FOOD CONSUMPTION AND ENERGY EXPENDITURE PATTERN OF EMPLOYED HOME-MAKERS IN ORGANIZED SECTOR IN TRIVANDRUM

BY

MARIA FLORENCE VARGHESE

THESIS

Submitted in partial fulfilment of the requirements
for the degree
MASTER OF SCIENCE IN FOOD SCIENCE AND NUTRITION
Faculty of Agriculture
Kerala Agricultural University

Department of Home Science
COLLEGE OF AGRICULTURE
Vellayani - Trivandrum

1989

Dedicated to my beloved parents

and sisters

DECLARATION

I hereby declare that this thesis, entitled "Food consumption and energy expenditure pattern of employed home-makers in organised sector in Trivandrum" 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 to me of any degree, diploma, associateship, fellowship or other similar title of any other University or Society.

Florence Varghese

MARIA FLORENCE VARGHESE

Vellayani

CERTIFICATE

Certified that this thesis entitled "Food consumption and energy expenditure pattern of employed home-makers in organised sector in Trivandrum, is a record of research work done independently by Kum. Maria Florence Varghese under my guidance and supervision and that it has not previously formed the basis for the award of any degree, diploma, fellowship or associateship to her.

Dr.L.Prema,
Chairman,
Advisory Committee,
Professor and Head,
Department of Home Science.

Vellayani

APPROVED BY

CHAIRMAN

Dr (Mrs) L.PREMA

MEMBERS

1. Dr (Mrs) P.SARASWATHY 26/9/90

2. Mrs.MARY MATHEWS

3. Dr (Mrs)V.USHA

EXTERNAL EXAMINER 26.9.90

ACKNOWLEDGEMENT

I wish to place on record my indebtedness to:

Dr (Mrs)L.Prema, Professor and Head, Department of Home Science, College of Agriculture, Vellayani and Chairman of Advisory Committee for her invaluable guidance, unfailing patience and keen interest shown throughout the period of study. Her excellent suggestions and timely help in providing much useful information relevant to the topic are gratefully acknowledged,

Dr (Mrs)Saraswathy.P., Associate Professor and Head, Department of Statistics, College of Agriculture, Vellayani for statistical help rendered and also for sensitive and penetrating critique of the manuscript,

Mrs.Mary Mathew, Associate Professor, Department of Home Science, College of Agriculture, Vellayani for the constant help, encouragement and useful advice,

Dr (Mrs) V.Usha, Assistant Professor, Department of Home Science, College of Agriculture, Vellayani who has been unstinting in valuable advice and for constructive suggestions and corrections,

the teaching and non-teaching staff of the Department of Home Science, College of Agriculture, Vellayani, specially Mrs. Mary Ukkru.P., Assistant Professor and former Chairman of the Advisory Committee for carrying out duties to the best of her ability and Mrs.Vimalakumari,N.K., Associate Professor, for the generous help received whenever approached,

the Dean, College of Agriculture, for providing the necessary facilities and the Kerala Agricultural University for awarding the fellowship during the period of study.

Finally, to my family, my friends and all who have rendered their help and support in the execution of this work, I offer my deepest appreciation.

Vellayani

MARIA FLORENCE VARGHESE

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INTRODUCTION

INTRODUCTION

Women, who are primarily responsible for 30 per cent of the world's households are being increasingly burdened with the growing responsibility of fulfilling the basic survival needs of all families. In this changing socio-economic environment, women have a vital role to play not only as traditional home-makers but also as wage earners. A women's domestic role as wife and mother consumes half of her time and energy (UNICEF 1985). Findings compiled by the United Nations (1985) revealed that together with their additional work outside the home, most women were found to work a double day.

In recent years, rapid changes have been taking place in the status of women. Higher technical and professional education and varieties of paid employment, varied opportunities for the development of new skills and wider social contacts were some of the concomitants of the new social order that had ushered in. This change had enabled women to achieve greater equality with men both within and outside the family, in the legal, social, educational occupational and economic spheres of activity. (Singh 1972). According to Kaur and Punia (1986) this new occupational status of woman has affected her traditional role in the home and has resulted into many conflicts.

According to Nirmala et al (1978) economic necessity, economic independence, raising the standard of living, occupying time, utilizing education and dislike of household work were some of the reasons for the home-maker seeking employment.

Change in social pattern from joint family to nuclear family had also vested greater responsibilities on these employed women. The continuous conflict between the demands of the home and the career brought various stress and strains on these women. Rao (1987) found that the stress of their new life style forced women to redefine their roles and change their maternal behaviour. Outside employment taken up by the women was generally reported to result in the negligence of their own health and had led to various nutritional problems.

The present study is to assess the major immobilities faced by the employed home-makers at the household level with special reference to their health and food habits. The study was conducted on the basis of the following objectives:

1. To study the factors affecting the food consumption pattern of the employed home-makers in Trivandrum
2. To study the energy requirements of the employed home-makers
3. To assess the knowledge and attitude of the employed home-makers regarding food and health

REVIEW OF LITERATURE

REVIEW OF LITERATURE

Female labour participation

Meslem (1985) reported that the world survey on women conducted by several U.N agencies provided a mass of data on employment, education, health and other aspects. According to a study conducted by International Centre for Research on Women (1980) women participated in both home and market production; and women tend to work longer hours and had less leisure time than men. Malik (1987) indicated that there was a dramatic increase globally in the participation of women in economic activity as wage earners, as self employed and as entrepreneurs According to Maret (1983) over the last thirty years the participation of women in American labour force had dramatically increased for all age groups and marital status categories. Ramachandran (1986) reported that in India working women constituted about 12 per cent of the total population and this trend was on the increase. The 1981 census series of Kerala revealed that the work participation rates of women in urban Kerala is 11.87.

Patel (1982) pointed out that during the last decade the combined effect of social inequalities along with the dramatic increase in participation rate of women

in the modern sector had raised questions on the existing relationships of women to society, in many countries including Asia. Jhurani (1985) opined that social, cultural and familial constraints deprived women of their freedom and mobility in the out door activities, and they were only in small numbers in the organised sector. C.S.W.I (1974) reported that the impact of the transition to a modern economy had resulted in the exclusion of an increasing number of women from active participation in the productive process with limited recognition of their contribution and ability to contribute. C.S.W.I (1974) further reported that the factors which caused such an exclusion need to be examined and corrective action and supportive measures initiated to ensure equal opportunity in the economic process which would enable women to pay their full and proper role in building up the nation.

Behrman et al (1981) revealed strong regional differences in overall female labour force participation implying that returns to human capital were higher in modern urban areas, that differences in experiences and to a lesser extent, in schooling and migratory status were important in explaining regional differences in

earnings and that wage differences, created long-run incentives for female migration. Sen and Sen (1984) reported that female labour force participation was conditioned by child bearing and rearing and by women's responsibility for domestic work. Gallin (1982) reported that the participation in work outside the home had been unaccompanied by a redefinition of women's status. Traditional ideology maintained and re-enforced the subordination of women to the family interest, to the needs of the state and the market. Sidhu et al (1987) revealed that female labour participation also resulted in the improvement in their social standing due to their increased involvement in social activities.

Pattern of employment of women

According to Patel (1982) industralization resulted in increasing number of women wage earners becoming a normal pattern of urban and industrialized enclaves and the jobs reserved for them were linked to those tasks which they performed at home and for which social values considered them to be best suited. Patel (1982) further reported that in the labour market the number of tasks allotted or performed by a woman continued to be exactly the same as if she were

not working outside the house. Her capacity to participate in the labour force in gainful employment had fundamentally changed relationships to society. But within the family social expectations remained the same, that of considering services of a woman in the unpaid category. Another report by Patel (1982) indicated that since women were burdened with family responsibilities, their allocated placed in the labour market, their level of wages and their low skills were the natural consequences of their biological condition.

Ramachandran (1986) indicated that more and more women were seeking employment in non-traditional occupations outside home because of socio-economic and other consideration and this trend begun in the industrialized countries was rapidly spreading to urban and rural populations in developing countries. According to UNDP (1985) the employment profile of women in organized sector indicated that they worked mainly in female stereo typed occupations such as teaching, nursing, tailoring, clerical jobs and similar sedentary type occupations. Swaminathan (1980) reported that between rural and urban areas there were differences in the pattern of employment of women. Educational and scientific services and medical and health services occupied third and fourth

places in urban areas, indicating that education has more effect on women's employment in urban areas. Patel (1982) reported that an analysis of women's traditional roles revealed that these roles were confined to women's status in the subsistence economy, the validity of the dual concept of public and private spheres and the impact on their cultural values.

Present status with reference to role of women

Mair (1981) reported that a better understanding had been forged between the international division of labour and the economic roles of women and that their status was inextricably linked with a chain of economic relationships in the international market system. According to the study conducted by International Centre for Research on Women (1980) changes in developing country economic structures were breaking down traditional sex roles, giving women increased responsibility for supplementing basic survival needs of the family and primary responsibility for 23 to 30 per cent of all households. Uni-dimensional views of women as wives/ mothers and secondary worker were no longer accurate due to the critical need for women to contribute to household income. Borremans (1983) reported that economic growth had added more to the working hours of women than to men.

By 1975, women, considered throughout the world provided two-third of all working hours and received 10 per cent of all paid income. Bhardwaj and Kumar (1987) reported that the Indian women had undergone many changes over the years, as in present society, they were contributing in all walks of life. They not only played varied roles in domestic but also in various other occupations, thus contributing to a major share in the national economy. Patel (1982) found that in many Asian countries, the basic wages of a male worker did not meet the primal needs of daily life and that supplementary income of a women became an absolute economic necessity. Singh (1972) studied the effect of outside employment on home and revealed that a large majority of the women were working purely due to economic reasons.

Dual role of women

Women performed tasks essential to any society's survival from raising children to growing food to feeding their families. (UNICEF, 1985) Kala (1976) reported that women were becoming aware that if they wished to contribute to the well being of the family the best way was to become a wage earner. Singh (1972) reported that when married women entered into gainful employment, it increased

their duties and they had to perform dual functions, one in the house (feminine role) and the other outside it (wage earner). According to Hong (1984) employed women found it extremely difficult to cope up with the double responsibilities and hence preferred to refrain from seeking employment outside home. Singh (1972) reported that since working women had to perform dual functions, it exposed them to conflicting expectations between their work outside and their duties in the home. Popkin (1980) reported that most women who played an active part in the household economic life and contributed to the well being of the family were also expected to maintain major household responsibilities. Popkin (1980) further reported that when women performed this dual role of mother/housewife and her involvement in market participation, family stood to gain between her household care and other responsibilities. Nirmala et al (1978) found that factors such as mother's age, education and children's age were associated with maternal employment and this employment provided satisfaction and a sense of fulfilment for the mother and therefore they were able to combine the dual roles effectively. Kala (1976) reported that the transfer of economic functions had left the mother with more time which could be devoted to paid employment outside the home.

Effect on family and children

Csekme (1980) reported that women of the world not only bear children but also ensure the well being of the family and the local community through production, preservation and preparation of food, through the partial production and maintenance of household goods, through the basic education and socialization of the next generation through rendering basic health services and through maintaining the emotional well being of the family. Earlier studies by Newland (1980) indicated that unavailability of women at home owing to heavy work schedule, may pave the way to deteriorated family nutrition. Malik (1987) reported that it has been universally accepted that an educated and earning housewife takes better care of her family, and child in terms of nutrition, clothing, education, shelter, leisure etc. all leading to a better quality of life. Ramachandran (1986) claimed that it was possible that employment outside the house could benefit the working women and her family as the additional income generated could raise the purchasing power and standard of living with consequent improvement in nutritional status. Kala (1976) reported that only a working middle class wife could have good housing,

adequate medical care, funds for holidays and to provide good education to children, and by working they could add to the social standing of the family. Sidhu et al (1987) indicated that urban employed housewives had more job related expenditure, than rural employed wives. But their employment resulted in augmentation of their families income and in general, improvement of their levels of economic well being.

A report of the working group on employment of women (1983) found that there were studies to prove that where woman earns her income it goes directly to improve the nutrition and health of her children. Rao (1987) reported that it was relevant to note that the effect of a mother's employment on children's health and nutrition was the net result of two opposites a positive income effect or knowledge effect and a negative less child care and time effect. Ramachandran (1986) reported that the income generated from women's employment brought long term benefits like financial security after retirement and better education for children. According to Saxena et al (1987) working of mothers outside the home had been denounced strongly because separation from the mother during childhood could disturb the normal, social and emotional development of the child. Nanda and Manocha(1977)

reported that employment of the mother influenced the children and they became less co-operative, sympathetic and showed indifferent social behaviour. The change was found to be more drastic in the case of male children, with regard to social behaviour, when compared to the change in girls. Singh (1972) studied the effect of outside employment on home and found that the women were greatly dissatisfied with the time they devoted to their children and home. Suseela et al (1970) found that the employed mothers were not able to participate fully in child rearing due to the full time nature of the jobs and lack of facilities such as creche. Choudhary et al (1986) reported that higher prevalence of malnutrition in children of working mothers, indicated that working status of mothers does effect the nutritional status of children. Rawson and Valverde (1976) reported that when mother works outside the home, the child care responsibilities were mainly performed by the older siblings. Children in such households received sub optimal care from their mother surrogates who lacked proper training or motivation to fulfill mother's role. The type of mother surrogate and the quality of child care provided by these mother substitutes was an important factor associated with nutritional status of children.

Effect on management of household responsibilities

Thyagarajan et al (1978) reported that combining both home and job responsibilities required careful planning by the employed mother and co-operation from the husband. Nag and Vaish (1977) indicated that in all families where both husbands and wives were serving, household affairs was a shared business. According to Devi and Ravindran (1985) women were not released from their household duties, when they took up remunerative work outside their home, it was assumed that they would manage to do their household work in lesser time by increasing their efficiency or lessen their burden by getting help from others including husbands. Bakshi et al (1987) reported that working home-makers enjoyed their role of being home-makers and disliked interruptions while working. They emphasized on organised and systematic work. The household equipment was found to be a great aid in home-making work, and the respondents found outside help to be a necessity for women with small children. Sundari and Kamalanathan (1968) reported that intelligent selection and use of labour saving kitchen devices would help in saving of time which may well be utilized for productive activities in the home, the

community and the nation. Mathias (1971) is of the opinion that the change in the status of women, especially those employed on a whole time basis along with many other factors has led to the acceptance of convenience foods in the normal diet, where time is of importance and where no domestic help is available. Noordanus (1980) found that social and economic changes, after the second world war, emphasized on the use of snacks for saving time at work, for elasticity of meal times and meal pattern and for use by the house wife to encourage healthy eating and for purely social purposes. Ogale et al (1987) in the assessment of household work load, reported that a considerable volume of household work load, consumes the home-maker's time. The food related tasks makes up the major part of the total household work load accomplished daily followed by care of family members, health care, care of clothing, shopping of vegetables, entertainment of guests, gardening, animal care and account keeping. The total volume of household work was effected by the income of the family, family life cycle, stage of the family and size of the family. George and Bafna (1983) found that the home-makers spent largest amount of time in preparing food, cleaning away and care of house. Time use was

greatly influenced by the size of the family and the age of the home-makers. Nimkar and Hatwalne (1976) reported that irrespective of duty hours, all categories of employed home-makers faced problems regarding cooking meals. Nuclear type of family, low income and low age of the youngest child created problems for more home-makers. Borremans et al (1983) reported that stress on women grows when households were connected to gas, water, electricity and sewage. Sundaram and Dhandepani (1984) reported that problems related to the general management of the house, time, children and servants were mainly faced by the employed home-makers. Studies conducted by Newland (1977) depicts that the work time of employed women competed with domestic responsibilities and additional work outside the home was reported to encourage women to limit their family size and to reduce family responsibility such as house keeping and child care activities.

Effect on dietary intake and health of home-maker

According to Satyanarayan et al (1979) nutrition and food intake were closely related to the efficiency and productivity of workers. It was also believed that lack of adequate food for prolonged periods resulted in lethargy and sluggishness and also reduced physical endurance.

Watanabe (1972) studied the relation of dining habit to general health condition in working women and found that one third ate 2 meals a day, omitting breakfast. Those eating 2 meals considered that they paid enough attention to their health. When chosing diet, they ate few different foods, had poor nutrient intake and were thought not to know enough about nutrition. According to Koyama et al (1972) a low proportion of working housewives ate breakfast, especially among those with infants under school age. Generally, the foods tended to be expensive and meals tended to be nutritionally unbalanced. Krechniak (1983) found that the most important drawback of the nutritional habits of women working in a ceramics factory was the infrequent consumption of vegetable and fruits. Foss and Keith (1982) estimated the energy and nutrient intakes for 50 single professional women indicating that many had dietary intakes low in K.cal, calcium, iron, vitamin A and thiamine. Ohlson and Harper (1976) reported that women aged 18 to 56 years were divided into 3 groups by energy intake and the percentage of normal heavy and obese women was calculated, for each intake an inverse relation was found between body weight and energy intake. According to Casey and Harrill (1977)

energy and nutrient intakes of the women were significantly affected by age and daily variety of foods. Muscat and Berg (1971) reported that an improvement in nutrition could have a continuing current or maintenance effect on the productivity of an active member of the labour force, or it can take the form of an investment, enabling a person to earn a higher future income stream.

According to Patel (1982) employed women carried more household responsibilities and longer working hours and too long hours of work at home and outside the home, as well as nutritional stress may act as physical burdens to these women. UNDP (1980) reported that chronic over work and exploitation of the developing world's female population had very damaging consequences for women themselves and for society as a whole. Ghosh (1987) revealed that the work the women do, within the home and outside and their role in the family and the bearing and rearing of children, not only affects their health but is also affected by it. Ramachandran (1986) indicated that the type of work a women does outside the home, availability of domestic help and the economic factors determine the impact of such employment on her. Ghosh (1987) also reported that the biological

and social realities of women's maternal role are closely linked to their health status and were major factors in the problems they faced in health, employment, education and many other areas. Ramachandran (1986) also reported that in some situations dual stress and conflicting demands of work in and outside the home had been shown to have had adverse effect on maternal and child health and nutritional status. According to Ghosh (1987) because of a woman's dual burden of domestic responsibilities and income generating activities, she might never find time to seek medical help except in extreme cases.

Ozorio (1984) found that 230 million women in third world suffer from nutritional anaemia and this mild or moderate anaemia might impair well being, reduce maximal work capacity and adversely affect work performance. Patel (1982) reported that two third of Asian women were perpetually undernourished and a majority were suffering from anaemia. W.H.O (1984) reported that iron deficiency anaemia affected large number of women belonging to low socio-economic groups in Latin America. Ghosh (1987) reported that nutritional anaemia was widespread among women of child bearing age and contributed significantly to maternal morbidity and mortality. Anaemia had a

profound effect on health, it lowered resistance to fatigue and disease and affected working capacity. Vijayalakshmi and Jayanthi (1986) reported that iron supplementation conserved energy and the work output was increased after supplementation suggesting that anaemia decreased productivity and supplementation with iron improved work output. UNDP (1980) reported that women had little resistance to tropical diseases and other endemic illnesses, exhaustion and lack of time might keep women from taking essential preventive health measures which could improve family well being.

MATERIALS AND METHODS

MATERIALS AND METHODS

A study on the food consumption and energy expenditure pattern of employed home-makers in organised sector in Trivandrum was undertaken to:

1. Study the factors affecting the food consumption pattern of the employed home-makers
2. Study the energy requirements of the employed home-makers
3. Assess the knowledge and attitude of the employed home-makers regarding food and health

I Area of study

The area selected for the study was the organised sector in Trivandrum. Organised sector is defined by DGET as " All establishments in the public sector (except defence) and non-agriculture sector establishments employing 10 or more in the private sector". Trivandrum being a city, having several public and private sector organizations with potential number of women employees was found to be suitable for undertaking this study.

II Plan of action

Plan of action of the present study comprised:

1. A survey to identify the factors influencing the food consumption pattern of the employed home-makers and their families
2. Assessing the actual food intake of the selected employed home-makers through weighment survey to get an idea about their dietary intake
3. Determination of energy requirements of the selected home-makers by monitoring their work schedule for one week, computing the energy required for daily activities; and comparing with the recommended daily allowance of ICMR
4. Assessment of the nutritional status of the selected home-makers through anthropometric and biochemical studies and through verification of health records
5. Assessment of the attitude and knowledge of the selected employed home-makers by developing suitable scales on food and health

III Selection of samples

In the present study selection of samples was confined to the organised sector in Trivandrum. A total of 200 employed home-makers, irrespective of age were selected at random from various public and private sector organizations by stratified random sampling techniques.

The different strata included were Executives, Doctors, Engineers, Agricultural Officers, School Teachers, College Lecturers and Office Assistants (Clerks).

These sampling techniques were used to achieve a higher level of accuracy in the study since complete coverage of the population is not feasible.

IV Selection of methods of study

Assessment of the factors influencing the food consumption pattern of the employed home-makers and their families was made to derive information on the socio-economic and dietary pattern of the families as well as the personal characteristics of the employed home-makers. For this, interview schedules were developed. The schedules were then pretested among selected employed

home-makers and on the basis of their suggestions it was suitably modified. The pretested and finalised schedule was later used for the actual study. The schedules are presented in Appendix I. Interview method was selected for the study since interview is conversation with a purpose, Bingham and Moore (1924). During the interview, the investigator presented each topic by means of specific questions and care was taken to continue the dialogue until information had satisfied the research objectives and another topic, was introduced,(Charles and Kahn 1968). Interview method is reported to be the suitable way as it proceeds systematically and records the collected information quickly (Bass et al 1979).

To assess the actual food intake by the food weighment method, suitably structured schedules were developed. The schedule is presented in Appendix II (a) and II (b).

To determine the energy requirements, computation was done based on the calorie requirement per kilogram body weight per hour. The schedule is presented in Appendix III.

Biochemical studies in blood to estimate the haemoglobin content was carried out in selected samples, as given in Appendix IV.

Statements to assess the level of knowledge and attitude regarding food and health were formulated and is given in Appendix V.

V. Conduct of the study

(i) The investigator interviewed the respondents of the study to elicit the required information on socio-economic situation of the families such as type of family, economic status, income, size and composition of the family, educational level, occupation and monthly expenditure pattern.

Information on food consumption pattern of the families included details such as, frequency of purchase of various food items, and inclusion of various food items in their daily menu; it also gave information regarding culinary practices to save time before cooking, cooking methods commonly adopted, meal serving pattern and foods prepared for special occasions, during illness and in special conditions.

Personal characteristics of the home-makers collected in the schedule included age, occupation, income and other employment related aspects,

details related to marital status, time spent in various activities, management of household work, health status of the home-maker and her dietary habits.

(ii) Weighment survey was carried out in 10 per cent of the 200 employed home-makers, selected randomly, to get accurate amount of the actual food intake. Since they were from the urban area, three day weighment method was adopted as recommended by Thimmayamma and Rau (1983). According to Guthrie et al (1985) one day food records alone were of limited value in estimating nutrient adequacy of a person's diet and quantify the magnitude of the variation over a three-day period. The more adequate the mean intake, the less variation in intake from day to day.

The investigator weighed the raw foods included in the meal for the day and the cooked weight of each preparation was recorded. The amount of each food consumed was also weighed, so also the plate waste to get the exact amounts of foods consumed. The nutritive value of the foods consumed was calculated using food composition tables (ICMR 1982). The quantity

of each food item as well as the computed nutritive value was then compared with the recommended daily allowance of foods and nutrients for women by ICMR.

(iii) The energy requirement of randomly selected employed home-makers, for various activities, was determined by monitoring their time motion pattern for one week. The energy expended was then calculated based on the calorie requirements of Indian reference woman, for sedentary, moderate, and heavy activities. the computed values were then compared with the recommendations of ICMR.

(iv) Nutritional status of the home-makers were assessed through anthropometric and biochemical studies in the sub sample, selected at random.

The height of an individual is made up of the sum of four components: legs, pelvis, sphere and skull. In field nutritional anthropometry only total height is measured (Jellifee 1966). To determine height a fiber glass tape was used. The fiber glass tape, was fixed on the wall with cellophane tape. The subject was asked to stand erect without slippers with the heels, buttocks, shoulders and occipit

against the wall. The height was read off from the scale on the wall

Weighing is the key anthropometric measurement (Jellifee 1966). Weight was determined using a bath room balance which was checked by caliberation with standard heights. Elston (1981) pointed out that for adults, weight over height squared (weight/height^2) is a convenient and adequate measure of over weight and that more complicated measures showed no significant advantages.

Haemoglobin estimation of the employed home-makers was conducted by the cyanomethaemoglobin method, NIN (1971). In this methods 20 μl of blood was collected, from a finger prick, into a haemoglobin pipette and delivered onto a Whatman No.1 filter paper disc. The blood samples collected in this manner were then eluted using Drabkin's solution and read colorimetrically at 540 mm in the photocolorimeter against a blank. Details of the procedure is given in Appendix.

The knowledge and attitude of the employed home-makers regarding food and health were assessed. Attitude

is a state of readiness for motive arousal according to Newcomb et al (1965). In attitude measurement the subject is confronted with a closed question in which not only the focal object and the dimension of appraisal, but also a set of categories from which to chose her reply. More complex sets of alternatives are possible with reasonably literate subjects, Scott (1968). In accordance with this many statements were formulated. Selected 20 statements were finalised. Care was taken to see that the statements were worded to express positive and negative responses. The responses to the statements were obtained on a five point continuum ranging from strongly agree to strongly disagree. The scoring pattern was as follows:

Strongly agree	:	5
Agree	:	4
Undecided	:	3
Disagree	:	2
Strongly disagree	:	1

Negative statements were scored in the reserve manner. Knowledge score was obtained from the number of correct responses and the attitude score of the respondents were obtained by adding up the scores corresponding to their response pattern.

Statistical methods used:-

The statistical methods used were:

i) Percentage analysis to make simple coparisons wherever necessary

ii) Correlation analysis, simple correlation coefficients were computed to find out the relationship between the dependant variable and each of the independent variables (Panse and Sukhatme 1957).

iii) The relationship of nutritional states (y) terms with haemoglobin level (X) is defind in terms of linear regression. y=a=bx where'b'determines the rate of change in nutritional status for unit change in haemoglobin level. The value of coefficient of determination explains the degree of variation 'y' explained by x'

Analysis of the data was done in the Department of Statistics, College of Agriculture, Vellayani using the Versa IWS Computer.

RESULTS

RESULT

A study to assess the food consumption and energy expenditure pattern of the employed home-makers in the organised sector in Trivandrum was conducted. The data collected was analysed and the results are presented under the following heads:

1. Socio-economic pattern of the families
2. Food consumption pattern of the families
3. Personal details of the employed home-makers

1. Socio-economic pattern of the families

The socio-economic pattern of the families of the 200 employed home-makers, with particular reference to, area of residence, details about the house, religion of the families, type of family, details of family size, age and sex-wise distribution of the family members, educational status of family members, sources of income and economic status of the families and the pattern of expenditure per month was determined, after analysing the data obtained.

Socio-economic pattern of the families

1. Area of residence

The area of residence of the 200 families surveyed is given in Table 1.

TABLE 1

Area of residence

Residential area	Number of families	Percentage
Rural	11	5.50
Sub-urban	39	19.50
Urban	150	75.00
Total	200	100.00

As depicted in Table 1, among the 200 families, a majority (75.00 per cent) were from the urban area and only 5.50 per cent resided in the rural area.

2. Details about the house

Details of the houses in which the families lived are presented in Table 2.

TABLE 2

Details about the house

Type of house	Number of families own	Percentage own	Number of families rented	Percentage rented
Tiled/double storey	8	4.00	0	0.00
Tiled/single storey	27	13.50	16	8.00
Concrete/double storey	66	33.00	10	5.00
Concrete/single storey	51	25.50	22	11.00
Total	152	76.00	48	24.00

Table 2 shows that, 76.00 per cent of the families had own houses, of which 4.00 per cent were tiled/double storey houses, 13.50 per cent were tiled/single storey houses, 33.00 per cent were concrete/double storey houses and 22.50 per cent were concrete/single storey houses.

Only 24.00 per cent lived in rented houses, of which 8.00 per cent lived in tiled/single storey houses, 5.00 per cent in concrete/double storey houses and 11.00 per cent in concrete/single storey houses.

The number of rooms in each was determined and are presented in Table 3.

TABLE 3

Number of rooms in the house

Number of rooms	Number of families	Percentage
1-3 rooms	12	6.00
4-6 rooms	109	54.50
More than 7 rooms	79	39.50
Total	200	100.00

As revealed in table 3, 54.50 per cent of the families had houses with 4 to 6 rooms and 39.50 per cent had more than 7 rooms whereas, only 6 per cent had houses with 1 to 3 rooms.

The environmental conditions in which the houses were situated are given in Table 4.

TABLE 4

Environmental conditions around the house

Environmental conditions	Number of families	Percentage
Poor sanitary conditions	14	7.00
Good sanitary conditions	79	39.50
Fair sanitary conditions	107	53.50
Total	200	100.00

Table 4 depicts that, 39.50 per cent of the families surveyed lived in good sanitary conditions and 53.50 per cent lived in fair sanitary conditions whereas, only 7.00 per cent of the families lived in houses situated in poor sanitary conditions.

Accessibility to other public places, from the house is given in Table 5.

TABLE 5

Accessibility to other public places from the house

Places	Easily accessible		Distant	
	Number of families	Percentage	Number of families	Percentage
Hospital	188	94.00	12	6.00
Market place	190	95.00	10	5.00
Place of worship	185	92.50	15	7.50
Bus-stop	194	97.00	6	3.00
Shopping complex	170	85.00	30	15.00
Post office	172	86.00	28	14.00
Cine theatre	160	80.00	40	20.00
Library/Reading room	122	61.00	78	39.00
Railway station	082	41.00	118	59.00
Airport	032	16.00	168	84.00

As revealed in Table 5, 61 to 97 per cent of the families lived within easy reach of most of the essential public utility places like hospital, market place etc.

except for the railway station and air port which were distant for 59.00 to 84.00 per cent of the families but within easy reach for 16.00 to 41.00 per cent of the families. Majority of the families, (97.00 per cent) had easy access to the bus stop. The table also shows that 3.00 to 39.00 pef cent of the families lived at a distance from most of these essential public utility places.

3. Religion of the families

The religion practised by the 200 families surveyed is given in Table 6.

TABLE 6

Religion of the families

Religion	Number of families	Percentage
Hindu	146	73.00
Muslim	9	5.50
Christian	45	22.50
Total	200	100.00

As depicted in Table 6, among the 200 families surveyed, 73.00 per cent were hindus, followed by christians (22.50 per cent) and muslim (5.50 per cent).

4. Type of family surveyed

Details of the family type, whether joint or nuclear, are presented in Table 7.

TABLE 7

Type of Family

Type	Number of families	Percentage
Joint family	37	18.50
Nuclear family	163	61.50
Total	200	100.00

Table 7 shows that among the families surveyed, a majority of them, 81.50 per cent were nuclear families and the remaining 18.50 per cent were joint families.

Details of family size

Details of family size of the 200 families surveyed is given in Table 8.

TABLE 8

Details of family size

Size of the family	Number of families	Percentage
0-2 members	12	6.00
3-4 members	133	66.50
5-6 members	40 (18*+22**)	20.00
7-8 members	15**	7.50
Total	200	100.00

As indicated in Table 8, majority of the families (66.50 per cent) belonged to medium sized families with 3 to 4 members, small families were comparitively less, forming only 6 per cent, while 7.50 per cent of the families constituted of 7 to 8 members.

Figures in parenthesis gives nuclear (*) or joint family(**)

6. Age and sex-wise distribution of the family members

Age and sex-wise distribution of the family members are presented in Table 9.

TABLE 9

Age and sex-wise distribution of family members

Age	Number of family members	Percentage	Males		Females	
			Number	Percentage	Number	Percentage
Children (upto 12 years)	218	26.45	124	29.38	94	23.38
Adolescents (13-18 years)	120	14.56	60	14.33	60	14.93
Adults (above 18 years)	486	58.99	238	56.39	248	61.69
Total	824	100.00	422	100.00	402	100.00

Table 9 reveals that among the 200 families surveyed, adults formed a majority of the population, comprising 58.99 per cent; of which 61.69 per cent were females and 56.39 per cent were males. Adolescents made up 14.56 per cent of the population, with only a slight variation in the male and female population, 14.23 per cent and 14.93 per cent respectively. Children comprised 26.45 per cent of the population, of which 29.38 per cent were males and 23.38 per cent were females.

7. Educational status of family members

Educational status of the family members was assessed and is given in Table 10.

TABLE 10

Educational status of family members

Level of education	Number of population	Percentage
Children prior to school going	52	6.28
Primary	61	7.44
High school	103	12.49
College	258	31.28
Higher education	350	42.51
Total	824	100.00

As given in Table 10, 6.28 per cent of the population were children prior to school going. 7.44 per cent were children undergoing primary education while another 12.49 per cent were undergoing high school education. About 31.28 per cent of the population were college educated and 42.51 per cent had undergone higher education.

Percentage of family members included in each education level group is given in Table 11.

TABLE 11

Percentage of family members included in each education level group

Range of percentage of members	Children prior to schooling	Education level of family members			
		Primary	High School	College	Higher education
10-15	0.28	0.14	0.28	..	0.14
15-20	0.33	0.33	0.50	0.16	..
20-25	1.00	0.80	1.40	0.60	1.20
25-30	2.00	3.00	1.00	2.75	2.60
30-35	2.66	1.66	3.66	2.33	2.66
35-40	..	..	..	..	..
40-45	..	..	0.40	2.80	4.00
45-50	..	..	..	..	..
50-55	..	1.50	4.50	7.00	13.00
55-60	..	..	..	2.28	3.60
60-65	..	..	..	4.80	11.31
65-70	..	..	..	2.66	..
70-75	..	..	0.75	..	..
75-80	..	..	..	1.50	..
80-85	..	..	..	..	..
85-90	..	..	..	..	..
90-95	..	..	..	..	..
95-100	..	..	..	2.00	4.00
Total	6.28	7.44	12.49	31.28	42.51

Table 11 reveals that, among the 200 families surveyed, a majority of them, 42.51 per cent, had undergone higher education, of which 13.00 per cent of the families had 50.00 to 55.00 per cent of the members with higher education, another 11.30 per cent had 60.00 to 65.00 per cent of the members with higher education and only 4.00 per cent of the families had to 75.00 to 100.00 per cent of the members with higher education.

8. Additional sources of income of the families, besides permanent jobs

Additional sources of income of the families surveyed, besides the permanent jobs is described in Table 12.

TABLE 12

Additional sources of income

Sources of income	Number of families	Percentage
Agriculture	44	22.00
Business/Rent/Interest from Bank/Shares	49	24.50
Subsidiary employment of other family members	30	15.00
Pension	29	14.50
Devoid of additional sources of income	48	24.00
Total	200	100.00

Table 12 describes the additional sources of income of the 200 families surveyed, indicating that, 22 per cent of the families received an additional income from agriculture, 24.50 per cent received an additional income from Business/Interest from Bank/Rent/Shares, 15 per cent got an additional income through the subsidiary employment of other family members and 14.50 per cent obtained it through the pension of family members. But, 24.00 per cent of the families were found not to receive any additional income from other sources.

The economic status of the families surveyed, showing their income per month, is given in Table 13.

TABLE 13

Economic status of the families

Income (Rupees/month)	Number of families	Percentage
Between 2001-3000	16*	8.00
Between 3001-4000	18*	24.00
Between 4001-5000	40*	20.00
Between 5001-6000	23*	11.50
Between 6001-7000	26*	13.00
Between 7001-8000	19 (10*+9**)	9.50
Between 8001-9000	12**	6.00
Between 9001-10,000	16**	8.00
Total	200	100.00

Figures in parenthesis gives nuclear (*) or joint family(**)

Table 13 gives a picture of the number of families coming under various income groups showing that, a majority of the families, comprising 24.00 per cent, had a monthly income ranging from Rs.3001 to Rs.4000; only 8.00 per cent had an income between Rs.2001 to Rs.3000 and another 8.00 per cent had an income ranging from Rs.9001 to Rs.10,000; 11.50 per cent had an income within Rs.5001 to Rs.6000; 9.50 per cent had an income ranging from Rs.7001 to Rs.8000 and only 6 per cent had an income between Rs.8001 and Rs.9000.

The economic dependency of the family members in the 200 families surveyed, was determined and is presented in Table 14.

TABLE 14

Economic dependency of the family members

Status	Number of members	Percentage	Economic dependency ratio
Economically independent	434	52.67	89.86
Economically dependent	390	47.63	
Total	824	100.00	

As indicated in Table 14, of the 824 members belonging to the 200 families surveyed, 52.67 per cent were economically independent members with salaries of their own whereas, 47.33 per cent of the members were economically dependent.

Using the formula $EDR = \frac{\text{Number of persons not in labour force} \times 100}{\text{Number of persons in labour force}}$

Economic dependency ratio of the population was calculated and found to be 89.86.

9. Monthly expenditure pattern of the families

The expenditure per month for various items, incurred by the families is presented in Table 15.

TABLE 15

Monthly expenditure pattern of the families in percentage

Range of monthly expenditure	Food	Clothing	Shelter	Education	Entertainment	Health	Travel	Personal expenditure	Ceremonies	Fuel	Electricity	Water	Servant	Miscellaneous	Savings
0-15	..	70.0	58.0	64.0	98.0	92.0	69.0	78.0	95.0	95.0	100.0	100.0	98.0	52.0	1.0
6-10	..	24.0	17.0	24.0	2.0	6.0	21.0	24.0	5.0	3.0	..	..	2.0	34.0	6.0
11-25	5.0	4.0	6.0	7.0	..	1.0	9.0	..	..	1.0	..	..	..	1.0	14.0
16-20	6.0	2.0	5.0	5.0	..	1.0	1.0	..	..	1.0	..	..	..	2.0	13.0
21-25	22.0	..	3.0	1.0	..	..	..	..	..	..	..	..	..	1.0	15.0
26-30	24.0	...	..	1.0	..	..	..	..	..	..	..	..	..	..	15.0
31-35	15.0	..	..	1.0	..	..	..	..	..	..	..	..	..	..	18.0
36-40	7.0	..	..	..	..	..	..	..	..	..	..	..	..	..	12.0
41-45	9.0	..	..	..	..	..	..	..	..	..	..	..	..	..	.4.0
46-50	..	..	..	..	..	..	..	..	..	..	..	..	..	...	2.0
51-55	2.0	..	..	..	..	..	..	..	..	..	..	..	..	..	..
60-65	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
66-70	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
71-75	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...
76-80	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

The monthly expenditure pattern of the families was divided into different ranges from 0 to 80.00 per cent as shown in table 15. The expenditure on food, for the families ranged from 11.00 to 55.00 per cent of their monthly income, 46.00 per cent of the families were spending 21.00 to 33.00 per cent and only 9.00 per cent were spending 36.00 to 40.00 per cent. A very few comprising only 2.00 per cent, spent 51.00 to 55.00 per cent.

Regarding expenditure on clothing 70 per cent spent 0 to 5.00 per cent of their income and the remaining 28.00 per cent spent 6.00 to 15.00 per cent with only 2.00 per cent spending upto 20.00 per cent on clothing per month.

Expenditure on shelter did not exceed 25.00 per cent of the monthly income as 58.00 per cent spent only to 0 to 5.00 per cent and another 42.00 per cent spent 6.00 to 25.00 per cent.

Education wise, 64.00 per cent of the families were found to spend only 0 to 5.00 per cent of their income and the remaining 39.00 per cent, spent 6.00 to 35 per cent.

98.00 per cent of the families spent only 0 to 5.00 per cent on entertainments while 2.00 per cent spent upto 10.00 per cent of their income.

Expenditure on health was likewise confined to 0 to 5.00 per cent in 92.00 per cent of the families and only in 8.00 per cent it exceeded 5.00 per cent but did not go beyond 20.00 per cent in any of the families surveyed.

Expenditure on travel indicated that in 69.00 per cent of the families, only 0 to 5.00 per cent of the income was utilized and in the remaining 31.00 per cent, upto 30.00 per cent was spent on travel.

Personal expenses incurred did not exceed 5.00 per cent of the income in 78.00 per cent of the families but in remaining 24.00 per cent it went upto 10.00 per cent.

The expenditure on ceremonies in 98.00 per cent of the families remained within 0 to 5.00 per cent and only in an exceptional 5.00 per cent it was 10.00 per cent of the income.

In 95.00 per cent of the families 0 to 5.00 per cent of the income was spent on fuel and in the remaining 5.00 per cent id did not exceed 20.00 per cent. All the families spent 0 to 5.00 per cent of their income on electricity and water. Expenditure due to servants was 0 to 5.00 per cent in 98.00 per cent of the families and only 2.00 per cent were found to spent about 10.00 per cent of their income for this.

Expenditure on miscellaneous items remained in the 0 to 5.00 per cent range in 52.00 per cent of the families, and did not exceed 25.00 per cent of the income in the remaining 48.00 per cent of the families.

All the families were found to have savings ranging from 0 to 50.00 per cent of their income, with 48.00 per cent having a savings of 21.00 to 35.00 per cent. 34.00 per cent had a monthly savings of 0 to 20.00 per cent and the remaining 18.00 per cent had a saving of 36.00 to 50.00 per cent of the income.

The percentage of income spent on food by families under different income groups is given in Table 16.

TABLE 16

Percentage of income spent on food by families under different income groups

Percentage of income expenditure on food	Percentage of families with monthly income							
	2001-3000	3001-400	4001-5000	5001-6000	6001-7000	7001-8000	8001-9000	9001-10,000
11-15	..	..	..	2.0	..	1.0	..	2.0
16-20	1.0	3.0	3.0	3.0	..	4.0	1.0	4.0
21-25	..	8.0	4.0	..	4.0	..	2.0	..
26-30	4.0	3.0	6.0	4.0	4.0	1.0	1.0	1.0
31-35	1.0	2.0	5.0	1.0	2.0	3.0	..	1.0
36-40	1.0	3.0	1.0	1.0	1.0	..	..	..
41-45	1.0	3.0	..	1.0	1.0	..	2.0	1.0
46-50	..	..	..	..	..	..	..	..
51-55	..	1.0	1.0	..	..	..	..	..
56-60	..	1.0	..	..	..	..	..	..
61-65	..	..	..	..	..	..	..	..
66-70	..	..	..	..	..	..	..	..
71-75	..	..	..	..	..	..	..	..
76-80	..	..	..	..	..	..	..	..

Table 16 reveals that, in all the 200 families, with income groups ranging from Rs.2001 to Rs.10,000, 11 to 45.00 per cent of the income was spent on food. Only very few families in the income group of Rs.3001 to Rs.5000 had a monthly expenditure of 51.00 to 60.00 per cent for food. This was due to variation in the number of members in the families coming under each income group.

2. Food consumption pattern of the families

The food consumption pattern of the families was assessed with regard to, the dietary practice of the families, the frequency of purchase and use of various foods, culinary practices to save time while cooking and commonly employed cooking methods, the inclusion of various food items in the daily menu, meal serving pattern of the families, foods prepared for special occasions, foods given during illness and other special conditions. The results obtained are presented in the following table.

10. Dietary practice of the families

The commonly adopted dietary practices of the families was determined and is presented in Table 17.

TABLE 17

Dietary practice of the families

Group	Number of families	Percentage
Vegetarian	21	10.50
Non-vegetarian	179	89.50
Total	200	100.00

Table 17 shows that, among the families surveyed, 10.50 per cent of the families were habitual vegetarians whereas, a majority of the families, comprising 89.50 per cent, were non-vegetarians.

11. Frequency of purchase of various food items

The frequency of purchase of various food items was determined and the results are presented in Table 18.

TABLE 18

Frequency of purchase of various food items

Food items	Percentage of families purchasing				
	Daily	Weekly	Monthly	Occa-sional	Never
Wheat and rice	..	41.0	59.0	..	..
Other cereals	..	29.0	43.0	28.0	..
Pulses	..	12.0	70.0	18.0	..
Green leafy vegetables	3.5	46.0	20.5	30.0	..
Roots and tubers	..	43.5	8.0	48.5	..
Other vegetables	6.0	90.0	..	4.0	..
Fruits	17.0	69.0	..	14.0	..
Milk	100.0	..	..	..	..
Fish	42.0	39.0	3.0	7.0	11.0
Meat	..	51.5	12.0	25.5	11.0
Egg	19.0	92.0	2.0	3.0	3.0
Oil seeds and nuts	..	10.0	44.0	46.0	..
Fats and oils	..	..	100.0	..	..
Sugar and jaggery	..	..	100.0	..	..
Miscellaneous items	..	38.0	48.0	14.0	..
Bakery items	17.0	69.0	..	14.0	..

As indicated in table 18, in most of the families, the purchase of wheat and rice, other cereals, pulses, fats and oils, sugar, jaggery and other miscellaneous food items was done

on a monthly basis. The purchase of green leafy vegetables, other vegetables, fruits, meat, egg and bakery items was done weekly and only fish and milk were purchased daily. Roots and tubers were purchased occasionally in most of the families. In 11.00 per cent of the families, fish and meat were never purchased due to vegetarian food habits of the families and in 3.00 per cent eggs were never purchased.

12. Frequency of use of various foods

The frequency of use of the various food items in the families surveyed was assessed and the results are presented in Table 19.

TABLE 19

Frequency of use of various foods

Food items		Percentage of families using different foods items					
		Daily	Once	Less than thrice	More-than thrice	Occa-sio nally	Never
CEREALS	Rice	100.0	..	..	..	..	..
	Wheat	42.5	26.0	20.0	4.0	7.5	..
	Rawa	..	38.0	25.5	5.5	26.0	5.0
	Maida	8.5	22.5	38.5	6.0	24.5	..
	Ragi	..	3.5	..	..	18.0	78.5
PULSES	Cowpea	2.0	13.5	14.5	12.5	57.5	..
	Bengalgram	..	45.5	16.5	12.5	13.5	..
	Blackgram	..	20.0	16.0	16.0	34.0	..
	Red gram	..	21.5	1.5	14.5	8.5	44.0
GREEN LEAFY VEGETABLES	Amaranthus	..	28.0	12.0	18.0	8.0	10.0
	Drumstickleaves	..	10.0	26.0	..	60.5	3.5
ROOTS AND TUBERS	Potato	..	25.5	16.0	..	58.5	..
	Tapioca	..	27.5	2.0	..	70.5	..
	Amorphophallus	..	..	..	..	89.5	10.5
	Colocasia	..	45.5	..	..	30.5	24.0
	Beet root	..	38.0	..	..	62.0	..
	Carrot	..	22.5	..	..	77.5	..
	Other vegetables	72.5	11.5	16.0	..	..	..
	Fruits	40.0	18.5	26.5	8.0	6.0	..
	Milk	100.0	..	..	..	..	..
	Fish	49.0	18.0	12.0	3.5	6.5	11.0
	Meat	10.0	4.5	40.0	..	23.0	11.0
	Egg	36.5	13.5	28.5	5.5	13.0	3.0
OIL SEEDS	Groundnut	..	27.0	6.0	8.0	40.0	19.0
	Gingelly seeds	..	..	..	..	79.5	20.5
NUTS	Coconut	100.0	..	..	..	..	..
FATS AND OILS	Ghee	18.0	12.0	4.0	..	46.0	20.0
	Dalda	18.0	10.0	6.0	..	66.0	..
	Oil	100.0	..	..	..	..	..
	Bakery items	30.0	39.0	26.5	8.5	6.0	..
	Processed foods	..	7.5	..	4.5	44.0	30.0
	Sugar	100.0	..	..	..	..	..

Table 19 indicates that, various food items like rice, wheat, other vegetables, fruits, milk, fish, meat, egg, coconut oil and sugar were included in the daily diet of majority of the families. Some of the families refrained from using some of the food items like rawa, ragi, red gram, amaranth, drumstick leaves, colocasia and amorphophallus due to poor acceptability among the family members. In a few families, vegetarianism being the prevalent dietary practise, fish, egg and meat were excluded from the daily diet.

13. Culinary practices to save time while cooking

The culinary practices commonly adopted by the employed home-makers in the 200 families surveyed was studied and the results are given in Table 20.

TABLE 20

Culinary practices to save time while cooking

Culinary practices	Percentage of families using these methods in the following				
	Cereals	Pulses	Vegetables	Roots/ tubers	Flesh foods
Pre-cooking	..	..	..	2.50	20.00
Soaking overnight	..	35.50	..	..	..
Grinding overnight	..	..	..	..	..
Cutting and keeping overnight	..	..	44.00	25.50	30.00
Frying overnight	..	..	..	..	..
Cooking overnight	..	1.50	..	14.50	21.00
Non-practicians	..	63.00	56.00	57.50	29.00
Total	NIL	100.00	100.00	100.00	100.00

Table 20 shows the culinary practices prior to cooking which aid the home-makers in spending less time on the actual day of cooking. Majority of the home-makers were not in the habit of practicing any of these methods as indicated in the table. Pre-cooking was confined to roots/ tubers by 2.50 per cent and was adopted in flesh foods by 20.00 per cent of the home-makers. Soaking overnight was practised in the case of pulses by 35.50 per cent of the

home-makers cutting and keeping overnight in the case of vegetables, roots/tubers and flesh foods was carried out by 44.00 per cent, 25.50 per cent and 30.00 per cent of the home-makers respectively; and cooking overnight was practised in pulses, roots/tubers and flesh foods in 1.50 per cent, 14.50 per cent and 21.00 per cent respectively.

14. Common cooking methods employed

The commonly adopted cooking methods in the 200 families surveyed was collected and the results are presented in table 21.

TABLE 21

Common cooking methods employed

Cooking methods	Percentage of families adopting the different methods in the following							
	Cereals	Pulses	Leafy vege-tables	Roots and tubers	Other vegeta-bles	Fish	Meat	Egg
Steaming	..	..	9.5	39.5	33.5	28.0	18.0	21.5
Boiling	71.5	11.5	14.5	38.5	16.5	8.5	16.5	31.5
Absorption method	..	44.5	26.0	..	20.5	6.5	..	..
Steaming	..	..	37.5	4.0	17.5	8.0	..	17.5
Deep frying	..	..	..	..	..	34.5	9.5	11.5
Shallow frying	..	..	12.5	..	..	14.5	6.0	18.0
Grilling	..	..	..	..	..	..	..	..
Baking	..	..	..	..	..	..	..	..
Pressure cooking	28.5	44.0	..	18.0	12.0	..	50.0	..
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 21 describes the common cooking methods adopted in the cooking of various food items indicating that in cereals, boiling was commonly adopted by 71.50 per cent of the home-makers. While in pulses, absorption method and pressure cooking were equally practised by 44.50 per cent of the home-makers. In leafy vegetables, steaming was commonly adopted by 37.50 per cent of the home-makers. In roots and tubers, steaming and boiling were adopted by 39.50 and 38.50 per cent of the home-makers. In other vegetables, stewing was commonly adopted by 33.50 per cent of the home-makers. In the case of fish, 34.50 per cent of the home-makers commonly practised deep frying. In meat, 50.00 per cent of the home-makers adopted pressure cooking and in egg, 31.50 per cent of the home-makers commonly adopted boiling.

15. Inclusion of various food items in the daily menu

The inclusion of various food items in the daily menu of the families surveyed was analysed and is given in Table 22.

TABLE 22

Inclusion of various food items in the daily meny

Food items	Percentage of families including different food items during			
	Breakfast	Lunch	Evening tea	Dinner
Cereals	100.00	100.00	41.50	100.00
Pulses	34.50	54.50	28.00	64.50
Leafy vegetables	..	29.50	..	33.00
Roots and tubers	17.00	16.50	7.50	24.00
Other vegetables	49.50	39.50	..	64.50
Fruits	74.50	8.50	..	46.50
Milk and milk products	100.00	98.00	100.00	14.00
Meat	3.50	89.00	..	76.50
Fish	..	89.00	..	70.50
Egg	58.50	16.50	..	12.50
Fats and oils	100.00	100.00	42.50	100.00
Sugar and jaggery	100.00	..	100.00	13.50
Processed foods	16.50	..	63.50	..
Bakery foods	14.50	..	79.50	..

The daily inclusion of the various food items as shown in Table 22, indicated that in most of the families, breakfast comprised of cereals, other vegetables, fruits, milk and milk products, egg, fats and oils, and sugar.

Lunch comprised of cereals, pulses, leafy vegetables, milk products like curds, meat, fish, fats and oils. Tea included mostly processed and bakery foods and also cereal and pulse preparations. Dinner included cereals, pulses and other items similar to that making up the lunch.

16. Meal serving pattern of the families

Among the 200 employed home-maker's families studied it was seen that the meal serving pattern differed on working days and on holidays. During the week, on working days especially, it was seen that a majority of the families, comprising 80.50 per cent, took their meals according to the convenience of each member. But on holidays in nearly all the families, comprising 92.50 per cent, meals were taken by all the members together. In an exceptionally few families, about 7.50 per cent, meals were first taken by the children and them by the elders in the family, irrespective of whether it was a holiday or a working day.

17. Foods prepared for special occasions

It was seen that all the families surveyed, generally celebrated occasions like Birth days, Anniversaries, Marriage and Religious festivals by preparing special delicacies and other sweet meats befitting the occasion.

18. Foods given during illness

Regarding the diet given to the family members during illness, it was seen that it was dependent more or less on the age of the ailing member. For example, children upto school going age were usually given bread soaked in milk etc. In older children and other members of the family rice gruel was usually given. Generally it was observed that in all the families, there was a tendency to provide diet as prescribed by the Doctor or Physician treating the ill family member.

19. Foods during special conditions

In special conditions like pregnancy, lactation etc. it was found that such persons were given the normal, regular food but only after taking into consideration the food choices and likes and dislikes of the concerned persons.

3. Personal characteristics and dietary pattern of the employed home-makers

The personal characteristics of the home-makers with reference to their age, details related to employment, income, marital details, management of household work, health status and also their dietary habits were assessed and the results are presented in the following tables:

20. Age wise distribution of the employed home-makers

The distribution of the employed home-makers according to their age was determined and is given in Table 23.

TABLE 23
Age distribution

Age range	Number of employed home-makers	Percentage
21-25 years	10	5.00
26-30 years	14	20.50
31-35 years	13	11.50
36-40 years	24	12.00
41-45 years	51	25.50
46-50 years	36	18.00
51-55 years	15	7.50
Total	200	100.00

Table 23 depicts the various age groups to which the employed home-makers belonged. All of them came within the age range 21 to 55 years with a majority of 25.50 per cent in the age group 41 to 45 years, and 20.50 per cent were in the age group of 26 to 30 years. Only a few belonged to the age group 21 to 25 years and 51 to 55 years (5.00 per cent and 7.00 per cent respectively).

21. Educational status of the employed home-makers

The educational status of the employed home-makers was determined and is presented in Table 24.

TABLE 24

Educational status of the employed home-makers

Level of education	Number of employed home-makers	Percentage
High school	25	12.50
College	52	26.00
Higher education	123	61.50
Total	200	100.00

The educational status of the home-makers given in Table 24 showed that a majority, comprising 61.50 per cent had undergone higher education, 26.00 per cent had college level education whereas, a minority consisting of 12.50 per cent were only high school educated.

22. Occupational status of the employed home-makers

The number of employed home-makers coming under various types of occupation was assessed and the results are given in Table 25.

TABLE 25

Occupational status of the employed home-makers

Occupation	Number of employed home-makers	Percentage
Executives	25	12.50
Doctors	25	12.50
Engineers	25	12.50
Agricultural Officers	25	12.50
College Lecturers	25	12.50
School Teachers	25	12.50
Clerical staff	50	25.00
Total	200	100.00

Table 25 shows the occupational status of the employed home-makers indicating that among the 200 women surveyed Executives, Doctors, Engineers, Agricultural Officers, College Lecturers and School Teachers, comprised 75.00 per cent with 12.50 per cent in each category. The remaining 25.00 per cent consisted of Clerical staff.

23. Details related to employment of the home-makers

The different aspects related to the employment of the home-makers was assessed and the results are described in Table 26.

TABLE 26

Employment status of the home-makers

Employment status	Number of permanently employed	Percentage	Number of temporarily employed	Percentage
Full time/Government Sector	163	81.50	..	..
Full time/Private Sector	24	12.00	..	..
Part-time/Government Sector	..	..	..	..
Part-time/Private Sector	13	6.50	..	..
Total	200	100.00	..	..

Table 26 shows the employment status of the home-makers, indicating that all were permanent employees. Among them, 4.50 per cent were full time employees in the Government Sector, 12.00 per cent were full time employees in the Private Sector and about 6.50 per cent were part-time employees in the Private Sector.

24. Physical status of the work

The physical status of the work in which the employed home-makers were engaged was determined and the results are given in Table 27.

TABLE 27

Physical status of the work

Status of work	Number of employed home-makers	Percentage
Sedentary	19	9.50
Moderate	176	88.00
Heavy	23	11.50
Total	200	100.00

As given in Table 27, 88.00 per cent of the home-makers described their occupation as moderate in physical activity, 9.50 per cent described it as sedentary whereas, 11.50 described it as heavy.

25. Length of service

The number of years for which the employed home-makers were working is given in Table 28.

TABLE 28
Length of service

Number of years	Number of employed home-makers	Percentage
Less than 5 years	35	17.50
5-10 years	47	23.50
10-15 years	39	19.50
More than 15 years	81	40.50
Total	200	100.00

Table 28 shows the number of years the home-makers had been engaged in their occupation. Among them 40.50 per cent had been employed for more than 15 years, 23.50 per cent had been engaged in their respective

occupation for 5 to 10 years, 19.50 per cent had been working for 10 to 15 years and only 17.50 per cent had been employed for less than 5 years.

26. Attitude towards employment

The employed home-makers attitude towards their employed status was analysed and the results are presented in Table 29.

TABLE 29

Attitude towards employment

Attitude	Number of employed home-makers	Percentage
Prefer to be employed	171	85.50
Prefer to be unemployed	29	14.50
Total	200	100.00

Table 29 gives an assessment of the home-makers attitude towards employment, showing that 85.50 per cent of the home-makers preferred to be employed while 14.50 per cent responded negatively.

27. Reasons for working

The various reasons for working, given by the employed home-makers, was assessed and the results are presented in Table 30.

TABLE 30

Reasons for working

Reasons	Home-makers who responded number	Percentage	Home-makers who did not respond number	Percentage
Economic	197	98.50	3	1.50
Self satisfaction	165	82.50	35	17.50
Independence	124	62.00	76	38.00
Profitable time utilization	113	56.50	87	43.50
Social status	49	25.50	151	75.50
More friends	85	42.50	115	57.50
Escape from domestic routines	29	14.50	171	85.50
Learn more about society	33	16.50	167	83.50

As depicted in Table 30, regarding the various reasons for working, there was variation in the responses. Among those who responded maximum response (98.50 per cent) was accorded to 'Economic reasons'. 32.50 per cent response

was given to 'self satisfaction', 62.00 per cent response was given to 'independence', 56.50 per cent to 'profitable time utilization', 42.50 per cent to 'more friends', 25.50 per cent was accorded to 'social status' and only 14.50 and 16.50 per cent response was given to 'escape from domestic routines' and 'to learn more about society'.

The reasons for working were ranked according to the priority of the home-makers and is given in Table 31.

TABLE 31

Reasons for working ranked as per priority

Reasons	Home-makers who responded number	Percentage	Ranking-as per priority	Priority number	Percentage
Economic	197	98.50	I	151	75.50
Self satisfaction	165	82.50	II	105	52.50
Independence	124	62.00	III	71	35.50
Learn more about society	33	16.50	III	21	10.50
Escape from domestic routines	29	14.40	III	19	9.50
Profitable time utilization	113	56.50	IV	63	31.50
More friends	85	42.50	IV	45	24.50
Social status	49	25.50	IV	31	15.50

As depicted in Table 31, the reasons for working when ranked as per priority, showed that 75.50 per cent of the home-makers first priority was economic reasons for taking up employment. Similarly 52.50 per cent gave second priority to self satisfaction. Third priority was given to independence, escaping from domestic dull routines and to learn more about society by 25.50 per cent, 9.50 per cent and 10.50 per cent respectively of the home-makers, as reasons for working. Fourth priority was given to profitable time utilization by 31.50 per cent, social status by 15.50 per cent and to have more friends by 24.50 per cent of the home-makers.

28. Time spent in employment by the home-makers

The time spent in employment by the home-makers, both at the place of work and at home was assessed and is given in Table 32.

TABLE 32

Time spent in employment by the home-makers

At place of work	Number of employed home-makers	Percentage	At home	Number of employed home-makers	Percentage
Less than 5 hours	..	..	Less than 1 hour	14	7.00
5 hours	..	..	1-2 hours	19	9.50
5-8 hours	183	91.50	More than 2 hours	125	62.50
More than 8 hours	17	8.50	Nil		20.50
Total	200	100.00		200	100.00

Table 32 shows the time spent in employment by the home-makers at place of work and at home, indicating that 91.50 per cent worked for 5 to 8 hours at their place of work, while a few comprising 8.50 per cent worked for more than 8 hours. Regarding the time spent in work related to their occupation at home, 62.50 per cent spent more than 2 hours in work, 7 per cent spent less than 1 hour, 9.50 per cent spent only 1 to 2 hours in work related to their occupation, at home, while 20.50 per cent did not engage in any work related to their employment, when at home.

29. Means of transport to place of work

The means of transport to place of work, of the 200 employed home-makers was studied and is given in Table 33.

TABLE 33

Means of transport to place of work

Mode of transport	Number of employed home-makers	Percentage
Walking	19	9.50
Bus	97	48.50
Train	..	..
Auto	29	14.50
Two wheeler	13	6.50
Car	42	21.00
Total	200	100.00

Table 33 reveals that a majority of the home-makers 48.50 per cent, travelled by bus to their place of work, while 21.00 per cent travelled by car, 14.50 per cent travelled by auto, 65.00 per cent travelled by two wheelers and for 9.50 per cent the place of work was within walking distance.

The distance travelled to reach the place of work was determined and is given in Table 34.

TABLE 34

Distance travelled to reach place of work

Distance covered	Number of employed home-makers	Percentage
Less than 5 kms	113	56.50
5-10 kms	62	31.00
10-20 kms	19	9.50
20-30 kms	6	3.00
Total	200	100.00

As shown in Table 34, majority of the home-makers, comprising 56.50 per cent travelled less than 5 kilometres daily to their place of work, 31.00 per cent had to travel 5 to 10 kilometres, while greater distance of 10 to 20 kilometres and 20 to 30 kilometres were travelled by 9.50 per cent and 3.00 per cent respectively.

TABLE 36

Income range of the employed home-makers

Range of income per month (in Rupees)	Number of employed home-makers	Percentage
Below 1000	3	1.50
Between 1001-1500	30	15.00
Between 1501-2000	71	35.50
Between 2001-2500	28	14.00
Between 2501-3000	23	11.50
Between 3001-3500	17	8.50
Between 3501-4000	6	3.00
Between 4001-4500	6	3.00
Between 4501-5000	16	8.00

Table 36 shows the monthly income range of the employed home-makers revealing that 35.50 per cent of the home-makers received a monthly income between Rs.1501/- to Rs.2000/- a marginal per cent of 1.50 had an income below Rs.1000/- about 15.00 per cent had an income that ranged from Rs.1001/- to Rs. 1500/- and the rest of the home-makers comprising 3.00 to 14.00 per cent (totalling 47.50 per cent) had a monthly income that ranged from Rs.2001/- to Rs.5000/-.

The person who played a role in deciding how the home-makers income was to be spent was determined and is given in Table 37.

TABLE 37
Decision maker in spending home-makers income

Person deciding	Number of employed home-makers	Percentage
Home-maker herself	147	23.50
Husband	53	26.50
In-laws	..	..
Parents	..	..
Total	200	100.00

As indicated in Table 37 regarding the person who decided the nature of spending the home-makers income, in 73.50 per cent of the cases, the home-maker herself was free to spend the income while in 26.50 per cent of the cases, the husband decided how the income was to be spent.

31. Different uses of the home-makers income

The different ways in which the home-makers income was put to use, was determined and is given in Table 38.

TABLE 38

Different uses of the home-makers income

Uses	Home-makers who responded number	Percentage	Home-makers who did not respond number	Percentage
Supplementing foods	170	85.00	30	15.00
Clothing	138	69.00	62	31.00
Travelling	152	76.00	48	24.00
Personal expenses	163	81.50	37	18.50
Entertainment/ recreation	105	52.50	95	47.50
Education/special needs of children	185	92.50	15	7.50
Household expenses	195	97.50	5	2.50
Savings	125	62.50	75	37.50

Table 38 shows the different uses of the home-makers income. Among those who responded, 85.00 per cent of the home-makers used their income to meet expenses incurred for supplementing the family's food needs; 69.00 per cent used it for meeting clothing expenses, 76.00 per cent

made use of their income to meet personal expenditure; only 52.50 per cent spent their income on entertainment and other forms of recreation; 92.50 per cent of the home-makers used their income for education and other special needs of their children, 97.50 per cent of the home-makers income contributed towards meeting household expenses, and 62.50 per cent saved a part of their income for future needs.

The different ways in which the home-makers income was used, ranked according to their priority is given in Table 39.

TABLE 39

Different uses of the home-makers income ranked as per priority

Uses	Home-makers who responded number	Percentage	Priority		
			Ranking	Number	Percentage
Supplementing foods	170	85.00	I	141	70.50
Household expenses	195	97.50	II	101	50.50
Education/special needs of children	185	92.50	II	95	47.50
Clothing	138	69.00	II	79	39.50
Savings	125	62.50	III	65	32.50
Personal expenses	163	81.50	IV	85	42.50
Travelling	152	76.00	V	81	40.50
Entertainment/ recreation	105	52.50	V	73	36.50

Table 39 shows the different uses of the home-makers income ranked as per the priority accorded them indicating that among those who responded 70.50 per cent gave first priority to the supplementing of foods for the family. Second priority was given to meet household expenses, education and other special needs of children and also clothing requirements of the family by 97.50 per cent, 92.50 per cent and 69.00 per cent respectively. Third priority was accorded to savings for future needs by 62.50 per cent of the home-makers while fourth priority was given to personal expenses incurred by 76.00 per cent of the home-makers. Travelling expenses and expenditure on entertainment and other recreations was given fifth priority by 76.00 per cent and 52.50 per cent respectively of the home-makers.

32. Budgetting pattern of the employed home-makers

The type of budgetting usually employed by the home-makers was studied and is given in Table 40.

TABLE 40

Budgetting pattern of the employed home-makers

Budget pattern	Number of employed home-makers	Percentage
Daily	15	7.50
Weekly	21	10.50
Monthly	63	31.50
No budgetting	101	50.50
Total	200	100.00

As indicated in Table 40, 50.50 per cent of the employed home-makers surveyed did not follow any budgetting pattern. About 7.50 per cent of the respondents followed a daily accounting system, 10.50 per cent followed a weekly budget pattern and 31.50 per cent were in the habit of maintaining a monthly budget pattern.

33. Economic status due to employment of the home-makers

The economic status achieved, due to the home-makers employment, was studied and is presented in Table 41.

TABLE 41

Economic status due to employment of the home-makers

Economic status	Number of employed home-makers	Percentage
Economically secure	173	86.50
Economically not secure	27	13.50
Total	200	100.00

Table 41 indicates that because of employment outside, 86.50 per cent of the home-makers considered themselves to be economically secure while only 13.50 of the home-makers had different views.

The income of the home-makers, which enabled their families to invest in personal assets was studied and is presented in Table 42.

TABLE 42

Personal assets

Assets	Number of employed home-makers	Percentage
Own house	65	32.50
Land	20	10.00
Shares	9	4.50
Bank investment	42	21.00
No assets	64	32.00
Total	200	100.00

Table 42 reveals that among the 200 employed home-makers 68.00 per cent helped to contribute to their families investment in personal assets, like own houses, land, shares and bank investments whereas, 32.00 per cent of the home-makers families were found not to possess any kind of personal asset.

34. Age at marriage of the employed home-makers

The age at marriage of the employed home-makers was studied and is given in Table 43.

TABLE 43

Age at marriage of the employed home-makers

Range of age	Number of employed home-makers	Percentage
20-24 years	81	40.50
25-29 years	95	47.50
30-34 years	24	12.00
Total	200	100.00

Considering the age at marriage of the employed home-makers table 43 shows that, 47.50 per cent of the home-makers were married at the age between 25 to 29 years, 40.50 per cent got married between the ages 20 to 24 years and about 12.00 per cent were married in between 30 to 34 years of age.

35. Number of years of marriage

The number of years, the home-makers had been married was determined and is given in Table 44.

TABLE 44

Number of years of marriage

Number of years of marriage	Number of employed home-makers	Percentage
Less than 5 years	41	20.50
5-10 years	43	21.50
10-20 years	67	33.50
More than 20 years	49	24.50
Total	200	100.00

As indicated in Table 44, 33.50 per cent of the home-makers had a marital life of 10 to 20 years, while 20.50 per cent had been married for less than 5 years, 21.50 per cent had been married for about 5 to 10 years and about 24.50 per cent had been married for more than 20 years.

36. Number of children

The number of children of the employed home-makers was determined and is presented in Table 45.

TABLE 45

Number of children of the employed home-makers

Number of children	Number of employed home-makers	Percentage
One	53	26.50
Two	98	49.00
Three	43	21.50
Four	6	30.00
More than four	..	..
Total	200	100.00

Table 45 shows that a greater number of the home-makers comprising 49.00 per cent had two children each. 26.50 per cent had a family of only one child and 21.50 per cent had a family with three children. Only very few home-makers (3.00 per cent) had four children. None of the home-makers had more than four children.

37. Incidence of miscarriages/abortions

The incidence of miscarriages/abortions among the employed home-makers was studied and is described in Table 46.

TABLE 46

Incidence of miscarriages/abortions in the home-makers

Prevalence	Number of employed home-makers	Percentage
Home-makers who had miscarriages/abortions	77	38.50
Home-makers who did not have any miscarriages/ abortions	123	61.50
Total	200	100.00

Table 46 shows that among the 200 employed home-makers, 61.50 per cent of them were found not to have had any miscarriages or abortions whereas, 38.50 per cent were found to have had miscarriages or abortions.

38. Incidence of normal deliveries

The incidence of normal deliveries in the home-makers was assessed and is presented in Table 47.

TABLE 47

Incidence of normal deliveries in the home-makers

Prevalence rates	Number of employed home-makers	Percentage
Home-makers who had normal deliveries	133	66.50
Home-makers who did not have normal deliveries	67	33.50
Total	200	100.00

Table 47 reveals that, 66.50 per cent of the home-makers were found to have had normal deliveries during parturition.

39. Persons taking care of children

The persons who took care of the children, of the employed home-makers, before they reached school going age was determined and is presented in Table 48.

TABLE 48

Persons taking care of the children prior to school going age

Persons	Number of families	Percentage
Mother	71	35.50
Mother-in-law	47	23.50
Servant	65	32.50
Older children	3	1.50
Others	14	7.00
Total	200	100.00

As given in Table 48, in 35.50 per cent of the families of employed home-makers, maternal grand mothers took care of the children, paternal grand mothers were shouldering this responsibility in 23.50 per cent of the families and in 32.50 per cent of the families, the home-makers were depending on outside help for child care. In a very small per cent of 1.50, older children cared for the younger children and in about 7.00 per cent of the families, the children were looked after by other persons having blood relation like sisters/sister-in-law of the home-makers.

40. Difficulties confronted by the home-makers due to dual role

The difficulties confronted by the home-makers due to their dual role was analysed and is given in Table 49.

TABLE 49

Difficulties confronted by the home-makers due to dual role

Difficulties	Home-makers who responded number	Percentage	Home-makers who did not respond number	Percentage
Improper care of the family	141	70.50	59	29.50
Inability to cope with household work	138	69.00	62	31.00
No rest	115	57.50	85	42.50
Mental/Physical strain	180	90.00	20	10.00
Added responsibilities	196	98.00	4	2.00

Table 49 shows the difficulties confronted by the home-makers due to their dual role. Among those who responded 70.50 per cent and 69.00 per cent of the home-makers expressed difficulty in taking care of the family and

inability of cope with household work, 98.00 per cent of the home-makers felt outside employment imposed additional responsibilities on them. 57.50 per cent of the home-makers were of the view that lack of proper rest was mainly due to outside employment, while for 90.00 per cent this additional responsibility resulted in mental/physical strain.

The difficulties confronted by the home-makers due to their dual role, as per the priority accorded, is given in Table 50.

TABLE 50

Difficulties confronted by the home-makers due to dual role, ranked as per priority

Difficulties	Home-makers who responded number	Per-cen-tage	Ranking as per priority	Priority	
				Number	Percen-tage
Improper care of the family	141	70.50	I		45.00
Inability to cope with household work	138	69.00	I		41.50
Added responsi-bilities	196	98.00	II		61.50
No proper rest	115	57.50	III		32.50
Mental/physical strain	180	90.00	IV		52.50

The difficulties confronted by the home-makers, ranked as per priority is shown in Table 50, indicating that among those who responded, first priority was given to difficulties like improper care of the family and inability to cope with household work on the part of 70.50 per cent and 69.00 per cent respectively of the home-makers. Second priority was accorded to additional responsibilities due to the employment undertaken, in 98.00 per cent of the home-makers. Third priority was given to lack of proper rest by 57.50 per cent of the home-makers and in 90.00 per cent of the home-makers, the mental and physical strain experienced due to their dual role claimed fourth priority.

41. Help in managing household work

The help received by the home-makers in managing household work was determined and the results is given in Table 51.

TABLE 51

Help in home management

Persons rendering help	Number of employed home-makers	Percentage
Fathers	11	5.50
Mothers/Mothers-in-law	25	12.50
Husband	100	50.00
Children	48	24.00
Others	16	8.00
Total	200	100.00

Table 51 shows the persons rendering help to the home-makers in her household work. It was seen that 50.00 per cent of them received help from their husbands, 5.50 per cent received help from their fathers and in 12.50 per cent, the home-makers got help from their mothers including mothers-in-law. Children extended help in household work to 24.00 per cent of their employed mothers and in some cases (about 8.00 per cent) other members of the family, like brothers, sisters etc. extended help to the home-makers.

42. Managing extra work load on occasions/guests

The management of extra work load on special occasions and during the visit of guests was studied and is given in Table 52.

TABLE 52

Managing extra work load on occasions/guests

Source	Number of employed home-makers	Percentage
Domestic help	55	27.50
Family members	75	37.50
Taking leave	70	35.00
Total	200	100.00

Regarding the management of extra work load on special occasions and during the visit of guests, 37.50 per cent of the home-makers were helped by their family members as indicated in Table 52. 27.50 per cent of the home-makers were dependent on domestic help available while 35.00 per cent of the home-makers managed the extra work by absenting themselves from outside employment and by becoming full time housewives on those days.

43. Types of fuels used for cooking

The types of fuels used by the home-makers, for cooking was assessed and is presented in Table 53.

TABLE 53
Type of fuels used for cooking

Type of fuel	Number of home-makers	Percentage
Firewood only	3	1.50
Kerosene only	10	5.00
Gas only	45	27.50
Electricity only	..	..
Combinations of the above	132	66.00
Total	200	100.00

As depicted in Table 53, several types of fuels were used by the home-makers while cooking. Among the 200 home-makers 34.00 per cent of them made use of either firewood (1.50 per cent), kerosene (5.00 per cent) or gas 27.50 per cent) whereas, the remaining 66.00 per cent of them made use of combinations of two or more types of fuels.

44. Use of labour saving gadgets

The use of labour saving gadgets, by the employed home-makers, was studied and is presented in Table 54.

TABLE 54

Use of labour saving gadgets

Gadgets	Number of home-makers not using gadgets	Percentage	Number of home-makers using gadgets	Percentage
Refrigerator	16	8.00	184	92.00
Mixie	19	9.50	181	90.50
Washing Machine	137	68.50	13	31.50
Pressure Cooker	33	16.50	167	83.50
Milk Cooker	100	50.00	100	50.00
Water heater	157	78.50	43	21.50
Electric Iron	42	21.00	158	79.00
Gas stove	42	21.00	258	79.00
Electric Heater	207	53.50	93	46.50
Electric Oven	155	77.50	45	22.50
Vegetable chopper	174	87.00	26	13.00

Table 54 indicates the different types of labour saving gadgets used by the home-makers. It was found that most of them possessed refrigerators, mixie, pressure cooker, electric irons and gas stoves. These gadgets were used habitually and regularly by the home-makers.

Only some of the home-makers possessed gadgets like washing machine, water heaters, electric heaters, electric ovens and vegetable choppers. Approximately half of the home-makers surveyed possessed milk cookers.

45. Person doing main cooking

The person engaged in carrying out the main cooking in the homes of the employed home-makers was studied and is presented in Table 55.

TABLE 55

Person doing main cooking

Person	Number of families	Percentage
Home-maker	127	63.50
Servant	57	28.50
Others (mother/mother-in-law)	16	8.00
Total	200	100.00

Regarding the person doing the main cooking as shown in Table 55, it was seen that 63.50 per cent of the home-makers themselves did the cooking. In 28.50 per cent of the families, servants did the cooking and in 8.00 per cent other family members like mothers or mothers-in-law were responsible for this.

46. Number of times of cooking per day

The number of times, cooking was carried out in the homes of the home-makers was analysed and is given in Table 56.

TABLE 56

Number of times cooking per day

Number of times	Number of employed home-makers	Percentage
2 times	75	67.50
3 times	41	20.50
4 times	24	12.00
Total	200	100.00

Table 56 reveals that among the 200 employed home-makers surveyed, 67.50 per cent of them cooked meals only twice a day, 20.50 per cent resorted to cooking thrice a day and only 12.00 per cent cooked four times a day.

47. Time spent by the home-makers in various other activities

The time spent by the home-maker in various activities, other than her employment, was studied and is presented in Table 57.

TABLE 57

Time spent by the home-makers in various other activities

Range of time spent in hours		Percentage of home-makers spending time on the following activities					
		Personal care	Household work	Teaching children	Studying	Leisure	Sleep
Nil	Daily	..	..	62.00	81.00	..	..
	Weekly	..	..	..	..	..	..
Less than 1 hour	Daily	51.00	..	14.50	17.50	18.50	..
	Weekly	..	..	..	..	..	..
1-2 hour	Daily	49.00	..	23.50	1.50	26.50	..
	Weekly	..	..	..	..	..	..
2-3 hour	Daily	..	21.50	..	..	..	..
	Weekly	..	..	..	..	..	..
3-4 hour	Daily	..	58.50	..	..	..	..
	Weekly	..	..	..	..	..	..
4-5 hour	Daily	..	13.50	..	..	..	..
	Weekly	..	..	..	..	33.50	..
5 hour	Daily	..	6.50	..	..	..	100.00
	Weekly	..	..	..	..	21.50	..

Table 57 deals with the time spent daily or weekly by the home-makers in various activities other than the time associated with her occupation at the place of work. It was seen that almost all the home-makers spent less than 1 or 2 hours daily for personal care. About 58.50 per cent of them devoted 3 to 4 hours per day for household work. Among those who spent time for teaching children, 23.50 per cent of the home-makers spent 1 to 2 hours while 14.50 per cent spent upto 1 hour. A few of them comprising 17.50 per cent spent on an average about 1 hour a day to improve their professional skill. All the home-makers were found to spend time on leisure activities which ranged from 1 hour to 2 hours daily by 45.00 per cent of the home-makers, while another 55.00 per cent of the home-makers spent 4 to 5 hours weekly on leisure activities. Activities selected for entertainment were watching T.V., gardening etc. All the home-makers slept for more than 5 hours daily.

48. Average distribution of time spent for various activities by the home-makers

The average distribution of time allotted for various activities was studied and is given in Table 58.

TABLE 58

Average distribution of time spent for various activities at home by the home-makers

Activity	Daily (in minutes)	Number of home-makers	Percen-tage	Weekly (in minutes)	Number of home-makers	Percen-tage
Personal care	60	200	100.00	..	..	..
Cooking	120	127	63.50	..	..	..
Sweeping	15	145	72.50	..	..	..
Cleaning utensils	30	145	72.50	..	..	..
Dusting/wiping	..	..	..	90	145	72.50
Washing clothes	30	..	..	90	115	59.00
Spring cleaning	..	..	..	240	100	90.00
Serving meals	15	200	100.00	..	..	..
Shopping	..	..	..	180	..	..
Studying	60	38	19.00	..	..	..
Leisure activities						
Needle work Watching T.V. Listening to Radio Gardening	150	90	45.00	..	..	..
Other entertainments	..	..	..	300	175	87.50
Sleep	360	200	100.00	..	..	..

As indicated in Table 58 the time distribution pattern of the home-makers revealed that besides the time spent at their place of work, the home-makers were found to spend about 4 hours daily in household work like cooking, washing clothes, serving meals and teaching children. The time allotted for themselves for personal care and leisure activities was only about 3 hours daily. Sleeping for 6 hours was considered adequate. At week ends, the home-makers sometimes spent about 7 hours for dusting/wiping, washing clothes and for spring cleaning the house. They were found to have more time for leisure during week-ends than or working days.

49. Health status of the home-maker as percieved by her

The health status of the home-maker, as assessed by herself was recorded and the result is presented in Table 59.

TABLE 59

Health status of the home-makers

Health status	Number of employed home-makers	Percentage	Frequency of illness	Number of employed home-makers	Percentage
Poor	..	..	Often	5	2.50
Average	141	70.50	Sometimes	100	50.00
Good	59	29.50	Rarely	95	47.50
Total	200	100.00		200	100.00

Table 59 describe the health status of the home-makers indicating that none of the home-makers had poor health, 70.50 per cent of them supposedly had average health, while 29.50 per cent had good health. With regard to the frequency of the occurrence of illness, only 2.50 per cent fell sick often, 50.00 per cent fell sick sometimes and about 47.50 per cent rarely fell ill.

50. Prevalence of health problems commonly seen

The prevalence of health problems most commonly seen in the employed home-makers was determined and is given in Table 60.

TABLE 60

Prevalence of health problems, commonly seen

Type of health problems	Number of home-makers	Percentage
Weak eye sight	37	18.50
Allergies	20	10.00
Migraine	20	10.00
Arthritis	33	16.50
Rheumatism	41	20.50
Sinus	36	18.00
Anxiety	29	14.50

As depicted in Table 60, some of the home-makers were seen to suffer from health problems like weak eye sight (18.50 per cent), allergies (10.00 per cent) migraine (10.00 per cent), athritis (16.50 per cent), rheumatism (20.50 per cent), sinus (18.50 per cent) and psychological problems like anxiety (14.50 per cent).

51. Habit of taking health promoters

The habit of taking health promoters, in the home-makers, was determined and is presented in Table 61.

TABLE 61

Habit of taking health promoters

Type	Number of employed home-makers	Percentage
Vitamin/mineral tablets	55	27.50
Health tonics	15	7.50
Nil	130	65.00
Total	200	100.00

As shown in Table 61, among the 200 employed home-makers 27.50 per cent were in the habit of taking vitamin and mineral tablets while 7.50 per cent of the home-makers were in the habit of taking health tonics.

52. Dietary habits of the home-makers

The dietary habits of the home-makers was studied and is presented in Table 62.

TABLE 62
Dietary habits of the home-makers

Dietary habits	Number of employed home-makers	Percentage
Early morning coffee/ tea	179	89.50
Snacks in between office hours	63	31.50
Tea/coffee in between office hours	154	77.00
Heavy snacks after returning from work	64	32.00
Breakfast before going to work	192	96.00
Breakfast after reaching place of work	8	4.00
Intake of special nourishing foods	109	54.50

Regarding the dietary habits of the home-makers, given in Table 62, it was found that 89.50 per cent of the home-makers were habitual consumers of coffee or tea, early in the morning just after waking. Snacks were

consumed regularly in between office hours by 77.00 per cent of the home-makers. Consuming heavy snacks after returning from work was habituated by 32.00 per cent of the home-makers only. Almost all the home-makers had their breakfast before going to work and 54.50 per cent were in the practice of taking special nourishing foods like Horlicks, Bourntiva, Complan etc.

53. Type of lunch taken by the home-makers

The home-makers surveyed were in the habit of taking packed lunch to their place of work. But the type of lunch taken varied and is given in Table 63.

TABLE 63

Type of lunch taken by the home-makers

Type of lunch	Number of home-makers	Percentage
Breakfast items	..	..
Cereal preparations	57	28.50
Instant foods	6	3.00
Traditional rice preparations	137	68.50
Total	200	100.00

As indicated in Table 63, a majority of the home-makers comprising 68.50 per cent were in the habit of taking traditional rice preparations, made at home for lunch, 28.00 per cent took cereal preparations while only 3.00 per cent took instant foods for lunch. None of the home-makers were found to take breakfast items for lunch.

54. Type of supper taken by the home-makers

The type of supper usually consumed by the home-makers was studied and the results are presented in Table 64.

TABLE 64

Type of supper taken by the home-makers

Type of supper	Number of home-makers	Percentage
Heavy supper	39	44.50
Light supper	111	55.50
Total	200	100.00

Table 64 reveals the type of supper generally taken by the home-makers showing that, 44.50 per cent of them took heavy meals during supper and 55.50 per cent took light meals.

4. Food intake, energy expenditure, nutritional status and level of knowledge and attitude of the employed home-makers

The food intake of 10.00 per cent of the 200 employed home-makers was determined by weighment method, to assess the quantity and quality of the foods consumed. The results are presented in the following tables.

55. Actual food intake

The food intake of the home-makers determined by weighment method is given in Table 65.

TABLE 65

Food intake of the home-makers by weighment method

Food groups	RDA	Amount consumed	Percentage of RDA met
Cereals	410	385.00	93.20
Pulses	*40	36.76	91.90
Green leafy vegetables	100	31.43	31.43
Other vegetables	40	46.18	115.45
Roots and tubers	50	47.50	95.00
Milk	100	235.00	235.00
Fats and oils	*20	17.00	35.00
Meat and fish	30	74.16	247.20
Eggs	1No	1No	100.00
Sugar and jaggery	20	24.00	120.00

* ICMR: (1987) recommendations

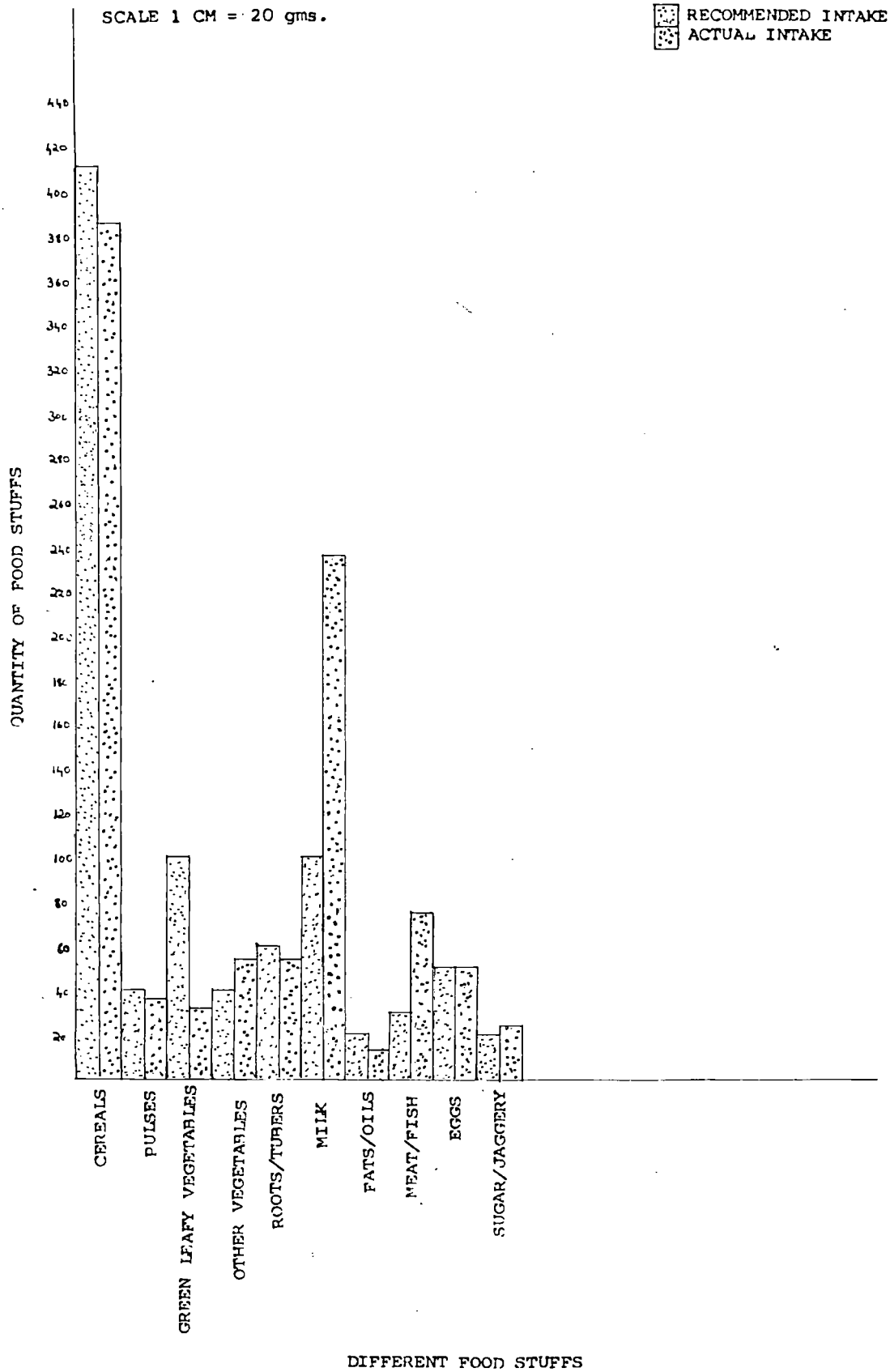

Fig.1 Comparison of actual food intake with the recommended

The average food intake of the employed home-makers by weighment method, given in Table 65 revealed that the foods consumed were not in balance proportions. The intake of green leafy vegetables was very poor. Cereal consumption nearly met the recommended allowances. Pulses, roots/tubers and fats was slightly less than the recommended level while that of other vegetables and sugar were slightly in excess. But intake of protein foods like meat, fish, egg and milk was very high, meeting more than twice the recommended allowance.

56. Nutrient intake of the home-makers

The nutrient intake of the home-makers computed from the quantity of foods consumed is presented in Table 66.

TABLE 66

Nutrient intake of the home-makers

Nutrients	RDA	Amount consumed	Percentage of RDA met
Protein (g)	45	59.66	132.58
Energy (Kcal)	1900	2165.05	113.95
Calcium (g)	0.4 - 0.5	0.51	102.00
Iron (mg)	32	25.50	79.69
Vitamin A	750	929.00	97.20
Thiamine (mg)	10	1.39	139.00
Riboflavin (mg)	13	1.20	92.31
Niacin (mg)	15	13.00	86.67
Vitamin C (mg)	40	39.62	99.05

As given in Table 66, the average intake of nutrients in the selected sub-sample of the employed home-makers depicted that the intake of iron, niacin and energy met only 80.00 per cent of the recommended allowances. The intake of vitamin A, riboflavin and vitamin C was almost equal to that of the recommended. While energy, protein, thiamine and calcium were found to be in excess of that prescribed in the recommended allowances.

57. Percentage difference of energy (Kilocalories) from the recommended

The percentage difference of energy (Kilocalories) from the recommended, was determined by computation, based on weight for age and is given in Table 67.

TABLE 67

Percentage difference of kilocalories between recommended and consumed, in the home-makers

Age(years)	Weight (kgs)	Recommended kilocalories	Amount consumed (Kcal)	Percentage difference (Kcal)
29	49.50	2090.00	1744.34	-16.54
26	37.50	1583.33	1730.57	+ 9.30
30	47.50	2005.45	1670.52	-16.70
25	48.25	2037.11	2377.37	+16.70
32	39.50	1667.69	1843.55	+10.55
32	61.00	2575.42	2368.05	- 8.05
34	45.50	1921.01	2067.80	+ 7.64
33	57.60	2406.54	2016.11	-16.22
29	49.00	2068.78	2266.40	+ 9.55
28	54.00	2279.88	1930.64	-15.32
28	49.25	2068.78	2162.30	+ 4.52
31	55.00	2322.10	2166.94	- 6.68
32	51.00	2153.22	2429.80	+12.84
31	44.00	1857.68	2046.85	+10.18
35	54.50	2279.88	2305.40	+ 1.12
30	46.00	1942.12	2446.82	+25.99
32	65.00	2744.30	2381.85	-13.21
28	52.00	2195.44	2685.40	+22.32
30	48.50	2047.67	2361.90	+15.35
29	50.00	2111.00	2298.40	+ 8.88

As given in Table 67 the percentage of difference of calories, computed from the recommended was found to be in excess of the recommended in 65.00 per cent of the sub-sample and in the remaining 35.00 per cent it was less than the recommended according to the requirement for their age.

58. Proportion of time spent in a day for different

The proportion of time spent in a day for different activities by the home-makers was determined and is given in Table 68.

TABLE 68

Proportion of time spent in a day for different activities, by the home-makers

Activity	Average time spent (hours)	Proportion of time spent in a day (percentage)
Personal care	1½	6.25
Cooking	3½	14.58
Other household work	2	8.34
Preparing children for school	1½	6.25
Travelling	1	4.16
Occupation at work place	5	20.83
Teaching children	1½	6.25
Leisure activities	2	8.34
Sleep	6	25.00
Total	24 hours	100.00

SCALE 1% = 3.6°

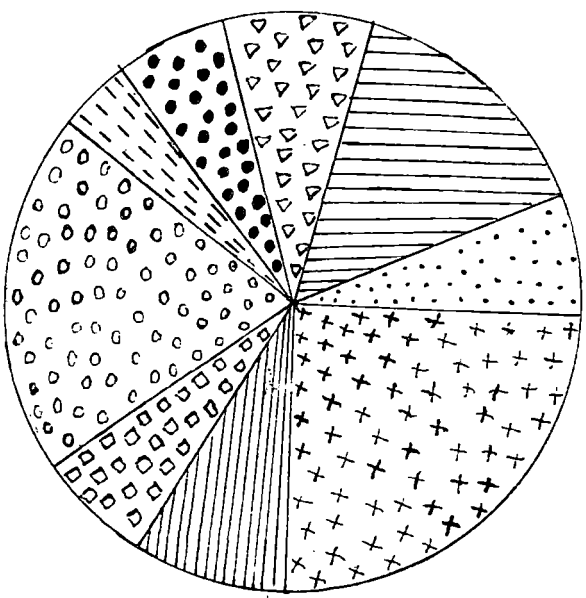

Fig.2 Proportion of time spent in a day for different activities

Considering the proportion of time spent by the home-makers for different activities daily, if was found that greatest proportion of time was spent for their occupation at the work place, (20.83 per cent), followed by time spent for cooking, (14.58 per cent) and other household work (8.34 per cent). Due to their employed status, it was found that they were not able to spend much time on their children.

59. Correlation between the energy consumed and the energy expended among the home-makers

The energy consumed by food intake and the energy expended for various activities from the time-motion study were determined and statistically correlated and is presented in Table 69.

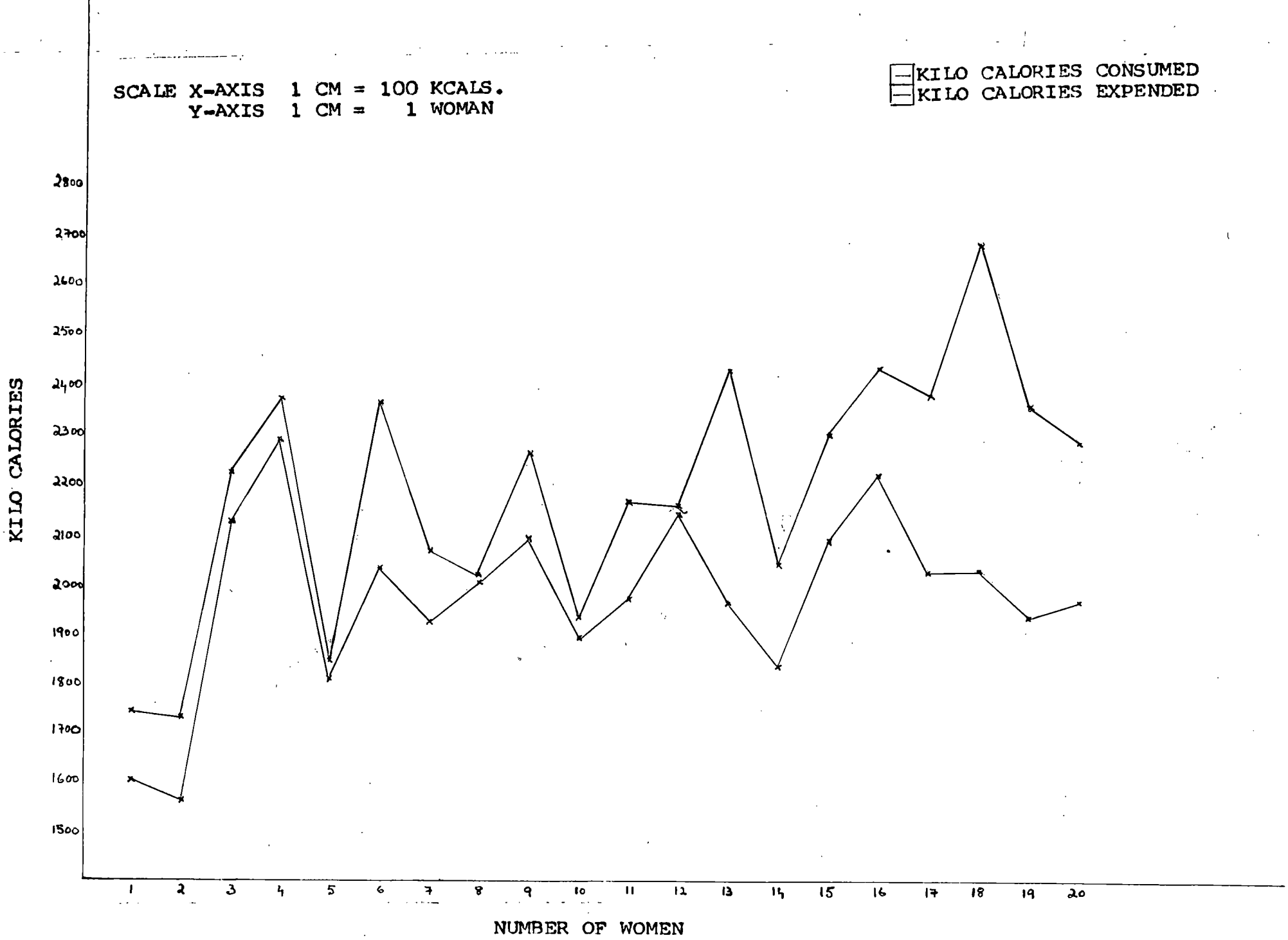

Fig.3 Amount of energy expended in relation to the energy consumed

TABLE 69

Effect of energy consumption on energy expenditure

Serial No.	Energy consumption (kcals)	Energy expenditure (kcals)
1	1744.34	1602.42
2	1730.57	1562.15
3	2229.43	2126.52
4	2377.37	2296.82
5	1843.55	1807.86
6	2368.05	2036.81
7	2067.80	1923.66
8	2016.11	2001.11
9	2266.40	2093.60
10	1930.64	1889.32
11	2162.30	1971.76
12	2166.94	2146.20
13	2429.80	1961.26
14	2046.85	1837.06
15	2305.40	2081.55
16	2446.82	2281.49
17	2381.85	2030.43
18	2685.40	2031.59
19	2361.90	1937.23
20	2298.40	1968.07
Correlation coefficient		0.6909*

Significant at 5% level

The energy consumed, determined by food weighment and the energy expended for various activities was computed in the employed home-makers, as given in Table 69. A significant correlation was found between the energy consumed and the energy expended.

The mean energy consumed and that expended by the home-makers was determined and is given in Table 70.

TABLE 70

Average energy (kilocalories) consumed and expended by the home-makers

	Mean
Average calories consumed	2165.05
Average calories expended for daily activities	1979.35
Percentage difference	8.58

The average energy consumed and expended by the employed home-makers given in Table 70 indicated that there was a percentage difference of 8.58 between consumption and expenditure of calories for various activities.

60. Percentage surplus of energy (kilocalories) remaining after utilization for various activities

The percentage surplus of energy (kilocalories) remaining after utilization for various activities was determined by computing the calorie balance and is given in Table 71.

TABLE 71

Percentage surplus of kilocalories in the home-makers

Age(years)/ no.of women	Weight (kgs)	Energy consumed (kcals)	Energy expended (kcals)	Percentage of surplus (kcals)
29	49.50	1744.34	1602.42	8.14
26	37.50	1730.57	1562.15	9.73
30	47.50	2229.43	2126.52	4.62
25	48.25	2377.37	2296.82	3.39
32	39.50	1843.55	1807.86	1.94
32	61.00	2368.05	2036.81	13.99
34	45.50	2067.80	1923.66	6.97
33	57.60	2016.11	2001.11	0.74
29	49.00	2266.44	2093.60	7.62
28	54.00	1930.64	1889.32	2.14
28	49.25	2162.30	1971.76	8.81
31	55.00	2166.94	2146.20	0.96
32	51.00	2429.80	1961.26	19.28
31	44.00	2046.85	1837.06	10.25
35	54.50	2305.40	2081.55	9.71
30	46.00	2446.82	2281.49	6.76
32	65.00	2381.85	2030.43	14.75
28	52.00	2685.40	2031.59	24.35
30	48.50	2361.90	1937.23	17.98
29	50.00	2298.40	1968.07	14.37

Table 71 gives the percentage surplus of kilocalories computed from the amount consumed in the selected sub-sample among the 200 employed home-makers, revealing that the percentage of surplus calories ranged from 0.74 to 24.35 per cent, indicating that even through the calorie intake was less than the recommended as depicted in the previous table, the expended energy being less than the energy consumed, the individuals were found to maintain a positive calorie balance.

61. Anthropometric measurements and haemoglobin profile of the home-maker

The height and weight measures and the haemoglobin levels of the home-makers were estimated and are presented in the following tables.

TABLE 72

Height profile of the home-makers

Height (cms)	Number of women	Percentage
146-150	4	20.00
151-155	12	60.00
156-160	1	50.00
161-165	2	10.00
166-170	1	5.00
Total	20	100.00

The height profile of the employed home-makers depicted in Table 73 showed that 65.00 per cent of them had heights that ranged from 151 to 155 cms.

TABLE 73

Weight profile of the women surveyed

Weight range (kgs)	Number of women	Percentage
36-40	2	10.00
41-45	2	10.00
46-50	8	40.00
51-55	5	25.00
56-60	1	5.00
61-65	2	10.00
Total	20	100.00

The weight profile of the 200 employed home-makers given in Table 73 indicated that 40.00 per cent of them had weights in between 46 to 50 kgs. and only 10.00 per cent each had weights that ranged from 36 to 40 kgs and from 61 to 65 kgs. 20.00 percent of the home-makes were found to be under the ideal weight and 80.00 percent were found to be above the ideal weight.

*Ideal body weight for Indian reference woman =45kgs.

TABLE 74

Haemoglobin levels of the home-makers

Haemoglobin range (gms)	Number of women	Percentage
12.0 - 12.4	10	50.00
12.5 - 13.0	10	50.00
Total	20	100.00

As shown in Table 74, among the selected employed home-makers surveyed, 50.00 per cent were found to have haemoglobin levels in between 12 to 12.40 gms while the other 50.00 per cent fell in the range of 12.50 to 13 gms.

62. Correlation hetween nutritional status and haemoglobin levels of the home-makers

The nutritional status determined from age, height, weight and haemoglobin levels was correlated with the haemoglobin content of the blood in the home-makers and is given in Table 75.

TABLE 75

Nutritional status and haemoglobin level and their correlation

Sl.No	Nutritional status	Haemoglobin level(gms)
1	118.05	12.0
2	121.51	12.5
3	121.67	12.4
4	124.46	12.8
5	118.33	12.0
6	119.40	12.0
7	125.82	12.8
8	124.55	12.6
9	126.09	12.9
10	125.13	12.8
11	119.57	12.2
12	126.33	12.9
13	125.82	12.8
14	118.21	12.0
15	120.07	21.1
16	124.33	12.7
17	118.65	12.0
18	121.03	12.3
19	120.11	12.2
20	121.38	12.5
Correlation coefficient	0.9770**	

** Significant at 1% level

The nutritional status of the employed home-makers given in Table 75 was computed from the age, height, weight and haemoglobin levels of these individuals. A significant correlation was found between the nutritional status and haemoglobin levels indicating the haemoglobin level in blood was influenced by nutritional status.

63. Correlation between energy expenditure and nutritional status of the home-makers

The energy expended for various activities computed from the time motion study was correlated with the nutritional status of the home-makers and is given in Table 76.

TABLE 76

Energy expenditure and nutritional status and their correlation

Sl.No	Energy consumption (kcals)	Energy expenditure (kcals)	Nutritional status
1	1744.34	1602.42	118.05
2	1730.57	1562.15	121.51
3	2229.43	2126.52	121.67
4	2377.37	2296.82	124.46
5	1843.55	1807.86	118.23
6	2368.05	2036.81	119.40
7	2067.80	1923.66	125.82
8	2016.11	2001.11	124.55
9	2266.40	2093.60	126.09
10	1930.64	1889.32	125.13
11	2162.30	1971.76	119.57
12	2166.94	2146.20	126.33
13	2429.80	1961.26	125.82
14	2046.85	1837.06	118.21
15	2305.40	2081.55	120.07
16	2446.82	2281.49	124.33
17	2381.85	2030.43	118.65
18	2685.40	2031.59	121.03
19	2361.90	1937.23	120.11
20	2298.40	1968.07	121.38

Correlation coefficient : 0.4561*

*. Significant at 5% level

As depicted in Table 76 a significant correlation was found between energy expenditure and nutritional status in the home-makers surveyed implying that energy expenditure depending on time spent for various activities, had an effect on the nutritional status of these women.

64. Knowledge and attitude of the home-makers regarding food and health

The knowledge and attitude of the home-makers regarding food and health was determined after analysing their responses and is presented in Table 77.

TABLE 77

Response to the statements on food and health to assess level of knowledge and attitude

Statements on food and health	Number of women who answered correctly	Percentage
1. Employed home-makers require more quantity of food than her unemployed counterpart	8	40.00
2. Excess consumption of water during Diarrhoea worsens the situation	19	95.00
3. Vegetables and fruits provide bulk in the diet	10	50.00
4. Nutritional status prior to pregnancy has no effect on subsequent foetal growth	17	85.00
5. Use of excess coconut in the daily diet increases fat consumption	18	90.00
6. D.P.T. vaccination prevents polio	5	25.00
7. The traditional Indian habit of eating more rice and less of vegetables and pulses makes a balanced meal	18	90.00
8. Storing foods in the refrigerator kills microorganisms	9	45.00
9. Washing vegetables before cutting instead of washing them after cutting, guarantees better nutritional quality	18	90.00
10. Fungus infected bread is not harmful	18	90.00

11. Regular health check up is needed for all	17	85.00
12. Heavy meals increases the capacity to work	17	85.00
13. Proper spacing of child births protects mother's health	17	85.00
14. Instant and other foods are very nutritious	17	85.00
15. Tuberculosis is a contagious disease and it can be cured	16	80.00
16. Potato and tapioca are included in the diet to meet the protein requirements	8	40.00
17. Frequent attacks of illness and infectious impairs health	15	75.00
18. The red colour of beetroot helps in the production of blood	16	80.00
19. Regular exercise ensures good health and fitness	20	100.00
20. Viral infections can be controlled by nutritious food	15	75.00

The response to the statements on food and health, given in Table 77 revealed that only 25.00 per cent of the women answered statement 6 correctly, 40.00 per cent answered statement 16 correctly; statement 8 and 3 were answered correctly by 45.00 and 50.00 per cent respectively. All other statements received correct responses of 75.00 to 95.00 per cent from the women and only statement 20 elicited correct response from all the women (100.00 per cent).

65. Level of knowledge score and attitude score of the home-makers

The level of knowledge score determined on the basis of number of correct responses and the attitude score determined on a 5 point scale helped to assess the home-makers knowledge and attitude towards food and health. The result is presented in Table 78.

TABLE 78

" Level of the knowledge"score and "attitude" score of the women in response to the statements on food and health

Serial No.	Level of knowledge score out of 20	Attitude score out of 100
1	13	69
2	12	69
3	16	75
4	15	80
5	17	82
6	15	77
7	16	78
8	15	76
9	16	74
10	17	74
11	16	77
12	11	61
13	14	72
14	10	60
15	18	81
16	16	79
17	11	68
18	16	76
19	19	83
20	15	75
Average score	14.90	71.05
Correlation coefficient : 0.9103*		

* Significant at 5% level

The level of knowledge score and attitude score of the employed home-makers revealed that the average knowledge score out of 20 was 14.90 and the average attitude score out of 100 was 71.05. This scoring indicated that the home-makers were average in performance with regard to knowledge and attitude towards food and health. A significant correlation was found between knowledge and attitude towards food and health.

DISCUSSION

DISCUSSION

The present study was carried out to assess the food consumption and energy expenditure pattern of 200 home-makers, employed in various public and private sector organizations in the city of Trivandrum. The assessment was made through surveys on the socio-economic and food consumption pattern of the families of the home-makers and the personal details related to the home-makers.

Socio-economic pattern of the families

A survey was conducted to assess the socio-economic conditions of the families of the 200 employed home-makers and it revealed that 75.00 per cent of the families resided in the urban area, in concrete/single storeyed or double storeyed houses of their own. Most of these houses were quite spacious with 4 to 6 rooms. (54.50 per cent) Many of the houses were ideally situated in good environment, within easy reach of essential public utility places like hospital, market place etc. (61.00 to 97.00 per cent).

Nuclear type of families (81.50 per cent) were a prominent feature with family size of 3 to 4 members (66.50 per cent). The small family size could be attributed to the higher education level of the parents,

since most of the families were from the privileged section of society, with 42.51 per cent having undergone higher education. According to Oza (1987) size of the family is small for the couple having educated husband. Mazumdar (1979) opined that expansion of employment and strengthening of women's decision making roles would also contribute to the adoption of small family norms.

Permanent jobs depending upon the type, contributed a steady family income that ranged from Rs.2001/- to Rs.10,000/- per month, with 20.00 to 24.00 per cent of the families having an income between Rs.3001/- to Rs.5000/-. This implied that education of mothers provided better job prospects that increased family income, supporting the contention that dual career families are better off economically than single career families. Oza (1987) reported that education of the working mother as well as that of the head of the family increases the level of family income. Besides the income from jobs, 76.00 per cent of the families received additional income from other sources like agriculture, pension, business/rent/shares etc. Economic dependency of the family member was determined to be in the ratio of 1:2:1.

The expenditure per month, for various items, incurred by the families indicated that the expenditure on food varied from 11.00 to 55.00 per cent of the monthly income. This variation in the amount of spent on food was found to be dependant on the family income and the number of family members. Quiogue (1970) found that the lower the income, the higher was the percentage of income spent on food. Rao (1971) reported a striking inverse relationship between family size and dietary status. In the present study also, adequate income and a limited family size were found to favour a positive food purchasing power to the families. In most of the families, the monthly expenses on clothing, shelter, education, entertainment, health, travel, personal expenditure, ceremonies, fuel, electricity, water, servants and other miscellaneous items remained within 5.00 per cent of the income. But in a few families, the expenditure on these items exceeded 5.00 per cent of the family income. All the families were found to save a part of their income, which in most of the families ranged from 21.00 to 50.00 per cent of the income. The high amount of savings could be due to reduced expenditure on other necessities. The higher education and economic independence of the

women might have helped the families to secure a comfortable life for all the family members, with all amenities and also to ensure a safe future with considerable savings.

Food consumption pattern of the families

The food consumption pattern of the families surveyed indicated that 89.50 per cent of the families were habitual non-vegetarians. The frequency of purchase of various food items indicated that the general trend was to purchase provisions on a monthly basis. Fresh food items like green leafy vegetables, other vegetables, meat, fish, egg, fruits and bakery items were purchased weekly by 50.00 to 90.00 per cent of the home-makers. Less expensive food articles like roots and tubers were also purchased, but only occasionally. Milk was purchased daily in all the families but in some families (42.00 per cent) fish also was a daily purchase item. A few of the families (11.00 per cent) being vegetarians, fish and meat were never purchased by them. Another 3.00 per cent of the families never purchased eggs. Nimkar (1976) reported that monthly purchasing was not common among employed home-makers whereas vegetable were bought twice a week or even more frequently.

The frequency of use of various food items depicted that the daily diet in most of the families comprised of various food items like rice, wheat, other vegetables, fruits, milk, fish, meat, egg, coconut, sugar and oil. Some of the families refrained from using food items like rawa, ragi, redgram, amorphophallus, drumstick leaves and colocasia due to poor acceptability among the family members. In a few families, vegetarianism being the prevalent dietary practise, fish, meat and egg were excluded from the daily diet.

The culinary practices prior to actual cooking revealed that a majority of the home-makers were not in the habit of adopting any of the methods. But to save time during cooking some of the home-makers practised soaking pulses overnight (35.50 per cent), cutting vegetables on the previous day (30.00 per cent) and cooking flesh foods on the previous day (21.00 per cent).

Common cooking methods employed by the home-makers, were the ones that helped to increase the acceptability of the particular food among the family members. A notable point in this context was that modern pressure cooking was found to be popular only among 50.00 per cent of the families, inspite of their higher socio-economic status.

Daily meal pattern obtained through a 3-day recall method indicated that four meal pattern, consisting of breakfast, lunch, tea and dinner was the accepted norm in all the families. Breakfast often included cereal preparations, vegetable preparations, milk and milk products, egg and fruits. Fats, oils and sugar were also added as ingredients in breakfast preparations. Lunch and dinner usually consisted of cereal and pulse preparations, leafy vegetables, curds, meat or fish and fats and oils. Tea mostly comprised of bakery items and processed foods supplemented with cereal or pulse preparations. The findings of the study were very much in line with the study of Mathias (1971) where it was found that with higher and more regular income, the consumption pattern of the families changed in quantity and quality without any consequent modification in the variety of dishes. The meal serving pattern in the families indicated that on working days, most of the families (80.50 per cent), took their meals according to the commitments of each member. But on holidays, in majority of the families (92.50 per cent) meals were taken by all the members together. Since majority of the families belonged to the higher socio-economic class, they generally celebrated occasions like

birthdays, anniversaries etc. The educational background being high, it was observed that in all the families, during illness or special physiological conditions, diet was provided according to the needs and requirements of the individuals, or as prescribed by the physician.

Personal details of the employed home-makers

The present study helped to shed light on several aspects related to the employed home-makers and revealed that all of them were in between 21 to 55 years of age, with 20.50 per cent and 25.50 per cent belonging to the age group of 26 to 30 years and 41 to 45 years respectively. Higher education had been acquired by 61.50 per cent of the home-makers. All of them were permanently employed as Administrators, Doctors, Engineers, Agricultural Officers, College Lecturers, School Teachers and Office Assistants (Clerks), with 81.50 per cent of them being full time employees in the government sector while the remaining (18.50 per cent) were either full time or part-time employees in the private sector.

Most of the home-makers (88.00 per cent) felt that their occupation was moderate in physical activity.

Only 40.50 per cent of them had been working for more-than 15 years. Inspite of the stress of dual role performed by them, 85.50 per cent of the home-makers expressed a positive attitude towards being employed. Several reasons were outlined for taking up 'outside' employment' among which "economic reasons" (98.50 per cent) and "self actualisation" (82.50 per cent) were accorded maximum response. For 91.50 per cent of the home-makers, their job kept them occupied for 5 to 8 hours a day, at their place of work. When at home, about 62.50 per cent of them allotted more than 2 hours a day, in work related to their jobs. Public conveyance was the usual mode of transport to the work place, for 46.50 per cent of the employed home-makers. A distance of less than 5 kilometres had to be travelled by 56.50 per cent of the home-makers to reach the work place and the time needed for the purpose was less than half an hour.

The monthly salary varied from Rs.900/- to Rs.5000/- with 35.50 per cent of the home-makers receiving Rs.1501/- to Rs.2000/- per month and 47.50 per cent receiving Rs.2001/- to Rs.5000/- every month.

In 73.50 per cent of the families, the home-makers were free to spend their income in the manner they choose best for the family. In general, the home-makers income was utilised along with the family income to meet different expenses incurred by the family. Though maximum expenditure was attributed to household related expenses, with special attention being given to certain aspects like education of children and for supplementing diet, it was observed that 85.00 per cent of the home-makers gave first priority to expenses incurred for supplementing the regular diet. Among the home-makers surveyed approximately 50.50 per cent did not keep a regular account of personal and family expenses. The employed status made 86.50 per cent of the women feel economically secure since their monthly contribution to the family income enabled 68.00 per cent of the families of the home-makers to invest in personal assets like house, land, shares etc.

Ramachandran (1986) reported the mean age at marriage of women who worked, to be higher and such women had fewer children. The marital status of the employed home-makers in this study indicated that most of them (47.50 per cent) had married in between 20 to 29 years

of age, 33.50 per cent of the home-makers had been married for 10 to 20 years while 24.50 per cent of the home-makers were reported to have a marital life of 20 years and more. Maximum number of children in the families were found to be 3 but 49.00 per cent of the home-makers had 2 children and an exceptional 3.00 per cent of them had 4 children each. The incidence of miscarriages/abortions in these women was very less, and majority 66.50 per cent were found to have had normal deliveries during parturition.

Suseela et al (1970) found that employed mothers could not participate fully in child rearing due to the full time nature of the jobs and lack of facilities such as creche. In the present study, when the home-makers left for work, their children, who had not attained school going age,were usually looked after by their mothers (35.50 per cent) or servants (32.50 per cent). According to Choudhary et al (1986) working status of mother does effect the nutritional status of children, but depends upon the type of mother surrogate taking care of the child in the absence of the mother.

Rajagopal (1974) reported that poor management of the home was a severe problem expressed by 60.00 per cent of the employed home-makers. In this study also dual role of the employed home-makers imposed several difficulties at the household level, mainly neglegence of children and other family members (70.50 per cent) and additional stress and strain to employed women (69.00 per cent). Most of the women (98.00 per cent) surveyed in the study were reportedly unable to cope with the additional responsibilities imposed by outside employment.

Husbands in dual career families assume an important supportive role. It was seen that working wives received considerably more help from their husbands. (Soni et al 1986) In the present study, in managing household work, 50.00 per cent of the home-makers were found to receive help from husbands. On special occasions or during the visit of guests or other committments, 37.50 per cent of the home-makers managed the extra work load with the help of family members without neglecting their outside employment, while 35.00 per cent of the home-makers managed this additional work by absenting themselves from work.

Ogale (1977) showed that the distribution of household tasks was not influenced by the type of family, size of family and employment status but was dependant on the socio-economic status of the families.

In the household activities, work related to kitchen was the most important one and majority of the home-makers (66.00 per cent) preferred to use combinations of 2 or more fuels like gas and electricity or gas, kerosene and electricity, in order to reduce the time spent on cooking. Since the home-makers mostly belonged to the higher economic strata, they resorted to labour saving gadgets like refrigerator (92.00 per cent) mixie (90.50 per cent) etc. to lighten their work load and to speed up household work. Sundari and Kamalanathan (1968) reported a saving of one hour and 27 minutes of cooking time in the preparation of the reference meal, using selected labour saving kitchen devices. Cooking was confined to twice a day by 67.50 per cent of the home-makers and 63.50 per cent of the home-makers personally did the cooking. Nimkar (1976) in his study found that majority of the employed home-makers (71.00 per cent) preferred to prepare the meals personally. Sundari and Kamalanathan (1968) studied the time utilization pattern of some home-makers and revealed that as the number of family members increased from two to seven and above, the time spent on cooking increased from 3½ hours to 5½ hours.

Considering the time spent for various other activities besides the time spent at their jobs, all home-makers spent less than 1 to 2 hours daily for personal care. About 58.50 per cent ot them devoted 3 to 4 hours a day for household work, 23.50 per cent of them spent 1 to 2 hours for teaching children. While 14.50 per cent spent upto 1 hour only for this purpose, 17.50 per cent spent on an average one hour daily to improve their professional skill by extra reading etc. 45.00 per cent of the home-makers engaged in leisure activities for 1 to 2 hours daily and 55.00 per cent spent 4 to 5 hours weekly on leisure activities. Ogale (1973) reported that employed home-makers spent the largest percentage of their leisure time on intellectual activities and there was a difference between the leisure time available to the home-makers with different employment status. In the present study, the leisure activities engaged in by the home-makers included reading, watching television, gardening etc. Health status of the home-makers revealed that all the home-makers surveyed were of optimum health condition. Most of the home-makers perceived their health as average. Incidence of illness, was reported only by 50.00 per cent of the

home-makers. The prevalence of health problems, most commonly seen in the employed home-makers were rheumatism (20.50 per cent) weak eye sight (18.50 per cent), Sinus (18.00 per cent) and athritis (16.50 per cent). Inspite of the existing health problems, only 27.50 per cent of the home-makers were found to be in the habit of taking health promoters like vitamin/mineral tablets or tonics. Most of the women (65.00 per cent) preferred to refrain from taking any of these health incentives.

According to Koyama et al (1972) the problems encountered in the dietary life of working women were the importance of eating 3 meals a day, ability to reach suitable shops and to buy the food and the use of processed food stuffs. The author had further reported that the home diet was also to a great extent influenced by the type of employment taken up by the wife, the presence of infants in the family or availability of home help. The dietary habits of the home-makers in this study indicated that most of them (89.50 per cent) were in the habit of taking early morning coffee or tea. Such beverages were also taken in between office hours by 77.00 per cent of the home-makers. Only 31.50 per cent took snacks in between office hours and 32.00 per cent took heavy snacks after returning from work.

Almost all the home-makers (96.00 per cent) had their breakfast before going to work. The home-makers generally took packed lunch to their place of work but the type of lunch varied, with most of them (68.50 per cent) taking traditional rice preparations. Dinner of 55.50 per cent of the home-makers consisted of light meals. Only 54.50 per cent of the home-makers took special nourishing foods like Horlicks, Maltova etc. for extra nourishment.

Actual food intake of the employed home-makers

The actual food intake of 10.00 per cent of the 200 employed home-makers, estimated by the food weighment method, revealed that the inclusion of the various food groups was not in a balanced proportion in their daily diet. The intake of cereals nearly met the recommended allowances. The intake of pulses, roots/tubers and fats was slightly less than the recommended while that of leafy vegetables was very poor. Other vegetables and sugar were slightly in excess of the recommended but intake of meat, fish, egg and milk was found to be more than twice the recommended intake. Wong (1985) found a direct relation between the amount of family income and expenditure on food. Demand for basal food was less than that for high protein foods and there was a

tendency for intake of high protein foods to increase as family income increased. The average consumption of nutrients indicated that protein calories calcium and thiamine was in excess of the recommended level but iron, witamin A, riboflavin and nicotinic acid was slightly less than the recommended level. Kawatsu et al (1969) studied the nutritional administration of nutritionists by calorie balance and found that their intake was lower than the standard for light work, and was also found to vary widely between persons. The results of the present study on employed home-makers also was found to be in line with the major findings of the study by Kawatsu.

Determination of energy requirements of the employed home-makers

The energy requirements of the home-makers was determined by studying their time motion pattern for a week. It was found that a greater proportion of the home-makers time was allotted for cooking and other household work; and also in their occupation at the place of work. Due to this, they were found to have very little time left for the care of their children or for leisure activities.

The energy requirements for daily activities was determined to be about 1979.35 on an average. This requirement varied with age, height and weight for individuals and also the time spent for various activities. A significant correlation was found between the energy consumed and the energy expended. In all the home-makers it was seen that average energy expended for daily activities was less than that obtained through the daily food intake, implying that inspite of their dual role in the home and outside, these women maintained a positive energy balance. The percentage difference between consumption and expenditure of energy was found to be 8.58. This could be due to the fact that all the home-makers studied were from educated and well to do families, where family size was small and domestic help was available.

Nutritional status of the employed home-makers

The anthropometric measures with regard to height, weight and haemoglobin level helped to determine the nutritional status. A significant correlation was found between the nutritional status and haemoglobin levels indicating that the haemoglobin level in blood was influenced by nutritional status. The nutritional status was also found to be influenced by the amount of energy

expended for various activities. Since these women were spending less energy for various activities, when compared to the amount consumed, no adverse affects were observed on nutritional status.

Level of knowledge and attitude towards food and health

An assessment of the knowledge and attitude of the employed home-makers, carried out in 10.00 per cent of the 200 home-makers indicated that the average score for knowledge was 14.90 out of 20 and the average score for attitude was 71.05 out of 100. This scoring indicated that the home-makers were average in performance with regard to knowledge and attitude towards food and health. The attitude of the home-makers towards food and health was found to be correlated with their knowledge regarding the same.

From the above revealations it could be concluded that though the home-makers experienced difficulties in carrying out their dual responsibilities at home and the work place, they were found not to suffer unduly from the same. This could be attributed to the fact

that the women under the present day were well educated, belonging to the higher socio-economic strata where their dietary intake was more than adequate to meet their daily energy output and the constraints on time and energy were eased by the presence of domestic help or the help of family members. Hence no adverse affects on nutritional status of these home-makers was observed.

SUMMARY

SUMMARY

The study entitled "Food consumption and energy expenditure pattern of 200 employed home-makers in organised sector in Trivandrum" was conducted among the women employed in public and private sector organizations, in the city of Trivandrum. The study undertaken threw light on the socio-economic and food consumption pattern of the families and personal details of the employed home-makers. The actual food intake and the energy expended for various activities was determined in 10.00 per cent of the home-makers. The nutritional status and attitude and knowledge of the home-makers with regard to food and health were also assessed.

Salient socio-economic factors observed were popularity of nuclear type families of limited size with self-owned houses in the urban area and within easy reach of essential public utility places. Majority of the families were from the high middle class group and the monthly expenditure pattern of the families indicated that the expenditure on food alone ranged from 11.00 to 55.00 per cent of the monthly income; non food expenses remained within 5.00 per cent of the income with considerable savings which comprised 18.00 to 50.00 per cent of the monthly income.

Conventional cooking methods with a few modern scientific practises and labour saving devices, are popular among the families surveyed. The family dietary pattern included all the food groups but not in the balanced proportions.

Majority of the employed home-makers had sought outside employment due to "Economic reasons" or for "Self-actualisation" Most of the home-makers were economically independent and they were found to spend their income in the way they considered best for the family and this income was usually utilized to meet household related expenses, for education/special needs of children and for supplementing family diet. The difficulties imposed on these home-makers due to the dual role were improper care of the family and inability to cope with household work. Time spent for various activities viz., for personal care, child care, leisure and to improve professional skills was considered to be adequate. Health status of the home-makers also revealed that majority of these women were healthy except for minor indispositions occasionally. Health incentives like vitamin/mineral tablets or tonics were not popular among them. The dietary habits indicated that most of

these home-makers were following a three meal a day pattern with intake of beverages like tea or coffee at frequent intervals.

An assessment of the actual food intake by weighment method revealed the inclusion of all food groups with excess proteins, calories, calcium and thiamine. The energy requirements for every day activities, when compared with the energy obtained through food intake, indicated that these women had a positive energy balance. The knowledge and attitude score of the employed home-makers towards food and health was found to be satisfactory.

Statistical treatment of data indicated a significant correlation between energy consumed and energy expended and the nutritional status and haemoglobin level in the blood. The energy expenditure was found to have a significant effect on the nutritional status of the home-makers and attitude was found to be statistically correlated to their knowledge on food and health.

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APPENDICES

APPENDIX I

COLLEGE OF AGRICULTURE

VELLAYANI

A SCHEDULE TO ELICIT INFORMATION ON SOCIO-ECONOMIC FOOD CONSUMPTION AND ENERGY PATTERN OF EMPLOYED HOME-MAKERS IN ORGANISED SECTOR IN TRIVANDRUM

SECTION A

SOCIO-ECONOMIC PROFILE OF THE FAMILY SURVEYED

Serial No:

I 1. Name of home-maker :

2. Address :

3. Place of residence :
(Please tick /)
i) Rural
ii) Sub-urban
iii) Urban

4. Religion :
(Please tick /)
i) Hindu
ii) Muslim
iii) Christian

5. Name of the head of the family :

6. Type of family :
(Please tick /)
i) Joint
ii) Nuclear

7. Details about the house
a) Type (Please tick /)
i) Tile
ii) Concrete

b) If so, (Please tick /)

i) Double storey
ii) Single storey

c) Number of rooms in the house (Please tick /)

i) 1-3 rooms
ii) 4-6 rooms
iii) More than 7

d) Whether (Please tick /)

i) Own
ii) Rented

e) Environmental conditions sanitary conditions around the house (Please tick /)

i) Open drains/adequate facilities for drainage
ii) Stagnant pools of water
iii) Garbage heaps/adequate facilities for waste disposal
iv) Presence of flies/mosquitos
v) Pollution from nearby factories
vi) Pollution from vehicular traffic
vii) Any other (Please specify)

8. Whether the following places are easily accessible from the house (Please tick /)

Place	Yes	No	Actual distance from home
i) Hospital			
ii) Market place			
iii) Place of worship			
iv) Bus stop			
v) Shopping complex			
vi) Post Office			
vii) Cini-Theatre			
viii) Library/Reading room			
ix) Airport			
x) Railway Station			
xi) Any other (Please specify)			

II 1. Structure of the family

Sl. No.	Relation to home-maker	Age	Sex	Occu-pation	Educa-tion level*	Veg.	Non. veg.	Income

* Code for education level

i) Illiterate
ii) Primary
iii) High School
iv) College
v) Higher education

2. Different sources of income/month

i) Agriculture
ii) Business/Rent
iii) Interest from Bank
iv) Shares
v) Cattle
vi) Poultry
vii) Subsidiary employment of family members (Please specify)
viii) Any other (Please specify) Total:

3. Family expenditure pattern:

Sl. No.	Items	Weekly expen-diture	Monthly expen-diture	Annual expen-diture
1.	Food			
2.	Clothing			
3.	Housing			
	i) Rent			
	ii) Maintenance			
4.	Health			
5.	Education			
6.	Travel			
7.	Recreation			
8.	Personal expenses			
9.	Ceremonies			
10.	Fuel			
11.	Electricity			
12.	Water			
13.	Servant			
14	Others (Please specify)			

SECTION B

FOOD CONSUMPTION PATTERN AND DIETARY HABITS OF THE HOME-MAKERS HOUSEHOLDS

1. a) Expenditure pattern on food for one month

Sl. No.	Food items	Frequency of purchase			
		Daily	Weekly	Monthly	Occasionally
1.	Cereals				
	Rice				
	Wheat				
	Rawa				
	Maida				
	Ragi				
	Others (Please specify)				
2.	Legumes				
	Cowpea				
	Bengalgram				
	Blackgram				
	Redgram				
	Others (Please specify)				
3.	Leafy vegetables				
	Amaranthus				
	Drumstick leaves				
	Curry leaves				
	Others (Please specify)				

4. Roots and tubers
   - Potato
   - Tapioca
   - Amorphophallus
   - Colocasia
   - Carrot
   - Beetroot
   - Others (Please specify)
5. Other vegetables
6. Fruits (Please specify)
7. Milk and milk products
8. Fish
9. Meat
10. Egg
11. Oil seeds and nuts
    - Groundnut
    - Gingelly seeds
    - Coconut
    - Others (Please specify)
12. Fats and oils
    - Ghee
    - Dalda
    - Oil
13. Sugar, Jaggery or honey
14. Miscellaneous
    - Masala powder
    - Chilli powder
    - Coriander powder
    - Others (Please specify)
15. Bakery items

b) Frequency of use of various foods: (Please tick under appropriate column)

Sl. No.	Food items	Daily	Less than 3 times/ week	More than 3 times/ week	Once a week	Once a fort-night	Once a month	Occa-siona-lly	Never
1.	Cereals								
	Rice								
	Wheat								
	Rawa								
	Maida								
	Ragi								
	Others (Please specify)								
2.	Legumes								
	Cowpea								
	Bengalgram								
	Blackgram								
	Redgram								
	Others (Please specify)								

Sl. No.	Food items	Daily	Less than 3 times/ week	More than 3 times/ week	Once a week	Once a fort-night	Once a month	Occa-siona-lly	Never
3.	Leafy vegetables								
	Amaranthus								
	Drumstick leaves								
	Curry leaves								
	Others (Please specify)								
4.	Roots and tubers								
	Potato								
	Tapioca								
	Amorphophallus								
	Colocasia								
	Carrot								
	Beetroot								
	Others (Please specify)								
5.	Other vegetables								
6.	Fruits (Please specify)								
7.	Milk and milk products								
8.	Fish								
9.	Meat								
10.	Egg								

Sl. No.	Food items	Daily	Less than 3 times/ week	More than 3 times/ week	Once a week	Once a fort-night	Once a month	Occa-siona-lly	Never
11.	Oil seeds and nuts								
	Groundnut								
	Gingelly seeds								
	Coconut								
	Others (Please specify)								
12.	Fats and oils								
	Ghee								
	Dalda								
	Oil								
13.	Sugar, Jaggery or honey								
14.	Miscellaneous								
	Masala powder								
	Chilli powder								
	Coriander powder								
	Others (Please specify)								
15.	Bakery items								
16.	Processed foods								

2 a) Culinary practices to save time while cooking

(Please tick /)

Sl. No.	Food items	Pre-cooking overnight	Soaking over-night	Grinding over-night	Cutting and keeping over-night	Frying over-night	Cooking over-night
1.	Cereals						
	Rice						
	Wheat flour						
	Rawa						
	Maida						
	Ragi						
	Others (Please specify)						
2.	Legumes						
	Cowpea						
	Bengalgram						
	Blackgram						
	Red gram						
	Others (Please specify)						

Sl. No.	Food items	Pre-cooking overnight	Soaking over-night	Grinding over-night	Cutting and keeping over-night	Frying over-night	Cooking over-night
3.	Leafy vegetables						
	Amaranthus						
	Drumstick leaves						
	Curry leaves						
	Others (Please specify)						
4.	Roots and tubers						
	Potato						
	Tapioca						
	Amorphophallue						
	Colocasia						
	Carrot						
	Beetroot						
	Others (Please specify)						
5.	Other vegetables						
6.	Fruits (Please specify)						
7.	Milk and milk products						
8.	Fish						
9.	Meat						
10.	Egg						
11.	Miscellaneous (Please specify)						

b) Methods employed for cooking (Please tick /)

Sl. No.	Food items	Stew-ing	Boi-ling	Absor-ption	Stea-ming	Deep fry	Shallow fry	Gri-lling	Ba-king	Press-ure cooking	Other methods
1.	Cereals										
	Rice										
	Wheat flour										
	Rawa										
	Maida										
	Ragi										
	Others (Please specify)										
2.	Legumes										
	Cowpea										
	Bengal gram										
	Black gram										
	Red gram										
	Others (Please specify)										
3.	Leafy vegetables										
	Amaranthus										
	Drumstick leaves										
	Curry leaves										
	Others (Please specify)										

Sl. No.	Food items	Stew-ing	Boi-ling	Absor-ption	Stea-ming	Deep fry	Shallow fry	Gri-lling	Ba-king	Press-ure cooking	Other methods
Others (Please specify)											
3.	Leafy vegetables										
	Amaranthus										
	Drumstick leaves										
	Curry leaves										
	Others (Please specify)										
4.	Roots and tubers										
	Potato										
	Tapioca										
	Amorphophallus										
	Colocasia										
	Carrot										
	Beetroot										
	Others (Please specify)										
5.	Other vegetables										
6.	Fruits (Please specify)										
7.	Milk										
8.	Meat										
9.	Egg										
10.	Fish										
11.	Miscellaneous										

3 a) Daily meal pattern: Dietary recall method

Meal time	Menu-day I	Menu-day II	Menu-day III
Early morning			
Breakfast			
Lunch			
Tea			
Dinner			
Bed-time			

b) Meal serving pattern: (Please tick /)

i) Meals taken together by all the members of the family

ii) Meals taken by head of the family first and then by others

iii) Meals taken by male members of the family first and then by the female members

iv) Meals taken by the children first and then by parents

v) Meals taken by the employed members of the family first

vi) Meals eaten according to the convenience of each member before going out of the house

4 a) Foods prepared for special occasions

Sl.No.	Occasion	Foods prepared	Reasons
1.	Birthdays		
2.	Anniversaries		
3.	Marriage		
4.	Festivals		
5.	Guests		
6.	Any other occasion (Please specify)		

b) Diet during illness and other special conditions

Sl.No.	Condition	Break-fast	Lunch	Dinner	Reason
1.	Children upto 3 years				
2.	Children of 3-6 years				
3.	School going children				
4.	Adolescents/teenagers				
5.	Pregnancy				
6.	Lactation				
7.	Old age				
8.	During illness				
9.	During convalescence				

SECTION C

DETAILS OF THE RESPONDENT

1. Age :

2. Name of occupation:

3. Income/month :

4. Education level :

Employment status of the home-maker

a) i) Full time
ii) Part-time

b) i) Government sector
ii) Private sector

Sl. No.	Type of job	Employment status		
		Permanent	Temporary	Self-employed

2. Physical status of the work
(Please tick /)

i) Sedentary
ii) Moderate
iii) Heavy

3. Length of service
(Please tick /)

i) Less than 4-5 years
ii) Less than 5-10 years
iii) Less than 10-15 years
iv) More than 15 years

4. Do you prefer to be gainfully employed

i) Yes
ii) No

If so, please give reasons:

4. Reasons for working
(In case of more than one reason, please rank your priority)

	I	II	III	IV
i) For economic reasons				
ii) For self satisfaction				
iii) To be independent				
iv) For utilising the time profitably				
v) To have social status				
vi) Opportunity to have more friends				
vii) To escape from domestic dull routines				
viii) To learn more about the society				
ix) Any other (Please specify)				

5. For what purpose is your personal income spent (Please rank according to priority)

	Priority ranking
i) For supplementing common food items	
ii) Clothing	
iii) Travelling expenses	
iv) To improve personal wardrobe	
v) Cosmetics	
vi) Jewellery	
vii) Movies/outings/picnics/ pleasure tours	
viii) Other entertainments	
ix) Education of children	
x) Special needs of children (toys, dress etc.)	
xi) For supporting parents	
xii) For giving private tuition to children	
xiii) For additions to home (furniture etc.)	
xiv) To pay rent, house tax, other bills	
xv) For savings	
xvi) Any other (Please specify)	

6 a) Are you in the habit of keeping household accounts (Please tick /)

i) Yes
ii) No

b) If so, what is your budget pattern

i) Daily
ii) Weekly
iii) Monthly
iv) Half-yearly
v) Yearly

c) Are you in the habit of consolidating the expenditure accounts by the end of every month (Please tick /)

i) Yes
ii) No

7. a) Are you free to spend your income as you like? (Please tick /)

i) Yes
ii) No

b) If no, family member who decides, how your income is to be spent (Please tick /)

i) Husband
ii) Son
iii) In-laws
iv) Parents
v) Any other (Please specify)

8 a) Are you economically secure·

(Please tick /)

i) Yes
ii) No

b) Personal assets if any because of this employment (Please tick /)

i) Yes
ii) No

c) If yes, (Please tick /)

i) Purchased/constructed house
ii) Purchased land
iii) Shares
iv) Bank investments
v) Any other (Please specify)

9. Means of transport to place of work: (Please tick /)

Means of transport	Distance to be travelled				Time taken for travelling			
	Less than 5 kms	5-10 kms	10-20 kms	More than 30 kms	Less than $4\frac{1}{2}$ hr.	$\frac{1}{2}$-1 hr.	1-2 hr.	More than 3 hr.
i) Conveyance arranged by employer								
ii) Walking								
iii) Bus								
iv) Train								
v) Auto								
vi) Two-wheeler								
vii) Car								
viii) Any other (Please specify)								

10. Time spent by the home-maker in her employment (Please tick / for both)

Time spent/day	At place of work	Time spent/day	At home
Less than		Less than	
i) 4-5 hours		i) 1 hour	
ii) 5-8 hours		ii) 1-2 hours	
More than		More than	
iii) 8 hours		iii) 2 hours	
		iv) Nil	

III Details of marital life

1. How many years since you were married (Please tick /)

Less than
i) 5 years
ii) 5-10 years
iii) 10-20 years

More than
iv) 20 years

2. Age, when married

3. Number of children, if any (Please tick /)

i) One
ii) Two
iii) Three
iv) Four
v) More than four

4. Have you had any abortions/ miscarriages? (Please tick /)

i) Yes
ii) No

5. a) Do you have normal deliveries: (Please tick /)

i) Yes
ii) No

b) If no, please indicate

i) Induced delivery
ii) Cesarian
iii) Breech birth
iv) Forceps baby
v) Vaccum delivery
vi) Any other (Please specify)

c) Please furnish details of medical care taken after each delivery

Details of each delivery	Number of days of complete rest	Details of medicine taken if any	
		Details	Duration
Child			
Child			
Child			
Child			

6. Who looks after the children before they reach school going age, when you go to work: (Please tick /)

i) Mother

ii) Mother-in-law

iii) Servant

iv) Older children in the family

v) Any other (Please specify)

C. 1) What are the difficulties you have to face because of your dual role as an employed home-maker.

(Please rank according to priority)

Priority ranking

i) No time for proper care of husband and children

ii) Unable to cope with household work

iii) No proper rest

iv) No leisure

v) Insufficient time to take care of household matters

vi) Mental strain

vii) Physical strain

viii) Responsibilities like looking after aged parents, which is routine otherwise, becomes taxing on leisure time

ix) Any other (Please specify)

2. a) Do other members of the family help to lesson the household work (Please tick /)

i) Yes
ii) No

b) If yes, please furnish more details:

Person	Work done
Father	
Mother	
Husband	
Children	
Others (Please specify)	

3. a) Do you have guests often (Please tick /)

i) Yes
ii) No

b) If so, please indicate number of days in a month, you will have guests:

c) How do you manage the extra work load, when you have guests: (Please tick /)

i) Domestic help
ii) Help of family members
iii) Take leave
iv) Any other (Please specify)

In case of special occasions how do you manage the extra work load (Please tick /)

i) Domestic help
ii) Help of family members
iii) Take leave
iv) Any other (Please specify)

D. 1) What are the labour saving equipments used in your home (Please tick /)

Sl. No.	Equipment used	Frequency of use		
		Daily	Weekly	Occasionally
1.	Refrigerator			
2.	Mixie/Wet grinder			
3.	Washing machine			
4.	Hay-box			
5.	Pressure cooker			
6.	Solar cooker			
7.	Milk cooker			
8.	Bread toaster			
9.	Electric kettle			
10.	Rice cooker			
11.	Immersion coil/water heater			
12.	Geysers			
13.	Electric iron			
14.	Gas stove			
15.	Electric heater			
16.	Electric oven			
17.	Vaccum cleaner			
18.	Vegetable chopper			
19.	Others (Specify)			

2 a) What type of fuel do you use for cooking
(Please tick /)

Sl. No.	Type of fuel
1.	Firewood
2.	Kerosene
3.	Gas
4.	Electricity

b) Who does the main cooking?

c) Who assists in cooking?

d) If so, in what way?

3. a) How many times in a day do you cook
(Please tick /)

i) 2 times
ii) 3 times
iii) 4 times

b) Total time spent for food preparation: including all main meals
(Please tick /)

i) 1 hour
ii) 1-2 hours
iii) 2-3 hours
iv) 3-4 hours
v) 4-5 hours
vi) 5 hours

4. Time spent by the home-maker in her various domestic activities

Sl. No.	Activities	Daily (in hours)		Weekly (in hours)	Monthly (in hours)	Total
		Before going for work	After returning from work			
1.	Personal care					
2.	Cooking					
3.	Sweeping					
4.	Cleaning utensils					
5.	Dusting/wiping					
6.	Washing clothes					
7.	Spring cleaning					
8.	Serving meals					
9.	Shopping					
10.	Teaching children					
11.	Child rearing					
12.	Studying any private courses					
13.	Reading					
14.	Stitching/embroidery/ other needle work					
15.	Watching T.V					
16.	Listening to the radio					
17.	Gardening					
18.	Cinema/other entertainments					
19.	Visiting friends/ relatives					
20.	Entertaining guests					
21.	Other occupations after office, outside home					
22.	Rest, including sleep					
23.	Others (Please specify)					

E. 1) How do you perceive your health status (Please tick /)

i) Poor
ii) Average
iii) Good

2) Do you fall sick (Please tick /)

i) Often
ii) Sometimes
iii) Rarely

3. Nature of health problems, if any

Sl. No.	Health problems	Acute	Mode-rate	Sli-ght	Relief measures adopted, if any
	(a) Physical and clinical				
1.	Handicapped				
2.	Asthama				
3.	Anaemia				
4.	Blood pressure				
5.	Weak eye sight				
6.	Cardiac problems				
7.	Diabetes				
8.	Allergies				
9.	Migraine				
10.	Athritis				
11.	Rheumatism				
12.	Backache				
13.	Ear problems				
14.	Sinus				
15.	Gastric problems				
16.	Over weight				
17.	Under weight				
	(b) Psychological				
18.	Depression				
19.	Anxiety				
20.	Boredom				
21.	Frustration				
22.	Others (Please specify)				

1. Dietary habits of the home-maker

Dietary habits	Yes	No	No.of times	Quantity	Reasons
i) Consuming coffee/ water/other beverages as soon as you get up in the morning					
ii) Consuming snacks in between office hours					
iii) Consuming tea/coffee/ other beverages in between office hours					
iv) Taking heavy snacks after returning from office					
v) Any other (Please specify)					

2. When do you take breakfast:
(Please tick /)

i) Before leaving for work
(Please specify time)

ii) After reaching place of work
(Please specify time)

5. Do you take any of the special nourishing foods given below:

Foods	Yes	No	Time	Reason
i) Complan				
ii) Horlicks				
iii) Proteinx				
iv) Bournvita				
v) Maltova				
vi) Boost				
vii) Viva				
viii) Oats				
ix) Corn flakes				
x) Any other (Please specify)				

6. Are you in the habit of taking any of the following (Please tick /)

i) Vitamin/Mineral tablets

ii) Health tonics

iii) Any other (Please specify)

APPENDIX II (a)

SCHEDULE FOR THREE DAY WEIGHMENT SURVEY

FAMILY DIET SURVEY

1. Serial No :

2. Name of the head of the family :

3. Name of the employed home-maker

4. Age and sex composition of those who have taken the meal

Age	Adult	12-21	9-12	7-9	5-7	3-5	1-3	Below 1	Guests (Age)
M									
F									

Food stuffs	Weight in grams
Cereals	
1. Rice	
2. Wheat flour	
3. Ragi	
4. Maida	
5. Rawa	
6. Others	

Food stuffs	Weight in grams
7. Bengal gram	
8. Black gram	
9. Red gram	
10. Soyabean	
11. Green gram	
12. Others	
13. leafy vegetables	
14. Other vegetables	
Roots and Tubers	
15. Carrot	
16. Onion, big	
17. Beetroot	
18. Potato	
19. Tapioca	
20. Sweet potato	
21. Yam	
22. Others	
Nuts and oil seeds	
23. Cashewnuts	
24. Coconut dry	
25. Coconut fresh	
26. Groundnut	
27. Others	
Fruits	
28. Amla	
29. Apple	
30. Banana ripe	

Food stuffs	Weight in grams
31. Lime and orange	
32. Mango, ripe	
33. Melon, water	
34. Papaya, ripe	
35. Tomato, ripe	
36. Others	
Fish	
37. Fish, fresh	
38. Fish, dry	
39. Prawns	
Other flesh foods	
40. Meat, beef	
41. Chicken	
42. Mutton	
43. Any other	
44. Liver	
45. Egg	
Milk and milk products	
46. Milk	
47. Curd	
48. Butter milk	
49. Skimmed milk	
50. Cheese	
51. Others	

Food stuffs	Weight in grams

Fats and oils

52. Butter
53. Ghee
54. Hydrogenated oil
55. Cooking oil (Specify)

Other food stuffs

56. Biscuit, Sweet
57. Biscuits salt
58. Bread
59. Sugar
60. Jaggery
61. Pappad
62. Sago
63. Alcoholic beverages
64. Sweets
65. Horlicks
66. Maltova
67. Instant foods
68. Processed foods
69. Any other

APPENDIX II (b)

FAMILY AND INDIVIDUAL FOOD CONSUMPTION SURVEY - WEIGHMENT METHOD

Name of the Investigator :

Serial No :

Name of the head of the family :

Address :

Name of the subject :

Date :

Age of the subject :

FOOD CONSUMPTION

Name of the meal	Menu	Weight of a total raw ingredients used by the family (g)	Weight of total cooked food consumed by the family (g)	Amount of cooked food consumed by the family (g)	Raw equivalents used by the individuals (g)
1	2	3	4	5	6
Breakfast					
Lunch					
Tea-time					
Dinner					
Others					

APPENDIX III

COMPUTATION OF ENERGY REQUIREMENTS

1. Energy requirement = Basal metabolism + Activity

2. Daily energy expenditure for rest and activity

		Rate
Sleep and rest	:	1 x BMR
Light activity	:	*1.7 x BMR
Moderate activity	:	*2.5 x BMR
Heavy activity	:	*5 x BMR

Total 24 hrs: energy expenditure =

*ICMR (1958) recommendations.

APPENDIX IV

HAEMOGLOBIN - CYANMETHAEMOGLOBIN METHOD

Principle

Haemoglobin is converted into cyanmethaemoglobin by the addition of potassium cyanide and ferricyanide. The colour of cyanmethaemoglobin is read in a photo electric colorimeter at 540 mm against a standard solution. Since cyanide has the maximum affinity for haemoglobin, this method estimates the total haemoglohin.

Reagent

Drabkins solution: Dissolve 0.05 g of potassium cyanide, 0.2 g of potassium ferricyanide and 1 g of sodium bicarbonate in one litre distilled water.

procedure

20 μ of blood are measured accurately from a haemoglobin pipette and delivered on to a Whatman No.1 filter paper disc. The filter is air dried, labelled and can be stored upto one week. The portion of filter paper containing the blood is cut and dipped in 5 ml Drabkin's solution taken in a test tube. Wait for

30 minutes and mix the contents on a vortex mixture and take the readings.

Construction of standard curve

If the blood drawn from the subject contains haemoglobin 15g/dl after estimation then prepare three reference standards as follows:

1. Reference standard A.

4 ml blood in 1000 ml Drabkin's reagent contains haemoglobin 15g/dl.

2. Reference standard B.

300 ml of reference standard A + 200 ml Drabkins reagent contain haemoglobin concentration of 10g/dl.

3. Reference standard C.

200 ml of reference standard A and 300 ml Drabkins reagent contains a haemoglobin concentration of 7.5g/dl.

Thus we have three reference standards at three levels of haemoglobin concentration. Use 5 ml from each standard whenever haemoglobin estimations are done.

APPENDIX V

STATEMENTS TO ASSESS ATTITUDE AND KNOWLEDGE OF EMPLOYED HOME-MAKERS REGARDING FOOD AND HEALTH

Statements	Strongly agree	Agree	Undecided	Disagree	Strongly disagree
1. Employed home-makers require more quantity of food than her unemployed counterpart					
2. Excess consumption of water during Diarrhoea worsens the situation					
3. Vegetables and fruits provide bulk in the diet					
4. Nutritional status prior to pregnancy has no effect on subsequent foetal growth					
5. Use of excess coconut in the daily diet increases fat consumption					
6. D P T vaccination prevents polio					
7. The traditional Indian habit of eating more rice and less of vegetables and pulses makes a balanced meal					
8. Storing foods in the refrigerator kills microorganisms					

Statements	Strongly agree	Agree	Unde-cided	Disa-gree	Strongly disagree
9. Washing vegetables before cutting instead of washing them after cutting, guarantees better nutritional quality					
10. Fungus infected bread is not harmful					
11. Regular health check up is needed for all					
12. Heavy meals increase the capacity to work					
13. Proper spacing of child births protects mother's health					
14. Instant and other processed foods are very nutritious					
15. Tuberculosis is a contagious disease and it cannot be cured					
16. Potato and tapioca are included in the diet to meet the protein requirements					
17. Frequent attacks of illness and infections impairs health					
18. The red colour of beetroot helps in the production of blood					
19. Regular exercise ensures good health and fitness					
20. Viral infections can be controlled by nutritious food					

FOOD CONSUMPTION AND ENERGY EXPENDITURE PATTERN OF EMPLOYED HOME-MAKERS IN ORGANIZED SECTOR IN TRIVANDRUM

BY

MARIA FLORENCE VARGHESE

Abstract of a THESIS
Submitted in partial fulfilment of the requirements
for the degree
MASTER OF SCIENCE IN FOOD SCIENCE AND NUTRITION
Faculty of Agriculture
Kerala Agricultural University

Department of Home Science
COLLEGE OF AGRICULTURE
Vellayani - Trivandrum

1989

ABSTRACT

A study on the "Food consumption and energy expenditure pattern of the employed home-makers in organised sector in Trivandrum" was conducted to assess the socio-economic, food consumption pattern of the employed home-maker's families and personal details related to the home-makers.

The 200 home-makers surveyed were urban residents of the higher middle class with nuclear families of small size.

To speed up cooking time they used modern methods of cooking besides labour saving gadgets and combinations of cooking fuels. Employment was sought by these women due to "Economic necessity" and "the need for self actualisation". Income of the home-makers was utilized for household related expenses, needs of children and supplementing family diet. The dual role of these home-makers imposed difficulties such as improper care of their families and poor management of household work. Barring minor health problems these home-makers in general were healthy.

The data when statistically analysed indicated a significant correlation between the energy consumed by way of food intake and the energy expended through various physical activities; nutritional status and haemoglobin level in the blood. The energy expenditure in turn was found to have a significant effect on the nutritional status of these women. Attitude was found to be statistically correlated to knowledge on food and health of these home-makers.