavourable attitude.

3.3.2 Independent Variables

Based on the review of literature and discussions with experts selected independent variables that were expected to be related with the selected dependent variables were identified. The independent variables selected for the study are listed below.

3.3.2.1 Age

It referred to chronological age of completed years attained by the respondents collected at the time of interview. Age was major criteria for the selection of the study population. Individuals between 18-35 years formed the study population.

3.3.2.2 Sex

Equal numbers of male and female were included in the study.

3.3.2.3 Education Level of Respondents

It is defined as the formal education attained by the respondent (Jayalekshmi, 2001). A higher education level has an influence on the knowledge acquisition of youth (Otta, 1995). Educational status of the respondents were measured using a scoring system developed by NFHS-2 (2001) are listed below.

Educational status	Score
Illiterate	0
Upper primary	1

High school	2
Pre-degree	3
Degree/Diploma/ Professional course	4
PG and above	5

3.3.2.4 Birth Order

The birth order of the individuals offer significant opportunities to acquire knowledge and develop attitudes (Nelson, 1995). Hence birth order was taken as an independent variable for the study. This was measured by classifying the respondents under three categories namely, first born, middle born and last born (Roopa, 2003).

The scoring observed is as follows.

First born	-	1
Middle born	-	2
Last born	-	3

3.3.2.5 Marital Status

Details regarding the marital status of the respondent were collected to assess the relationship with the selected dependent variables. Marital status of the respondent was categorized into two as married and unmarried.

The scoring was as follows.

Category	Score
Married	1
Unmarried	2

3.3.2.6 Occupational Status of Respondents

The occupation is defined as the position of the respondent, which act as a source of income in which he spent major part of his time and attention (Raj, 1998). The occupational status of the respondent were assessed and grouped as follows.

Category	Score
Unemployed	0
Government sector	1
Private sector	2
Casual Labourer	3
Farmer	4

3.3.2.7 Income of Respondent

Monthly income of respondents were taken into account for measuring this variable. The income of the respondent were ranged and scoring assigned as follows.

Income range	Score
No income	0
≤ Rs. 2250	1
2251 – 3500	2
3501 – 5000	3
5001 – 10000	4

3.3.2.8 Social Participation

In this study it is defined as the type of membership (office bearer/member) the respondent have in a social organization. The scoring observed by Thara (2002) is as follows.

Category	Score
Membership in none of organisation	0
Membership in one or more organisations	1
Office bearer	2

3.3.2.9 Religion

Religious affiliations influence the attitude and behaviour of the individual (Rao, 2002). So data of the respondents' religion was also collected. The scoring system observed is as follows.

Category	Score
Hindu	1
Christian	2
Muslim	3

3.3.2.10 Caste

In this study caste refers to the caste hierarchy of rural youth whether they belonged to upper/other backward class/Scheduled caste or Tribe. The categorization followed in the Census Report (1991) was adopted in this study. All the respondents in the study population were

classified into following category and scores were assigned as indication against each other.

Category	Score
Forward caste	3
OBC	2
SC/ST	1

3.3.2.11 Type of Family

Type of family to which the respondents belong was taken as an independent variable. It was classified into nuclear, joint and extended. The scoring procedure adopted by NFHS -2 (2001) was adopted in the present study as follows:

Category	Score
Nuclear	1
Joint	2
Extended	3

3.3.2.12 Family Size

The size of the family refers to the total number of the members in a family of each respondent. Based on the number of members, the families were classified as follows.

Small family - 1-4 members

Large family - 5-8 members

3.3.2.13 Family Income

Monthly family income from all sources was taken into account for measuring this variable. Categorization of the income for this study was ranged into low, medium and high as observed by Thara (2002).

Income Range	Score
≤ Rs. 5000 (low income)	1
Rs. 5001 – 10,000 (middle income)	2
>Rs, 10,000 (High income)	3

3.3.2.14 Source of Information

It is defined as the extent to which rural population is exposed to different mass media for communication such as radio, newspaper and television (Jayalekshmi, 1996).

In the present study, information source utilization was measured by using ranking procedure. The respondents were asked to rank various information sources in the order of utilization. Based on the number of sources of information utilized by each respondent an index of information utilization was computed as:

$$\text{Information source utilization index} = \frac{\text{Number of sources utilized}}{\text{Total number of sources}} \times 100$$

3.4 RESEARCH TOOLS USED FOR THE STUDY

3.4.1 An interview schedule to elicit information on the socio-economic background of the selected families as well as the personal characteristics, dietary habits and nutrition related practices of the subjects under study.

- 3.4.2 A knowledge test to determine the knowledge level of the rural youth on nutrition.
- 3.4.3 An attitude scale to assess the attitude of the rural youth towards nutrition.
- 3.4.4 A rating scale to assess the nutrition related practices of the selected families.

3.4.1 Interview Schedule

An interview schedule was constructed to collect information about the socio-economic variables like family type, family size, family income, size of land holding, type of house, household food production, source of drinking water and personal characteristics of the respondents like age, sex, ordinal position, educational status, occupational status, marital status, source of information, social participation and income (if any). There were questions to know about the dietary habits and nutrition related practices of the respondents. This was ascertained by food use frequency and questions about their nibbling habits, the food fads and fallacies and habits of taking food from outside the home were also assessed. The questionnaire was pre-tested and standardized before administering among the respondents.

Frequency of use of different food items in the dietaries of respondents clearly indicate the adequacy of diet consumed by them. In this study food use frequency were measured using a check list on a 8 point scale. The locally popular foods and those frequently advertised through media were listed down and respondents' use for each item was rated separately.

3.4.2 Construction of Nutrition Knowledge Test

Knowledge is a body of understood information possessed by an individual or by culture, which is in accordance with established facts (Henersons *et al.*, 1987). In order to measure the knowledge level of the rural youth on nutrition, a nutrition knowledge test was developed as detailed below.

An item pool of 60 statements was composed relevant to nutrition knowledge on selected areas such as balanced diet, nutritive need, functions of food, nutritive value of food stuffs, food groups, nutritional deficiencies and cooking method without nutrient loss. These statements were prepared from relevant literature. Both positive and negative statements were formed. Care was taken to use simple and clear statements with no ambiguity in language or idea to avoid confusion and doubts. A jury consisting of 10 subject experts analysed the statements. In light of the suggestions made by experts, 33 statements were selected and were pre-tested. Based on the result of the pre-test five statements were discarded and remaining 28 items were selected for constructing the knowledge test. The numbers of statements in the knowledge test were based on the selected areas of nutrition.

Each statement was tested in a three point continuum of 'Yes', 'Don't know' and 'No' with a score of '2' for correct answer '1' for answer which was unknown and '0' for wrong answer. Finally the scores were added upto get the knowledge score for each respondent. The maximum score for the test developed was 54 and the minimum score 0. The constructed knowledge test administered is appended (Appendix II).

3.5.3 Measuring Attitude of the Respondents towards Optimum Nutrition

Thurstone (1946) defined attitude as the degree of positive or negative effect associated with some psychological object towards which people can differ in varying degrees.

An attitude score measured attitude. As attitude cannot be directly measured and have to be inferred from the opinion and expression of the individual, it is imperative to have as many as clear and simple statements as to provide opportunity to the respondents to reveal the extremes of his or her attitude (Bagchi, 1992).

Attitude of the respondents were measured by using Likert type attitude test developed for the purpose. For the development of the attitude scale, 70 items each expressing some opinion about importance of good nutrition, food habits and nutrition education were collected. These items were collected from relevant literature and discussion with experts. Later these items were edited according the criteria suggested by Edwards (1969). After vigorous selection only 36 statements were retained. Care was taken to see that the statements were worded to express positive and negative attitude. In the light of the suggestions made by the specialists, the items were modified and after a pilot study a total of 27 relevant items related to importance of good nutrition, food habits and nutrition education were finalised.

The responses of each item were obtained on a three point continuum ranging from 'Agree', 'No opinion' and 'disagree'. The score assigned were, 'Disagree - 0', 'No opinion - 1' and 'Agree - 2'. Negative statements were scored in reverse manner. The attitude score of the respondents were obtained by adding up the scores corresponding to their response pattern for each statement. There was thus a possibility for a respondent receiving a maximum score of 54 and minimum score 0. Attitude scale developed is presented in Appendix III.

3.5.4 Rating Scale to Assess the Nutrition related Practices of the Families

Rating means measuring an attribute of objects or persons by judgment in a continuum (Krishnaswamy, 1996).

A rating scale was prepared based on the selected nutrition related practices of the families with respect to

1. Food production / purchase
2. Food storage
3. Food preparation
4. Food distribution / consumption

Relevant literatures were referred to and experts were consulted in order to identify the statements based on the above aspects. Thus 60 statements were identified. The list of these statements was handed over personally to selected judges from the teaching faculty. The judges were requested to rate the most relevant statements in a three-point continuum most relevant, relevant and not relevant with scores 2, 1 and 0. Those statements rated as most relevant by more than 70 per cent of judges were selected for the study. Thus the final rating scale consisted of 36 statements, which was administered among the respondents after a pilot survey. They were asked to indicate the practices followed by them in a three point continuum of often, sometimes and never with scores of 2, 1 and 0 respectively. Summing up the scores on all the four areas selected namely food production/purchase, food storage, food preparation and food distribution/consumption assessed the maximum score obtained by each respondent. Maximum score a respondent could obtain in the scale was 72 and minimum score was zero. The rating scale prepared for the purpose is presented in Appendix IV.

3.6 METHODS OF DATA COLLECTION

Data was collected through interview method. The selected rural youth were administered the data collection instruments developed for the purpose by the investigator herself because an interviewer administered

questionnaire ensures answers to more complex questions, completion of all questions and an explanation of problems (Eastwood, 1997).

After collecting the background details of the respondents using the schedule, the knowledge test to assess their nutrition knowledge was given, followed by nutrition attitude scale. A rating scale to assess the nutrition related practices of the family were also administered.

3.7 DATA PROCESSING AND ANALYSIS

Generated data were subjected to processing and interpreted in terms of frequency and percentages. The statistical measurements used were measures of central tendency, measurement of variation and measurement of relationships. The result of the statistical analysis were interpreted and discussed based on earlier empirical evidences and findings. Simple correlation was computed to find out the relationship between independent and dependent variables. Karl Pearson's Product Moment correlation was computed to find out the interrelationship and degree of association between the dependent variables.

Results

4. RESULTS

The results of the present study entitled "Assessment of nutritional cognition of rural youth and nutrition related practices of their families" are presented under the following headings.

- 4.1 Personal characteristics of the respondents
- 4.2 Socio-economic profile of the families
- 4.3 Assessment of nutritional cognition
- 4.4 Nutritional cognition and its relationship with selected socio-economic variables
- 4.5 Dietary habits and nutrition related practices of the respondents.
- 4.6 Assessment of nutrition related practices of the families
- 4.7 Inter-relationship of rural youth's nutritional knowledge, attitude and related practices of their families
- 4.1 Personal characteristics of the respondents

Personal characteristics of the selected one hundred and sixty respondents with reference to age, educational status, occupational status, marital status, social participation, birth order, income (if any) and utilization of information sources were studied in order to have an overall idea about the subjects and also to relate those with nutrition cognition of the subjects.

Table 1 Age and Sex wise Distribution of the Respondents

Category	18-20	21-25	26-30	31-35
Farm				
Male	20 (25.00)	9(11.25)	7(8.75)	4(5.00)
Female	15(18.75)	8(10.00)	11(13.75)	6(7.50)
Total	35(43.75)	17(21.25)	18(22.50)	10(12.50)
Non-farm				
Male	21(26.25)	7(8.75)	8(10.00)	4(5.00)
Female	12(15.00)	11(3.75)	7(8.75)	10(12.50)
Total	33(41.25)	18(22.50)	15(18.75)	14(17.50)

Data showed that majority of the respondents (farm 43.75 percent and non-farm 41.25 percent) belonged to the age group of 18-20 years. Out of the remaining respondents in the farm families 22.50 per cent belonged to the age group of 26-30 years, 21.25 per cent belonged to the age group of 21-25 years and 12.50 per cent belonged to 31-35 years while in the non-farm families 22.50 per cent belonged to the age group of 21-25 years 18.75 per cent belonged to 26-30 years and 17.50 per cent respondents belonged to 31-35 years.

Table 2 Birth Order wise Distribution of the Respondents

Category	First	Middle	Last
Farm			
Male	26(32.50)	9(11.25)	5(6.25)
Female	18(22.50)	13(16.25)	9(11.25)
Total	44(55.00)	22(24.50)	14(17.50)
Non-farm			
Male	28(35.00)	6(7.50)	6(7.50)
Female	15(18.75)	15(18.75)	10(12.50)
Total	43(53.75)	21(26.25)	16(20.00)

From Table 2 it is evident that majority of the subjects were first born (*i.e.*, 55 percent of farm and 53.75 percent non-farm families). Next highest numbers of respondents were middle born which constituted 27.50 per cent of farm families and 26.25 per cent of non-farm families. Majority of the respondents who were categorized as last-born belonged to families having two children and 20 per cent belonged to this category.

Table 3 Marital Status wise Distribution of the Respondents

Category	Married	Unmarried
Farm		
Male	10(12.50)	30(37.50)
Female	13(16.25)	27(33.75)
Total	23(28.75)	57(71.25)
Non-farm		
Male	25(31.25)	15(18.75)
Female	28(35.00)	12(15.00)
Total	53(66.25)	27(33.75)

Assessment of the marital status of the respondents revealed that 28.75 percent respondents of farm and 66.25 per cent of non-farm families were married while 71.25 per cent and 33.75 per cent of respondents were unmarried and belonged to farm and non-farm families respectively.

Table 4 Educational Status wise Distribution of the Respondents

Category	Upper primary	High school	Pre-degree	Degree/ diploma/ Professional course	PG and above
Farm					
Male	3(3.75)	5(6.25)	22(27.50)	7(8.75)	3(3.75)
Female	4(5.00)	2(2.50)	15(18.75)	13(16.25)	6(7.50)
Total	7(8.75)	7(8.75)	37(46.25)	20(25.00)	9(11.25)

Table 4 Continued

Non-farm					
Male	2(2.50)	3(3.75)	25(31.25)	8(10.00)	2(2.50)
Female	1(1.25)	1(1.25)	20(25.00)	13(16.25)	5(6.25)
Total	3(3.75)	4(5.00)	45(56.25)	21(26.25)	7(8.75)

Forty-six percent of the farm and 56.25 per cent of non-farm respondents were found to have education upto pre-degree level. Almost equal percentage in farm and non-farm families (*i.e.*, 25.00 percent and 26.25 per cent) had education at the degree / diploma / professional degree level. Whereas 11.25 per cent and 8.75 per cent of the respondents belonging to both farm and non-farm families respectively had education upto Post graduate level and above, an equal percent (*i.e.*, 8.75) in farm families had education upto upper primary and high school level. But it was found that in the non-farm families 3.75 percent had education upto upper primary level and five per cent had high school level of education. However none of the respondents in both the categories were illiterate. The number of females having higher education was more than the males

Table 5 Occupational Status wise Distribution of Respondents

Category	Farming	Casual labourer	Government sector	Private sector	Unemployed
Farm					
Male	11(13.75)	3(3.75)	3(3.75)	9(11.25)	14(17.50)
Female	3(3.75)	2(2.50)	4(5.00)	5(6.25)	26(32.50)
Total	14(17.50)	5(6.25)	7(8.75)	14(17.50)	40(50.00)
Non-farm					
Male	-	13(16.25)	7(8.75)	11(13.75)	9(11.25)
Female	-	4(5.00)	3(3.75)	9(11.25)	24(30.00)
Total	-	17(21.25)	10(12.50)	20(25.00)	33(41.25)

Table 5 reveals that majority of the respondents (*i.e.*, 50 percent from farm and 41.25 percent of non-farm) were unemployed. About nine

per cent respondents of the farm and 12.50 per cent respondents of non-farm were government employees whereas 17.50 per cent of the farm and 25 per cent of the non-farm respondents had private jobs. About 6.25 per cent farm respondents and 21.25 per cent non-farm respondents were casual labourers like construction workers, fishermen, drivers and coir workers while 17.50 per cent of farm respondents were doing self employment like farming and as presumed none of the respondents from non-farm families were engaged in farming.

Table 6 Income wise Distribution of the Respondents

Category	No income	Rs ≤ 2250	Rs 2251-3500	Rs 3501-5000	Rs 5001-10,000
Farm					
Male	13(16.25)	2(2.50)	4(5.00)	9(11.25)	12(15.00)
Female	26(32.50)	1(1.25)	4(5.00)	5(6.25)	4(5.00)
Total	39(48.75)	3(3.75)	8(10.00)	14(17.50)	16(20.00)
Non-farm					
Male	12(15.00)	3(3.75)	4(5.00)	5(6.25)	16(20.00)
Female	23(28.75)	4(5.00)	3(3.75)	4(5.00)	6(7.50)
Total	35(43.75)	7(8.75)	7(8.75)	9(11.25)	22(27.50)

As could be observed from the Table 6 majority of the respondents from both the groups (48.75 percent and 43.75 percent) had no income of their own. But clear variation could be seen in the income between the two groups. About four percent of farm respondents had an income upto Rs 2250, 10 percent had an income between Rs 2251-3500 and 17.50 percent were having an income between Rs 3501-5000 and twenty percent were having an income between Rs 5001-10000. In the case of non-farm families even though the majority belonging to the higher income group *i.e.* 27.50 percent had Rs 5001-10,000 and 11.25 percent had Rs 3501 - 5000, the other two income groups (Rs ≤ 2250 and Rs 2251-3500) were of 8.75 percent each.

Table 7 Distribution of Respondents Based on Utilization of Various Sources of Information on Nutrition

	TV	Radio	Newspaper	Friend	Magazine	Exhibition	Resource person
Farm							
Male	10(12.50)	7(8.75)	10(12.50)	1(1.25)	8(10.00)	1(1.25)	3(3.75)
Female	15(18.75)	7(8.75)	6(7.50)	-	10(12.5)	-	2(2.50)
Total	25(31.25)	14(17.50)	16(20.00)	1(1.25)	18(22.50)	(1.25)	5(6.25)
Non-farm							
Male	11(13.75)	7(8.75)	12(15.00)	-	4(5.00)	1(1.25)	5(6.25)
Female	18(22.50)	5(6.25)	7(8.75)	1(1.25)	2(2.50)	-	7(8.75)
Total	29(36.25)	12(15.00)	19(23.75)	1(1.25)	6(7.50)	1(1.25)	12(15.00)

Table 7 revealed that in farm families Television was ranked as the primary source of information by 31.25 percent of males and 18.75 percent of females. Magazines were ranked as the primary source of information by 22.50 percent of the respondents including 10 percent of male and 12.50 percent of females. Only 1.25 percent of respondents belonging to farm families reported exhibition and friends as their primary source of information. No female respondents ranked friends, as well as exhibition as their primary source of information. Respondents from non-farm families (36.25 percent) also ranked Television as the primary source of information including 13.75 percent males and 22.50 percent females. About twenty four percent of the respondents utilized newspaper as primary source of information including 15 percent males and 8.75 percent of females. An equal percentage of respondents (15 percent) ranked radio and magazine as their primary source of information. A very negligible percent of respondents from both farm and non-farm families ranked friends and magazines as their primary source of information.

Table 8 Distribution of Respondents Based on Their Social Participation

Category	None	Members	Office bearers
Farm			
Male	8(10.00)	28(35.00)	4(5.00)
Female	7(8.75)	31(38.75)	2(2.50)
Total	15(18.75)	59(73.75)	6(7.50)
Non-farm			
Male	10(12.50)	30(37.50)	-
Female	12(15.00)	27(33.75)	1(1.25)
Total	22(27.50)	57(71.25)	1(1.25)

As depicted in Table 8 majority of the respondents in each group (*i.e.*, 73.75 per cent and 71.25 per cent) were members of various organizations; 18.75 per cent of farm respondents and 27.50 per cent of non-farm respondents were not members or office bearers in any organization. Only very few of the female respondents were office bearers in both groups.

4.2 SOCIO-ECONOMIC PROFILE OF THE FAMILIES

Socio-economic profile of the families with special reference to religion, caste, family type, family size, family income and household food production of the selected respondents were studied and the results are presented below.

Table 9 Religion wise Distribution of Families

Category	Hindu	Christian	Muslim
Farm			
Male	32(40.00)	6(7.50)	2(2.50)
Female	24(30.00)	12(15.00)	4(5.00)
Total	56(70.00)	18(22.50)	6(7.50)
Non-farm			
Male	27(33.75)	9(11.25)	4(5.00)
Female	30(37.50)	10(12.50)	-
Total	57(71.25)	19(23.75)	4(5.00)

Table 9 reveals that majority of the respondents were Hindus (70 percent in farm and 71.25 percent in non-farm families). While 22.5 percent of farm respondents and 23.75 percent of non-farm respondents were Christians. The remaining were Muslims (7.50 percent in farm and 5.00 percent in non-farm families).

Table 10 Caste wise Distribution of the Families

Category	Forward	OBC	Backward
Farm			
Male	23(28.75)	17(21.25)	-
Female	17(21.25)	22(27.50)	1(1.25)
Total	40(50.00)	39(48.75)	1(1.25)
Non-farm			
Male	16(20.00)	19(23.75)	5(6.25)
Female	25(31.25)	14(17.50)	1(1.25)
Total	41(51.25)	33(41.25)	6(7.50)

The caste wise distribution of the families as depicted in Table 10 shows that majority of the families (50 percent from farm and 51.25 percent from non-farm) belonged to forward community and 48.75 percent from farm and 41.25 percent from non-farm were from Other Backward Communities while 1.25 percent of farm and 7.50 percent non-farm families belonged to scheduled caste groups respectively. Percentage of

respondents belonging to SC and ST were comparatively fewer in both groups.

Table 11 Distribution Based On Family Size

Category	Small family (1-4 members)	Large family (5-8 members)
Farm		
Male	30(37.50)	10(12.50)
Female	28(35.00)	12(15.00)
Total	58(72.50)	22(27.50)
Non-farm		
Male	35(43.75)	5(6.25)
Female	34(42.50)	6(7.50)
Total	69(86.25)	11(13.75)

Data presented in Table 11 shows that majority of the respondents in both groups (*i.e.*, 72.50 percent farm and 86.25 percent non-farm) had 1-4 members in their families. Of them non-farm constituted a higher percentage but 27.50 per cent of farm and 13.75 per cent of non-farm had large families.

Table 12 Distribution Based on Family Type

Category	Nuclear	Extended	Joint
Farm			
Male	30(37.50)	4(5.00)	6(7.50)
Female	28(35.00)	5(6.25)	7(8.75)
Total	58(72.5)	11(11.25)	13(16.25)
Non-farm			
Male	35(43.75)	1(1.25)	4(5.00)
Female	37(46.25)	2(2.50)	1(1.25)
Total	72(90)	3(3.75)	5(6.25)

It can be seen from Table 12 that majority of the respondents belonged to nuclear type of families (*i.e.*, 72.50 percent in farm and 90 percent in non-farm). An equal percentage (13.75 percent) of farm families belonged to both extended and joint type where as in the non-farm families only 6.25 per cent belonged to joint type and 3.75 belonged to extended type of families.

Table 13 Distribution Based on Monthly Income

Category	Rs ≤ 5000 (Low income)	Rs 5000 – 10,000 (Middle income)	Rs > 10,000 (High income)
Farm			
Male	11(13.75)	23(28.75)	6(7.50)
Female	8(10.00)	27(33.75)	5(6.25)
Total	19(23.75)	50(62.50)	11(13.75)
Non-farm			
Male	11(13.75)	20(25.00)	9(11.25)
Female	15(18.75)	20(25.00)	5(6.25)
Total	26(32.50)	40(50.00)	14(17.50)

Table 13 showed that a considerable percentage (*i.e.*, 62.50 percent of farm and 50 percent of non-farm families) of the study sample had a monthly income within the range of Rs 5001-10,000; 23.75 per cent of farm families and 32.50 per cent non-farm families belonged to low income category with a monthly income ranging from ≤ Rs.5000 while 13.75 per cent and 17.50 per cent of farm and non-farm families respectively belonged to high-income group.

Table 14 Distribution based on Land Holdings

Category	< 1 acre	1-5 acre	> 5 acre
Farm			
Male	-	37(46.25)	3(3.75)
Female	-	34(42.50)	6(7.50)
Total	-	71(88.75)	9(11.25)
Non-farm			
Male	38(47.50)	2(2.50)	-
Female	39(48.75)	1(1.25)	-
Total	77(96.25)	3(3.75)	-

Information related to the distribution of the families with respect to land holdings given in Table 14 reveals that in non-farm families 96.25 per cent of the respondents had a land size less than one acre and only a few respondent (3.75 percent) had land area within 1-5 acres whereas in the farm families 88.75 per cent respondents had land area within 1-5 acres and 11.25 percent had greater than five acres of land.

Table 15. Distribution of families based on animal food production and utilization

Animal products	Production		Utilization	
	Yes	No	Fully utilized	Partially utilized
Milk	69 (86.25)	11 (13.75)	54 (78.27)	15 (21.73)
Egg	58 (72.50)	22 (27.50)	47 (81.04)	11 (18.96)

Figures in parenthesis denote percentage

Enquiring on home production of animal foods among the families surveyed revealed that 86.25 per cent farm families produced milk and 72.50 per cent families were engaged in poultry rearing. It was found that 78.27 per cent families fully utilized the milk produced by them and 21.73

per cent families utilized the milk produced only partially. Likewise, 72.50 per cent families produced eggs and majority of the eggs produced were utilized for home consumption.

Table 16. Distribution of families based on crop production and utilization

Crops cultivated	Production		Utilization	
	Yes	No	Fully utilized	Partially utilized
<u>Major crops</u>				
Coconut	80 (100.00)	-	20 (25.00)	60 (75.00)
Paddy	7 (8.75)	73 (91.25)	7 (100.00)	-
<u>Minor crops</u>				
Vegetables	28 (35.00)	52 (65.00)	28 (100.00)	-
Roots and tubers	53 (66.25)	27 (33.75)	45 (84.90)	8 (15.10)
Green leafy vegetables	56 (70.00)	24 (30.00)	49 (87.50)	7 (12.50)
Fruits other than banana	38 (47.50)	42 (52.50)	24 (63.15)	14 (36.85)
Banana	72 (90.00)	8 (10.00)	15 (20.84)	57 (79.16)

Figures in parenthesis denote percentage

Table 16 depicts the data on crop production and utilization of farm families studied. Coconut was found to be the most important crop cultivated by all farm families. Ninety per cent of the families cultivated banana. Only few families (35.00 per cent) were found to be engaged in cultivation of vegetables. Vegetables commonly cultivated were bittergourd, ladies finger, beans, brinjal and cucumber. About 56.25 per cent of families belonging to different land holdings were found to cultivate roots and tubers like yam, coleus, colocasia, elephant foot yam, sweet potato, arrow root and tapioca. Cultivation of green leafy vegetables

were found to be appreciable in 70 per cent of families. Only 8.75 per cent of the families cultivated paddy.

An assessment to understand the utilization pattern of crops cultivated indicated that among the families cultivating paddy, almost all the families were utilizing the same fully at home. Among the cultivators of coconut, 25 per cent of the families utilized the produce for home use, whereas 60 per cent families sold out the same for earning an income. The vegetables produced were fully utilized by all the families. Around 85 per cent of the families fully utilized roots and tubers and 15 per cent of the families partially utilized the produce. Likewise 87 per cent of the green leafy vegetables produced were fully utilized and 12.50 per cent of the families used to sell out the green leafy vegetables produced by them. Among the fruit growers, 36.85 per cent partially utilized the produce while 63.15 per cent of families utilized the produce for home consumption only. Around 20 percent banana cultivators utilized the produce fully and the remaining percent of the families utilized the produce only partially at home and the excess was sold out.

Regarding the housing condition it was observed that majority had concrete houses (72.50 percent farm and 67.50 percent non-farm) while 23.75 per cent of farm and 31.25 per cent of non-farm families had tiled houses and only few, 1.20 percent in non-farm and 3.75 per cent of farm families had thatched houses.

It was found that 97.50 per cent of farm families and 92.50 per cent non-farm families depended on their own well for drinking water and 2.5 per cent of farm families and 7.5 per cent of non-farm had public tap water facility.

4.3 ASSESSMENT OF NUTRITIONAL COGNITION

Nutrition cognition comprises of nutrition knowledge and nutrition attitude.

4.3.1 Knowledge Level on Nutrition

The knowledge level of the respondents was assessed using the knowledge test developed for the purpose. On the basis of the scores obtained by the respondents in the knowledge test, they were classified into three levels, low, medium and high, which are shown in Table 17. Low level of knowledge were obtained by those who got score less than mean minus standard deviation, high level of knowledge were obtained by those with scores above mean plus standard deviation and medium level of knowledge were obtained by those with scores between mean minus standard deviation and mean plus standard deviation. The maximum score of the test was 56 and the minimum 0.

Table 17. Nutrition knowledge level of the subjects

Score range Category	Low < 36	Medium 36 - 44	High > 44
Farm			
Male	22 (27.5)	17 (21.25)	1 (1.25)
Female	5 (6.25)	25 (31.25)	10 (12.50)
Total	27 (33.75)	42 (52.50)	11 (13.75)
Non-farm			
Male	25 (31.25)	15 (18.75)	0 (0)
Female	9 (11.25)	28 (35.00)	3 (3.75)
Total	34 (42.50)	43 (53.75)	3 (3.75)

Nutrition knowledge level of the subjects revealed that majority of the respondents had medium level knowledge under selected seven areas namely balanced diet, nutritive needs, functions of food, food groups, nutritive value of food stuffs, nutritional deficiencies and cooking methods without nutrient loss. Out of this 21.25 per cent of male and 31.25 per cent of female respondents belonged to farm families whereas 18.75 per cent males and 35 per cent females belonged to non-farm category. The data further revealed that greater percentage of respondents belonged to non-farm families (42.50 per cent) have low level of knowledge compared to farm families (33.75 per

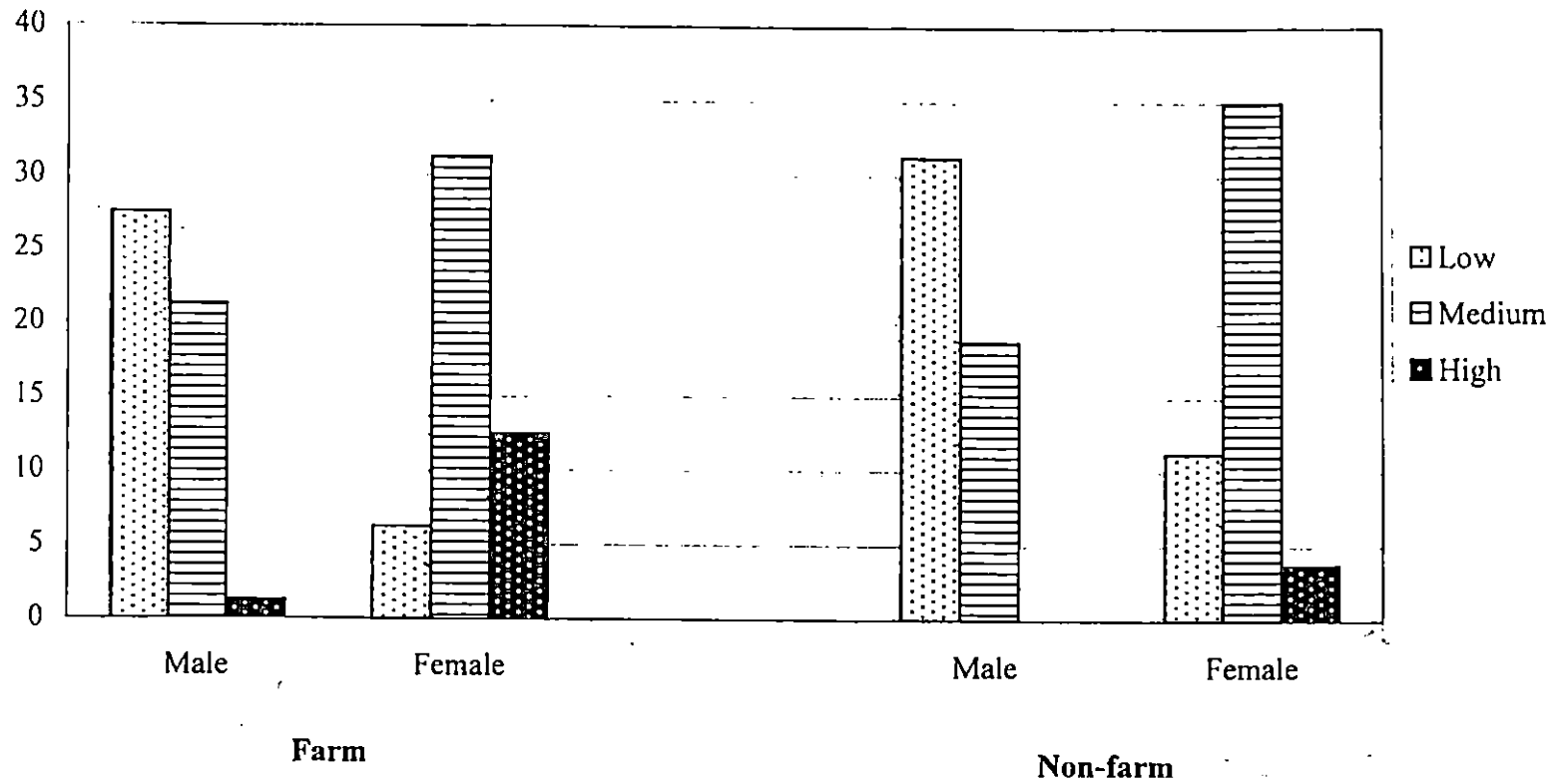


Fig. 2. Nutrition knowledge level

cent). But in the case of high-level category it was found that greater percentage of respondents belonged to farm families (13.75 per cent) than non-farm families (3.75 per cent). In both category females possessed better scores of knowledge than males.

Table 18 Component wise distribution of nutrition knowledge level of the respondents

Components		Farm			Non-farm		
		Male	Female	Total	Male	Female	Total
Balanced diet	L	15 (18.75)	13 (16.25)	28 (35.00)	17 (21.25)	15 (18.75)	32 (40.00)
	M	21 (26.25)	19 (23.75)	40 (50.00)	20 (25.00)	21 (26.25)	41 (51.25)
	H	4 (5.00)	8 (10.00)	12 (15.00)	3 (3.75)	4 (5.00)	7 (8.75)
Nutritional needs	L	20 (25.00)	19 (23.75)	39 (48.75)	22 (27.50)	19 (23.75)	41 (51.25)
	M	18 (22.50)	18 (22.50)	36 (45.00)	16 (20.00)	19 (23.75)	35 (43.75)
	H	2 (2.50)	3 (3.75)	5 (6.75)	2 (2.50)	2 (2.50)	4 (5.00)
Functions of foods	L	10 (12.50)	8 (10.00)	18 (22.50)	12 (15.00)	10 (12.50)	22 (27.50)
	M	19 (23.75)	18 (22.50)	37 (46.25)	25 (31.25)	28 (35.00)	53 (66.25)
	H	11 (13.75)	14 (17.50)	25 (31.25)	3 (3.75)	2 (2.50)	5 (6.25)
Nutritive value of food stuffs	L	26 (32.50)	22 (27.50)	48 (60.00)	28 (35.00)	25 (31.25)	53 (66.25)
	M	14 (17.50)	17 (21.25)	31 (38.75)	12 (15.00)	15 (18.75)	27 (33.75)
	H	-	1 (1.25)	1 (1.25)	-	-	-
Food groups	L	12 (15.00)	10 (12.50)	22 (27.50)	14 (17.50)	13 (16.25)	27 (33.75)
	M	25 (31.25)	30 (37.50)	55 (68.75)	25 (31.25)	24 (30.00)	49 (61.25)
	H	3 (3.75)	6 (7.50)	9 (11.25)	1 (1.25)	3 (3.75)	4 (5.00)
Nutritional deficiency diseases	L	21 (26.25)	20 (25.00)	41 (51.25)	21 (26.25)	21 (26.25)	42 (52.50)
	M	19 (23.75)	20 (25.00)	39 (48.75)	9 (11.25)	19 (23.75)	28 (35.00)
	H	-	-	-	-	-	-
Cooking method without nutrient loss	L	7 (8.75)	4 (5.00)	11 (13.75)	6 (7.50)	5 (6.25)	11 (13.75)
	M	24 (30.00)	21 (26.25)	45 (56.25)	28 (35.00)	25 (31.25)	53 (66.25)
	H	9 (11.25)	15 (18.75)	24 (30.00)	6 (7.50)	10 (12.50)	16 (20.00)

Figures in parenthesis denote percentage

Table 18 gives the details on the component wise distribution of the respondents based on nutrition knowledge level in the seven selected areas such as balanced diet, nutritional needs, functions of food, food groups, nutritive value of food stuffs, nutritional deficiency diseases and cooking methods without nutrient loss.

The knowledge level of the respondents of farm and non-farm categories were found out under seven areas such as balanced diet, nutritive needs, functions of foods, nutritive value of food stuffs, food groups, nutrition deficiency diseases and cooking methods without nutrient loss. The statements are presented in Appendix II. The scores obtained corresponding to the related areas were classified into low, medium and high based on the mean and standard deviation values. The details are presented in the Table 18.

Assessment of Table 18 showed that low level of knowledge was found more among the areas like nutritive value of different food stuffs (60 per cent of farm families and 66.25 per cent of non-farm families), nutritional deficiency disease (51.25 per cent farm families and 52.50 per cent of non-farm families) and nutritional needs (*i.e.*, 51.25 per cent farm families and 51.25 per cent of non-farm families).

Higher percentage of respondents in both farm and non-farm families had medium level of knowledge on the statements related to the areas such as balanced diet, functions of food, food groups and cooking methods without nutrient loss. High level of knowledge was found more in the statements related to cooking methods without nutrient loss (30 per cent of farm families and 20 per cent of non-farm families).

4.3.2 Attitude towards Optimum Nutrition

An attitude scale to find out the attitude of the respondent towards optimum nutrition based on the three areas namely importance of nutrition, food habits and nutrition education was designed for the study.

There were 27 statements in the schedule. The responses of the correct answer in the three-point continuum were grouped into favourable, neutral and unfavourable and comparisons were made. Based on the mean and standard deviation, the scores obtained by the respondents in the attitude test, they were divided into three groups. Those who were having a favourable attitude were included in the first group, and those having neither favourable nor unfavourable attitude were categorized in the second group and the third group consisted of subjects having unfavourable attitude. The maximum scores of the attitude test were 54 and the minimum was 0.

Table 19 gives the distribution of attitude scores of the respondents studied.

Table 19. Attitude of the respondents towards optimum nutrition

Score range Category	Favourable ≥ 49	Neutral 37 – 48	Unfavourable < 37
Farm			
Male	9 (11.25)	19 (23.75)	12 (15.00)
Female	15 (18.75)	17 (21.25)	8 (10.00)
Total	24 (30.00)	36 (45.00)	20 (25.00)
Non-farm			
Male	3 (3.75)	20 (25.00)	17 (21.25)
Female	9 (11.25)	19 (23.75)	12 (15.00)
Total	12 (15.00)	39 (48.75)	29 (36.25)

It is seen from the Table 19 that majority of the respondents (46.87percent) in both groups (45.00 per cent of farm and 48.75 per cent non-farm respondents) had neutral attitude towards nutrition. Among 31 per cent of the total respondents, majority from non-farm families had unfavourable attitude whereas among 22.50 per cent of respondents.

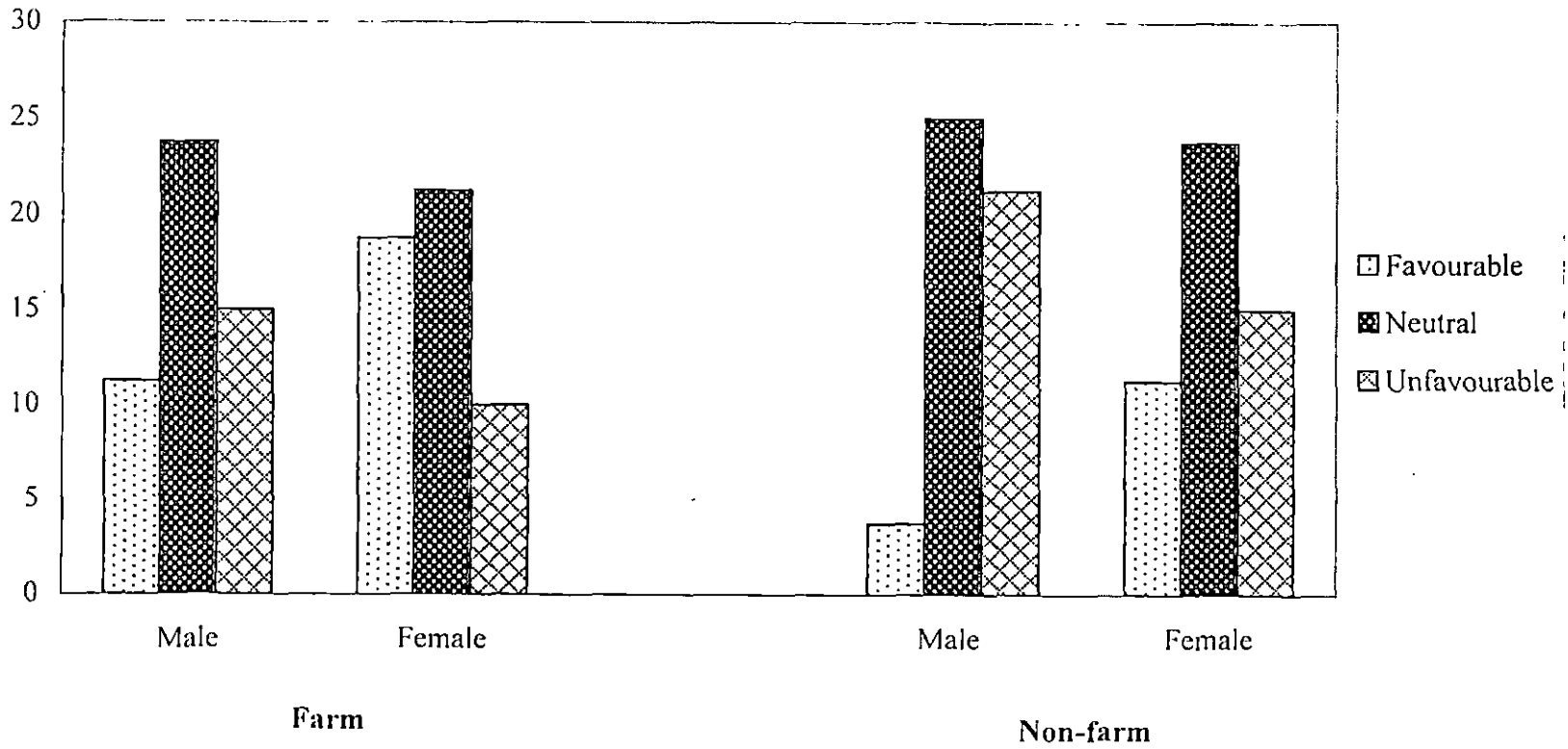
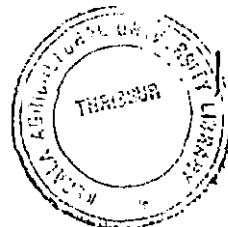


Fig. 3. Attitude of the respondents



majority of farm respondents (30.00 percent) had favourable attitude towards nutrition.

The attitude towards nutrition was again subdivided into three different areas such as importance of good nutrition, food habits and nutrition education. The respondents' attitude against each area were separately focused and compared. Unit wise analysis of nutrition attitude of the respondents is shown in Table 20.

Table 20. Nutrition attitudinal component wise distribution of study subjects

Components		Farm			Non-farm		
		Male	Female	Total	Male	Female	Total
Importance of good nutrition	L	13 (16.25)	11 (13.75)	24 (30.00)	15 (18.75)	13 (16.25)	28 (35.00)
	M	22 (27.50)	24 (30.00)	46 (57.50)	24 (30.00)	25 (31.25)	49 (61.25)
	H	5 (6.25)	5 (6.25)	10 (12.50)	1 (1.25)	2 (2.5)	3 (3.75)
Food habits	L	10 (12.50)	9 (11.25)	19 (23.75)	12 (15.00)	10 (12.50)	22 (27.50)
	M	26 (32.50)	24 (30.00)	50 (62.50)	25 (31.25)	25 (31.25)	50 (62.50)
	H	4 (5.00)	6 (7.50)	10 (12.50)	3 (3.75)	5 (6.25)	8 (10.00)
Nutrition education	L	17 (21.25)	15 (18.75)	32 (40.00)	19 (23.75)	17 (21.25)	36 (45.00)
	M	23 (28.75)	24 (30.00)	47 (58.75)	21 (26.25)	22 (2.75)	43 (29.00)
	H	-	1 (1.25)	1 (1.25)	-	-	-

Figures in parenthesis denote percentage

Attitude scale consisted of 27 statements. This scale is divided into three areas namely, importance of good nutrition, food habits and nutrition education. Each area include nine statements. Maximum score obtained for each statements were 18. Each area is again categorized based on mean and SD as low, medium and high to measure the extent of attitude among the respondents in the three areas. Score below four is considered as low level of attitude and score between 4 and 7 is considered as middle value and scores above 7 is considered as high level of attitude.

It is observed from the Table 20 that in all the three areas namely importance of good nutrition, food habits and nutrition education, majority of the respondents got the score value at medium level in farm and non-farm families. Among the three areas, higher percentage of respondents (21.25 per cent farm and 18.75 per cent non-farm) showed lower level of attitude towards nutrition education.

Assessment of nutritional cognition of male and female respondents were found out statistically. Mean scores of male and female respondents on nutrition cognition are presented in Table 21.

Table 21. Comparison of Nutrition cognition among the respondents

Sex	Variables	Means score \pm Standard deviation	t value
Female Male	Nutrition Knowledge	42.25 \pm 4.814 38.83 \pm 3.585	7.1837**
Female Male	Nutrition Attitude	44.33 \pm 6.759 42.07 \pm 6.480	8.4543**

**Significant at 1 per cent level

It is evident from the Table 21 that there was significant variation in the nutrition cognition of males and females. Variation in nutrition knowledge of male and female respondents is significant at one per cent level. Nutrition attitude for males and females is also significant at one per cent level. Nutrition knowledge scores and nutrition attitude scores of females was found to be higher than that of males.

4.4 NUTRITIONAL COGNITION AND ITS RELATIONSHIP WITH SELECTED SOCIO-ECONOMIC VARIABLES

The relationship between the respondents' nutritional cognition (namely nutrition knowledge and nutrition attitude) and the selected socio-

economic variables was computed and the results are presented in Table 22 and Table 23.

4.4.1 Relationship between Selected Independent Variables and Nutrition Knowledge

The results presented in Table 22 revealed that nutrition knowledge has a negative significant correlation with age and positive significant relationship with family income at five per cent level. Independent variables like religion, sex, education, family size, family type, income of respondent, occupation and social participation were found to have highly significant relationship at one per cent level.

Table 22. Relationship between nutrition knowledge and selected independent variables

Variables	Correlation
Age	-7.94329**
Sex	2.6006**
Education	9.9081**
Birth order	0.1390
Marital status	0.1139
Occupation	3.1920**
Income of respondent	2.4995**
Social participation	8.7882**
Religion	7.9432**
Caste	0.1985
Family type	8.6871**
Family size	8.9796**
Family income	1.9272*

* Significant at 5 per cent level ** Significant at 1 per cent level

It is observed from the Table 22 that variables like birth order of the respondent, caste and marital status has no relationship with their knowledge level.

4.4.2 Relationship between respondent's attitude towards nutrition and selected independent variables on nutrition attitude

It is clear in Table 23 that independent variables such as age, education, income of the respondent, religion and family type had a significant correlation with attitude. A highly significant positive correlation at one per cent level was also seen with sex, occupation, social participation, family size and family income.

Table 23. Relationship between attitude towards nutrition and selected independent variables

Variables	Correlation
Age	2.0613*
Sex	2.6422**
Education	2.1040*
Birth order	0.1063
Marital status	0.1875
Occupation	7.2157**
Income of respondent	2.1518*
Social participation	7.2157**
Religion	2.1823*
Caste	0.1913
Family type	2.0104*
Family size	3.7595**
Family income	6.9603**

* Significant at 5 per cent level ** Significant at 1 per cent level

The Table 23 shows that no significant relationship exists between birth order, marital status and caste and attitude towards optimum nutrition of the respondents.

It is also evident that independent variables like sex, education, occupation, income of the respondents; social participation, religion, family type, family size and family income had a positive influence on nutritional cognition of the youth.

4.5 DIETARY HABITS AND NUTRITION RELATED PRACTICES OF THE RESPONDENTS

The dietary habits and nutrition related practices of the respondents were presented in Table 24.

Table 24 Dietary Habits of the Respondents

Category	Vegetarian	Non-vegetarian
Farm		
Male	-	40(50.00)
Female	5(6.25)	35(43.75)
Total	5(6.25)	75(93.75)
Non-farm		
Male	-	40(50.00)
Female	3(3.75)	37(46.25)
Total	3(3.75)	77(96.25)


The dietary habits of the respondents were studied and it was found that majority of the respondents from both farm & non-farm families were non-vegetarians (Table 24). It was also noted that no one of the male respondent was vegetarian.

Regarding the food habits of the respondents, about 73.75 percent of farm families and 78.75 per cent of non-farm families have the habit of nibbling in between meals. A few of the respondents in farm (8.75) and non-farm families (17.50 %) were reported to be choosy in their food choices. Another observation of the respondents dietary habit is that though the three meal a day is followed in majority of the families in Kerala, most of the respondents *i.e.*, 32.50 per cent of farm and 38.75 per cent of non-farm respondents stated that they regularly skip one meal daily. On further analysis it was found that majority of respondents in both farm and non-farm families skip breakfast but very few of the respondents skip lunch or dinner.

Majority of the respondents (70 % from farm and 63.75 % non-farm) prefer home food while a few male respondents and none of the female respondents from farm and non-farm families have the habit of eating outside whereas 27.50 per cent farm families and 32 per cent non-farm family respondents have the habit of buying food from outside as well as home food.

About 86 per cent of farm and non-farm families liked novel recipes than traditional foods. About 68 per cent respondents of farm and 61 per cent of non-farm used to consume vegetables in raw form, except 2.5 per cent of female respondents in farm families, all other respondents drink buttermilk daily. Comparable to farm families only 55 per cent from non-farm families used to drink butter milk.

Table 25 Nutrition related practices of the respondents

Sl. No.	Food habits		Farm			Non-farm		
			Male (n=40)	Female (n=40)	Total	Male (n=40)	Female (n=40)	Total
1	Nibbling habit	Yes	32 (40.00)	27 (33.75)	59 (73.75)	35 (43.75)	28 (35.00)	63 (78.75)
		No	8 (10.00)	13 (16.25)	21 (26.25)	5 (6.25)	12 (15.00)	21.25 (26.56)
2	Choosy	Yes	2 (2.5)	5 (6.25)	7 (8.75)	5 (6.25)	9 (11.25)	14 (17.50)
		No	38 (47.50)	35 (43.75)	73 (91.25)	35 (43.75)	31 (38.75)	66 (82.50)
3	Skipping meals	Yes	11 (13.75)	15 (18.75)	26 (32.50)	12 (15.00)	19 (23.75)	31 (38.75)
		No	29 (36.25)	26 (31.25)	54 (67.50)	28 (35.00)	21 (26.25)	49 (61.25)
	Breakfast	Lunch	11 (100)	11 (73)	22 (85.00)	12 (100.00)	9 (47.00)	31 (67.75)
		Dinner	-	4 (7)	4 (15.00)	-	7.5 (37.00)	7 (22.58)
		-	-	-	-	-	3 (16.00)	3 (9.67)
4	Preference 	Home food	24 (30.00)	32 (40.00)	56 (70.00)	21 (26.25)	30 (37.50)	51 (63.75)
		Eating outside	2 (2.5)	-	2 (2.50)	3 (3.75)	-	3.75 (3.75)
		Both	14 (17.5)	8 (10.00)	22 (27.50)	18 (20.00)	10 (12.50)	26 (32.50)
5	Like novel foods than traditional foods	Yes	34 (42.50)	35 (43.75)	69 (86.25)	35 (43.75)	33 (41.25)	68 (85.00)
		No	6 (7.5)	5 (6.25)	11 (13.75)	5 (6.25)	7 (8.75)	12 (15.00)
6	Consumption of vegetables in raw form	Yes	30 (37.5)	24 (30.00)	54 (67.50)	27 (33.75)	22 (27.50)	49 (61.25)
		No	10 (12.50)	16 (20.00)	26 (32.50)	13 (16.25)	18 (22.50)	31 (38.75)
7	Drinking buttermilk to quench thirst	Yes	40 (50.00)	38 (47.50)	78 (97.50)	24 (30.00)	20 (25.00)	44 (55.00)
		No	-	2 (2.50)	2 (2.50)	16 (20.00)	20 (25.00)	36 (45.00)
8	Consumption of synthetic beverages	Yes	29 (36.25)	21 (26.25)	50 (62.50)	32 (40.00)	27 (3.75)	59 (73.75)
		No	11 (13.75)	19 (23.75)	30 (37.50)	8 (10.00)	12 (16.25)	21 (26.25)

The frequency of use of different foods in general meal pattern was assessed by means of a check list in which a number of common and locally popular food items in each of the major food groups were listed down and the respondents rated it according to their frequency of use, ranging from daily use to seldom use. The mean food use frequency computed for farm and non-farm rural youth on the basis of the frequency of consumption of each item are given in Table 26.

The data presented in the Table 26 revealed that consumption of cereals, nuts and oil seeds, condiments and spices, fats and edible oils, sugar and jaggery, etc. were found to be 100 per cent in both farm and non-farm families.

Consumption of roots and tubers were high among farm families compared to non-farm families where it ranged from 95 per cent to 100 per cent. Regarding leafy vegetables frequency of use was very low among non farm families compared to farm families which ranged from 54 percent to 71 percent. But in the case of other vegetables frequency of consumption was higher than leafy vegetables and ranged from 86.00 percent to 95.00percent. Moreover the table indicated that the use of vegetables was more frequent among farm family male and female than non farm families. The use of leafy vegetables was more frequent among rural farm female respondents than male respondents.

The frequency of consumption of pulses was 66.50 per cent and 69.00 per cent respectively in farm females and males. But in case of fruits use it was comparatively high among farm female *i.e.*, 97.00 per cent compared 94.00 per cent in non farm females where as it was 95.00 per cent for farm males and 92.00 per cent for non farm males.

In case of consumption of animals foods like milk, fish, poultry and meat. The score for consumption of milk ranged from 96.00

Table 26 Percentage distribution of respondents based on food use frequency

Food groups	Farm		Non-farm	
	Male (n=40)	Female (n=40)	Male (n=40)	Female (n=40)
Cereals	100	100	100	100
Pulses	66.50	69.00	71.00	72.50
Leafy vegetables	69.00	71.00	54.00	58.00
Roots and tubers	100	98.00	97.00	95.00
Other vegetables	95.00	94.00	86.50	90.00
Nuts and oil seeds	100	100	100	100
Condiments and spices	100	100	100	100
Fruits	95.00	97.00	92.00	94.00
Meat	58.00	52.00	67.00	60.00
Egg	71.50	67.00	66.50	62.00
Fish	68.00	67.00	80.50	74.50
Milk and milk products	100	100	97.50	96.00
Fats and edible oils	100	100	100	100
Sugar	100	100	100	100

per cent to 100 per cent. Next to milk, the consumption of fish was comparatively high among the respondents of non-farm families and ranged from 67.00 per cent to 80.50 per cent. Among meat and poultry, the use of poultry was high among respondents belonging to farm families *i.e.*, 71.50 per cent. However a clear-cut variation in use of meat was detected. The frequency was very low (58.50 per cent) for farm males and comparatively quite high (67.00 per cent) for non-farm males.

4.6 ASSESSMENT OF NUTRITION RELATED PRACTICES OF THE FAMILIES

The nutrition related practices of the respondents' families were measured using a rating scale developed for the purpose. Total individual score of the respondents were summed up. The maximum possible score of the respondents were 72 and the minimum was zero. Based on mean and standard deviation the scores obtained for the selected nutrition related practices, the respondents were classified into poor, moderate and good, which is given in Table 27.

Table 27. Nutrition related practices of the respondent families

Sl. No.	Category	Score range	Farm families	Percentage	Non-farm families	Percentage
1	Poor	<61	12	15	16	20
2	Moderate	61-67	44	55	52	65
3	Good	> 67	24	30	12	15

It is evident from Table 27 that majority of the respondent families both farm and non-farm were followed the practices in a moderate level. Only 30 per cent population of farm families and 15 per cent non-farm families followed nutrition related practices strictly whereas 15 per cent

farm family respondents and 20 per cent non-farm respondents had poor practices.

Nutrition related practices of selected families were categorized under four areas namely food production/purchase, food storage, food preparation and food distribution/consumption. The areas under which the practices followed by the respondent family rated as often, sometimes and never which is given in Table 28.

Regarding the statements pertaining to food production / purchase as showed in Table 28, 92.50 per cent of the farm families and 96.25 per cent non-farm families often purchased iodised salt for consumption, while 3.75 per cent of non-farm families and 7.50 per cent of farm families sometimes purchased it. About 58 per cent of the farm families often produced green leafy vegetables in homesteads while five per cent never produced it, whereas in non-farm families no one produced it in their homesteads. While purchasing food materials 15 per cent of farm families and 17.50 per cent of non-farm families often gave priority to nutritive value. About six per cent of the non-farm families never gave priority to nutritive value while purchasing food stuffs and the rest of the families (85 per cent farm and 76.25 per cent non-farm families) sometimes purchased food stuffs according to their nutritive value. Only 21.25 per cent of farm families and 23.75 per cent of non-farm families often purchased recognized and branded products. A few families (8.75 per cent of farm and 1.25 per cent non-farm) never purchased recognized and branded products. Rest of the families (81.25 per cent farm and 77.50 per cent non-farm) sometimes purchased recognized and branded products.

About five per cent of farm families and 14 per cent of non-farm families often purchased food from street vendors and 87.50 per cent of farm and 80 per cent non-farm families sometimes purchased it, which is a bad practice. Only 7.50 per cent of farm families and 6.25 per cent non-

Table 28 Comparison of Nutrition related practices in selected areas

Statements		Farm family		Non-farm family	
		Number	Per cent	Number	Per cent
Food production / purchase					
a) Green leafy vegetables are produced in homesteads	O	46	57.5	-	-
	S	30	37.50	-	-
	N	4	5.00	-	-
b) Iodized salt is purchased	O	74	92.50	77	96.25
	S	6	7.50	3	3.75
	N	-	-	-	-
c) While purchasing food materials priority is given to nutritive value of foods	O	12	15.00	14	17.50
	S	68	85.00	61	76.25
	N	0	-	5	6.25
d) Purchase only recognized and branded products	O	17	21.25	19	23.75
	S	55	68.75	60	75.00
	N	7	8.75	1	1.25
e) While purchasing food products, the date of manufacturing is taken into consideration	O	12	15.00	14	17.50
	S	65	81.25	62	77.50
	N	3	3.75	4	5.00
f) Cooked food from street vendors are purchased	O	4	5.0	11	13.75
	S	70	87.50	64	80.00
	N	6	7.50	5	6.50
g) TV advertisements are considered for food purchase	O	5	6.25	11	13.75
	S	14	17.50	65	81.25
	N	56	70.00	4	5.00
Food storage					
a) In order to prevent spoilage in cereals neem leaves are put along with cereals	O	7	8.75	-	-
	S	15	18.75	10	12.50
	N	58	72.50	70	87.50
b) A pinch of salt on sugar are added to coconut oil to prevent rancidity	O	74	92.50	45	56.25
	S	6	7.50	35	43.75
	N	-	-	-	-
c) Roots and tubers are buried for longer shelf life	O	41	57.25	-	-
	S	30	37.50	7	8.75
	N	-	11.25	73	91.25
d) For storing fermented mixes such as idli, dosa and appam, Janatha refrigeration is used	O	-	-	-	-
	S	5	6.25	-	-
	N	75	93.75	80	100.00
Food preparation					
a) Iron Kadai is used for preparations	O	9	11.25	5	6.20
	S	65	81.25	54	6.75
	N	16	18.75	22	27.50
b) Earthen pot is used for preparing rice	O	63	78.75	56	70.00
	S	17	21.25	24	30.00
	N	-	-	-	-
c) Rice is prepared by absorption method	O	12	15.00	10	12.50
	S	63	78.75	61	76.25
	N	5	6.25	9	11.25

farm families never purchased food from street vendors which is a good practice.

About 14 per cent of non-farm families often considered TV advertisements for food purchase while 81.25 per cent sometimes purchased food according to this and only five per cent of non-farm respondents never purchased food by considering TV advertisements. But among farm families majority of the respondents 70 per cent never purchased foods by considering TV advertisements, whereas 17.50 per cent sometimes and 6.25 per cent often purchased foods on the basis of TV advertisements.

Table 28 shows the food storage practices of rural farm and non-farm families.

Responses of the families about statements related to storage practices found that 8.75 per cent of families of farm prevent spoilage of cereals by putting neem leaves along with cereals. But 12.5 per cent of non-farm families and 18.75 per cent of farm families sometimes put neem leaves along with cereals. Majority of the respondents never followed this practice to prevent spoilage in cereals. None of the members in non-farm families and about 94 per cent of farm families never used Janatha refrigerator for storing fermented mixes such as idli, dosa and appam. Only 6.25 per cent respondents of farm families sometimes used Janatha refrigerator.

About 93 per cent of farm families and 56 per cent of non-farm families often put a pinch of salt or sugar in coconut oil to prevent rancidity whereas 43.75 per cent of non-farm families and 7.50 per cent farm families sometimes practiced this. Fifty one per cent of the farm families often buried roots and tubers for longer shelf life while none of non-farm members practiced this. About 37 per cent of farm families and 8.75 per cent of non-farm families sometimes followed this practice and majority of respondents of non-farm families (91.25 per cent) and 11.25

Table 28 continued

Statements		Farm family		Non-farm family	
		Number	Per cent	Number	Per cent
d) Care is taken to prepare balanced diet	O	35	43.75	24	30.00
	S	38	47.50	30	37.50
	N	9	11.25	26	32.5
e) Baking soda is used to retain colour of vegetables	O	-	-	-	-
	S	2	2.50	2	2.50
	N	78	97.50	78	97.50
f) Excess water after cooking vegetables is drained off	O	-	-	-	-
	S	3	3.75	5	6.25
	N	77	96.25	75	93.75
g) Vegetables are cooked in open vessels to retain colour	O	2	2.50	7	8.75
	S	49	61.25	57	71.25
	N	29	36.25	16	20.00
h) Aginomotto is used for preparation	O	-	-	-	-
	S	-	-	-	-
	N	80	100.00	80	100.00
i) Vegetables are washed after cutting	O	21	26.25	19	23.75
	S	20	25.00	26	32.50
	N	39	48.75	35	43.75
Food distribution / consumption					
a) Boiled water is used for drinking	O	80	100.00	80	100
	S	-	-	-	-
	N	-	-	-	-
b) Locally available fruits such as papaya, pineapple guava are used	O	80	100	71	88.75
	S	-	-	9	11.25
	N	-	-	-	-
c) Sprouted pulses are consumed	O	9	11.25	11	13.75
	S	65	81.25	64	80.00
	N	6	7.50	5	6.25
d) Hands are washed prior to cooking	O	5	6.25	7	8.75
	S	72	90.00	72	90.00
	N	3	3.75	1	1.25
e) Steam foods are given to children	O	80	100.00	78	97.50
	S	-	-	2	2.50
	N	-	-	-	-
f) Butter milk is used for quenching thirst	O	74	92.50	59	73.75
	S	6	7.5	19	23.75
	N	-	-	2	2.50
g) Fried foods are totally avoided	O	-	-	-	-
	S	5	6.25	-	-
	N	75	93.75	80	100.00
h) Ragi based products are given to young children also	O	-	-	-	-
	S	4	5.00	1	1.25
	N	76	95	79	98.75
i) Country vegetables like banana flower, pseudostem of plantain and amaranthus (local variety) are used	O	74	92.50	62	77.50
	S	6	7.50	18	22.50
	N	-	-	-	-
j) Locally made snack foods such as peanut candy and gingelly balls are used	O	-	-	-	-
	S	79	98.75	80	100.00
	N	1	1.25	-	-

per cent of farm families never followed this practice as they used to buy only limited quantities.

Table 28 shows the distribution of respondents related to food preparation practices.

Food preparation practices of the rural farm and non-farm families revealed that 11.25 per cent of farm families and 6.25 per cent of non-farm families, 15 per cent of farm families and 12.50 per cent non-farm families and 78.75 per cent of farm and 70.00 per cent of non-farm families were often following good practices such as using iron kadai for preparation and earthen pot for preparing rice and cooking rice by absorption method respectively. Majority of respondents of farm and non-farm families (78.75 % farm and 70.00 % non-farm families) often cooked rice in earthen pot. About 27.5 per cent respondent of non-farm families never used iron kadai for preparation, whereas 81.25 per cent respondents of farm families sometimes used it. Seventy eight per cent of farm families and 76.00 per cent respondents of non-farm families prepared rice by absorption method only sometimes.

Majority of the members of farm and non-farm families (96.25 % farm and 97.50 % non-farm) never drained off excess water after cooking vegetables. That indicated a good practice. About 97.50 per cent of farm and non-farm families never used baking powder to retain colour of vegetables. Only 2.5 per cent farm families and 8.75 per cent of non-farm families often cooked vegetables in open vessels to retain colour whereas 36.25 per cent of farm families and 20.00 per cent of non-farm families never cooked vegetables in open vessels which is a good practice. It is striking to note that both farm and non-farm families never used aginomotto for preparations. Majority of the families (48.75 of farm and 43.75 % non-farm) never washed vegetables after cutting, but 26.25 per cent of farm families and 23.75 per cent of non-farm families often followed this practice. About 44 per cent of farm and 30 per cent of non-farm families

Table 28 continued

Statements		Farm family		Non-farm family	
		Number	Per cent	Number	Per cent
k) Fish, egg and meat are included compulsory in the diet	O	15	18.75	80	100.00
	S	65	81.25	-	-
	N	-	-	-	-
l) Mushroom is produced for consumption	O	-	-	-	-
	S	5	6.25	-	-
	N	75	93.75	80	100.00
m) Synthetic drinks are consumed	O	15	18.75	17	21.25
	S	45	56.25	53	66.25
	N	20	25.00	10	12.50
n) Left over cooking oil is repeatedly reheated for further cooking	O	59	73.75	60	75.00
	S	19	23.75	17	21.25
	N	2	2.50	3	3.75
o) Male members are given nutritious food than females	O	64	80.00	63	78.75
	S	-	-	5	6.25
	N	16	20	12	15
p) Bakery items are used for light refreshments	O	19	23.75	25	31.25
	S	57	71.25	55	68.75
	N	4	5.00	-	-

often took care to prepare balanced diet but 11.25 per cent of farm and 32.50 per cent of non-farm did not bother to prepare balanced diet while 47.50 per cent of the farm and 37.50 per cent non-farm families sometimes followed this practice.

Table 28 depicts the food distribution and consumption of the respondent's families.

Table 28 shows that in all the families surveyed majority of the male members were often given nutritious foods than females, *i.e.*, 80 per cent of farm families and 78.25 per cent of non-farm families. Only 20 per cent of farm families and 15 per cent of non-farm families never practiced this. Left over cooking oil is repeatedly reheated for further cooking by majority of the farm and non-farm families (73.75 % of farm and 15 % of non-farm families). Only 2.5 per cent of farm families and 3.75 per cent of non-farm families never practiced this. Bakery items were often used for light refreshments by 23.75 per cent of farm families and majority (71.25) used it sometimes. Whereas in non-farm families 31.25 per cent often had bakery items while 68.75 per cent used bakery foods only sometimes. Synthetic drinks were often consumed by 21.25 per cent of non-farm families and 18.75 per cent of farm families, whereas 25 per cent of farm families and 12.5 per cent of non-farm families never consumed it. But majority of the families both farm and non-farm surveyed consumed synthetic beverages sometimes.

Desirable practices such as drinking boiled water is often practiced by both farm and non-farm families. Locally available fruits such as papaya, pineapple and guava were often used by all the farm families. About 88.75 per cent of non-farm families often used it and 11.25 per cent used it sometimes. Sprouted pulses were often consumed by 13.75 per cent of non-farm families and 11.25 per cent of farm families. Majority of farm and non-farm families sometimes practiced it while 7.5 per cent of farm and 3.75 per cent of non-farm families never practiced it.

All the families surveyed often gave steamed foods to children. About 93 per cent of farm families used buttermilk for quenching thirst, a small percentage (7.50) used it only sometimes. But in the non-farm families only 73.75 per cent families often used it and 23.75 per cent sometimes used it. All the non-farm families surveyed and majority of farm families (93.75 %) never avoid fried foods. Only five per cent of farm families and 1.25 per cent of non-farm families sometimes gave ragi based products to young children. Country vegetables like banana flower, pseudostem of plantain and amaranthus (local variety) were often used by majority of farm (92.5 %) and non-farm (77.5%) families. Locally made snack foods such as peanut candy and gingelly balls were used by 98.75 per cent of farm and 100 per cent of non-farm families. Fish, egg and meat were included in the diet of all non-farm families only some times but 18.75 per cent of farm families and hundred per cent of non-farm families often consumed it. About 94 per cent farm families never produced mushroom for consumption while 6.25 per cent families produced it for consumption. None of the families of non-farm were producing mushroom for consumption.

Statistical analysis of selected nutrition related practices of farm and non-farm families were done based on mean score and standard deviation. The results are presented in Table 29.

Table 29. Nutrition related practices of farm and non-farm families

Category	Mean score \pm Standard deviation	t value	Significance
Farm	64.6 \pm 2.925	2.06312	0.05
Non-farm	63.5 \pm 2.451		

Table 29 projects the fact that there was significant variation in the nutrition related practices of farm and non-farm families.

4.7 INTERRELATIONSHIP OF RURAL YOUTH'S NUTRITIONAL KNOWLEDGE, ATTITUDE WITH THE NUTRITION RELATED PRACTICES OF THEIR FAMILIES

Karl Pearson's Product Moment Correlation was used to find out the relationship between the knowledge, attitude and practices and the results are given in Table 30.

Table 30 Inter-relationship among rural youths' nutrition, knowledge, attitude with the related practices of their families.

	Nutrition knowledge	Nutrition attitude	Nutrition practices
Nutrition knowledge	1.0000		
Nutrition attitude	0.7601**	1.0000	
Nutrition related practices	0.1551	0.0966	1.0000

**Significant at 1 per cent level

Results in the Table 30 shows that there was a significant correlation between nutrition knowledge and attitude at one percent level while the nutrition related practice of the families had no significant relationship with nutrition knowledge as well as nutrition attitude.

4.7.2 Difference among farm and non-farm family respondents' knowledge, attitude and their family practices

Table 31. Difference between farm and non-farm families on knowledge, attitude and practice

Category	Mean non-farm (n = 80)	Mean Farm (n = 80)	t value
Knowledge	40.25	45.25	7.5633**
Attitude	41.075	47.95	7.0516**
Practice	63.537	64.60	2.0631*

* Significant at 5 per cent level ** Significant at 1 per cent level

Table 31 depicts that there existed a significant difference between farm and non-farm families on nutrition knowledge, attitude and practice. The level of significance of both attitude and knowledge is at one per cent and for practice; it is at five per cent level.

It is clear from the table that farm family respondents possessed better knowledge than non-farm respondents and that the attitude had a positive effect on practice.

In order to find out the relationship of the respondents' information source utilization with the nutrition knowledge, attitude and practices of their families, Information Source Utilization (I.S.U) index was computed.

The results showing the inter relationship with the information source utilization index is given in Table 32.

Table 32. Interrelationship between information source utilization index and nutrition knowledge, attitude and practices.

	Information source utilization index	Nutrition knowledge	Nutrition attitude	Nutrition related practices
Information source utilization index	1.0000			
Nutrition knowledge	0.7183**	1.0000		
Nutrition attitude	0.5601**	0.7601**	1.0000	
Nutrition related practice	0.0550	0.1551	0.0996	1.0000

** Significant at 1 per cent level

As depicted in Table 32 information source utilization index had a positive significant relationship with nutrition knowledge and attitude at 1 per cent level. But information source utilization index showed no relationship with the practices followed in their families.

Discussion

5. DISCUSSION

The findings of the study entitled "Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families' are statistically analysed and presented in the previous chapter. These findings with relevant research support are discussed in this chapter under the following headings.

- 5.1 Personal characteristics of the respondents
- 5.2 Socio-economic profile of the families
- 5.3 Assessment of nutritional cognition
- 5.4 Nutritional cognition and its relationship with selected socio-economic variables
- 5.5 Dietary habits and nutrition related practices of the respondents
- 5.6 Assessment of nutrition related practices of the families studied
- 5.7 Interrelationship of rural youths' nutritional knowledge, attitude and related practices of their families.

5.1 PERSONAL CHARACTERISTICS OF THE RESPONDENTS

Personal characteristics of the subjects were taken into account in this study since they may have an impact directly on their food selection, preferences and consumption pattern.

The socio-economic and personal characteristics of the respondent comprised of age and sex, education, birth order, economic status, education level, occupational status, marital status, dietary habits and information source utilisation. As mentioned earlier this information was collected through direct interview with the subjects using an interview schedule and was statistically analyzed in detail. The results revealed that

majority of the respondents (42.5 per cent) were between 18-20 years of age whereas 21.85 per cent belonged to 21-25 years and 20.62 percent belonged to 26-30 years while the remaining 15 per cent belonged to the age group of 31-35 years.

Besides the age and sex structure of the population, information on few other common personal characteristics like birth order, marital status, educational level, income level, occupational status, dietary habits and information source utilization of the respondents were also collected.

When the birth order of the respondents were studied, interestingly, 54.38 per cent of the youths were found to be first born and the rest were either middle born (26.87 per cent) or last born (18.75 per cent). This is in line with the previous study done by Chandran (2001) in which sample selected from Thiruvananthapuram district consisted mainly of first born from small and nuclear families with one or two children.

The marital status of the respondents revealed that 47.5 per cent of respondents of farm and non-farm families were married while 52.5 per cent of respondents were unmarried. This may be due to the fact that majority of respondents belonged to younger age group (18-20 years). Among the farm families 25 per cent male and 32.5 per cent female were married while 75 per cent male and 67.5 per cent female were unmarried. The finding is in line with the survey conducted by NFHS-2 (1999) that women in Kerala marry at much younger ages than men, and that men and women married at younger ages in rural areas than in urban areas.

Kuttikrishnan and Suchetha (1989) reported that among rural labour households of Kerala 80.10 per cent of the women were married before the age of 18 years. As reported by Suja (1989) early marriage is common among the women of agricultural labourers also from Thiruvananthapuram district. Main reason for the early marriages could be the widely practiced dowry system. Educational qualification of the respondents indicated that majority of the respondent (51.25 per cent) had education upto pre-degree

level. Beghin (2003) pointed out that educational level of the parents is a major factor which influences the growth and development of children. When more males were seen in educated group upto pre-degree level majority of female respondents possessed higher educational level above pre-degree. This finding is in line with the study done by Thara (2002) where majority of the female respondents were having minimum qualification of graduation.

Karuna (1993) found that literacy and educational attainments are the indications of qualitative improvements in human resources and female literacy is said to hold the key to the generation of full genetic potentials pertaining health and nutrition and family planning.

According to Charyulu and Narayana (1997) education is one of the most dynamic factors in the development of rural areas and they further reported that education is considered as an essential component in the cultural revolution for stimulating equality among people of both sexes; for better socialization and for bringing greater awareness among people. Education is recognized as an important social input which helps an underdeveloped community to seek ways and means of bringing about changes to develop itself and solving its social and economic problems (Government of India, 1995).

Panikar (1991) reported that literacy rate of agricultural labourers in Kerala were found to be 72 per cent. The high educational status of the respondents in a way reflects a typical picture of the Kerala population with its high literacy levels. This finding is in support with the findings of Rosia and Sarangadharan (1994).

A study conducted by Jayanthakumari (1993) revealed that parents of larger land holdings were found to have better education than the parents with smaller land holdings, as many of them had undergone education upto college level. However majority of the respondents irrespective of the size of the land holdings had medium level of

education. The study also found that none of the parents belonging to any group were found illiterate. In the present study also none of the respondents were found illiterate.

Reddy (1993) pointed out that the employment status of the population is an important determining factor with respect to health and nutritional status. Employment status of male and female respondents surveyed in farm and non-farm families indicated that percentage of employed males were higher than females. The present study also agrees with the observation made by Eapen (2000), which indicate that the work participation rate of females has not increased as much as male in last decades in Kerala particularly in Thiruvananthapuram. Marakar (1980) has reported that the women account for 40 per cent of total unemployment. The study also throws light on the fact that among the farm and non-farm families majority of the respondents were unemployed. This may be due to the factor that majority of respondents were in the stage of undergoing education.

Among the female members surveyed 35 per cent belonging to farm families and 40 per cent of non-farm families were employed and independent. This study enlightened the report of Nathawat and Mathur (1993), stated that employed women secure higher scores for general health, life satisfaction and self-esteem. In Kerala also women's employment is found to benefit the working women themselves and their families, since the income generated would increase the nutrition knowledge and attitude and hence purchasing power and standard of living with consequent improvement of nutritional status.

A study conducted by Paul (1993) found that agriculture was the main source of livelihood in the families surveyed. As per the occupational distribution of the respondents among farm families, it was revealed that equal percentage (17.50 per cent) respondents were engaged solely in agriculture and private sector. But in the non-farm families none

of the respondents were engaged in farming and majority of respondents were employed in private sector. It may be concluded that, in most of the families male respondents was the main bread winner and a few of female respondents were economically dependent.

In the case of monthly income of the respondents 48.75 per cent of farm and 43.75 per cent of non-farm families had no income as they were unemployed. Among the rest of the population, 23.75 per cent had income between Rs. 5001 – 10,000, 14.38 per cent had an income between 3501-5000, 9.37 per cent had income level between 2251-3500 and 6.25 per cent had an income less than or equal to Rs. 2250.

In the present study majority of the respondents from farm(31.25 per cent) and non farm (36.25 percent) families utilized Television as the primary source of information. This finding is in line with Philip *et al*; (1998) that TV has got advantages over other media because of its mass coverage. According to Ferrinho *et al.* (1993) majority of young adults were in the habit of watching TV programmes daily. In this study it was found that newspaper ranked second position among non farm families but in the case of farm families, magazines were ranked second. This may be attributed to the fact that in order to get more information about farming practices they might have subscribed agricultural magazines regularly.

Their involvement in social participation revealed that majority of the respondents were members of various organizations. A few respondents were functioning as office bearers too. These findings are in line with Apparao (1999) that youth is more creative ,energetic and potential strength of family, group, society ,village, locality and the nation. The capabilities and potential strength of youth could be utilized for the development of family,society,village,district,state and nation for which efforts are to be made to motivate the youth and organize them to choose the right path of life.

5.2 SOCIO-ECONOMIC PROFILE OF THE FAMILY

To assess the socio-economic status, details pertaining to the type of family, family size, income and caste are reported to be ascertained (Srishti *et al.*, 1995).

In the present study to ascertain socio-economic status of the families, variables such as religion, caste, family size, family income, family type were taken into consideration.

The Kerala Statistical Institute (1992) has recorded that vast majority of the population of Thiruvananthapuram district follows Hindu religion; the same trend is reflected in the sample population under study. Both among males and females majority belonged to Hindu religion. Fifty seven per cent of the total population in rural Kerala belonged to Hindu religion as reported by Kannan *et al.* (1991).

Vast majority of the respondents were Hindus, residing in rural areas. These observations are in conformity with the findings of Ranganathan (1996).

Caste is an oldest institution of the Indian Society and has a great influence on the attitude and behaviour of an individual. Arora (1991) reported that caste is a unique institution of the Indian society. Hence caste belongingness of the respondents were also found out. Among the respondents almost equal percentage belonged to the two categories, namely forward and other backward communities. Percentage of respondents belonging to scheduled caste and tribe was fewer than the rest. Similar findings can be seen in the results of survey conducted by Lisa (1996).

As family size is an important social factor, distribution of families according to family size were analysed. Data presented in Table 11 show a high percentage with small sized families (1-4 members). According to

Park and Park (1991) the average family size in India is four, small families are more common than other types of families in the study locale.

The results of this study is in tune with the findings of Rajagopal (1993). The reason might be as Lisa (1995) reported growing urbanization, breaking down of joint family and high female literacy in the district under study.

As far as family type is concerned majority of the respondents in both categories belonged to nuclear type of families as shown in Table 12. Nuclear family has become a prevalent norm in Kerala as reported by Buliyya *et al.* (2002). NFHS-2 Survey (2001) conducted in Kerala found that just over half of all households are of nuclear type. In Kerala joint family system is not much prevalent now-a-days. So only a small percentage of respondents (8.75 and 11.25) was from extended and joint families. The observation is in conformity with the findings of Gincy (1988) and Thomas (1989) who reported that most of the families residing in the rural/coastal areas of Thiruvananthapuram district were of nuclear type.

The economic status directly or indirectly influences the purchasing power and standard of living of a family. Arora (1991) suggests that household income should be taken into consideration because it is the family income which really determines the family status and the socio-economic strata of the society to which they belong. The present study revealed that 56 per cent of respondent families had a monthly income of the range of Rs. 5001 to 10,000. This is similar to the findings of Thara (2002), Rekha (2001) and John (2000).

Regarding the land holding by the selected families it was found that majority of farm families were having atleast one acre of cultivable land. Majority of non-farm families had land less than one acre but it was not cultivated and were utilized for other purposes such as constructing building, shops, houses etc.

Production of animal foods through animal husbandry was popular among majority of the families. A favourable trend was observed in the utilization of the animal produce at the household level among the farm families surveyed. It can be inferred that farm families were fully aware of the wholesomeness of the egg, milk in the daily diet. This may probably be due to their exposure to various services offered through different organizations.

Among the cultivated crops, coconut was found to be the most important crop cultivated by majority of the families. A least per cent of the families cultivated paddy. Menon and Prema (1976) reported that size of the holding had positive influence on creating a favourable attitude towards kitchen gardening. Cultivation practices of vegetables indicated that only few families were found to be interested in cultivation of vegetables. Vegetables commonly cultivated were bittergourd, ladies finger, peas, brinjal and cucumber. Majority of the families were found to cultivate plantain. Roots and tubers like yam, coleus, colocasia, elephant foot yam, taro, sweet potato, arrowroot, tapioca and dioscorea were cultivated by around 66 per cent of families. A positive trend was noted among the families with regard to cultivation of green leafy vegetables and fruits. This could be attributed to the fact that cultivation of green leafy vegetables and fruits do not require much expenses.

Utilization of farm produce by the farm families revealed that majority of the families utilized the produce such as paddy and vegetables fully at home. Above 80 per cent of the families utilized roots and tubers and green leafy vegetables fully at home. Fruits were partially utilized below 50 per cent of the families whereas above 70 per cent of the families partially utilized plantain and the excess were sold out. This will further add to their family income.

5.3 ASSESSMENT OF NUTRITION COGNITION

Nutrition cognition comprises nutrition knowledge and nutrition attitude. Nutrition knowledge is a scientific construct that was developed to represent the cognitive processes that were related to receiving and or understanding nutrition information (Alexson and Brinberg, 1992). In the present study nutrition knowledge and nutrition attitude of the respondents were measured in terms of scores.

Knowledge is generally understood as an ultimate acquaintance of an individual with facts (Bloom, 1965) Knowledge is the information possessed by an individual on a particular topic. The growing years of youth demand more food to meet the needs like, physical activity and preparation of adulthood. Moreover, it is a period of learning and the behaviour learned during this phase of life continues into later years. Hence the youths' knowledge on nutrition helps in the right choice of locally available food stuffs as well as avoidance of food faddism.

Knowledge level of the study subjects on nutrition was measured by using a knowledge test developed for the purpose which consisted of 28 items related to balanced diet, nutritive value of food stuffs, nutritive needs, food groups, functions of food, nutritional deficiencies and better cooking methods.

On the basis of the scores obtained by the respondents in the knowledge test they were classified into three levels, low, medium and high as shown in Table 17. The maximum score of the test was 56 and minimum was 0.

It is interesting to note that majority of the sample had medium level of knowledge on nutrition aspects. Among the two categories females possessed high level of knowledge than males. The low and medium level of knowledge might be due to lack of exposure regarding

these areas of information. This finding substantiates the need for nutrition education for rural youth as recommended by Shirur (2000).

Nutrition Awareness of the Study Subjects

Categorization of respondents based on their knowledge towards nutrition under selected seven areas revealed that majority of respondents belonging to both farm and non-farm families possessed medium level of knowledge. The seven selected areas like balanced diet, nutritive needs, nutritive value of food stuffs, functions of foods, food groups, nutritional deficiency disease and cooking methods without nutrient loss. But it is interesting to note that both the male and female respondents of farm and non-farm families got a higher score in the area cooking methods without nutrient loss.

It is obvious from the Table 18 that majority of the subjects under study were familiar with different cooking methods without nutrient loss. Both males and females belonged to farm and non-farm families had very poor scores on the awareness of nutritional deficiencies. They possessed moderate level of knowledge on other areas like balanced diet, nutritive needs, functions of food and nutritive value of food stuffs. Although the youth in the present study had fairly good knowledge on certain area of nutrition as shown in Table 18 their overall knowledge could be rated as unsatisfactory only from the poor scores they got for selected areas. Thus more importance should be given to these areas like deficiency diseases, nutritional needs and nutritive value of different food stuffs through nutrition education programmes in rural areas especially to youth is needed.

These findings are in line with Pearson and Endres (1985) study results which stated that young adults were least knowledgeable about sources of quality protein and energy value of carbohydrates. In these circumstances it may be concluded from the results of the present study that the study subjects need to be enlightened on the concepts of applied

nutrition and related factors for developing better health and nutrition practices.

Attitude towards Optimum Nutrition

Food habits may be formed out of beliefs and opinion towards food as well as nutrition as stated by Srilakshmi (2000). Attitude is a complex term meaning opinion and feeling towards a particular thing. Attitudes are formed as a result of experience, knowledge and interactions. Christensen *et al.* (2001) stated that an attitude has effective (evaluative feelings) cognitive (beliefs, knowledge and opinions) and behavioural components. Here attitude towards nutrition of the respondents was measured using a suitably structured attitude scale.

It is seen from the Table 19 that females had higher favourable attitudes than males and majority of the study population (both farm respondents and non-farm respondents) had neither favourable nor unfavourable attitude towards nutrition. The reason might be their lower level of nutrition knowledge. This study is in line with Goel and Kumar (1998). Hence the finding substantiated the fact that nutrition message through the ongoing intervention programmes reached only a small percentage of youth population. Kenner *et al.* (1999) reported that there are only very few research studies focused on discovering the most effective ways to educate youth. Ineffective education methods could be one of the reasons for the poor knowledge level.

On analysing the different areas of attitude towards optimum nutrition, it was found that majority of the respondents in both farm and non-farm group showed neutral attitude towards all statements. This may be due to their unawareness about the related areas. Major portion of respondents showed low level of attitude towards the statements related to nutrition education. Thus it can be attributed that nutrition intervention programmes are conducted rarely among these panchayats and it has not reached the youth population.

It is obvious from the Table 20 that majority of male and female respondents of farm and non-farm families had neither favourable nor unfavourable attitude towards importance of good nutrition, food habits and nutrition education. The reason might be lack of opportunities for them to give serious thought on the need for good nutrition. This findings is in confirmation with the reports of NNMB (1995) which stated that the rural families in Kerala state were not in the habit of including all the food components specifically required for balanced diet. Rajasree and Soman (1994) had also found that a typical rural Kerala dietary pattern would be based on rice, fish, tapioca and coconut. These findings will help educators to identify factors that need to be addressed in any nutrition education programme. So, it is suggested that if earnest measures are taken for nutrition education among the rural youth, the efforts might instill positive attitude towards nutrition which will lead to desirable nutrition behaviour for the future generation too. The results of the present study supported the statement given by Chieppa (2000) that increase in knowledge will actively lead to develop favourable attitude too.

It is inferred from the Table 21 that there was significant variation in the nutrition cognition of males and females and that sex is an important determinant of nutrition cognition of the rural youth. Nutrition knowledge scores and nutrition attitude scores of females were found higher than males. The reason may be attributed to the fact that acquisition of knowledge on nutrition is considered the responsibility of fair sex.

5.4 RELATIONSHIP BETWEEN NUTRITION COGNITION AND SELECTED INDEPENDENT VARIABLES

Statistical analysis Simple correlation was done to find out the relationship of selected independent variables and the dependent variables, namely nutrition knowledge and nutrition attitude.

The correlation results revealed that independent variables such as age, sex, education, occupation, income of respondents, social participation, religion, caste, family type, family size and family income influenced the nutrition knowledge and attitude of rural youth as shown in Table 22 and 23.

With regard to age on nutrition knowledge, a negative relationship could be seen. Thus it could be interpreted that as the age increases acquisition of knowledge decreases. The study is in line with Sujatha (1990) who found that as the age increased, the level of knowledge was found to decrease, or in other words there is a reciprocal relationship between age and knowledge. But in the case of attitude a positive relationship was seen.

Sex has significant influence on the knowledge and attitude score of respondents. The results of the study done by Aneja *et al.* (1998) found that rural women had more knowledge regarding nutritional aspects than their counterparts.

The study revealed that educational status of the respondents had a positive significant influence on knowledge and attitude. The finding was similar with the study done by Aneja *et al.* (1998) who stated that the education of the respondents had significant association with knowledge and attitude of rural women. The studies of Sujatha (1990) and Bhatnagar and Singhal (1994) also supported the same results that increase in knowledge of respondents was highly affected by their educational status.

The study also supports the findings of Kunwar *et al.* (1998) who found that mothers with low educational level were found to have less knowledge about various nutritional areas also and the educational level of mothers positively influenced their attitude towards correct nutrition practices as stated by Goel and Kumar (1998).

The results revealed that there was no significant variation in the nutrition knowledge and nutrition attitude score among the first born, middle born and last born rural youth. This finding is contradictory with the findings of Rajani (2003), who stated that the nutrition knowledge scores and attitude scores varied significantly for female adolescents of middle and last borns which may be attributed to greater opportunities of middle born and last born for mutual interaction than the first born.

Similarly caste of the respondents had found no influence on nutrition knowledge and attitude. The results is in line with the findings of Khanna (1995), who concluded that there was no differences in the knowledge and attitude of higher and lower castes.

Correlation analysis depicted that occupational status and income of the respondents had a positive influence on the knowledge and attitudinal level. Significant effect of education, type of family, occupation and income on the knowledge and attitude of the respondents was observed by Bhatnagar and Singhal (1994). Social participation had positive significant correlation with knowledge and attitude of the respondents.

Family income, type of family and size of family had also positive significant correlation with nutrition knowledge and nutrition attitude. A study conducted by Rajammal and Chandramani (1992) revealed that among the socio-economic parameters of the respondents' family income and educational status influenced the gain in nutritional knowledge, attitude and practices. However, whether they belong to joint or nuclear family or vegetarian or non-vegetarian had no significant bearing on the knowledge gain. Similar finding was observed by Jyothilekshmi (2004) who stated that income of the families do influence the gain in nutritional knowledge and positive attitude towards foods and dietary practices. The higher the income level, better was their nutritional knowledge and behaviour. The results in the present study are in line with the findings of

Reddy (1993) which stated that economic status of the population is an important determining factor with respect to attitude formation. Reports of National Nutrition Monitoring Bureau (1996) also substantiate the results of the present study.

5.5 DIETARY HABITS AND NUTRITION RELATED PRACTICES OF THE RESPONDENTS

Dietary habits of an individual are the characteristic respective act that he performs under the impetus of need to provide himself with nourishment and simultaneously to meet an assortment of social and emotional goals (Gift *et al.*, 1972). In the present study it is found that 95 per cent of respondents belonging to farm and non-farm families were non-vegetarians and only five per cent were vegetarians. Similar results was obtained by Beatrice (1999) in her study undertaken in Thiruvananthapuram district where majority of adolescent sample were noted as non-vegetarians.

Dietary habits of the respondents revealed that majority of them had the habit of nibbling. The foods commonly used were coffee/tea, bakery items and fruits. A few were reported to be choosy in their food habits. Another observation of the respondents dietary habit is that though three meal a day is followed in majority of the families in Kerala, most of the respondents stated that they regularly skip one meal daily particularly breakfast, because majority of the respondents were students and lack of time due to tuition classes were the reasons reported by them. A small percentage of respondents skip lunch and dinner due to fasting. This study is in line with Khalid (2003) on the breakfast practices of young girls 40.00 per cent of 217 girls under observation missed breakfast, 40.00 per cent claimed that they do not feel appetite while 46.00 per cent are in a hurry for classes. Similar results are obtained by

Samuelson (2000). Doctors, dietitians and nutritionist have observed that starting a day with a heavy breakfast is not only good for health but also to improve the work efficiency of the individual. It is confirmed by many that soft drinks and snack items give only empty calories and no other nutrients (Sadana *et al.*, 1997). It is clear that majority of female respondents from farm and non-farm families never food from outside and majority of the respondents preferred home food.

The results indicated that only very few of the respondents studied were vegetarians and it is interesting to note that they were all female. Eventhough major were non-vegetarians all were in the habit of consuming vegetables daily.

On assessing the frequency of various food item it is observed that cereals is consumed daily by the rural youth as cereal is the staple food of India and among this, rice is consumed daily by the study population which is the staple food for Keralites. In addition to this nuts and oil seeds, condiments and spices; fats and edible oils; sugar and jaggery were the most commonly used foods. Similar results were obtained by Mony (1993), Gayathri (2003) and Roopa (2003) as these items are needed in small quantities daily for various culinary preparations of Kerala diet.

Next to cereals, milk, roots and tubers and fruits were found to be consumed all most daily by the rural youth. Consumption rate of fruits and roots and tubers were high among those from farm families. This may be due to the availability of fruits and vegetables from their homesteads. Milk is taken daily as such or with tea or coffee which is usually substituted for their breakfast. It is surprising to note that about 2.00 percent of female respondents among farm families did not consume milk and milk products because they disliked its smell and taste. This study disagrees with earlier study reported by Kavitha (1999) that the milk and milk products are included in the daily dietaries of adolescents in Thiruvananthapuram district as they have the habit of drinking coffee or

tea frequently. A study done in sub-urban Mumbai on food habits, nutritional intake and health of young girls also revealed that two-third of students consumed milk and milk-products regularly (Raj *et al*, 2003). In case of fruits ripe tomatoes were included in the daily diet of almost every one of the subjects but other fruits are less frequently consumed by them. Hamulka *et al*. (2003) reveals that frequency of breakfast intake decreased among youth population. Morning being the peak hour the youth might find it difficult to squeeze in time for having breakfast. Consumption of spices and green leafy vegetables were found to be low in both farm and non-farm families. Animal products such as meat is found to be less consumed in both categories. Fish was found to be less consumed by farm family comparable to non-farm families. Consumption of poultry were found to be low in non-farm families compared to farm families.

5.6 ASSESSMENT OF NUTRITION RELATED PRACTICES OF THE FAMILIES STUDIED

The nutrition related practices of the respondent families as shown in Table 27 were also assessed in order to fix priorities for intervention.

Nutrition related practices of the respondent families studied were measured using a rating scale, consisting of 36 statements related to food production/purchase, food storage, food preparation and food distribution / consumption. The areas under which the practices followed by the respondent families were rated and classified into poor, moderate and good practices as shown in Table 27.

Assessment of food production / purchase of the families revealed that the respondents responses towards statements showed that desirable practices were followed only sometimes by majority of farm and non-farm families. Green leafy vegetables were produced only in the farm families. Iodised salt was purchased by 90 per cent of farm families and 95 per cent of non-farm families. Regarding food storage practices of the respondents as shown in Table 28 that 8.75 per cent of the farm families

often put neem leaves along with cereals (rice) in order to prevent spoilage whereas none of the non-farm families followed this practice. This may be due to the fact that the non-farm families did not buy cereals in bulk. About 18 per cent of farm families and 13 per cent of non-farm families followed this practice only when large amount of cereals were purchased and stored for longer days.

None of the non-farm families and about 94 per cent of farm families never used Janatha refrigerator for storing fermented mixes such as idli, dosa and appam while 6.25 per cent of farm families followed this practice only sometimes. This may be due to the unawareness of the technique behind Janatha refrigeration. Majority of farm family members (93 %) often put a pinch of salt or sugar in coconut oil to prevent rancidity whereas in non-farm families this practice was not followed. This is because farm families store more oil from grinding coconut as they produce it in larger quantities. Majority of the farm families buried roots and tubers for longer shelf life whereas none of the non-farm families followed this practice. This may be due to the fact that only small quantities of roots and tubers were purchased by non-farm families.

More number of farm families were following good practices like preparing rice in earthen pots, cooking rice by absorption method and using iron kadai for cooking when compared to non-farm families. Majority of the farm and non-farm families never drained off the excess water after cooking vegetables. It is encouraging to note that none of the farm and non-farm families were using aginomotto. Majority of the families both from farm and non-farm families never washed vegetables after cutting but about 44 per cent of farm and 30 per cent of non-farm families often to prepare balanced diet.

With regard to food distribution and consumption majority of families surveyed were found that more male members were often given nutritious foods than females. Left over cooking oil is repeatedly reheated

by majority of farm and non-farm families. But 23.75 per cent of farm and 21.25 per cent of non-farm families sometimes repeatedly use the cooking oil when there is excess of oil after deep frying. Majority of farm and non-farm families sometimes used bakery items as light refreshments. But among farm and non-farm families more number of non-farm families consumed bakery items and synthetic drinks than non-farm families. Only very few of the members in farm and non-farm families were not practicing these undesirable practices.

All the families surveyed often followed desirable practices such as drinking boiled water and consumption of locally available fruits like papaya, pineapple and guava. Majority of families were often consuming country vegetables like banana flower, pseudostem of plantain and amaranthus (local variety). The reason may be due to the availability of country vegetables as well as low price or zero price of the items.

The results of the statistical analysis indicated that majority of farm and non-farm respondents followed nutrition related practices only in a moderate way.

This may be due to respondents' low level of knowledge and neutral attitude towards optimum nutrition. These findings emphasized the need for nutrition education programmes among rural youth.

Jaya and Selvaraj (1996) in their study has found that educational programmes are more effective method for creating awareness in the aspects of nutrition. However, in implementing effective education programme this lacuna in the knowledge of youth could be overcome and thereby nutrition related practices could be improved.

5.7 INTERRELATIONSHIP WITH NUTRITION KNOWLEDGE, ATTITUDE AND PRACTICE OF THE RESPONDENTS

Karl Pearson's Product Moment Correlation was computed to find out the relationship between nutrition knowledge, attitude and practices.

Results from Table 24 revealed that there exists a significant positive correlation between nutrition knowledge and nutrition attitude. This is in line with the findings of Goel and Kumar (1998), which indicated that knowledge of rural mothers concerning nutrition has high and positive relationship ($r = 0.511$) with attitude of rural mother suggesting that knowledge inspired mothers to change their attitudes towards favourable side.

The interrelationship also throws light on the fact that no significant relationship existed between nutrition related practices on attitude and knowledge among rural youth. The findings contradict with the results obtained by Rajammal and Chandramani (1992). In their study among rural young women, there was a significant correlation between nutrition knowledge and attitude, attitude and nutrition related practices and knowledge and nutrition related practices.

Based on the findings of the present study it may be concluded that changes in attitudes towards food require knowledge, awareness or beliefs that may be obtained from acceptance of new ideas and adjustments in nutrition related habits which ultimately lead to practice of what is being learnt.

Summary

6. SUMMARY

The study entitled 'Assessment of nutritional cognition of selected rural youth and the nutrition related practices of their families' was undertaken in Neyyattinkara taluk. The objective of the study is to assess and compare the nutritional cognition of selected rural youth belonging to farm and non-farm families. The nutrition related practices of the selected families were also assessed in order to suggest suitable strategies of the nutritional well being of the community. The type of study was of descriptive one.

Two blocks were randomly selected from Neyyattinkara taluk and from the selected blocks two panchayats were selected on random basis. The respondents selected for the study comprised of 160 rural youth (both male and female) from two wards of selected two panchayats namely Parassala and Chenkal. Equal number of respondents, eighty each were drawn from the selected two wards and from each ward care was taken to include equal number of male and female subjects.

The dependent variables selected for the study included nutrition knowledge and nutrition attitude, which comprised nutrition cognition. The independent variables for the study included the socio-economic variables like caste, religion, family size, family type, family income, land size, household food production and type of house and the personal characteristics of the respondents such as age, sex, educational status, birth order, marital status, occupational status, income, source of information and social participation. A comprehensive analysis of socio-economic and personal characteristics and nutrition knowledge and attitude of rural youth were carried out using appropriate statistical tools.

The salient findings of the study were:

The socio-personal characteristics revealed that majority of the respondents from farm and non-farm families belonged to 18-20 years of age and were well educated. The respondents as a whole form a homogenous group with many belonging to the first-born category. It was found that majority of respondents belonging to farm families were unmarried whereas majority from non-farm families were married. Majority of the respondents in both category; farm and non-farm, were unemployed and had no income of their own. Employed youth include government servants, self-employed persons and private jobholders. A few of the respondents were engaged in farming as their major source of income.

The findings showed that among the various sources of information utilized by the respondents, television was accorded the highest rank followed by newspaper, radio, magazine and resource person. Friends as well as exhibition were ranked as the least beneficial source of information on nutrition.

Rural youths' involvement in social participation revealed that majority of the respondents had membership in different organizations such as Ayalkkootoms, Kudumbasree, Youth Clubs, Kalasamithies and Resident Associations.

When the socio-economic profile of their families were analysed, it was found that respondents were mainly Hindus and belonged to forward caste. Majority of them hailed from nuclear families having one to four members. Majority of the middle-income families had monthly income between Rs. 5000-10,000.

While analysing the land holding size, it was found that non-farm families had no cultivable land but farm families had at least one acre of cultivable land.

Possession of land by an individual generally indicates his social status and security. In the present study majority of the farm and non-farm families possessed land of their own. Farm families possessed at least one acre of cultivated land whereas, non-farm families had less than five acres of land and they did not pay much attention to utilize the available land for cultivation. However the data pertaining to the home production of crops by farm families such as paddy and vegetables produced were fully utilized at the household level and the excess coconuts were sold out. This observation stresses the need for maintaining vegetable garden in the available land which would result in better consumption and thereby better health. Besides this excess produce can be utilized for improving their economic level.

Production of animal foods through animal husbandry was popular among the surveyed families. A favourable trend was observed in the utilization of animal produce at the household level.

The knowledge level of the respondents were assessed using the knowledge test developed for the purpose. Majority of the respondents under study had medium level of knowledge. It was found that nutrition knowledge score of farm families was higher than non-farm families and that females had higher nutrition knowledge scores than male.

While analysing the awareness of respondents about nutrition aspects, it was found that higher percentage of respondents in both the categories, farm and non-farm, were familiar with cooking methods without nutrient loss. Higher percentage of respondents possessed lower level of knowledge in the areas like nutritive value of different foodstuffs, nutritional deficiency diseases and nutritional needs.

Based on the scores obtained by the respondents through the attitude test administered, it was further found that majority of the selected youth of both farm and non-farm families had neither favourable nor unfavourable attitude towards good nutrition, food habits and nutrition education.

With regard to the nutrition cognition of rural youth, there was a significant variation between male and female youth. Nutrition knowledge score and attitude score of females were found higher than males.

This study reveals that independent variables like sex, education, occupation, income of respondents, social participation, religion, caste, family type, family size and family income influenced the nutrition knowledge and attitude of rural youth.

With regard to age on nutrition knowledge, there exist a negative relationship. Thus it can be interpreted that as the age increases acquisition of knowledge decreases on the other words there is a reciprocal relationship between age and knowledge. But in the case of attitude a positive relationship had seen.

Dietary habits of the respondents revealed that majority of the respondents in farm and non-farm families were non-vegetarians. Majority of respondents were good eaters and most of them possessed nibbling habits and very few were found choosy. Majority of respondents from farm and non-farm families used to skip meals especially breakfast. Higher percentage of respondents from both categories preferred home food than eating from outside. Majority of the rural youth studied liked mushroom preparation, but they did not include the same in their diet due to its low availability. Above fifty per cent of the respondents in both farm and non-farm families used to consume vegetables in raw form too. Almost all the respondents in farm families used to consume buttermilk whereas about half of the respondents, both male and female in non-farm families also had the habit of drinking buttermilk for quenching thirst. Majority of male respondents from farm and non-farm families used to have synthetic beverages.

The frequency of use of various food items revealed that cereals, fats and oils, sugar and jaggery, condiments and spices were the most commonly used foods. Milk, roots and tubers and fruits were consumed

almost daily by rural youth. Consumption of pulses, green leafy vegetables and meat were found to be low in both farm and non-farm families. Fish was found to be less consumed by farm families comparable to non-farm families. Consumption of poultry was found to be low in non-farm families comparable to farm families.

Nutrition related practices of the respondents' families studied were measured using a rating scale, consisting of 36 statements related to food production / purchase, food storage, food preparation and food distribution / consumption. The areas under which the practices followed by the respondents' families were rated and classified into poor, moderate and good practices. Assessment of food production / purchase of the family revealed that the respondents' responses towards statements showed that desirable practices were followed only sometimes by majority of farm and non-farm families. Majority of farm family members (93 %) often put a pinch of salt or sugar in coconut oil to prevent rancidity whereas in non-farm families this practice was not followed. More number of farm families were following good practices like preparing rice in earthen pot, cooking rice by absorption method and using iron kadai for cooking when compared to non-farm families. Majority of the farm and non-farm families never drained off the excess water after cooking vegetables. It is encouraging to note that none of the farm and non-farm families were using aginomotto. With regard to food distribution and consumption majority of families surveyed were found that more male members were often given nutritious food than females. All the families surveyed often followed desirable practices such as drinking boiled water and consumption of locally available fruits like papaya, pineapple and guava. Majority of families were often consuming country vegetables like banana flower, pseudostem of plantain and amaranthus (local variety).

Karl Pearson's Product Moment Correlation was computed to find out the relationship among nutrition knowledge, attitude and practices.

Results revealed that there exists a significant positive correlation between nutrition knowledge and nutrition attitude. The interrelationship also throws light on the fact that no significant relationship exists between nutrition related practices, attitude and knowledge among rural youth.

The results also revealed that information source utilization index had highly significant positive influence on nutrition knowledge and attitude but there existed no relationship between information source utilization and nutrition related practices of the families.

Thus it may be concluded that nutrition cognition of rural youth of farm families was better than non-farm families and that female respondents possessed more knowledge and favourable attitude than male respondents. However the nutrition related practices followed in farm and non-farm families under study were found at moderate level only.

But overall assessment of nutrition cognition of rural youth was found to be unsatisfactory and clarity in the concepts of applied nutrition was lacking among the respondents studied. It may be concluded that initiating intervention programmes and awareness creation to improve dietary habits and nutrition related practices among the youth population is highly essential.

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Appendices

APPENDIX – I

**Kerala Agricultural University
Department of Home Science
College of Agriculture, Vellayani**

Title of thesis : “Assessment of nutritional cognition of rural youth and nutrition related practices of their families to which they belong”

Interview schedule to elicit information on socio-economic and personal characteristics of the respondents

1. Name and address :

2. Age

Sex: M/F

3. Religion : Hindu / Christian / Muslim

4. Caste : Forward/OBC/SC/ST

5. Family type : Nuclear / Joint / Extended

6. Family size :

1-2

3-4

5-6

7-8

7. Ordinal position : First/Middle/Last

8. Educational status of the respondent:

- a) Illiterate b) Primary school c) High school d) SSLC e) Pre-degree,
f) Degree / Diploma g) Post graduation and above

9. Occupational status :

- a) Unemployed b) Government sector c) Private sector d) Casual employee
e) Farming

10. Land possessed _____ cents / acres / Nil

10a. Area of cultivated land

10b. Crops cultivated in your land

10c. Details of livestock possessed

No. of animals

No. of birds

APPENDIX – I Continued

11. Total family income (monthly)

12. Income of the respondents (monthly)

13. Housing condition : Thatched / Tiled / Combined / Asbestos/Concrete

14. Source of drinking water

Pipe	<input type="checkbox"/>	Well water	<input type="checkbox"/>
River	<input type="checkbox"/>	Tube well	<input type="checkbox"/>
Surface water	<input type="checkbox"/>		

15. Source of information on nutrition (mark rank wise)

Television	<input type="checkbox"/>	Magazines	<input type="checkbox"/>
Radio	<input type="checkbox"/>	Exhibition	<input type="checkbox"/>
Newspaper	<input type="checkbox"/>	Resource persons	<input type="checkbox"/>
Friends	<input type="checkbox"/>		

16. Membership in social organization

Member in any organization

Member in one or many organizations

Office bearer

APPENDIX – II
Kerala Agricultural University
College of Agriculture, Vellayani
Department of Home Science

Name of investigator :

Name of subject :

“Assessment of nutritional cognition of selected rural youth and nutrition related practices of their families”

Statement to test the knowledge on nutrition

Sl. No.	Title	Yes	Don't know	No
1	Diets adequate with all the essential nutrients are termed as balanced diet			
2	Balanced diet can be prepared from locally available food stuffs			
3	Balanced diet include food materials from all food groups			
4	Knowledge on nutritive value of different food materials will help in making balanced diet			
5	Vitamin A is essential for blood clotting			
6	It is not necessary to supplement iron and folic acid tablets to pregnant women			
7	Vitamin C is essential for the absorption of iron			
8	Calcium is important for adolescents			
9	Cereals, roots and tubers are rich sources of energy			
10	Pulses and milk are poor sources of protein			
11	Dry fruits such as raisin and dates are not nutritious items			
12	Locally available leafy vegetables contain more nutrients than cabbage			
13	Egg protein is not fully utilized by the body			
14	Consumption of fruits and leafy vegetables will prevent constipation			
15	Cereals provide required vitamins to the body			
16	Consumption of fats will provide more energy			
17	Vegetables and fruits provide bulk in the diet			
18	Pasteurized milk is good for consumption			
19	Germinated pulses contain vitamin B			
20	Animal foods provide better quality protein			
21	Rice coked in absorption method is more nutritious than straining			
22	Pressure-cooking is advisable to prevent nutrient loss			
23	Vegetables should be cut into big pieces for preventing nutrient loss			
24	Fried foods are better than steamed foods			
25	Bleeding of gums is due to the deficiency of vitamin C			
26	Iodine deficiency leads to goitre			
27	Cod liver oil should be given to children who suffered from night blindness			
28	Deficiency of calcium and vitamin D will not reduce bone strength			

APPENDIX – III

**Kerala Agricultural University
College of Agriculture, Vellayani
Department of Home Science**

Name of investigator :

Name of subject :

“Assessment of nutritional cognition of selected rural youth and nutrition related practices of their families”

Statement to test the attitude on nutrition

Sl. No.	Title	Agree	Undecided	Disagree
1	Fast food stuffs are harmful to health			
2	Iodised salt consumption is not safe			
3	Consumption of baked foods should be encouraged			
4	Consumption of snack foods should be avoided			
5	Salads should be included in daily diet			
6	Fibre rich food should be taken			
7	Milk is not required for young boys			
8	Consuming more than one cereal in each meal is advisable			
9	Amla and guava can be eaten instead of apple and orange			
10	Family members should eat together			
11	Skipping meals during growing years do not harm much			
12	Daily fruit intake is not practical			
13	Youth generally have poor food habits			
14	Vegetarianism should be encouraged			
15	Regular consumption of processed foods is not advisable			
16	It is advisable to limit the intake of fats and oils			
17	Consuming unpasteurized milk should be avoided			
18	Raw salads should be included in daily diet			
19	Nutrition education programme generally do not target youth population			
20	Nutrition education should be included in the school curriculum			

APPENDIX – III Continued

Sl. No.	Title	Agree	Undecided	Disagree
21	Nutrition knowledge can be disseminated in a better way through television			
22	Nutrition information through print media is more effective			
23	Food distribution should be there in every nutrition intervention programme			
24	Funds should be allowed in national budget for nutrition education for the youth			
25	Nutrition education should be a component in agricultural education programme			
26	Nutrition education promotes good food habits			
27	Nutrition education is meant only for females			

APPENDIX – IV

**Kerala Agricultural University
College of Agriculture, Vellayani
Department of Home Science**

Name of investigator :

Name of subject :

“Assessment of nutritional cognition of selected rural youth and nutrition related practices of their families”

Statement to test the nutrition related practices of families

Statements	Often	Sometimes	Never
Food production / purchase			
a) Green leafy vegetables are produced in homesteads			
b) Iodized salt is purchased			
c) While purchasing food materials priority is given to nutritive value of foods			
d) Purchase only recognized and branded products			
e) While purchasing food products, the date of manufacturing is taken into consideration			
f) Cooked food from street vendors are purchased			
g) TV advertisements are considered for food purchase			
Food storage			
a) In order to prevent spoilage in cereals neem leaves are put along with cereals			
b) A pinch of salt or sugar are added to coconut oil to prevent rancidity			
c) Roots and tubers are buried for longer shelf life			
d) For storing fermented mixes such as idli, dosa and appam, Janatha refrigeration is used			
Food preparation			
a) Iron Kadai is used for preparations			
b) Earthen pot is used for preparing rice			
c) Rice is prepared by absorption method			
d) Care is taken to prepare balanced diet			
e) Baking soda is used to retain colours of vegetables			
f) Excess water after cooking vegetables is drained off			
g) Vegetables are cooked in open vessels to retain colour			
h) Aginomotto is used for preparation			
i) Vegetables are washed after cutting			

APPENDIX – IV Continued

Food distribution / consumption			
a) Boiled water is used for drinking			
b) Locally available fruits such as papaya, pineapple guava are used			
c) Sprouted pulses are consumed			
d) Hands are washed prior to cooking			
e) Steam foods are given to children			
f) Butter milk is used for quenching thirst			
g) Fried foods are totally avoided			
h) Ragi based products are given to young children also			
i) Country vegetables like banana flower, pseudostem of plantain and amaranthus (local variety) are used			
j) Locally made snack foods such as peanut candy and gingelly balls are used			
k) Fish, egg and meat are included compulsory in the diet			
l) Mushroom is produced for consumption			
m) Synthetic drinks are consumed			
n) Left over cooking oil is repeatedly reheated for further cooking			
o) Male members are given nutritious food than females			
p) Bakery items are used for light refreshments			

APPENDIX V

Kerala Agricultural University
College of Agriculture, Vellayani
Department of Home Science

Name of the investigator

Interview schedule to elicit information on dietary habits and nutrition related practices of the respondents

1. Food habits, Vegetarian / Non vegetarian : Yes/No
2. DO you have the habit of nibbling : Yes/No
3. Are you very choosy in your food : Yes/No
4. Do you skip any meal : Yes/No
 - a) If yes, which meal : Breakfast/Lunch
Evening tea/supper
5. What do you prefer : Home food/ eating
outside/Both
6. Like novel foods than traditional foods : Yes/No
7. Do you consume vegetables in raw form : Yes/No
8. Do you drink buttermilk to quench thirst : Yes/No
9. Do you consume synthetic beverages : Yes/No

**ASSESSMENT OF NUTRITIONAL COGNITION OF SELECTED
RURAL YOUTH AND THE NUTRITION RELATED PRACTICES
OF THEIR FAMILIES**

SHINY, R.L.

**Abstract of the
thesis submitted in partial fulfillment of the requirement
for the degree of**

**Master of Science in Home Science
(Food Science and Nutrition)**

**Faculty of Agriculture
Kerala Agricultural University, Thrissur**

2004

**Department of Home Science
COLLEGE OF AGRICULTURE
VELLAYANI, THIRUVANANTHAPURAM-695 522**

ABSTRACT

The study entitled "Assessment of nutritional cognition of selected rural youth and nutrition related practices of their families" was undertaken. The locale of the study was Neyyattinkara taluk of Thiruvananthapuram district. The objective of the study was to assess and compare the nutrition knowledge and nutrition attitude of rural youth belonging to farm and non-farm families. The nutrition related practices of the families were also assessed.

Equal number of the respondents from farm and non-farm families were drawn for the study comprised of 160 rural youth (80 male and 80 female) from two wards of the selected two panchayats.

The dependent variables selected included nutrition knowledge and nutrition attitude. The independent variables included socio-economic variables like caste, religion, family size, family type, family income, land size, household food production and type of house. A comprehensive analysis of socio-economic and personal characteristics along with nutrition knowledge and attitude of the selected rural youth were carried out using appropriate tools and methods.

The socio-personal characteristics revealed that majority belonged to 18-20 years. Majority had education upto pre-degree level and belonged to first born category. Fifty per cent of the respondents, both from farm and non-farm families had no income of their own. The respondents got major source of information from television. Their social participation revealed that many of them were members of various organizations.

The socio-economic status of the families found that majority belonged to Hindu forward caste hailed from nuclear families having monthly income between Rs. 5001-10,000. Non-farm families did not cultivate any crops in their possessed land. In the case of farm family at

least one acre of land was possessed by each were cultivated major and minor crops. Their farm produce like paddy, vegetables and fruits were fully utilized by them.

While analysing their overall nutrition knowledge scores it was found that majority of the respondents had medium level knowledge and the farm families possessed better knowledge than non-farm families. When the nutrition awareness of the respondents in selected areas of nutrition was studied it was found that many of the respondents had better knowledge in cooking methods without nutrient loss while only a small percentage had correct knowledge on nutrition deficiency disorders.

The attitude level of the respondents was measured using specially designed attitude scale. It was revealed that majority possessed higher score in neutral level *i.e.*, they had neither favourable nor unfavourable attitude. It was found that in the areas of importance of good nutrition, food habits and nutrition education higher per cent of the respondents showed neither favourable nor unfavourable attitude. Among the rural youth the females have a higher nutritional cognition when compared to their male counterparts.

It is noted that the selected independent variable, age had a negative relationship with knowledge whereas other independent variables like caste, marital status and birth order had no relationship with knowledge and attitude of the respondents.

Dietary habits of the respondents revealed that majority were non-vegetarians. Regarding nutrition related practices it was found that majority were good eaters and had possessed nibbling habits. Most of the respondents especially females skip one meal a day particularly breakfast. In the case of frequency of use of different foods it was found that rural youth consumed pulses, green leafy vegetables and meat in lesser quantity. While rating nutrition related practices of the families it was

found that majority followed the practices in a moderate level and there is not much difference between farm and non-farm families.

The interrelationship with nutrition knowledge and nutrition attitude and practice revealed that there exists a significant positive relationship between nutrition knowledge and attitude but not with practice.

Information source utilization of the youth had a positive relationship with nutrition knowledge and nutrition attitude whereas it showed no relationship with the practices followed in their families.

Overall assessment of nutrition cognition of rural youth was found to be unsatisfactory and clarity in the concepts of applied nutrition was lacking among the respondents studied. The results of the study emphasized the need for nutrition intervention programme specially targeted to rural youth.