# FOOD CONSUMPTION PATTERN OF RURAL HOUSE-HOLDS BELOW POVERTY LINE AS INFLUENCED BY FOOD SUBSIDIES DISTRIBUTED THROUGH FAIR PRICE SHOPS

BY

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**THESIS**

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# DECLARATION

I hereby declare that this thesis entitled "Food consumption pattern of rural households below poverty line as influenced by the food subsidies distributed through fair price shops" is a bonafide record of the 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
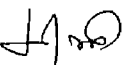
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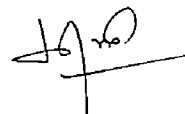
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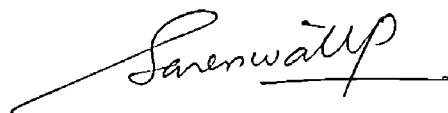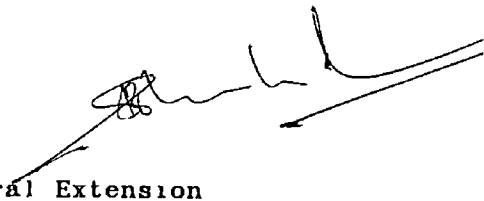

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Smł    PRIYA GOPINATH

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# INTRODUCTION

# 1   INTRODUCTION


The growing concern of different organisations over eradication of the hunger and malnutrition prevalent among low income consumers has generated a sense of urgency about analysing the scope and effectiveness of specific policy measures available for increasing the consumption level of the poor   In this context  the distribution of food grains at subsidised price levels  through fair price shops to ensure supply of key essential food commodities  at reasonable rates to the weaker sections of society so as to increase their health status is worth mentioning   Khanna (1988) opined that public distribution system is an important measure to tackle the inflationary trends  to keep 1price under check  reduce price fluctuation and ensure supply of essential food commodities at reasonable rates   According to Kumar (1979)  many factors  that can affect consumption of the subsidised foods are  knowledge of public  accessibility to fair price shops  supply conditions to and from the shops effective demand for the subsidised foods  house hold income and price differences between the subsidised food and the equivalent in the open market   The taste  preference and

quality of foods distributed through this programme may influence the popularity of the public distribution programme  Compared to many states  the distribution of food grains at subsidised price levels through fair price shops in Kerala is reported to be functioning very efficiently  However influence of this programme  on consumers at household level  is not at present available  Since such information is required to redesign and improve the distribution programme  the present study is attempted

In this study  all possible factors influencing rural households  access to subsidised food distributed through fair price shops were studied  Benefits of this system on consumers below poverty line and the influence of the subsidised foods on their daily food consumption pattern at the house hold level was also assessed

# REVIEW OF LITERATURE

## 2   REVIEW OF LITERATURE


World food problems were critically studied by several international and national agencies like U S Department of Agriculture (1974) Food and Agricultural organization of the United Nations (1974 and 1977) and International Food Policy Research Institute (I F P R I - 1990)   World food problems were studied by these organisations through an integrated approach   examining the inter relationships of technological change   agricultural growth over all economic growth and social welfare   Major findings of these efforts were   that fool problems existed because of slow in growth production   poor transportation and absence of other infrastructural facilities     In this context   public distribution is a step towards economic growth and a step towards achieving some level of   equity in fool consumption

This chapter presents a comprehensive information on

history and development of public distribution system

effect of public distribution system on family consumption
and other fa tors influencing the food consumption pattern of
rural families

**History and development of public distribution system**

Singh (1973) has reported that in India  there was
considerable development of national institutions in the
early 1960 s with the development of National Co-operative
Development Corporation (NCDC)  which was a prelude to Food
Corporation of India (FCI)  set up in 1965   The FCI was to
coordinate both imports and the internal trade and the
legislation which established it   also enabled individual
States in the Union to set up their own Civil Supplies
Department and Corporations (Government of India 1965)

According to Thayi (1990)  one of the major goal
of the national food policy is to safeguard the interest of
consumers  particularly  the more vulnerable section of
society  by making available food grains at reasonable and
uniform prices through the public distribution system
throughout the country and in the process of stabilising open
market prices at reasonable levels

Discussing about the duties of public distribution system Kaushik Basu (1992) has stated that a public distribution system geared to the needs of the vulnerable sections of the community can bring essential livelihood within easy reach of people whose lives may remain otherwise relatively untouched by the progress of real national income. Davis (1982) has stated that the income position of the households is a major factor determining the food expenditure.

Kapur (1985) has studied the functioning of public distribution system and he has observed that so long as the supply situation of food grains in the country remained tight and for meeting the requirements of public distribution system emphasis had to be placed on enlarging the size of procurement.

Referring to the involvement of various agencies Gavan (1979) has reported that it is the joint responsibility of the Central Government state Government and union territory administrations to ensure the smooth functioning of public distribution system.

According to Gavan (1979) the responsibility of the central government is to procure store and transport food materials from purchase point to central godowns while the responsibility of state governments and Union Territory administrations to lift these commodities from central godowns and distribute them to consumers through a net work of fair price shops Gavan (1979) had also reported that commitement under rationing was met partly through domestic procurement and partly through imports

Referring to the history and development of public distribution system Alderman (1982) had reported that rationing was introduced in 1942 He further reported that by 1947 about 54 million in urban areas were covered by statutory rationing and another 19 million by other forms of public distribution system

Thayi (1990) has stated that a fair price shop generally caters to a population of about 2 000 He has further stated that the public distribution system operates in an universal manner and all people irrespective of income are entitled to draw supplies from fair price shops at fixed prices

The number of fair-price shop⁴ in 1987 in India
stood 3 50 lakh of which about 79 per cent of the shops were
in rural areas and one third of them were operated by co-
operatives (Kapur 1985)   Some State Government had added
other items for distribution under the system


According to Gupta (1977) every year the central
government fixes the issue price of wheat and rice which is
uniform through out the country at all the depots of F C I
The report of the study group of public distribution system
for areas other than metropolitan cities (GOI   1986) had
observed that in fixing the retail price of wheat and rice
administrative charges   sales tax and market tax are also
included by few State Governments   Thayi (1990)


The open market prices of rice in the dual market
system have been estimated to be about 20 per cent higher
than those areas where dual market system is absent
(Radhakrishnan and Indrakant 1987)   According to Gupta
(1977) larger distribution through the public distribution
system can help in easing the pressure on the open market
prices   even though its impact remains limited because of the
low quality of grain distributed and   f the section of

population who are not exclusively depended on the public distribution system  Price  income  taste and preference were reported to be different  factors that influence the quantities of food grains distributed through ration shops and this ration rice accounted for the major share of rice consumption by people belonging to low income groups (George 1984)

Khanna (1988) has opined that the public distribution system is an important measure to tackle the inflationary trends ie  to keep prices under check  reduce price fluctuation and ensure supply to key essential commodities like wheat  rice  sugar and edible oil at reasonable rates particularly to the weaker sections of the society thus insulating the vulnerable section of society against rising prices  Roy (1979) was of opinion that aggregate consumption of food grains decreased in India due to increase in price of food commodities  Davis (1982) has also stated that the income position of the households is a major factor determining food expenditure

Public distribution system is reported to give benefit  mostly to the urban areas (Government of India 1988)  open market sales are under taken by Food Corporation

of India (1987) surplus quantities to this available after meeting commitments of public distribution system antipoverty alleviation programmes and supply to tribal area Anderson (1988) has found that reduction in food consumption among the poor is increasingly correlated with income and land

Alderman (1982) has reported that in a rationing system where food grains were issued for a 15 day period many of them may not have enough money to buy the required quantities

According to Kumar (1978) the effectiveness of the public distribution system can be ascertained by determining whether the distribution in different states has been in proportion to the number of poor people in each state Whether the quantities distributed in different states has reached the really poor and by ensuring whether government procurement of supplies through the fair price shops have helped to regulate the increase in open market prices

Effect of public distribution system on family consumption

Ahmed (1979) observed that public distribution system had impact on the consumption le el of low income

households income distribution among producers and consumers in Kerala The study also found that eliminating rationing and movement restrictions led to reduced consumption levels of rice with an over all net loss to the producers and consumers He has further stated that the decline in consumption was maximum for the consumers belonging to low income group

West and Price (1976) found that bonus food stamps significantly increased the value of food consumed The coefficient for the entire sample shows that approximately one-third of the additional income by food stamps is used to purchase additeted food

Alderman and Braun (1984) showed that income transfers through the ration system have a clearly progressive effect on income distribution Households in the upper Egypt and urban areas in general benefit from this part of the system than other households do Food subsidies provide a larger part of the real income of the poor This comes mainly through the subsidy on flour bread and the ration system Together with the grains of rural households (farm producers) from livestock production the overall

effect of subsidies and food price policies on distribution
helps    Schoeheld (1974) examining commercialisation and diet
in 29 African Villages    found that pure subsistence villages
are better fed than villages which perhaps oversell their
subsistence crops or cultivate cash crops at the expense of
subsistence crops

A survey was conducted by Harriss et al  (1984)
among 261 land holding households in four districts of south
India  revealed  that  they  are  dependent  on  rainfed
agriculture    This study relates dependence upon markets of
various sorts for income and net food availability    They had
further stated that the peasantry household had an average of
less than 940 k cal of  food energy per person available each
day from grain obtained by their own production or by
purchase

Biswas and Anderson (1985) have pointed out that
if food aid or food subsidy is to alleviate malnutrition  it
must be increasingly allocated to low income  food deficit
countries and it should reach the poorest segment of the
population especially in rural areas

Musaiger (1982) states that income price limit purchase power high growth rate of population family size and educational level of husband and wife were considered as determinants of food consumption level

Scrimshaw (1985) suggested that the principal ways of providing food and shelter are food subsidies and income supplements  In Egypt subsidised bread is a major factor in preventing severe malnutrition

Garcia and Anderson (1987) showed that pilot food price subsidy scheme in Philippines increased  household income and household consumption by more than nine per cent Musgrove (1988) expressed the clear implication of the nutrition programmes is more important to discriminate or to target beneficiaries correctly in metropolitan cities

Senauer (1990) reviewed the factors concerning household behaviour on food consumption and nutrition and found that income price changes agricultural households agricultural commercialization household economics and education determined the intra household allocation of food and thereby the nutritional status of the population

As studied by Shyu (1980) significant factors affecting food consumption and families were urbanisation education and occupation level of family members family size and variance of food consumption

Davis (1982) stated that the income position of the households is a major factor determining food expenditure To the extent that food assistance programmes such as food stamp programme enhance the income position of low income households food expenditure outlays are increased Also other socio economic factors interact with the income-food expenditure relationship to condition the household nutritional impact

Wowenberg (1970) has shown that each household has different protein and calorie requirement based on the levels of physical activity social requirement and available income He is of the opinion that three factors should be considered together in order to reach an over all assessment of the malnutrition problem

According to Davis (1982) it is only the public distribution system fed from the buffer stocks that has kept the consumer prices within bounds of sanity

According to Naurang Rai (1982) among the states variation in the supplies from the buffer stocks made difference in the per capita availability Mellor (1980) has found that because the poor spend 60 80 per cent of their income on food low prices through subsidies can significantly raise their real income Timmer (1985) noted that food aid was so important to the elimination of poverty because improving purchasing power in the rural economy is the best and fastest way to reduce some of the important inequalities in income distribution

Other factors influencing the food consumption pattern of rural families

A study conducted by Verma (1989) had revealed that the food consumption was closely associated with the economic levels of the family and their land ownership Mudambi (1978) studied the distribution of purchase of different food items in the families and observed that most accepted and expensive foods 1 ke milk and pulses were consumed and the consumption depended on income very rarely Lipton s (1982) review of the concept of poverty focuses on the proportion of their expenditure on to food Ajula et al (1983) have

Mellor (1988) concluded that because the poor spend so much on food (60 to 80 % of total income) low prices through subsides can significantly raise their real incomes Food subsidies account for between 15 and 25 per cent of total income of the poor in a number of countries

## Nutritional status of different age groups of low income groups

According to Swaminathan (1986) nutritional status of an individual is influenced by the intake of essential nutrients Sreenivasan et al (1991) have reported that poor intake of foods and most of the nutritional problems of rural household are traced to their low purchasing power vis-a-vis high and rising prices of essential commodities Nutritional status were significantly associated with the body weight body mass index haemoglobin clinical score energy expenditure and intakes of calories and proteins

Patel (1982) has reported that two third of Asian women were perpetually under nourished and suffering from anaemia

reported that calories were consumed below the body requirement in low income large family labour class in punjab Families with 3 or less number of children were observed to have better intake of calories and protein than the families with 4 or more children as reported by Kumar et al (1976)

Agarwall (1980) had reported that food consumption of rural population was lower than the minimum requirement of physical systenance for healthy living Panickar (1979) reported that adverse circumstances such as unemployment economic distress and natural calamities affect the level of food intake A study conducted among the rural households by Silva et al (1981) indicated that the well being as measured by the quantity of food consumed by the farmers were far from a satisfactory living

Musgrove (1988) had stated that low cost calorie rich foods show more price responsiveness than costlier protein rich foods and suggested that subsidies concentrated on the former are effective in stimulating calorie consumption

food consumption pattern and also on  nutrition   and *th*

health status of the people   Edmumdson (1981) has revealed

that food consumption was conditioned by a wide range of

social and economic variability which was found to atleast

partially neutralise the possible impact of differences in

wealth and income

Panickar (1979) conducted a study among Kutaad

agriculture labourers of Kuttard and found that the diets

were both inadequate and unbalanced   He had also reported

that  the intake of fish and meat together were sufficiently

higher than the intake recommended by the ICMR for an adult

man doing heavy work   A report from Centre for Development

the Studies (1975) had revealed that calorie norm for Kerala

taking in to account the age  size  composition of the states

population  turns out to be 2200 k  cal a day   According to

Laisamma Cheriyan (1992)   the consumption pattern of

labourers were found to be better  in relation to certain

major food articles like cereals and pulses  because of

higher income of the family   According to Dorothy et al

(1980)  the requirements vary with age groups and for active

teenagers three meals a day is not enough to satisfy their

appetite   But Musgrove et al  (1981) reported that most of

adolescents take only three meals a day

Aujla et al (1985) estimated the nutrient intake among 100 families from three villages in Hoshiarpur District Punjab by dividing the households into 3 groups according to family size viz two to four small five to eight medium and more than nine large The results showed that energy intake was 112 107 and 96 per cent of the recommended amounts in small medium and large families respectively

Kumar (1979) assessed that lower income household on an average suffered a deficiency of both calories and protein in terms of norms established by FAO Rice from the ration system contributed one fifth of both calories and protein in the household diet Without ration rice a net decline in calorie and protein supply would occur for these households as they used that portion of consumption expenditure to purchase some tapioca and rice mainly from open market A larger impact on consumption and hence demand resulting from ration rice availability is reflected in the high marginal propensity to consume additional foods from the subsidy income than from other income sources For these households a net calorie increment of between 17 and 53 per cent of ration rice calories consumed was found to occur

Mellor (1988) concluded that because the poor spend so much on food (60 to 80 % of total income) low prices through subsides can significantly raise their real incomes Food subsidies account for between 15 and 26 per cent of total income of the poor in a number of countries

Nutritional status of different age groups of low income groups

According to Swaminathan (1986) nutritional status of an individual is influenced by the intake of essential nutrients Sreenivasan et al (1991) have reported that poor intale of foods and most of the nutritional problems of rural household are traced to their low purchaging power vis-a-vis high and rising prices of essential commodities Nutritional status were significantly associated with the body weight body mass index haemoglobin clinical score energy expenditure and intakes of calories and proteins

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According to Satya Narayana (1979) low productivity in both men and women industrial workers in India had resulted in extremes of BMI while Mathew (1989) had stated that female industrial labourers in India suffered from mild or moderate forms of anemia The result of a survey conducted in Hydrabad by Balakrishnan (1990) had also indicated that majority of adult women were anaemic

Shelty (1990) had reported that a change in body size (Stature and body weight) behavioral life style responses are the pivotal change that occur during an adaptation to long term or chronic energy deficiency (CED)

Surveys conducted by National Nutritional Monitoring Bureau (1982) had shown that girls in the 13 16 years age group consume much less than boys meeting only two thirds of their recommended in take while resulting in low nutritional status

Johnshaw and Hansinger (1988) expressed that food aid is well suited to support labour intensive rural work schemes which create income and assets among the poor provide employment for the victims of the austerity

in grain and also possible economic expansion with minimum

new balance of payments pressure   Such programmes can be

directed at improvements   in the rural infrastructure   The

increase in income among the poor provents the counter

productive destruction of human capital and monetized food

aid can have high income transfer efficiency   By sustaining

employment   Incomes of the poor and food aid would also

maintain demand for local food thus avoiding disincentive

effects


Caste income   type and size of the family

education of the mother   and type of house are reported to be

some of the socio-economic factors which determine the

nutritional and health status of the population


Gupta (1977) reported that the incidence of

siclness was higher in Hindus than in Sikhs and other

religion   He also reported that higher the caste lower the

morbidity


Income showed a direct relationship with the

nutritional status and morbidity of the population (Maya and

Rao 1983) Gulati (1977) and Bhuiya et al  (1986) Geetha and

Devadas (1986) stated that as the monthly income of the family increased there was increase in the percentage of well nourished child population

Increased family size is reported to have adverse effect on the nutritional status of every member of the household A dirt statistical significance was observed between incidence of diseases and family size (Khan et al 1981) similar findings were observed by Geetha and Devadas (1986)

Family size is a mark of social and economic status With social changes more number of nuclear families have emerged which has affected the life style of families both in rural and urban sector Yasoda (1990) has reported that the children from joint families in Hyderabad has better height for age than children from nuclear families Studies of Grenal et al (1973) in Madhya Pradesh revealed similar findings

Devedas et al (1991) reported that the incidence of infectious diseases were higher among family members if the mother were illiterate Similar findings mere reported by Islam et al (1984) in Bangladesh and by Aguillion (1982) in Phillipines

# MATERIALS AND METHODS

# 3  MATERIALS AND METHOD

3 1 This chapter encompasses the various techniques administered in the investigation to ascertain the food consumption pattern of rural households below poverty line as influenced by the food subsidies distributed through fair price shops

## 3 2 Selection of area

From the 12 NES Blocks functioning in Trivandrum District  NES Block Athiyannor was selected at random for the study   Under this Block there are 7 panchayaths with 100 ration shops viz Thiruvallam (17)  Venganoor  (15)  Vizhinjam (14)  Kottukal (14)  Kanjiramkulam (12)  Karimkulam (18) and Athiyannor (10)

Among the seven panchayaths Athiyannor was selected at random for the study   Out of the ten ration shops available in the panchayat  five ration shops were selected at random

## 3 3 Selection of samples

On the basis of their participation in the food subsidy programme implemented through these five ration shops 120 households were divided into 4 groups

Group       Percentage of participation

(in percentage)

| Group | Percentage of participation (in percentage) |
|-------|---------------------------------------------|
| 1 | 76 to 100 |
| 2 | 51 to 75 |
| 3 | 26 to 50 |
| 4 | Less than 25 |

A sub sample of 10 households from the two extreme groups were selected for a detailed study on the influence of the food subsidy programme on the nutritional status of the family members

## 3 4 Plan of action

Information on the contribution of food subsidies on the regular food consumption pattern at the household

level was documented in all the 120 households with reference to their socio economic background   Personal characteristics of the respondents monthly expenditure pattern on basic needs   purchasing pattern and sources of various food articles   rate of utilisation of public distribution system frequency of use of food articles   meal pattern of the family and health profile of the family members were also recorded

An indepth study on the subsample of 20 households was conducted with reference to actual food intake Anthropometric measurements were made and identification of nutritional disorders attempted     All the members of the 20 households were included in the indepth study

3 5 Tools Selected for data collection

An interview schedule suitably structured for the food consumption survey is presented in Appendix I    Data was collected through interview method

The actual food intake and nutritional status of the members of the selected   20 households were ascertained using standard techniques    Since only weighment methods can

give reasonably accurate values of individual dietary intake
[Gore et al (1977) and Tilve (1977)]    the actual food
intake was assessed through food weighment method

From the volume of cooked food and total quantity
of raw foods used by the individual the weight of raw foods
consumed by the individual was calculated

```
Quantity of          Total quantity of      Volume of cooked
raw food             raw foods used     x   food consumed
Consumed for     -   for each item          by an individual
each item by         -  -   -- --- -- ---------------------
an individual               Total volume of cooked  food
```

The nutrients available from the food consumed was
computed using food composition table of ICMR (1981)  The
questionnaire prepared for the weighment survey is presented
in Appendix II (a)

Nutritional status of the members of the households
was    ascertained    through    anthropometric    studies
Anthropometric measurement such as weight and height of all
the family members were taken as per the norms recommended by
Jelliffee (1966)   Since Body Mass Index is considered to be
a good indicator of nutritional status and functional status

depending upon frequency of use    Based on these scores
frequency score for each food group was determined using the
formula suggested by Reaburn et al    (1974)

$$\text{Score} = \frac{R_1 S_1 + R_2 S_2 + R_3 S_3 \quad R_n S_n}{n}$$

$S_n$ - Scale of rating

$R_n$    Percentage of respondents selecting rating

n      maximum scale rating

Estimation of ration subsidy

For each food item supplied through fair price
shops    ration subsidy was worked out    using the formula
(Ahmad    1979)    Quantity of rationed food item X price at
open market for the item    price in the ration shop

By summing up the benefits of all the food items
obtained from    fair price shop for a family    total ration
subsidy was worked out

(Nutritional News 1990) the index was estimated as the ratio of weight (kg) to height$^2$ (m)

Clinical examination is considered to be an important part of nutritional assessment and gives direct information on signs and symptoms of dietary deficiencies prevalent (Swaminathan 1986) and hence this test was also applied with the help of a qualified physician

Bio chemical investigation administered on the members of selected households was estimation of haemoglobin using cyanmethemoglobin method  According to Swaminathan (1986) biochemical measurement is important in assessing the nutritional status of the individual

3 6 Analysis of data

From the data processed  variables such as food use frequency  and ration subsidy were selected for detailed analysis

Frequency of use of various food items among families was assessed by assigning scores ranging from 1 to 8

Relationship between selected Socio-economic variables and accessibility to public distribution System

From the various Socio economic factors few variables such as family size occupational status of the family total monthly income of the family monthly expenditure oh food and food use frequency were selected to determine their influence on accessibility of the households to Public Distribution system Association of the above variables on the accessibility to public distribution system was determined by assessing the rate of utilising public distribution system and total ration subsidy enjoyed by the families

Relationship between the economic status of the families and the benefit obtained from public distribution system

On the basis of the family income the families were grouped into three families with a monthly income upto Rs 250 Rs 251 to 500 and Rs 501 to 700

Influence of family income on the rate of utilisation public distribution system food use frequency

and contribution of ration subsidy in the daily meal were ascertained

## Influence of Public Distribution system on daily consumption pattern

One day meal pattern of the families were collected by the Recall method   For the recall survey a set of standardised vessels which could aid the subjects to recapitulate the amount of foods consumed for each meal in the previous day viz   break fast   tea, lunch   dinner   and in between snacks   were used   Prior to the collection of actual data   the respondents were explained in detail about the procedure of the survey   The quantities of food used by the family in various preparations were recorded in quantities using standard cups   According to Visewara Rao (1975) any single day or two day weighment methods would be an efficient tool as that of 7 days   The contribution of food materials available from fair price shops as constituents in the daily meal and in supplying different nutrients were worked out

Tests of significance

The anthropometric measurement and haemoglobin values were compared with the standard values by student s test

Mean food intake and nutrient intake of the households were compared with Recommended Daily Allowances suggested by Gopalan et al (1981) and Recommended Daily Allowances for nutrients (Indian Council of Medical Research 1991) and bio Chemical values with standard values

Developing Nutritional Status Index

Suppose $x_{ij}$ be the observation corresponding to $j^{th}$ variable for the $i^{th}$ sample $w_j-1/k_j^2$ the weight assigned to the observation corresponding to the $j^{th}$ variable the nutritional status of $j^{th}$ individual is defined as

$$N_1 \quad \xi^k \quad W_1 \quad X_1, \quad 1 \quad 1 \quad 2 \qquad N$$
$$J \quad 1$$

N1     No of respondents

K     No of variables

The nutritional status index of the member of the households were defined in terms of the characters like weight height body mass index clinical score haemoglobin level and head chest and arm circumferences

Height of the for members in each family was recorded and mean height was found for each age group and members coming in each age groups were catagorised as

| Height | Score |
|--------|-------|
| ≤ meanheight   S | 1 |
| meanheight ± SD | 2 |
| ≥ meanheight + SD | 3 |

Weight   Weight of the member in each family was recorded and mean weight was obtained for each age group   The members coming in each age groups were catagorised as

| Weight | Score |
|--------|-------|
| ≤ Mean weight   SD | 1 |
| Mean weight   + SD | 2 |
| ≥ Mean weight +SD | 3 |

Body mass index (weight/height$^2$)

Body mass Index was calculated f r each   l v l   l
a l grouped them as

| Body mass Index Classification | Presumptive d g osi |
|---|---|
| Below 16 | CED Severe |
| 16 17 | CED Moderate |
| 17 1 18 5 | CED mild |
| 18 6  0 | low weight nor al |
| 20 25 | Normal |

–

CED*    Chronic Energy Deficiency

Haemoglobin level   Haemoglobin level for each i d v
calculated ard number of persons under each age & o l
cl sif cl biaod o standard haon glolln lov l l  ll
pre cr ted by Gopaldas (1986) for each g o l  l divi
l v ig less haemoglobin level were categor i cl urder l
class ind those having haemoglobin levels above tlc st       l
cr c categorised under High class

Statistical analysis

Su table statistical anilysis was ca   cl o  ll
processed

# RESULTS AND DISCUSSION

and privileges enjoyed  Scheduled caste and scheduled tribes
and other backward communities are generally considered to l
under previleged sections of the population


        Among 120 households surveyed   only 12 5 per ce t
were from   forward community while 41 6 per cent vore
dentified under scheduled caste and scheduled tribes anl
1ᵣ ⁹ ᵢₗᵣ ᴄₑᵢₜ  of tle households belonging to other lackwu d
communitie3


        Nuclear type families and patriarchal system weri
fo d to be common among all the groups class fiod on tle
bisis of their caste system    Compared to forward
communities   number of members in the housetolds  belorg ig
to scheduled caste and scheduled tribes  in geiei il    ᴄᵢᴄ
f iil to l  noi


        Table 2 presents the sex and age wise distrilutioi
of the family members in the households surveyed   More tlan
25 per cei t of the population in the households survejed were
children   while 73 6 per cent were   adults    The total
denographic profile of the households further revealed tlat
53 5 per cent were   male   nembers and 46 5 per cc t  ᴄ o
female menbers

Table 3   Educational status of the heads of the families and
          respondents


          —  ——  —    —  ———

| Sl No | Educational Level | Head of the family | Respondents |
|---|---|---|---|
| 1 | Illiterate | 35 (29 2) | 15 (12 5) |
| 2 | Can read but cannot write | 23 (19 2) | 26 (21 7) |
| 3 | Can read and write | 40 (33 3) | 42 (35 0) |
| 4 | Primary | 10 (8 3) | 14 (11 7) |
| 5 | Upper primary | 7 (5 8) | 13 (10 8) |
| 6 | High school | 5 (4 2) | 10 (8 3) |
|  | Total | 120 (100) | 120 (100) |

Table 4  Possess on of land  cattle and domest c b rds  by the households

| Possession of land | Total domest c an mals | | | | | Domest c b rds | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Total | N l | Cow | buffalo | Sheep | Total | N l | Hen | Chicken | Duck | Total |
| Less than 5 cents | 52 (43 3) | 52 (43 3) | | | | 52 (43 3) | 48 (40 0) | 3 (2 5) | | 1 (0 8) | 52 (43 3) |
| 6  10 cents | 34 (28 3) | 32 (26 6) | | | 2 | 34 (28 3) | 27 (22 5) | 5 (4 2) | (0 8) | 1 (0 8) | 34 (28 3) |
| 11 20 cents | 15 (12 5) | 14 (1 6) | 1 (0 8) | | | 15 (12 5) | 10 (8 3) | 3 (2 5) | 2 (1 1) | | 5 (12 5) |
| 21 40 cents | 12 (10 0) | 11 (9 2) | | | 1 | 12 (10 0) | 9 (7 5) | 2 (1 1) | 1 (0 8) | | 12 (10 0) |
| 4  60 cents | 7 (5 8) | 4 (3 3) | 1 (0 8) | | 2 | 7 (5 8) | 5 (4 1) | (0 8) | 1 (0 8) | | 7 (5 8) |
| Total | 120 100 0) | 30 (94 2) | 2 (1 7) | | 5 (4 2) | 120 (100 0) | 99 (82 5) | 14 (11 7) | 5 (4 2) | 2 (1 2) | 20 (100 0) |

Table 5   Employment   status of the respondents and heads of the
          families

| Type of Employment | Respondents | Heads of the families |
|---|---|---|
| Government jobs | 3 (2 5) | 2 (1 7) |
| Private Jobs | 1 (0 8) | |
| Labourers | 50 (41 7) | 65 (54 2) |
| Self employed | 56 (46 7) | 49 (40 8) |
| Unemployed | 10 (8 3) | 4 (3 3) |
| Total | 120 (100) | 120 (100) |

Table 3 presents details pertaining to the educational status of the respondents and the heads of the household

As revealed in the table 29 10 per cent of the heads of the families and 12 5 per cent of the respondents were found to be illiterate Further 33 3 per cent of family head and 35 0 per cent respondents were able to read and write and only 4 2 per cent family head and 8 3 per cent respondents had their educational level upto highschool

Table 4 furnishes information about the possession of land and domestic animals and birds by the households Among the households 43 3 per cent were having less than 5 cents of land followed by the households (28 3 per cent) loss having 6 to 10 cents Remaining of 34 1 is 1 11 were possessing 11 to 20 cents (12 5 per cent) 21 to 40 (10 per cent) and 41 to 60 cents (5 8 per cent) of land Households with better land holding were found to possess domestic animals and birds

Table 5 reveals the employment status of the respondents and heads of the families In four households

Table 6  Occupational status of the households

| Details of members employed | Details of households Numbers | Percentage |
|---|---|---|
| One member | 40 0 | 33 3 |
| Two members | 40 0 | 33 3 |
| Three members | 24 0 | 20 0 |
| More than 3 members | 16 0 | 13 4 |
| Total | 120 00 | 100 00 |

Table 7    Distribution of households based on monthly income

| Range of income (Rs) | Income from different sources | | | | | Total Family income (Rs) |
| --- | --- | --- | --- | --- | --- | --- |
| | Wages of respondent | Head of the family | Domestic animal | Domestic birds | Farms | |
| Below 100 | 2(1 7) | 1(0 8) | 82(68 3) | 88(40 0) | 52(43 3) | 1(0 8) |
| 101 200 | 38(31 7) | 2(1 7) | 30(25 00 | 27(22 5) | 45(37 5) | 30(25 0) |
| 201 300 | 28(23 3) | 38(31 7) | 8(6 7) | 5(4 2) | 20(16 7) | 30(25 0) |
| 301 ˄ 0 | 10(8 3) | 28(23 3) | — | — | 3(2 5) | 21(20 0) |
| 401 500 | 14(11 7) | 10(8 3) | — | — | | 10(8 3) |
| 501 600 | 9(7 5) | 14(11 7) | — | — | — | 12(10 0) |
| 601 700 | 17(14 2) | 20(16 7) | — | — | | 8(6 7) |
| 701 800 | 2(1 6) | 7(5 8) | — | — | — | 5(1 1) |
| Total | 120(100) | 120(100) | 120(100) | 120(100) | 120(100) | 120(100) |

Table 8    Frequency of exposure of respondents to different media

| Possession of various items included under different media | Once in a week | Twice in a week | Thrice in a week | Occass ionally | Never | Total |
|---|---|---|---|---|---|---|
| News paper | | | | | | |
| Possession    Nil (100) frequency of reading | 27 (22 5) | 30 (25 0) | 24 (20 0) | 21 (20 0) | 15 (12 5) | 120 (100) |
| Radio | | | | | | |
| Iossession – 31 (25 9) frequency of listening | 21 (17 5) | 46 (38 3) | 35 (29 2) | 14 (11 7) | 4 (3 3) | 120 (100) |
| Television | | | | | | |
| Possession    Nil (100) | | | | | | |
| Frequency of watching | 18 (15 0) | 38 (31 6) | 51 (42 5) | 7 (5 8) | 6 (5 0) | 120 (100) |

Many of the households were found to be familiar with different media  About 25 9 per cent  of the families were possessing radio  but the results presented in the table r  cals that they were highly irregular  in using th s n d a  As far as newspaper and television are concerned  none of the families possessed them   Nearly 42 5 per  cent of the families watched the television and 20 per cent of th  families read newspapers thrice a week   Nearly 5 per cent of the families reported that they had never watched televisior

Th  general profile of the 120 households selected for the stu v was found to be a representative sample from the under previleged section of the low income strata of the society   Variation among the households for different socio economic factors was also insignificant

## 4 2  Factors influencing the access of rural households to subsidised food distribution system

Among  the  various  socio economic  variables presented under 4 1  few variables like family size compositior of households  educational status of the  ead of

head of the families were found to be unemployed The similar situation related to respondents was detected in 10 households Many of the family heads were labourers on daily wages (51 2 per cent) or self employed (10 8 per cent) while in the case of the respondents 88 4 per cent were found to be in similar situation Negligible number of respondents and heads of the families were found to have Government job

Table 6 presents the occupational status of the family member most of the respondents (66 6 per cent) have occupational status ranging from 1 to 2 members in a family where as occupational status with 3 or more than 3 members were 20 per cent and 13 4 pr cent respectively

Table 7 analysis of the total income of the households revealed that many families (53 3 per cent) were in the income range of Rs 201 to 500 Subsidiary occupations like rearing domestic animals and birds and cultivation around the homes were found existing only among households with a monthly income of Rs 400 or less

Frequency of exposure of respondents to different media are presented in Table 8

Table 9    Distribution of households based on their family size

| Particulars Family sizes | Group 1 | Group 2 | Group 3 | Group 4 | Total |
|---|---|---|---|---|---|
| 3 4 members | 25 (20 8) | 14 (11 7) | 16 (13 3) | 14 (11 7) | 69 (57 5) |
| 5 7 Members | 5 (4 2) | 16 (13 3) | 10 (8 3) | 13 (10 8) | 44 (36 7) |
| 8 10 Members | | | 4 (3 3) | 3 (2 5) | 7 (5 8) |
| Total | 30 (25 0) | 30 (25 0) | 30 (25 0) | 30 (25 0) | 120 (100 0) |

Group 1    76 to 100 per cent participation

Group 2    51 to  75 per cent participation

Group 3    26 to  50 per cent participation

Group 4    0 25 per cent participation

Table 10   Distribution of households based on family composition

Distr bution of households

| Age particulars | Group 1 | | | Group 2 | | | Group 3 | | | Group 4 | | | To al |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total | Male | Female | To al | |
| 0 4 | 6 | 8 | 14 | 10 | 9 | 19 | 2 | 2 | 4 | 5 | 4 | 9 | 46 |
| | (1 1) | (1 5) | (2 6) | (1 9) | (1 7) | (3 5) | (0 4) | (0 4) | (0 7) | (0 9) | (0 7) | (1 7) | (8 6) |
| 5 9 | 4 | 1 | 5 | 5 | 2 | 7 | 3 | 3 | 6 | 5 | 5 | 0 | 28 |
| | (u 1) | (0 ) | (0 9) | (0 9) | (0 4) | (1 3) | (0 6) | (0 6) | (1 1) | (0 9) | (0 9) | ( 9) | (5 2) |
| 10 14 | | 3 | 3 | 2 | 2 | 4 | 3 | 3 | 6 | 3 | 3 | 6 | 9 |
| | | (0 6) | (0 6) | (0 4) | (0 4) | (0 7) | (0 6) | (0 6) | ( 1) | (0 6) | (0 6) | ( 1) | (3 5) |
| 15 19 | 7 | 4 | 11 | 5 | 2 | 7 | 1 | 5 | 16 | 7 | 7 | 4 | 48 |
| | (1 3) | (0 7) | (2 1) | (0 9) | (0 4) | (1 3) | (2 1) | (0 9) | (2 9) | (1 3 | 3) | 2 6 | (8 9) |
| Above 19 | 46 | 40 | 86 | 50 | 46 | 96 | 64 | 54 | 18 | 48 | 46 | 94 | 395 |
| | (8 6) | (7 5) | (16 0) | (9 3) | (8 6) | (17 9) | (11 9) | (10 1) | (22 0) | (8 9) | (9 6) | (17 5) | (73 6) |
| Total | 63 | 56 | 119 | 72 | 61 | 133 | 83 | 67 | 150 | 66 | 65 | 133 | 536 |
| | ( 1 7) | (10 4) | (22 3) | (13 4) | (11 3) | (24 9) | (15 4) | (12 5) | (27 9) | (12 3) | (13 2) | (24 9) | (100) |

the family and the espordent occupational status of the family members monthly income monthly food expenditure pattern food use frequency and source of purchase were identified as few variables influencing the purchase of subsidised foods distributed through food subsidy programme The one hundred and twenty households were grouped in to 4 catagories with 76 to 100 per cent participation (group 1) 51 to 75 per cent participation (group 2) 26 to 50 per cent participation (group 3) and less than 25 per cent participation (group 4)

Table 9 presents the distribution of rural households based on their family size Distribution of the households based on their family size revealed that many households (57 5 per cent) were of with 3 to 4 members However there was no variation among the four groups in this distribution

Table 10 presents the composition of the families Total members in 120 households were found to be 536 with 8 6 per cent preschool children 8 8 per cent school going children 8 9 per cent adolescents and 73 6 per cent add lt Adult population was found to be higher in all the four

a    [ s  but    no  ho ds o  o o t      na s at s o the n   o the r  ly and   o o t

| t cu a | G oup P | | | oj 2 | | | P | F | | H | Gr | Total H | R |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Ill t ate | 10 (8 3) | 6 (5 0) | 0 (3 3) | 7 | 9 (3 3) | 21 (7 5) | 5 (5) | 3 (2 5) | 6 (5 0) | 5 (4 2) | (1 | 7 (5 8) | 35 (29 2) | 15 (12 5) |
| 2 Can ead but cannot w t | 0 5 0 | 0 (6 7) | 4 (11 6) | 5 ( 2 | 0 [ | 1 (9 ) | 9 (7 5 | 8 (6 7) | 17 (14 2) | 3 (2 5) | 4 3 3 | 7 (5 8) | 23 (19 2) | 26 (21 7) |
| can ead and wr te | 10 (8 3) | 17 (14 7) | (2 5) | 9 7 5 | 12 ( 0 0) | 13 0 8) | 1 9 2 | 24 (20 0) | 17 (14 2) | 12 (10 0 | 29 (24 2) | 40 (33 3) | 42 (35 0) | |
| 4 P mary | 3 ( 5) | 3 (2 5) | 6 (5 0) | 2 ( 7) | 3 (2 5 | 5 (4 2) | 3 (2 5) | 3 (2 5) | 6 (5 0) | 2 (1 7) | 5 (4 2) | 7 (5 8) | 10 (8 3) | 14 (11 6) |
| Upp pr m | 2 (1 7 | 2 (1 7) | 4 (3 3) | ( ? | 9 3 | 6 (5 0) | 1 (0 8 | (2 5) | 4 (3 3) | 2 (1 7) | 4 3 3) | 6 (5 0) | 7 (5 8) | 13 (10 9) |
| 6 H gh School | 2 (1 7 | 0 8) | 3 (2 5) | 1 0 8) | 4 3 3 | 5 (4 2) | 1 0 8) | 2 ) | 3 (2 5)) | (0 8) | 3 (2 5 | 4 (3 3) | 5 (4 2) | 10 (8 3) |
| 7 Total | 30 (25 0 | 30 ( 5 0) | 60 (50 0) | 3 25 0) | 30 5 0 | 60 (50 0) | 30 ( 0) | 30 (25 0) | 60 (50 0) | 30 (25 0) | 30 (25 ) | 60 (25 0) | 120 (100 0) | 120 (100 0) |

u   Head of the a ly    R  Respondent    T  otal

groups of households   Total family members were more  n
group 3   followed by groups four and two a d lastly & o  l   1


A compariso  of data among the four gi)ijs rev iled
that child populatior was more in the second group followel
by fourth and third groups   Female population was nore in
th  third group followed by fourth and second group
Sin lar results were reported in the earlier st d es
conducted among low income households by Reiu Seshadriratl
(1)93) Money Paul (1993) Jyothi Augustine (1933) ai l
Jayanthakumari (1993)

Table 11 presents the distribution of households
based on tle educational status of the head of the householda
and the respondents   Heads of 29 2 per cent of  families and
respondents of 12 5   per cent families were found to be
illiterate   In all the four groups  heads of the families or
respondents with moderate education (upper primary ard ligh
sc ool) were found to be less in comparison w th  r   i )
level education

Ir 8 3 per cent and (4 2 per cent) of the families
respoidents   aid of the families had education up to I al
scl ool level respectively

Table 12    Distribution of households based on the occupational status of
the family members

| Sl No | Details of employed persons | Distribution of households | | | | |
|---|---|---|---|---|---|---|
| | | Group 1 | Group 2 | Group 3 | Group 4 | Total |
| 1 | One member | 6(5 0) | 5(4 2) | 16(13 3) | 13(10 8) | 40(33 3) |
| 2 | Two members | 11(11 6) | 13(10 8) | 4(3 3) | 9(7 5) | 46(33 3) |
| 3 | Thre members | 5(4 2) | 7(5 8) | 8(6 7) | 4(3 3) | 21(20 0) |
| 1 | More than 3 members | 5(4 12) | 5(4 2) | 2(1 7) | 4(3 3) | 16(13 4) |
| 6 | Total | 30(25 0) | 30(25 0) | 30(25 0) | 30(25 0) | 120(100 0) |

Table 13    Distribution of house holds based on income levels

| Monthly income | Distribution of the households |
|---|---|
| Up to Rs 250 | 49 (40 8) |
| Rs 251 500 | 42 (35 0) |
| Rs 501 750 | 29 (24 2) |

Table 14 Distribution of households based on monthly expenditure pattern (percentage of households)

Monthly expenditure pattern percentage

| | 0 | 11-20% | 21-40 | 41-60% | | |
|---|---|---|---|---|---|---|

1 Food
3  6  8  8  9  0  9  8  3  4  3  4
(2 5) (5 0)  6 7  (6 7)  (5 3  15  5 8  5 0  0 )  3 3  2  3)

2 Clothing
2  4  7  0  8  26  23  20
(1 ) (3 )  5 8) (8 3)  23 3) (21 7)  (19 2) ( 6 7)

3 Education
7  3  9  3  21  27  21  19
(5 8) (2 5)  7 5) (10 8) (17 5) (22 5) (17 5) (15 8)

4 Personal expenditure
30  30  0  30
(25) (25  5  (25)

5 Health
30  30  30  30
(25)  25)  ( 5)  (25)

6 Transport
30  30  0  0
(25) (25  5)

7 Recreation
3  8  9  2  25  21
5  4  6 7  7  22 5) 20 8)  (1s 3  17 5

8 Fuel
0  30  C  30
(25  ( 5)  ( 5

9
8  28  6  5
3  6 7  (  3 3  1 7  3 (12 5

10 Personal expenses on education
0  0  0  5
6  3 3  0)  9 2)

11
4  6  2  2
5)  5 0  3  (10  0 8  3  5 3  8  v s

Total
E  0  3  house

Table 12 presents the distribution of the households based on the occupational status of the family members it was found that two members were employed in 3J 3 per cent of the households while in 13 4 per cent of the households more than 3 members were employed

Table 13 revealed that many households were having an income level up to Rs 250 (40 8 per cent) while 35 per ent of the households were having income lev l b tw ei Rs 2J1 o 500 Only very few families (24 2 per cer l) were having a higher income level between Rs 501 to 700

Table 14 presents the monthly expenditure pattern of the households All the households spent major part of their income (41 to 80 per cent) for food while 1 to 10 per ce of their income was mainly spent for cther xp lit s like clothing education personal expenses health transport and fuel There were a few families who did not incur any expense for clothing education recreation electricity and personal expenses of grown up children

All the families surveyed were unable to meet their expe ses with the income they had Many families (49 per

cent) were in the habit of meeting 21 to 40 per cent of their households expenditure through the loans taken

Data from various developing countries suggest that the poor often spend between 60 and 80 per cent of their income on food (Mellor 1980) Kaur and Mann (1988) conducted studies among low socio economic group families in Punjab and found that in most of the families the major expenditure was for food Similar results were seen in the present study also Quiogue (1970) found that lower the income higher was the percentage of income spent on food Wong et al (1985) and Sreenath et al (1978) also found a direct relation between the amount of family income and expenditure on food

Money spent on clothing and education were found to reduce when the per capita income decreased For majority of the families expenses on recreation personal expenses and rent were negligible and this agrees with the findings of Jyothi Augustine (1993) who conducted studies among women engaged in store breaking

Table 15   Average percentage of income spent by diffe    l
          groups of households

| Iood stuffs | Group 1 | Group 2 | Group 3 | Group 1 |
|---|---|---|---|---|
| Cereal | 82 5 | 83 2 | 85 0 | 88 0 |
| Pulse | 1 0 | 0 5 | 0 ⸯ | 0 3 |
| Green leafy vegetables | 2 0 | 2 0 | 1 0 | 0 5 |
| Other vegetables | 1 5 | 1 4 | 1 5 | 0 ᴜ |
| Roots and tubers | 1 5 | 1 5 | 2 0 | 2 5 |
| Milk | 3 0 | 2 5 | 2 0 | 1 ᴜ |
| Fat and oil | 2 0 | 2 0 | 2 0 | 1 ᴜ |
| Fruits | 0 5 | | | |
| Fish | 2 0 | 2 0 | 2 0 | 1 5 |
| Spices and condiments | 2 0 | 2 9 | ᴌ 0 | 1 9 |
| Sug r and Jaggary | 2 0 | 2 0 | ? 0 | 1 9 |

Table 6    Influence of selected var ables on total food expend t  ᵃ and expend tu e on rat ons

| Related | Expend ture on total ᵢ ᴬ | | | | Expend ture on  at on | | | |
| variables | Group 1 | Group 2 | Gro  ᴿ | Group 4 | G oup 1 | Group 2 | Group 3 | Group ᴬ |
|---|---|---|---|---|---|---|---|---|
| 1 Fam ly size | 0 2809 | 0 l ᵤ | 0 3842 | 0 3145 | 0 7969 | 0 7305 | 0 6833 | 0 6958 |
| 2 Educat c  ᵤf the head of the fam ly | 0    ᴬ | 0 1590 | 0 3166 | 0   034 | 0 1082 | 0 2369 | 0 1065 | 0 1034 |
| 3 Educat on of t respondent | 0 615 | 0 1874 | 0 862 | 0 1512 | 0 0123 | 0 00 9 | 0 0317 | 0 1512 |
| 4 Mo   ly ncome | 0 9943** | 0 9774** | 0 9911** | 0 9852* | 0 2815 | 0 0592 | 0 3415 | 0 0453 |
| 5 Hoᵤ p oduction | 0 0240 | 0 0853 | 0 2116 | 0 0032 | 0 1953 | 0 0470 | 0 3859 | 0 0 83 |
| 6 Soc al pa ticipat on of Respondents | 0 0575 | 0 5069** | 0 1737 | 0 1380 | 0 1110 | 2026 | 0 03 6 | 0   721 |
| Expenditure on food | | | | | 0 2607 | 0 0302 | 0 3472 | 0 0543 |
| Total exenditure | | | | | 0 1074 | 0 0843 | 0 4337 | 0 1175 |

* S gn ficant at 1 per cent  level      ** Significant at 5 per cent level

Table 5 reveals that in all the households the major percentage of food expenditure was towards the purchase of cereals It was also noted that the percentage of income spent for the purchase of cereals was increasing from group 1 (82 5 per cent) to group 4 (88 per cent)

Average percentage of income spent for other foods by all the households reveals that they played a very negligible role in the dietaries The predominance of cereals in their diets also indirectly indicates the significant role played by Public Distribution Programme

A study conducted by Senaver and Young (1984) stated that regularity of beneficiaries for foods subsidy programme have a substantially greater impact on at home food expenditure In the present study such variations were not observed among the different groups of households

Influence of selected variables like family size education level of the head of the family education level of the respondents monthly income home production and social participation of the respondents on total food expenditure and expenditure on ration was statistically tested and the

results are presented in Table 16  As stated earlier there was no glaring variation among the households of the four groups for the above selected variables

Significant association between monthly income and total food expenditure was observed in all the groups  Unlike other groups  in group 4  the significance was at 5 per cent level  As income increases  the expenditure on food was also observed to increase  Social participation of the respondents of  roup 2 was found to have an influence in the total food expenditure of their families

Ration expenditure was significantly influenced by the family size in all the groups  since food ration allotment depends on the family size and its composition  Monthly income of the households in group 4 and home production of the households in group 3 were also found to be significantly associated with the ration expenditure  A negative association between home production and expenditure on ration was also observed probably due to increase in home production  the respondents might have avoided ration purchase

Table 7   Influence of media on total food expenditure and expenditure on ration

| Variables | Total food expenditure | | | | Expenditure on ration | | | |
|---|---|---|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Group | Group 2 | Group 3 | Group 4 |
| Media score | 0 856 | 0 0131 | 0 2918 | 0 0425 | 0 0989 | 0 0584 | 0 1018 | 0 83 |
| Frequency of reading newspaper (score) | 0 3 29 | 0 1892 | 0 2695 | 0 1461 | 0 3962 | 0 3054 | 0 2579 | 0 0938 |
| Possession of Radio (Score) | 0 1954 | 0 135ₚ | 0 0100 | 0 2805 | 0 1549 | 0 722 | 0 0 81 | 0 0982 |
| Frequncy of listening radio | 0 4919 * | 0 2410 | 0 1761 | 0 1250 | 0 2124 | 0 0126 | 0 0371 | 0 1006 |
| Frequency of watching Television | 0 1443 | 0 0361 | 0 1284 | 0 0679 | 0 6763 | 0 812 | 0 0586 | 0 229 |

** Significant at 1 per cent level

* Significant at 5 per cent level

Table 18    Distribution of households based on monthly expend t    fo   r l
            foods agai st (total food) expe d ture

| Percentage of ration expenditure against total food expenditure | Distribution of households | | | | |
|---|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 | Tot l |
| less than 10 | 16 (53 3) | 13 (43 3) | 8 (26 7) | 8 (26 7) | l ( )7  ) |
| 11 to 20 | 7 (2) 3) | 15 (30 0) | 10 (3) 3) | 3 (1 ) 3) | 1 (12 5) |
| 21 to 30 | (16 7) | 2 (6 7) | 8 (26 7) | l (3 3) | 1 (1 ) 3) |
| Above 30 | 2 (6 7) | | 4 (13 3) | 2 (6 7) | 8 (6 7) |
| | 30 (100) | 30 (100) | 30 (100) | 30 (100) | 1 0 (100 ) |

The literacy level in Kerala being very high the media may have an influence on the various intervention and welfare programmes  Scores were given for possess o ur l freq ncy of use of different media like news paper radi aid television  Total score for each household was worked out by summing up the scores obtained for the above factors The highest score which could be obtained for a household was 20 and on the basis of scores obtained the households w ic classified into different groups  Association of this total score  on total food expenditure and ration experditure was ascertained aid the results are presented in lable 17

Frequency of listening to radio was fourd to lave significant negative association with total expenditure and ration experditure in group l and frequency of  atch i tele ision have significant positive associatior witl total ration experditure in the same group

Table 18  Presents the distributior of the households based on their expenditure for ration foods against  their total food expenditure Among the households in the four groups  50 8  per cent of the households were spending upto 20 per cent of their total food expe i lure for purchasing ratior food

Table 19  Distribution of households based on the frequency of use of various foodstuff

| Foodstuff | Groups of house holds | Daily | Thrice in a week | One in a week | Once in fortnight | Occasionally |
|---|---|---|---|---|---|---|
| Rice sugar | 1 | 30 (100 0) | | | | |
| Coconut | 2 | 30 (100 0) | | | | |
| Milk spices | 3 | 30 (100 0) | | | | |
| Condiments and oils | 1 | 30 (100 0) | | | | |
| Wheat | 1 | | 30 (100 0) | | | |
| | 2 | | 15 (50 0) | 15 (50 0) | | |
| | 3 | | 3 (10 0) | 23 (76 7) | 1 (13 3) | |
| | 4 | | 5 (16 7) | 20 (66 6) | 5 (16 7) | |
| Pulses | 1 | | 10 (33 4) | 20 (66 6) | | |
| | 2 | | 5 (16 7) | 15 (50 0) | 5 (16 7) | 5 (16 7) |
| | 3 | | 3 (10 0) | 10 (33 3) | 14 (16 7) | 3 (10 0) |
| | 4 | | 3 (10 0) | 9 (30 0) | 13 (13 3) | (10 7) |
| Vegetable | 1 | 12 (40 0) | 18 (60 0) | | | |
| | 2 | 8 (26 7) | 13 (43 3) | 7 (23 3) | 2 (6 6) | |
| | 3 | 7 (23 3) | 20 (66 3) | 2 (6 6) | 1 (3 3) | |
| | 4 | 6 (2 0) | 18 (60 0) | 3 (10 0) | 2 (6 6) | 1 (3 3) |
| Leafy vegetables | 1 | 20 (66 7) | 5 (16 7) | 5 (16 7) | 6 (2 0) | |
| | 2 | 20 (66 7) | 7 (23 3) | 3 (10 0) | | |
| | 3 | 18 (60 0) | 10 (33 3) | 2 (6 6) | | |
| | 1 | 16 (53 3) | 12 (10 0) | 1 (3 3) | 1 (3 3) | |
| Fruit | 1 | 20 (16 7) | 10 (33 3) | | | |
| | 2 | 10 (33 3) | 10 (33 3) | 10 (33 3) | | |
| | 3 | 15 ( 0 0) | 15 (50 0) | | | |
| | 1 | 25 (83 30) | 5 (16 7) | | | |

A comparison among the four groups revealed that percentage of ration expenditure against total food expenditure was low in group 1 and this was gradually increasing in groups 2  3 and 4

This data indicates that households in group 1 utilised efficiently monetary benefits from the public di tribution system

Table 19  Presents distribution of households based on the frequency of use of various foods  All the four groups of households found to include were rice  sugar  cocorut milk  spices  condiments and oils every day  While vegetables were included thrice in a week and foods like pulses and wheat  once in a week

Wheat was an unfamiliar food for Keralites about three decades ago  Constant availability of this food through public distribution system has gradually changed the food habits of the people  The dietaries of regular beneficiaries of this programme throws light on these lines  All the households under group 1  were found to include wheat as an item in their meal for three days in a week  Frequency of use

of wheat is found to decrease in proportion to their reduced rate of utilisation of the food subsidy programmes Studies conducted by Sanadanan (1983) have also indicated that prolonged implementation of food subsidy programme will change the dietary habits of beneficiary population

Foods such as rice wheat sugare and oil distributed under this programme were insufficient to meet the requirements of the household for a week Hence in addition of food ration these items were purchased from the open market Similar findings were reported by Bhargava (1945)

Frequency of use of various food items among families were assessed by assigning scores ranging from 1 to 8 depending upon frequency of use Based on these scores frequency for each food group was determined On the basis of scores obtained various food items were classified into different groups and details are presented in Table 20 Cereals sugar spices condiments nuts oil and milk were daily included in the diets of all the 120 households Fish was consumed daily by members of households in group 2 Based on the food use frequency score vegetables a n

Table 20 Classification of foods based on food use frequency score

| Classification of food | Score range in percentage | Group 1 | Group 2 | Group 3 | Group 4 |
|---|---|---|---|---|---|
| Daily used foods | 76 100 | Cereal sugar Spices and condimentdnuts oil milk | Cereals sugar spice and condimentsnuts o l milk and fish | Cereals sugar spices and condiments nuts and oil | Cereals sugar spices and condiments nuts and oil |
| Moderately used foods | 51 75 | Vegetables Green leafy vegetables | Vegetables | Vegetables milk fish | Vegetables milk fish |
| Less frequently used foods | 25 50 | Roots and tubers pulses other vegetables | Roots and tubers green leafy vegetables | Green leafy vegetables | Green leafy vegetables |
| Least frequentl used foods | Less than 25 | Egg fruits | Vegetables Pulses | Vegetables roots and tubers pulses | Roots and tubers pulses other vegetables |

Table 21   Distribution of   households based o  food use
frequency score

| Food use frequency scores (in range) | Details of households | | | |
|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 |
| 50 and above | 16 (53 3) | 11 (36 7) | 11 (16 7) | 6 (20 0) |
| 17 19 | 6 (20 0) | 15 (50 0) | 15 (50 0) | 17 (56 7) |
| 44 16 | 8 (26 7) | 4 (13 3) | 7 (3 3) | 7 (23 3) |
| Total | 30 (100) | 30 (100) | 30 (100) | 30 (100) |

m lerately used food for all the households   M lk a d f1sl

vere categor sed 1t the same group   by tle lo sclolds 1

grol s2 ard 3   wh1le for households 1n groul 1   green leafy

vegetables vere also moderately used foods


Green leafy vegetables were less frequently used

foods for tle households 1n groups 2   3 and 4 wh1le root 1 and

tubers had tle same place 1n the d1etar1es of the houselolds

of groups 1 and 2   Pulses were also frequertly usel ty tle

households  n group 1


Least frejuently used foods by the louseholds 1n

groups 2   3 and 4 were vegetables   Roots and tubers a 1d

pulses were least used by the households 1n groul s 3 a d 1

Frequency of use of var1ous foods by the louseholds 1n tle

fo r g oul r v alol tlat tle fo la d1str1l l 1 tlr gl 1l

publ1c d1str1but1on system are the major 1tems of their da1ly

d1etar1es


Scores obta1ned for each food 1tem were sunmed ul

to work out the total food use frequercy score for eacl

household and the d1str1but1on of households based ol tl c

scores obta 1ed arc 1resented 1n Table 21    As re c1lcl

Table 22   Influence of selected variables o  f   l
            frequency scores


| Selected | Distribution of household | | | |
| Variables | Group 1 | Group 2 | Group 3 | ( )p 4 |
|---|---|---|---|---|
| Family size | 0 1116 | 0 2197 | 0 1074 | 0 2178 |
| Educational status of head of the family | 0 2540 | 0 4109 | 0 0011 | 0 3 55 |
| Educational status of respondent | 0 0979 | 0 3226 | 0 130 | 0 1191 |
| Monthly income | 0 1694 | 0 2993 | 0 3837* | 0 3 02 |
| Expenditure on food | 0 1580 | −0 3309 | 0 1227* | 0 3247 |
| Home production score | 0 1184 | 0 0773 | 0 3403 | 0 3192 |
| Social participation of the respondents | 0 3602 | 0 0037 | 0 344 | 0   3 |

* Significant at 1 per cent level

the table higher scores for food use frequency were obtained for the households in group 1 (53 3 per cent) followed by the households in group 3 (46 7 per cent) and group 2 (36 7 per cent) and group 4 (20 per cent)

Association of certain selected variables like family size educational status of the head of the family educational status of the respondent monthly income expenditure of food home production score and social participation were statistically tested with food use frequency score and details are presented in Table 22

As revealed in the table food use frequency score was significantly associated with monthly income of the household and expenditure on foods of the households in group 3

Information collected regarding the sources of purchase of food items available under food subsidy programme revealed that in group 1 higher per cent of households were found to rely more on ration shops for effecting the purchase of rice while among the other groups this trend was absent

Quantity of rice purchased in every household raised from one to twenty five kilogram every month General trend was to purchase rice available from the fair shops completely and for the remaining open markets were utilised For all the households in the 4 groups the rice supplied through fair price shops were insufficient

The observation is in line with the findings of George (1979) who has enumerated from his study that ration rice accounted for a major share of the rice consumption of the consumers belonging to the low income groups Consumers in the low income groups obtained about two thirds of their requirement consumption of rice from the ration shops while consumers belonging to upper income groups and who are less utilising the food subsidy programme obtained only one third of their rice from the ration shops He has further stated that the consumers of the low income strata supplemented their rice ration with tapioca a cereal substitute As the income levels were raised tapioca was replaced by rice from the open market

All the house holds in the four groups were depending on fair price shops alone for effecting the purchase of wheat and sugar Based on their source f

purchase of sugar and oil compared to other groups
households identified under group 1 were relying more on fair
price shops for purchasing oil

Compared to rice lesser quantity of wheat was
purchased by all the house holds This indicates that even
though the food subsidy programme has helped to change the
food habits of the beneficiary population this food item was
accepted mainly because of its cost

Dependence of beneficiary on public distribution
system is high and absence of such welfare programme may
result in the decline in food consumption level among
consumers belonging to low income groups Study conducted by
Ahmed (1979) revealed that eliminating rationing and movement
restrictions led to reduced consumption levels f i l
over all net loss to the producers and consumers Major side
effect of the supply of ration foods is generation of
additional demand for other commodities including no gra
foods and there by increasing food consumption Rationing
has positively aided poor quite successfully since w thout
it the consumption of the poorest would have been lower th n
wt t tho) vere

Table 23   Possession of ration cards by the households

| Year of possess | Group 1 | Group 2 | Group 3 | Group 4 | Total |
|---|---|---|---|---|---|
| 1 5 | 6 (20 0) | 14 (46 7) | 4 (13 3) | 5 (16 7) | 25 (21 2) |
| 6 10 | 8 (26 7) | 10 (33 3) | 16 (53 3) | 19 (63 3) | 53 (11 2) |
| 11 15 | 9 (30 0) | 5 (16 7) | 6 (53 3) | 3 (10 0) | 23 (19 1) |
| 16 20 | 7 (23 3) | 1 (3 3) | 1 (13 3) | 3 (10 0) | 1 (12 ) |
| | 30 (100) | 30 (100) | 30 (100) | 30 (100) | 120 (100) |

4 3 Benefits of public distribution system on consumer

Benefits of Public Distribution System on co sumers wer ascertained by determining the rate of utilisation of the system Rate of utilisation of the system was assessed by eliciting information on possession of ration cards frequency of use of the cards quantity of food subsidies purchased role of ration subsidy in total food expenditure pattern and health status of family members Benefit of this s stem to families of different income level was also ascertained

Among the 120 households surveyed all the families were found to possess ration cards Details pertaining to the period of possession of ration cards are presented in tle table 23 As revealed in the table 24 2 per cent of the families were possessing the cards for the last 5 years While 44 5 per cent of the families had cards for 6 10 years lesser per centage of households (19 2 per cent) wo possessing the cards for 11 15 years and for 16 20 years (12 5 per cent) A comparison among the four groups of the families revealed a direct relationship between years of possession of cards and extent of util sation Reg lar users

Table 24    Frequency of using ration cards by the rural households

| Different groups of household | Once in a week | Once in a fortnight | Once a month | Occassionally | Never | Total |
|---|---|---|---|---|---|---|
| 1 | 30(100 0) | | | | | 30(100) |
| 2 | 15(50 0) | 50(50 0) | | | | 30(100) |
| 3 | 5(16 7) | 20(66 6) | 5(16 7) | | | 30(100) |
| 4 | | 20(66 6) | 5(16 7) | 5(16 7) | | 30(100) |
| Total | 50(41 7) | 55(45 8) | 10(8 3) | 5(4 1) | | 120(100) |

Table 25    Reasons for not using the ration cards regularly

| Reasons | Distribution of the households | | | | Total |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | |
| 1  Lack of money | 10(33 3) | 15(50 0) | 20(66 7) | 15(64 3) |
| 2  No availability on credit | 3(10 0) | 6(20 0) | 5(16 7) | 11(20 0) |
| 3  Card pledging | 2(6 7) | 4(13 3) | 3(10 0) | 3(12 8) |
| 4  Lack of money and no availability of credit | | | 2(6 7) | 2(2 9) |
| 5  Total | 15(21 4) | 25(35 7) | 30(42 8) | 70(100 0) |

of food subsidies were found to possess the ration cards for longer periods   Similar results was observed by sanathanan (1993)   who conducted studies among the rural households in Kannor district

Table 21 details of the frequency of using the ration cards by the different groups of households   All the households identified under group 1 were ᵘˢⁱⁿᵍ cards every reel While 50 per cent of the households in the second group   and 16 7   per cent in the third group were having similar purchasing habits   Households identified under group 4 were not in the habit of purchasing ration regularly   66 6   per cent of the households were using ration cards once in fortnight and 16 7   per cent were using ration cards once in a month   Ration cards were occasionally used by the remaining 16 7   per cent of the households

Reasons attributed for not using this facility regularly are presented in Table 25   All the households in group 1 and 50 per cent in group 2 were regularly purchasing food subsidies   Major reason for using the ration card regularly was reported to be the reduced cost of food materials available   Reasons for not using the cards

Table 26    Persons responsible for purchasing food rati

| Perso s | Details of house holds | | | | [ ! ] |
| respx sible | Group1 | Grou 2 | G ou 3 | Gr u 1 | |
| 1 Head of the family | 10(33 3) | 12(40 0) | 8(26 7) | 6(20 0) | 36(30 0) |
| 2 Respondent | 10(33 3) | 15(50 0) | 12(40 0) | 14(46 7) | 51(12  ) |
| 3 Elder children male | 5(16 7) | 2(6 7) | 5(16 7) | (16 7) | 17(14 2) |
| 4 Elder children female | 5(16 7) | 1(3 3) | 5(16 7) | 5(16 7) | 16(13 1) |
| 5 Total | 30(100) | 30(100) | 30(100) | 30(100) | 120(100) |

Table 77   F equency of t me and d stance taken for pu chas ng

D stance taken by d fre ent g oups of hou enold  (k lometers

| | Group 1 | | | | Group 2 | | | | Group 3 | | | | Group 4 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1/2 | 1/2 | 1 1/2 | 1/2 2 | 1/2 | 1/2 1 | 1 /2 | 1/2 2 | 1/2 | 1/2 1 | 1/2 | / | 1/2 | 2 1 | /2 | /2 2 | Total |
| 6 10 m n | | | | | 5 (16 7) | | 2 (6 7) | | 2 (6 7) | 5 6 7) | 5 (16 7) | | | | | | 14(11 6 |
| 1 20 m n | | | | | 5 16 7) | | 4 (13 3 | 4 3 3) | 3 8) | 3 0 0) | 5 16 7) | | | | | | 9(16 6 |
| 21 30 m n | 10 33 3) | | 1 (3 3) | | | 2 6 7 | | | 2 (16 | | ( 6 7) | 3 (10 0) | | | | | 26 22 0) |
| 31 40 m n | 5 (16 7) | 3 (10 0) | 1 (3 3) | 5 (16 7) | | | | | | 1 (3 3 | 3 (10 0) | 2 (6 7) | | | | | (18 3 |
| 4 50 m n | 5 (16 7) | 2 (6 7 | 2 (16 | | 10 (33 3) | 6 (20 0) | | 2 6 7) | | | | 3 ( 0 0) | | | | | 9 9 |
| 51 60 m n | | 1 3 3) | | | | 3 (10 0) | | 2 (6 7 | 3 | | | | | | | | 0 4 ) |
| otal | 20 66 ) | 5 6 7 | 0 | 2 16 | 5 16 | 16 3 3) | 2 (6 67 | 3 2 5 | 8 5 | 0 | | 5 | 14 ( 1 7 | | | | 0 (u |

H  Pe d or the  e          Respon e t          o al

regularly by the families were mainly due to lack of money (64 3 per cent) lack of credit facility (20 per cent) and pledging of cards (12 9 per cent) Due to lack of money and credit facility 2 9 per cent of the households were not purchasing ration food subsidies Among the four groups of the households these reasons were given mainly by the households identified under groups 3 and 4

Table 26 details the persons responsible for purchasing food rations In all the households head of the family (30 per cent) respondent (42 5 per cent) or children (27 7 per cent) were responsible for purchasing food rations Compared to men women and girl children were more involved in this work This results agrees with the studies of Sanadanan (1993) who conducted studies among the rural household of Kanoor District

Frequency of purchasing food ration was influenced by the time spent at ration shops and distance of ration shops from their houses and details pertaining to this are presented in Table 27

Table 29  Distribution of households based on rate of utilizing public distribution system scores

| Public distribution system scores (in range) | Details of households | | | |
| --- | --- | --- | --- | --- |
| | Group 1 | Group 2 | Group 3 | Group 4 |
| 20 24 | 6(20 0) | 6(20 0) | 3(10 0) | |
| 15 19 | 20(66 7) | 17(56 7) | 16(53 4) | 11(36 7) |
| 10 14 | 4(13 3) | 7(23 3) | 11(36 7) | 19(63 3) |
| Total | 30(100) | 30(100) | 30(100) | 30(100) |

Distance of ration shops from the houses were in the range of 1/2 Km to 2 Kms   The beneficiaries were spending 10 min to 1hr to effect the weekly purchase of food rations   Among the households identified under group 1 many houses 66 7 per cent were located within 1/2 km of ration shops while in group 2   (16 7   per cent) of the households were having this advantage   In groups 3 and 4 26 7 per cent and 11 7   per cent of houses respectively were with in 1/2 km of ration shops   Very few households   16 7 per cent in group 1   2 5 per cent in group 2   4 2 per cent in group 3 and households in group 4 were staying about 2 kms away from the ration shops   An assessment of time spent for effecting the purchase of food rations revealed that 11 7 per cent of the households spent approximately 30 minutes   Much variation among the four groups were noted since 16 6   per cent spend 11 20 minutes 22 5   per cent spend 21 30 minutes 22 5   per cent spend 31 40 and 18 3   per cent spent 31-40 minutes   The remaining 33 3 per cent households spent up to 41 60for this work   Distance and time to be spent for this work might have an influence on their purchase habits

Table 28 presents information on the quantity of cereals (rice and wheat) purchased every month by these

fam lies    Food subsidies such as rice and wheat were
pur hased once in a week   palm oil once in fort night and
sugar once in a month by the families    According to family
size   quantity of food subsidies available were also varying
Among these foods   rice and wheat were the major items
Quantity of food rations available for the households under
public distribution system was in the range of 1 kg to 15 kg
of cereals every month    Only one household was getting nore
than 16kg of cereals through this programme


Among the 120   households   19 2 per cent were
purchasing up to 5 kg of rice while 65 per cent of the
households were purchasing 6 to 10 kilograms of rice    Only
5 8 per cent of the families were getting more than 11 kg of
rice through this welfare programme


Wheat is also found to be an equally popular item
in the dietaries   as rice  Among the   households 6 7 per cent
of the households were purchasing up to 5 kg while 80 per
cent from all the four groups were purchasing 6 to 10 kg
everymonth    Only 12 5 per cent of the households were found
to purchase 11 to 15 kg of wheat    The availability of these
foods to the households was influenced by the regula ity in
utilising this facility

Table 28 Distribution of households based on the quantity of rice and wheat purchased every month

| | Details of households | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Quantity (kg) | Group 1 | | Group 2 | | Group 3 | | Group 4 | | Total | |
| | R | W | R | W | R | W | R | W | R | W |
| Less than 5 | 6 (20 0) | 5 (16 7) | | | 15 (50 0) | (3 3) | 2 (6 7) | 2 (6 7) | 23 ( 9 2) | 8 (6 7) |
| 6 10 | 22 (7 3) | 23 6 7 | 25 (83 3) | 2o (86 7) | 5 (16 7) | 21 (70 0) | 26 (86 0) | 26 (86 0) | 78 (65 0) | 96 (80 0) |
| 11 15 | 6 (6 6) | 2 (6 7) | 5 ( 6 7) | 4 (13 3) | 10 (33 3) | 1 (3 7) | 2 (6 7) | 2 (6 7) | 19 (83 0) | 15 (12 5) |
| 16 20 | | | | | | 1 (3 3) | | | | 1 (0 8 |
| Total | 30 ( 00) | 30 100) | 30 (100) | 30 (100) | 30 (100) | 30 (100) | 30 ( 00) | 30 (100) | 30 00) | 30 00 |

R Rice

W Wheat

All the respondents surveyed had favourable views about the quality and quantity of the foods distributed under the public distribution system even though the influence of food subsidies on their health status was not realised by the beneficiaries  However  these observations supported tle fact that supplying certain food items to the targeted groups at price levels below the cpen market rate  ensured a minimum food consumption standard for those targeted groups  In a study conducted by Bhargava (1945) similar  views were expressed by the respondents about the quality and quantity of food subsidies distributed through fair price shops

Rate of Utilisation of Public Distribution System was worked out by allotting scores for possession of ration cards  frequency of use  and quantity of ration foods purchased  The highest score which could be obtained for each household was 21  and on the basis of scores obtained for 120 households they were classified into different groups  Details pertaining to this are presented in Table 29

As revealed in the table  nore households in g oup 1 (86 7) obtained  higher range scores when conpared to otier

Table 30   Influence of selected variables on ___ ___ distribution system

| Selected variables | Different group of households | | | |
|---|---|---|---|---|
| | Group 1 | Group 2 | Group 3 | Group 4 |
| 1  Family size | 0 0011 | 0 0021 | 0 0622 | 0 0 ( ) |
| 2  Educational level of head of the family | 0 0989 | 0 0121 | 0 0210 | ) 012 |
| 3  Educational level of respondent | 0 2625 | 0 1182 | 0 0513 | 0 2122 |
| 4  Monthly income | 0 1110 | 0 0745 | 0 0307 | 0 1116 |
| 5  Expenditure on food | 0 1063 | 0 0738 | 0 006 | 0 1313 |
| 6  Total household expenditure | 0 1853 | 0 1548 | 0 1572 | 0 0006 |

Table 31 Influence of selected variables on rat n t it ly

| Selected variables | Men values obtain 1 for s 1 t l v r tl s | | | |
| | Gr u l | Gro 2 | Gr 3 | C t 1 |
|---|---|---|---|---|
| Average household size | 4 33 | 4 33 | 1 77 | 4 20 |
| Average number of employed persons in a family | 2 | 1 | t | 2 |
| Average food use frequency score | 19 20 | 18 93 | 48 13 | 18 03 |
| Total food expenditure | 111 16 | 350 90 | 269 50 | 20C 90 |
| Ration subsidy/month (Rs in range) | 23 75<br>67 02 | 13 92<br>31 28 | 22 99<br>68 43 | 1C 21<br>71 97 |
| Ration subsidy/ household/month(Rs) | 41 62 | 37 24 | 34 11 | 23 34 |
| Average household income percentage of ration subsidy on total income of the family | 8 82 | 9 18 | 8 75 | 10 30 |
| Percentage of ration subsidy on total food expenditure | 10 12 | 10 61 | 12 65 | 12 31 |

groups viz  group 2 (76 7) group 3 (63 4) and group 4 (36 7)

Influence  of selected variables like family size
education of the head of the family  educational level of tle
respondents  monthly income  expenditure on food and total
household expenditures on the public distribution system
utilisation  was statistically ascertained and the details
are presented in Table 30  As revealed in the table there was
no significant association between public distribution system
scores and the variables selected

Benefits of the public distribution system was
assessed by determining role of ration subsidy on the food
expenditure pattern  Ration subsidy is the monetary benefit
obtained for a household by the utilization of public
distribution system  Since supplying certain food items at
price levels below the open market rates target groups helps
to ensure a minimum food consumption standard for those
groups

Table 31 presents details pertaining to the
meanvalues obtained for ration subsidy permonth  per
household  monthly income  family size  total  fo d

expenditure number of persons employed in a household and food use frequency scores

As revealed in the table average family size of house holds identified under groups 1 and 2 were 4 3 while in the case of group 4 it was 4 20 Households identified under group 3 were of larger size with an average of 4 8

Irrespective of their family ize households urder group 1 were getting an average monthly benefit of Rs 41 6 as ration suusidy followed followed by group 2 (Rs 37 2) group 3 (Rs 34 11) and lastly group 4 (25 54) In other words there was steady decrease in the amount spent for buying ration from group 1 to group 4 Range of ration subsidy/month also expressed a varying trend among the groups with wider range for group 3 and 4 Average nonthly income of the households identified under group was Rs 471 83 while a steady decrease was noted in group 2 (392 60) group 3 (389 70) and group 4 (241 16) Percentage of ration subsidy on total income of the family was steady increasing form 8 82 in group 1 to 10 5 in group 1

Total food expenditure for the house lolls in tle four groups were from 206 9 (group 4) to 411 2 (group 1) The average amount spent for buying ration in a month was decreasing from Rs 41 6 (group1) to 25 5 (group 4) However percentage of the amount spent for buying ration on total food expenditure was increasing from group (10 1) to group 4(12 3) The households were observed to spend 80 percent of their income on food and low prices through subsidies could significantly raise their real incomes According to Mellor (1988) food subsidies accounted for poor sepnt between 15 and 25 percent of the total income of the poor However surveys conducted by Anderson (1988) had indicated that reductions in food consumption by the poor were inversely correlated with income level The average number of person employed in a household identified under groups 1 and 4 were 2 while in case of groups 2 and 3 it was 1 This factor may not have influence on ration subsidy of each household

Total food use frequency score for the households in the four groups were 49 2 (group 1) 48 8 (group 2) 48 1 (group 3) and 48 0 (group 4) The increase in rations was found to be directly propotional to the mean food use frequency score obtained by the households in each group

Table 32  Distribution of households of different income level based on
years of possession of ration cards

| Groups of different income level | Years of possession of ration cards | | | | |
|---|---|---|---|---|---|
| | 1 5 | 6 10 | 11 15 | 16 20 | Total |
| Up to Rs 250 (12) | 15(12 5) | 18(15 0) | 1(0 8) | 5(4 2) | 12(8 3) |
| Rs 251 500 (19) | 10(8 3) | 17(11 7) | 12(10 0) | 10(8 3) | 19(10 8) |
| Rs 501 750 (29) | 4(3 3) | 18(15 0) | 7(5 8) | | 29(24 2) |
| Total | 29(21 2) | 53(44 2) | 23(19 2) | 15(12 5) | 120(100) |

Table 33  Distribution of households based on the frequency of using ration cards

| Groups of different income level | Once in a week | Once in fortnight | Once in a month | Occasionally | N or Total |
|---|---|---|---|---|---|
| 1  Up to Rs  250  (12) | 11(11 7) | 25(20 8) | 2(1 7) | 1(0 8) | 12(3  0) |
| 2  2o1  00  (4)) | 17(11 2) | 20(16 7) | 8(6 7) | 4(3 3) | 1)(1) 8) |
| 3  o01 750  (29) | 19(15 8) | 10(8 3) | | | 29(21 2) |
| Total | 50(41 7) | 55(45 8) | 10(8 3) | 5(4 2) | 120(100) |

Public distribution system is a step towards achieving some level of equity in food consumption by making available food grains to the weaker and vulnerable sections of the society at subsidised rates and thus insulating them against rising prices

Public distribution system is also reported to be an intervention programme meant for the welfare of the poorest of poor   Data pertaining to this collected in the study was reclassified among the house holds   divided into three groups   based on their monthly income

Table 32 presents the distribution of households of different income levels   based on years of possession of ration cards   Higher percentage of households belonging to lower income group were not found to possess ration cards for long periods

Table 33 presents the frequency of using ration cards by the rural households based on their income level 15 8 per cent of the households coming under the income level o  Rs   501 to 750 used ration cards once in a   week and 11 7 per cent and 14 2 per cent of the households in the income

Table 31  Distribution of households based on the quantity of r
and wheat purchased every month from fair price shop

(in kilograms)

| Groups of different income levels | Less than 5 | | 6 10 | | 11 15 | | 16 20 | |
|---|---|---|---|---|---|---|---|---|
| | R | W | R | W | R | W | R | W |
| Up to Rs 250 | 23 (19 2) | 8 (6 7) | 18 (75 0) | 34 (28 3) | 11 (0 8) | | — | |
| 251 500 | | | 38 (31 7) | 10 (33 3) | 11 (9 2) | 9 (7 5) | | |
| 501 750 | | | 22 (18 3) | 22 (18 3) | 7 (5 8) | 6 (5 0) | | |
| Total | 23 (19 2) | 8 (6 7) | 78 (65 0) | 96 (80 0) | 19 (15 8) | 15 (12 5) | 1 (0 8) | |

R   Rice

W   Wheat

Table 35  Mean percentage of ration expenditure towards f l
expenditure

| | Distribution of house holds | | | |
|---|---|---|---|---|
| Mean percentage of ration expenditure | Up to Rs 250 | Rs 251 500 | Rs 501 750 | Total |
| Less than 10 | 3(2 6) | 20(16 7) | 22(18 3) | 15(37 5) |
| 11 20 | 17(11 2) | 27(22 5) | 7(5 8) | 51(12 5) |
| 21 30 | 11(11 7) | 2(1 7) | | 16(13 3) |
| Above 30 | 8(6 7) | | | 8(6 7) |
| Total | 42(35 0) | 49(40 8) | 29(24 2) | 120(100 0) |
| Correlation value (r) | ( 0 8987)** | ( 0 0302) | ( 0 3972)** | ( 0 0513) |

**    Significant at 1 per cent level

level of Rs 251 to 500 and below Rs 250 respectively used
ration cards once in a week


Table 31 presents the quantity of rice and wheat
purchased by the rural households once in a month
from fair price shop In all the three income level of
households more quantity of rice and wheat purchased was in
the range of 6 10 kilograms Households with better income
were in the habit of purchaising more cereals


Table 35 reveals the mean percentage of ration
expenditure to actual expenditure incurred by households in
each group It was found that 37 5 per cent of households
from all the three groups were in the habit of spending less
than 10 per cent of the total expenditure for ration
purchasing While 6 7 per cent households spent more than
30 per cent Among the three groups of the households first
group were spending more than 30 per cent (6 7 per cent)
While all the households identified under groups 3 w ie
spending only up to 20 per cent of the total food expenditure
for purchasing food subsidies

Table 36  Influence of monthly income on public distribution system

| Public distribution system scores | Income up to Rs 250 | Avg score | Rs 251 500 | Avg score | Rs 501 700 | Avg score |
|---|---|---|---|---|---|---|
| 20 10 | 1 | 28 | 6 | 32 | 8 | 3 |
| 15 19 | 22 | 16 | 25 | 17 | 15 | 18 |
| 10 11 | 6 | 12 | 18 | 13 | 6 | 13 |
| Average score | 10 7 | | 16 3 | | 9 7 | |
| Correlation vlaue (r) | (0 110) | | ( 0 0745) | | ( 0 0307) | |

Association between ration subsidy and food expenditure was tested by administering correlation and t as found that the amount spent for purchase of ration was significantly associated with food expenditure of the households in the first (r 0 8987) and third groups (r 0 397)

Public distribution system cores were worked out by summing up the scores alloted for buying food subsidies The highest scores were obtained for more households with higher income The average scores obtained for the rural households in the three groups in different ranges are given in parantheses Families with better income were found to have higher public distribution system score

Table 36 presents the influence of monthly income on public distribution system score About 18 3 per cent in the first group 23 8 per cent in the second groups and 12 5 per cent in the fourth group had public distribution system score between 15-19

Influence of monthly on public distribution system score was statistically tested by administering correlation

Table 37 Influence of ration subsidy ... distribution ...

| Rupees spent for buying ratio | Different groups of income level Rupees upto | | |
|---|---|---|---|
| | 250 | 251 500 | 501 700 |
| Less than Rs 15 | 1(0 8) | | |
| 16 30 | 29(20 0) | 22(18 3) | 13(10 8) |
| 31 45 | 12(10 0) | 20(16 7) | 10(8 3) |
| 46 60 | 3(2 5 ) | 6(5 0) | 5(4 6) |
| 61 70 | 2(1 7) | 1(0 8) | 1(0 8) |
| Total | 42(35 0) | 49(40 8) | 29(21 2) |
| Correlation value (r) | ( 0 1853) | (-0 1518) | (0 1572) |

test and was found that monthly income of the households has positively influenced to public distribution system score in the first group (0 1110)

Table 37 presents the score obtained by the families classified on the basis of ration subsidies the distribution of the families were higher in the group spent Rs 10 to 45 as ration subsidies

Correlation between ration subsidy and public distribution system was statistically tested and was found that there was significant correlation between these two variable only in the third group (0 1572)

Table 38   Influence of subsidised food on daily food consumption
of the four groups of households

| Diff Age Groups | Cereals 1 | 2 | 3 | 4 | Fats & Oil 1 | 2 | 3 | 4 | Sugar 1 | 2 | 3 | 4 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adult Male | 498 | 474 | 453 | 450 | 20 | 17 | 15 | 12 | 25 | 20 8 | 15 | 12 |
| RDA | 670 | | | | 35 | | | | 60 | | | |
| %RDA met | 74 3 | 70 7 | 67 6 | 67 1 | 57 1 | 48 5 | 42 8 | 34 2 | 41 6 | 34 6 | 2ᶠ | 20 |
| | | | | | | | | | | | | |
| Adult Femal | 360 | 352 | 348 | 332 | 18 | 16 | 13 | 10 | 20 | 15 4 | 13 | 12 2 |
| RDA | 440 | | | | 25 | | | | 60 | | | |
| %RDAmet | 81 8 | 80 | 79 | 75 | 72 | 64 | 52 | 40 | 33 3 | 25 6 | 21 6 | 20 3 |
| | | | | | | | | | | | | |
| Adolescent male | 340 | 321 | 318 | 310 | 14 | 11 | 9 3 | 7 5 | 14 | 12 8 | 11 4 | 10 |
| RDA | 430 | | | | 30 | | | | 30 | | | |
| %RDAmet | 79 | 71 3 | 70 6 | 68 8 | 46 6 | 36 6 | 31 | 25 | 46 6 | 42 6 | 38 | 33 3 |
| | | | | | | | | | | | | |
| Adolescent Female | 290 | 271 | 263 | 252 | 13 | 9 8 | 7 7 | 5 4 | 13 | 12 1 | 11 | 10 4 |
| RDA | 350 | | | | 30 | | | | 30 | | | |
| %RDmet | 82 8 | 77 4 | 75 1 | 72 0 | 43 3 | 32 6 | 25 6 | 18 | 43 3 | 40 3 | 36 6 | 31 6 |
| | | | | | | | | | | | | |
| Children Male | 272 | 263 | 254 | 238 | 12 | 10 4 | 9 3 | 8 0 | 12 | 11 8 | 11 3 | 11 |
| RDA | 320 | | | | 35 | | | | 50 | | | |
| %RDAmet | 85 | 82 1 | 79 3 | 74 3 | 6 | 29 7 | 26 5 | 22 8 | 40 | 39 3 | 37 6 | 36 6 |
| | | | | | | | | | | | | |
| Children Female | 230 | 270 | 245 | 220 | 10 | 9 4 | 8 6 | 7 0 | 13 | 12 7 | 11 4 | 10 8 |
| RDA | 320 | | | | 35 | | | | 30 | | | |
| %RDA met | 71 8 | 84 3 | 76 5 | 68 7 | 5 | 26 8 | 24 5 | 20 | 43 3 | 42 3 | 38 | 36 |
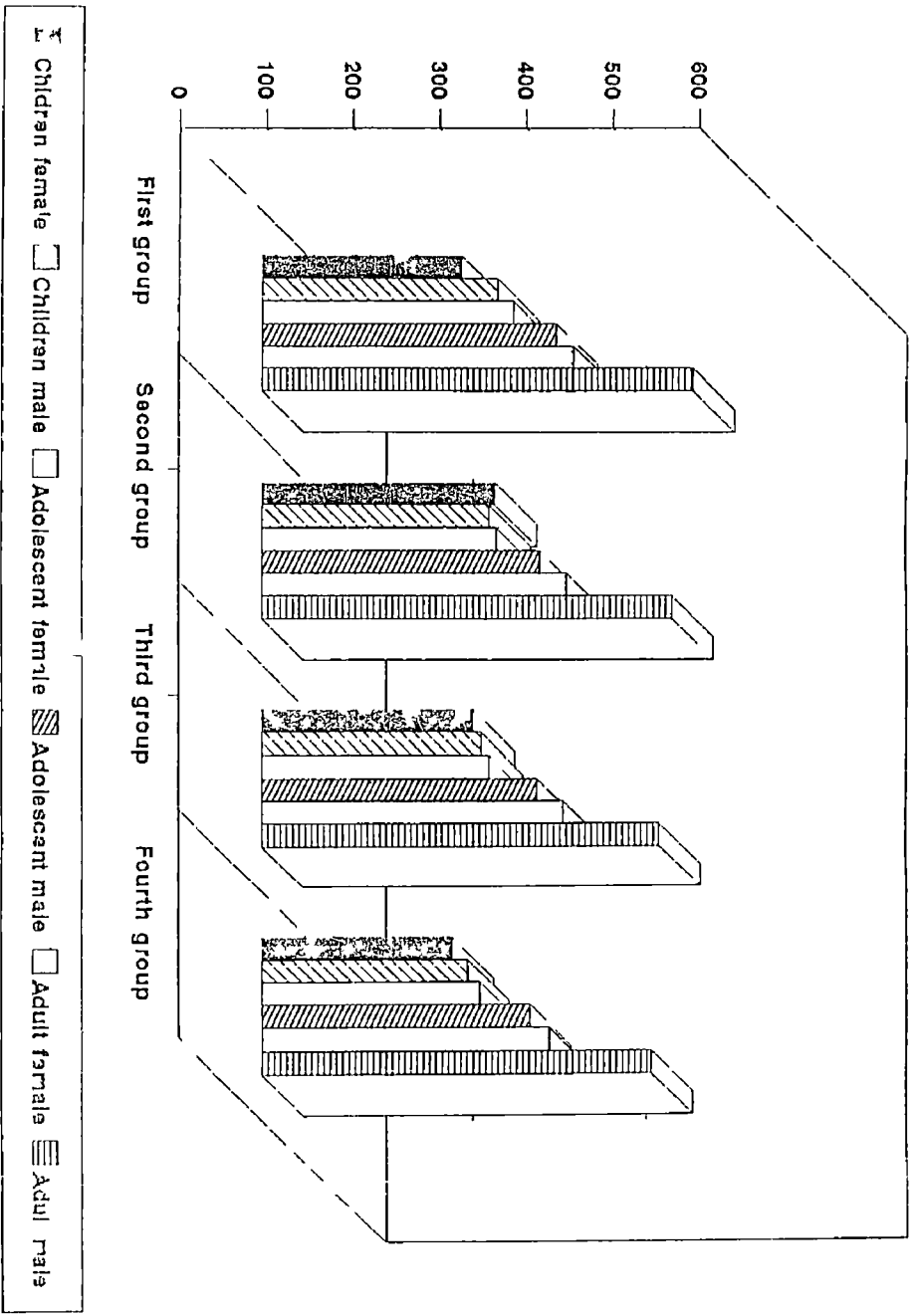
Fig. 1. Influence of daily food consumption
and amount are 5 cars of rice in
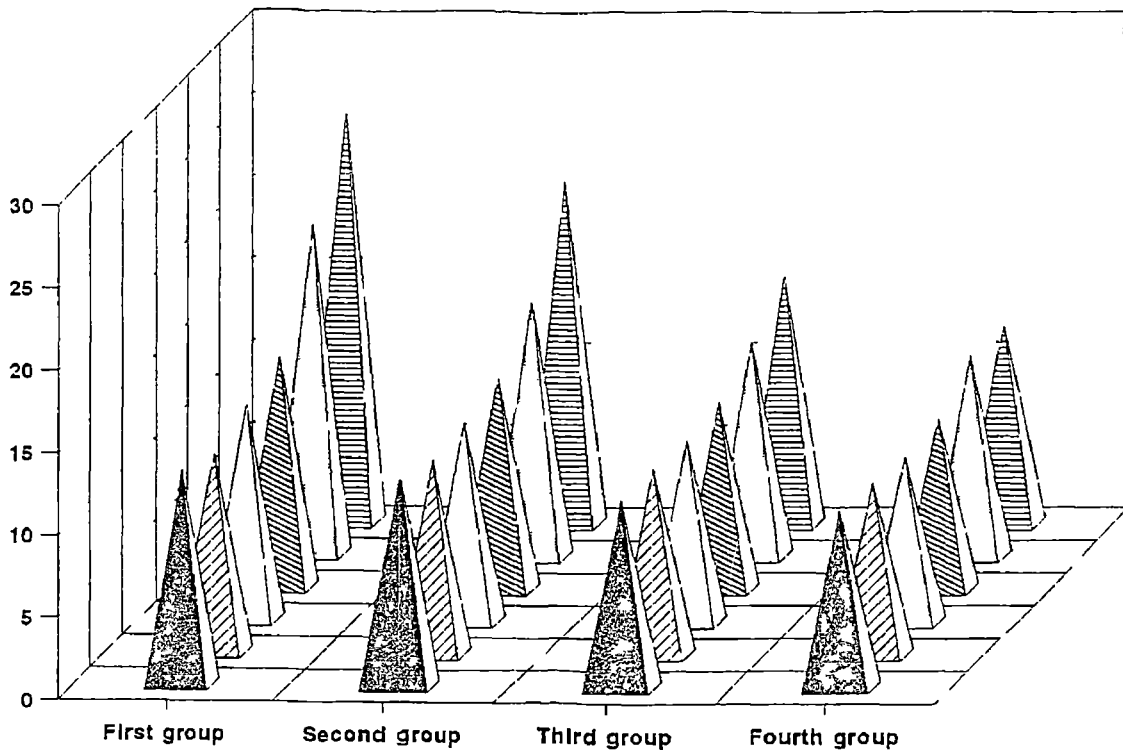
Children female ☐ Children male ☐ Adolescent female ▨ Adolescent male ☐ Adult female ☰ Adult male

30

25

20

15

10

5

0

First group    Second group    Third group    Fourth group

△ Children female  △ Children male  △ Adolescent female  △ Adolescent male  △ Adult female  △ Adult male

Fig. 2. Influence of sugar on daily food consumption
of four different groups of house holds
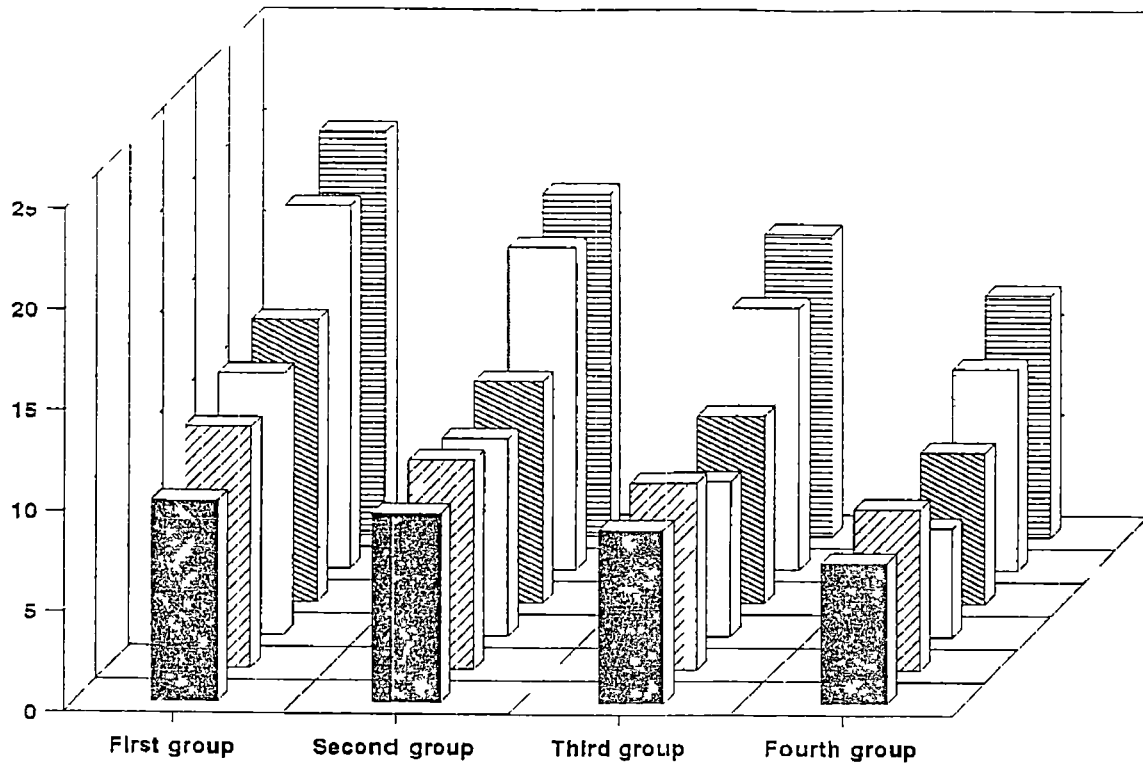
Fig. 3. Influence of oil on daily food consumption
of four different groups of house holds

Table   39 Mean he ght and we ght of fam ly members of d fferent
group

| Particulars | | Hе q t | | | | hе gh | | | |
|---|---|---|---|---|---|---|---|---|---|
| | Tota No | G | G | G3 | G4 | G1 | G2 | G | G4 |
| 1 Adult male | 09 | 1 6 7 (47 | 178 5 (50) | 17? 5 64) | 170 3 (48) | o8 9 (47) | 63 5 50) | 62 9 (o4) | 60 48 |
| sta dard | | 177 | | | | 6 | | | |
| def cit | | 0 17 | 0 85 | ? 54 | 3 79 | 65 | 2 | 3 38 | 7 ?3 |
| 2 Adult males | 18o | 15 8 40) | 158 2 (46) | 1 17 54) | 153 6 (46) | 61 9 (40) | 56 7 46 | 48 7 59) | 41 9 4o |
| Standard | | 150 8 | | | | 50 | | | |
| def c t | | | | | | | | 6 | o | 16 |
| 3 Adolescent ma e 3 | | 159 ? 7 | 1o0 8 (5) | 162 11 | 155 4 (7 | 49 o (7) | 49 5 | 56 11 | 51 |
| Standard | | 150 | | | | 47 3 | | | |
| def c t | | | | | | | | | |
| 4 Adole cent female 18 | | | | | | | | | |
| | | 157 ? 4 | 156 (?) | 15 3 5 | 144 8 (7) | 45 (4) | 48 ( ) | 44 8 (5) | 4 8 7 |
| Standa d | | 147 | | | | 48 7 | | | |
| %defic | | | | | | 7 5 | 1 4 | 3 9 | 2 |
| 5 h ldren male | 48 | 1 1 5 (180 | 134 7 ( o) | 1?7 7) | 131 3 (10) | ?7 (18) | ?6 5 (18) | 1 5 (7 | ?8 ? 1 |
| Sta da d | | 13 7 | | | | 1 4 | | | |
| %def c t | | | 1 67 | 7 ?9 | 4 16 | 17 8? | 15 6 | ___ | 10 19 |
| 6 Ch ldren femme | 45 | 1?8 1 (?0) | 11o 8 15) | 128 1 7) | 1 5 7 (3) | 30 (20) | 20 5 1 | 3 6 (7 | 27 |
| Standard | | 138 3 | | | | o 5 | | | |
| %def c | | 7 o7 | 7 7 | 7 37 | 9 11 | 7 69 | 9 ? | 27 3 | 1 |

Number  n paranthes s  n column (1   ndicate  sample size

61   Group

6    G oup2

G3   G oup3

G4   Group4

4 4    Influence   of   subsidised  foods   on   their   laily  f(  l
        consumption   Pattern and health status

        Influence of the subsidised foods on the di ly food
consumption   of   the   households   identified   under   foui
differert groups was acertained through recall method

        As revealed in the Table 38  the percentag^ of   RDA
met for all the food items were more in group 1 and least   ir
gioup 4 for different age groups (71 8 to 85 poi cent)

        Fig  1 3 presents the influence of subsidised foo ls
like rice  sugar  oil on their daily food consumption pitteir
and health status of 4 different households

        Health  profile  of the members of   the   househol ls
were   ascertained by determining anthropometric  measurements
such  as  height and weight for all the members in  the  four
groups  of  households   From this  data  mean  leigl ts  and
weights and percentage deficit for each age group were worl ed
out ir comparison with standard values (NCIIS st indards  Gopal
Das — 1986)

        Table 39 presents data on mean height ind weigl l of
family members of households belonging to different grot s

        A  compai ison  of mean height and weight  of  al ll
males  in the four groups of the households revealed tl at   ii
all tl e gi oups  mean height was below standard  wl ile oi ly li

group 1 the average weight was above the standard weight recommended Percentage deficit in the height and the weight of the 2 31 to 7 23 adult males of the four groups were in the range of 0 17 to 3 79 with highest value in group 4 In the case of adult females mean height of the women in the four group were above standard recomm ded while mean weights of the women in groups 3 and 4 were below normal weight Percentage deficit in the weights of gro s 3 and 4 were in the range of 2 60 and 6 2 respectively In the cas of adolescent male mean heights and weights w above the standard recommended Mean heights f adolescent female in group 4 were below standard while data pertain g to weights revealed deficiency in all the four groups Mean heights of children (male) in group 1 and mean weight of the children in group 3 were above the standard recomm ded While in the case of the children (female) mean heights and weights in all the groups were below standard Per e t age deficit in the heights of the children (fe ale) of the four groups of households were in the range of 7 37 to 9 11 with a steady increase from group 1 to group 4 (except in group 3) In the case of weight of children (fe ale) percentage of deficit was in the range of 7 69 in the first group increasing to 29 2 in the second group Compared to

| F M I (Range) | TABLE 40 B M I of adult males of different groups of Pulses Different Groups | | | | |
|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | Total |
| 1 Below 16 | | — | — | — | — |
| 2 16 17 | | — | — | — | — |
| 3 17 1 18 5 | | | — | — | |
| 4 18 8 20 | 1 | | | | 1(0 5) |
| 5 20 2⌐ | 46 | ⌐0 | 64 | 48 | 09(99 5) |
| | ( _ 5) | (_ɔ 9) | ( ɔ0 6) | (2_ 9) | _09(100) |

TAPLE 41    B M   c⁴ Adu1⁺ remⁿles or different groups of houses
          Different Croun

| B M I (Range) | 1 | � | ⁻ | 4 | total |
|---|---|---|---|---|---|
| Below 1� | — | | — | — | |
| 16-17 | 2(1  1) | | | | 2(1  1) |
| 17    18 5 | 4(2  2) | | — | — | 4(2  2) |
| 18 6 2C | 24(12  9) | ⁻C (16  ⁻) | 26(1⁻ 9) | ⁻⁻(12  4) | 10⁻(5⁵  4) |
| 2   25 | 1  (5  4) | 16(8  �) | 28(15  1) | 23(12  4) | 77(41  4) |
| Total | 40(21  5) | 46(24  7) | 54(29  ⁻) | 46(24  7) | 186(1C0) |

Table - 42 BMI of adolescent males

| Category | I | II | III | IV | Total |
|----------|-----|-----|-----|-----|-------|
| Below | — | | | — | |
| 16 17 | — | 1(3 33) | 1(3 33) | — | 2(6 67) |
| 17 1-18 5 | 5(16 70) | 3(10 00) | 3(10 00) | — | 11(36 00) |
| 18 6-20 | 2(6 67) | 1(3 33) | 2(6 67) | 2(6 67) | 7(23 30) |
| 20-25 | | — | 5(16 70) | 5(16 70) | 10(33 33) |
| Total | 7(23 30) | 5(16 70) | 11(36 70) | 7(23 30) | 30(100 00) |

ABLE 43        B.M.I of Adolescent Females

| | I | II | III | IV | To |
|---|---|---|---|---|---|
| Below 16 | – | – | – | | |
| 16-17 | — | – | | – | |
| 7.1-18.5 | 2(11.1) | – | 1(5 6) | | (1G ) |
| 8.6-20 | 2(11.1) | 2(11.1) | 2(11.1) | 1(22.2) | 10( ) |
| 20-25 | | | 2(11.1) | 3(16.7) | 5(27 7) |
| Total | 4(22.2) | 2(11.1) | 5(27.8) | 7(38.9) | (100) |

secor l group  percentage deficit in groups 3 a 1 l  e c
less

In  earlier  studies  deficient  heights  a l
weights  were reported to different age groups leloigi g  lo
lov  income  groups  A sirv y conducted  among  agric ll i il
labouiers  by Laisamma (1992) has revealed that 50 8  per c l
of  adult  males and 63 4 adult females  had  lificie l  b d)
veigl s while leights were deficient in 89 8 percent of  l l
miles aid 18 l percent of adult fenales

According  to a report of NNMB (1981)  ll  ov rll
average weight of adult women from middle income group  anor
industrial  labour and slum dwellers ranged 20 10  years  s
15 2 lg  Mean body weight and  height of  adolescoits  r
well compirable with earlier studies of Money laul (1393)

Vijaya  Raghavan et al  (1971) have  reporlel  thit
joor  Indian  childien were found to be shorter  ard  tl
than  the  children belonging to the higher inconc  giof  of
orresponding ages

Studies  corducted  by  Sheshadri  th  (1934)  d
Jayaitha  kumari  (1993)  had  revealed  that  a ry cl ll e

b longing to low income strata do not have normal height and weight

From the anthropometric data presented in table 39 no conclusive information on the impact of public distribution system was obtained however the variation among different groups of households were distinct in the case of adult male and adult female

According to Satyanarayan (1989) extremes of BMI (for undernourished and obese) are associated with low productivity in both men and women As per NCHS standard (1986) Body mass Index (B M I) in normal status for adult males and females are 20   25 and 18 6   20 respectively In the case of adolescent boys and girls it is let to   17 to 25

Distribution of adult males adult females adolescent males and females based on BMI are presented in Table 40 to 43 As revealed in Table many of the adult males were identified under normal category Data presented in Table 41 also reveals similar results regarding women) to were in the range of 20 to 25 classification Among the adult females 55 38 percent of women in the four households

Table 44    Occurance of diseases during last year

| Diseases | Head of family | Responde nt | Children | Total |
|---|---|---|---|---|
| Chickenpo | (( 82) | nil | nil | 7(( 82) |
| Measles | 6(1 65) | 6(1 65) | nil | 12( () |
| Whooping Cough | 1(( 27) | nil | nil | 1( 27) |
| Fever | ((8 26) | 22(6 (6) | 4)(11 (1) | 97(25 74) |
| Diar hoea | 17(4 68) | 26(7 16) | 78(1( 46) | 81 22 71) |
| T B | 1(( 27) | nil | nil | 1( 27) |
| 4+5 | 17 4 17 | 20 ( 05) | 7((8 76) | 65(17 9() |
| Health Indivi | 47(12 94) | 46(12 67) | 15(4 17) | 1 8(20 75) |
| dual | 12( (77 26) | 120 (6) | 12 (7 88) | 67(1(() |

ere identified i the ange of 18 6 to 20 x 1 41 3} rec t of le womer i tle 4 groups came in tle raige of 17 1 to 18 5 As revealed in the Table adolescent were i tle ra ge of 1 1 to 18 5 in al tle four groups while 33 3 canc tle range cf 20 to 2 BMI of tle idolescent fenale 5 6 i mainly located in the range of 20 to 25 classificatior Morb dity status of the family members was determined by conducting clin cal examination vitl lle help of i jual fiel physicia ii all the four groups

Table 44 Presents tle occurence of d seises i lle family members during last year

As revealed in the table only 8 3 pe cer t of lle lead of the families 6 06 percent of tle responde ls a d 11 0 percent of children had suffered from fever Diar loca vas fourd to be common in children (11 0 perce il)

## 4 5 Contribution of food subsidies on the actual food inta and nutritional status of the selected consumers

Benefits of Public distributioi system ca l ensured oi lv by determinirg the (the effect of til f) food subsidies For this 10 house holds each fiom inoi g lle

Table  45 Distribution of members of different age groups in  the

20 house holds selected

| Age Groups | House holds under | | Total |
| | Groups I | Groups II | |
|---|---|---|---|
| Adult Male | 18(21 6) | 13(15 6) | 31(37 3) |
| Adult Female | 15(18 0) | 18(21 6) | 33(39 8) |
| Adolescent Male | — | 2(2 4) | 2(2 4) |
| Adolescent Female | 2(2 4) | 2(2 4) | 4(4 8) |
| Children Female | 3(3 6) | 2(3 6) | 5(6 0) |

| Food stuff | Group | Adult male | | | Adult female | | | Adolescent male | | | Adolescent Female | | | Chi dren male | | | Children female | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | A F I | I R S | D | A F I | I R S | D | A F I | I R S | D | A F I | I R S | D | A F I | I R S | D | A F I | I R S | D |
| R ce | 1 | 498 3 | 452 8 | 85 4 | 354 | 318 | 89 8 | | | | 300 | 250 | 83 3 | 26ɔ | 265 | 100 | 220 | 220 | 100 |
| | 2 | 423 5 | 423 5 | 100 | 314 | 298 3 | 95 | 32ɔ | 32ɔ | 100 | 283 | 243 | 85 8 | 255 | 25ɔ | 100 | 200 | 200 | 100 |
| Sugar | 1 | 35 | 35 | 10 0 | 13 6 | 13 6 | 100 | 6 | 6 | 106 | 20 | 20 | 100 | 15 | 15 | 100 | 15 | 15 | 100 |
| | 2 | 28 2 | 28 2 | 10 0 | 10 2 | 12 2 | 100 | 10 | 15 | 100 | 10 3 | 18 3 | 100 | 10 | 10 | 100 | 10 | 10 | 100 |
| O l | 1 | 17 5 | 17 0 | 97 1 | 16 0 | 15 | 93 7 | | | | 25 | 15 | 60 | 6 25 | 6 | 96 | 5 | 4 | 80 |
| | 2 | 14 9 | 14 0 | 93 9 | 11 9 | ll | 92 4 | 15 | 14 ɔ | 96 6 | 20 | 15 | 75 | 5 | 4 | 80 | 4 | 3 | 80 |

A F I    Actual Food intake

I R S    Intake of ration subsidy

D        D fference

Table  Contribut on of rat on food on calorie and protein intake of family members

| Groups | | Adult male IRS | Actual ntake | Adult female IRS | Actual intake | Adolescent male IRS | Actual intake | Adolescent female IRS | Actual intake | Children male IRS | Actual intake | Children female IRS | Actual intake |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Calor es | 56ɔ ɔ | 2179 3 | 1100 28 | 1811 8 | ——— | ——— | 865 0 | 1461 0 | 1245 8 | 1245 8 | 1189 6 | 1189 6 |
| 2 | Ava la ble | 1465 3 | 1907 1 | 10321 | 1340 | 1124 5 | 1ɔ16 0 | 840 7 | 1157 6 | 986 9 | 986 9 | 852 2 | 852 2 |
| | Prote ns | 28 ɔ | 57 4 | ?0 3 | 32 8 | ——— | ——— | —— | —— | 48 5 | 48 5 | 30 4 | 4 |
| 2 | Ava la ble | 27 1 | 48 1 | 19 0 | 50 | 20 8 | 0 | —— | —— | 36 1 | 36 1 | 19 9 | 19 9 |

gio p will 76 to 100 percent participation and from grc ij 4
w tl less than 25 percent participation verc scleclcd
Actual food intake of all the family members of tlc al vc 20
louse folds were collected

Table 45 presents the distribution of ncmlcrs of
different age groups in the 20 house holds selectel A
omparison of the population distribution revealed that there
is more or less equal distribution among men (49 4 perccil)
ird vonci (50 6 perccnt)

Table 46 explains the advantage of inc easig tlc
supply of ration foods like cereals (rice ant rlcil) s gi
and oil More than 80 percent of cereal inta e for ll llc
age groups in the two groups are cereals available al
subsidised rate Compared to households in group 2
louseholds in group l were found to utilise more effectively
the food subsidy programme Data pertainiig to oil irtal
also reveals similar trend Suhgar aviilitl at sul ll l
rate alonc is to meet the sugar requirements of tle two
groups Talle also presents details of aviilalililly of
calorie and protien from subsidised foods Comapared to
intake of food more quantity of calories ard jiotiens v c
net fromactual food intake in all the gioups of houselolds

This further indicates that recent policies designed to increase supplies of moderately costly grain foods like pulses and other commodities along with the public distribution of food grains will assist in improving the overall nutritional status of the poor population

James and Indiani (1979) conducted consumer survey to examine the utilisation of ration by different groups rural and urban areas in Sri Lanka to estimate the contribution of the ration to calorie consumption. The study indicated that the use of ration was virtually significant and all segments of the community received some benefits from it. They further stated that a high proportion of total cereals consumed was obtained from food ration. The n ement in income through food subsidy enabled them to increase consumption of a range of food products in the categories of animal products oils and fats and to spend more for housing and clothing

The house holds in two groups on an average suffered a deficiency of both calories and proteins in terms of RDA. Foods distributed through Public Distribution System contributed of 1566 60 calories and 28 90 percent of protein

ble to  47 Mean foou  nta e of the adul  a las of  he t o q o ps of hou e holds

| Group  No | Cereal | Pulse | Green leaf Vegetables | Other Vegetables | Roots & Tube | Milk | Fat & Oil | Fru ts | sh | Suga | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 498 3 | 16 9 | 19 7 | 12 8 | 42 7 | 7 7 | 17 5 | 5 | 20 | 3 | |
|  | 4  5 | 13 2 | 14 6 | 7 14 | 38 5 | 40 7 | 14 9 | 7 14 | 1 2 | 8 2 | |
| R D A | 670 | 60 | 1C0 | 80 | 80 | 25C | 35 | 30 | 55 | 60 | |
| % OF RDA | 74 | 29 | 19 7 | 16 | 53 3 | 29 8 | 50 | 16 6 | 36 3 | 58 3 | |
| 2 | 63 | 22 | 14 6 | 9 9 | 48 1 | 16 2 | 42 5 | 7 13 | 24 | 47 | |

TABLE 48 Mean food intake of the adult females belonging to the two groups of house holds

| Group Nos | Cereal | Pulse | Green leafy vegetable | Other vegetable | Root & Tuber | M lk | Fats& Oils | Fru ts | Fish | Sugar |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 354 0 | 12 0 | 12 0 | 10 0 | 33 3 | 88 3 | 16 0 | 2 6 | 13 3 | 13 6 |
| 2 | 315 0 | 9 2 | 9 2 | 8 8 | 30 0 | 60 8 | 11 9 | 1 1 | 12 5 | 12 2 |
| RDA | 440 0 | 45 0 | 100 0 | 40 0 | 50 0 | 150 0 | 25 0 | 30 0 | 30 0 | 60 0 |
| % of RDA n G 1 | 80 4 | 26 6 | 12 0 | 25 0 | 66 6 | 58 8 | 64 0 | 8 6 | 44 3 | 22 6 |
| % of RDA in G 2 | 71 5 | 20 4 | 9 2 | 22 0 | 60 0 | 40 5 | 47 6 | 3 6 | 41 6 | 20 3 |

TABLE 49 Mean food intake of adolescent males belong ng to the groups of house holds

| Group No | Cereal | Pulse | Green leafy vegetable | Other veg etable | Root & Tuber | Milk | Fats& Oils | Fruits | Fish | Sugar |
|---|---|---|---|---|---|---|---|---|---|---|
| I | 325 0 | 22 5 | | 30 0 | 32 5 | 90 0 | 15 0 | 22 5 | 20 0 | 15 0 |
| RDA | 430 00 | 50 0 | 100 0 | 150 0 | 150 0 | 140 0 | 30 0 | 30 0 | 30 0 | 30 0 |
| %R D A met | 75 50 | 45 0 | | 20 0 | 21 6 | 64 2 | 50 0 | 75 0 | 66 7 | 50 0 |

TABLE 5l Mean food ntake of ch ldren nale belong ng to the two groups of house holds

| Group No | Cereal | Pulse | Green leafy vegetable | Other veg etable | Root & Tuber | Milk ( n gms) | Fats & Oils | Fruits | F sh | Sugar |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 265 0 | 11 3 | 6 3 | 5 0 | 16 2 | 80 0 | 6 3 | 10 0 | 10 0 | 15 0 |
| 2 | 255 00 | 7 5 | 5 0 | | 12 5 | 76 0 | 5 0 | 5 0 | 5 0 | 10 0 |
| RDA | 320 00 | 60 0 | 100 0 | 75 0 | 100 0 | 200 0 | 35 0 | 30 0 | 50 0 | 30 0 |
| X of RDA in G 1 | 82 80 | 18 7 | 62 5 | 6 7 | 16 2 | 43 0 | 17 8 | 33 3 | 20 0 | 50 0 |
| X of RDA in G 2 | 79 6 | 12 5 | 5 0 | | 12 5 | 35 0 | 14 2 | 16 7 | 10 0 | 16 7 |

TABLE  52 Mean food intake of children female belonging to the two groups of house holds

| Group No | Cereal | Pulse | Green leafy vegetable | Other veg etable | Root & Tuber | Milk | Fats & Oils | Fruits | Fish | Sugar |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 220 0 | 7 5 | 7 5 | 2 5 | 10 0 | 60 0 | 5 0 | 10 0 | 10 0 | 15 0 |
| 2 | 200 0 | 6 5 | | 10 0 | 8 0 | 50 0 | 4 0 | 2 5 | 5 0 | 10 0 |
| RDA | 320 0 | 60 0 | 100 0 | 7 5 | 100 0 | 200 0 | 35 0 | 30 0 | 50 0 | 30 0 |
| % of 1 RDA | 68 7 | 12 5 | 7 5 | 3 0 | 10 0 | 30 0 | 14 2 | 33 3 | 20 0 | 50 0 |
| 2 | 62 5 | 10 8 | — | 13 3 | 8 0 | 25 0 | 11 4 | 8 3 | 10 0 | 167 |

TABLE   50 Mean food intake of   the adolescent girls belonging to the two groups

| Group No | Cereal | Pulse | Green leafy vegetable | Other veg etable | Root & Tuber | Milk | Fats& Oils | Fruits | Fish | Sugar |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 300 00 | 15 0 | | 30 0 | 30 0 | 113 3 | 25 0 | 15 0 | 15 0 | 20 0 |
| 2 | 283 00 | 15 0 | 16 0 | 10 0 | 33 3 | 100 3 | 20 0 | 5 0 | 10 0 | 18 3 |
| RDA | 350 00 | 50 0 | 50 0 | 50 0 | 150 0 | 140 0 | 30 0 | 30 0 | 30 0 | 30 0 |
| % of 1 RDA | 71 40 | 30 0 | | 20 0 | 22 2 | 80 9 | 83 3 | 50 0 | 50 0 | 66 7 |
| 2 | 69 4 | 30 0 | 32 0 | 6 7 | 30 0 | 71 6 | 66 7 | 16 7 | 33 3 | 61 0 |

)

for adult male  While calorie availability from food at or
for adult female was 1100 28 and  20 30 percent prot en
Adolescent ma e  obtained 1124 50 calories and 20 80 per ert
of protien from ration food  Calories available from food
ration for male children was 1245 80 for female cl ldre
1189 60  contribution from food ration for protien for
children were 48 50 g percent (male) and 30 40g percit
(female)  In group 2  the rate of availability of these two
nitric ts for all the age groups were comparitively less

⌣    This further indicates that without ration rice a
let decline in calorie and protein supply would occur for
these households

Table 47 to 52 present the mean food intake of
family members of different age groups viz adult (male and
female) adolescent (male and female) and children (male and
female)  All the food articles included in the diets of
different members in the households belonging to group 1 ver
quantitatively better  However a comparison with RDA
revealed that the diets of the two groups were deficient i
all the foods with reference to RDA

The actual quantity of food intake of differe t age
groups in the two groups incomparison with the suggested

Rec mmended Dietary allowances are presented from table 17 t>
table o2

A comparison of percentage deficit betwe  t]  t vo
gro ps of adult males revealed a variation of 11 percent cic}
for cereals and sugars  The consumption pattern of adult
mal s were in accordance with earlier studies condu ted a  ig
similar socio economic situations  Sreenivasan (1991) his
also observed that level of cereal vegetables mill  d  ll
products  and  oils  were very low  among  the  occupitional
groups lile agricultural labourers and artisans  The  actual
food intake of the agricultural labourers estimatel ly  food
weighment  method  revealed that inclusion of  various  f ols
groups  were not in balanced proportio) in their daily  l ct
Paniler (1979) had found that diets of agricultural labou ers
were  both inadequate and unbalanced  Diets of  Agri  ltural
labourers in Trivandrum were reported to be deficient in fats
and oils (Renu Seshadrinath  1993)

In  the  case  of adult females  belonging  to  two
groups  there was a variation of 8 9 percent ind 2 3  per c t
for  cereals  and  sugar respectively  Gupta  et  al  (1)88)
reported  that compared to R D A the diets of  working  women
were  largely unbalanced and lacked in leafy  vegetables  anl

protein foods like egg and meat. Renu Sisili et al (1993) observed that diets of adult male and female members are deficient in all the food items required for a balanced diet. In the present study also similar result obtained were worth mentioning

A comparison of the mean values of the second group with reference to percentage of RDA met revealed that there was a variation of 69 4 percent and 61 0 percent for cereal and sugar when compared to RDA. Unlike other age groups diets of adolescents are influenced by various social and psychological factors. Krishna Kumari et al (1983) reported that the intake of fruits and green leafy vegetables by the adolescents were negligible. Money E Paul (1993) revealed that the actual food intake of the adolescents indicated that intake of fish were below the Recommended allowances. Similar trend in food intake was noted in this study also

A comparison of the mean values of the two group of adult female with reference to percentage of RDA met revealed that there was a variation of 2 0 percent cereal and 5 7 percent sugar

a  nu  e  n akes o hous  holds belong  o  two    o

| f    e S oup | Numbe o  a  age  belong ng o two g oups pe son In each age grou | P c e ga | Ene o (It local o  e | Fa ( gm) | Calc um ga | Carotene &g | T as n  a | R of a n a | Na n ag | Asco b oc d mg |
|---|---|---|---|---|---|---|---|---|---|---|
| A u ta | 18 | 7 4 | 179 | 19 6 | 394 | 070 | 1 ٦ | 1 | 1£ | B 9 |
| Adul  s e | 13 | 8 | 1907 1 | 18 4 | 374 | 1713 | 1 1 | 1 2 | 15 | £ 5 |
|  |  | 60 | B00 | 20 | 400 | 2400 | 1 £ | 1 6 | 1B | 40 |
| RDA ≠ |  | °5 6 | 7 | 98 | 98 | 86 2 | ° B | 81 2 | 98 B | 9 2 |
| RDA ⊬ |  | 80 16 | 50 1 | 9 | 93 5 | 71 3 | 78 |  75 | B ٦ | 9 2 |
| A  Lt  aale | 15 | 46 1 | 1811 B | 16 4 | 384 | 1736 | 2 | 1 4 | 15 | ٦7 |
| R u]  e&ale | 18 | 2 B | 1 40 | 15 5 | 371 | 1731 | 1 1 | 1 3 | 14 | 9 |
|  |  | 50 | 29 5 | 20 | 400 | 2400 | 1 2 | 1 5 | 16 | 40 |
|  |  | 92 | 61 9 | 82 | 96 | 72 | 100 | 93 ٥ | 93 7 | 92 7 |
|  |  | 55 6 | 45 8 | 77 5 | 92 7 | 72 1 | 91 6 | 86 7 | 87 5 |  |
| Adu   t male |  | 4C | 1 16 | 1 ٢ | ٥6 | 119 9 | 2 | 1 1 | 14 |  |
| T |  | 7 | 642 | 2? | 600 | 400 | 1 2 | 1 5 | 6 | 40 |
|  |  | 5 ٦ | 57 | 97 7 | 89 ٦ | 49 9 | 100 | 73 3 | 37 | ° 5 |
| Ado e ent fema e | 2 | 5 9 | 1461 | 0 | 541 | 1048 | 1 | 1 2 | 15 | B 2 |
| Adole   female | 2 | 7 2 | 1 7 6 | 19 6 | 24 | 020 | 1 | 1 1 | 4 | 6 |
|  |  | 6 | 064 | 22 | 600 | 2400 | 00 | 1 2 | 15 | 40 |
|  |  | 9 | 70 | 90 9 | 90 1 | 4 | 1(0 |  | 1 0 | 0 |
|  |  | £ | ⁵6 | 89 | 87 3 | 42 5 | 1 | 91 7 | 93 | 89 |
| Ch d  aale | 4 |  | 2  8 | 19 | ٦60 | 1840 | 8 | 1 ٦ | 14 | £ |
| 4 ] . aale | 4 | ٤ | 985 9 | 14 5 | 334 | 1512 | 100 | 1 1 |  |  |
|  |  | ٥ | 47 | 2 | 400 | 2400 | 7 | 1 ٦ | 15 | 4C |
|  |  | 8 | 50 9 | 76 | 90 | ٥ 7 | 1 | 00 | 93 3 | 90 |
|  |  | £ | 40 ٦ | 58 | 8 5 | 6 | 9 | B 6 | 80 | 8E |
|   e ale |  | 4 9 | 8° | 1 | ٦81 | 710 |  | 1 | 1 | 5 |
|  |  |  | 6 | ٥ | 154 | ( 9 |  | 1 | 4 |  |
|  |  | C 6 | ⁵ | 00 | 400 | 0 | 1 |  | ٥ |  |
|  |  | 3 | 8° 5 | ° | 71 ? | 0 | 00 | 0 |  |  |
|  |  | 1 4 | 4 4 | 90 7 | 64 1 | 90 | 3 | 84 ٥ | ٥ |  |

A comparison of the mean values of the two groups of children (male) with reference to percentage of RDA in further revealed that there was a variation of 3 20 and 33 30 percent between cereal and Sugar in the 2 group

A comparison of the mean values of two groups of female children with reference to RDA met further revealed that there was a variation of 6 2 percent and 17 3 percent between cereals and sugar in two groups

Renu Seshadrinath (1983) reported that diets of children of all age groups were deficient in the of cereal In the present study also these foods were deficient Suja (1989) observed that fruits were deficient in the diets of male and female children of 10 12 years and female children of 4 to 6 years

Nutrient content of the diets with reference to protein energy fat calcium carotene th amine riboflavi n acin ascorbic acid iron were computed from the quantity of food consumed using food composition table of ICMR (1984) Mean nutrient intake of different family members of the households belonging to two groups were presented Table 53 Along with mean intake of nutrients RDA specified

for each age group and percentage of RDA met are also presented in the table

A comparison with RDA indicated that diets of all the age groups in the two groups of households were deficient in protein energy fat thaimine riboflavin niacin vitamin C calcium and carotene iron

A comparison between two groups revealed that the protein energy fat thaimine riboflavin niacin calcium and carotene and iron for all age groups were better in group 1

As revealed in the table protein intake was found to be the range of 19 9 gms to 57 4 gms A comparison with RDA indicated that the diets of all the age groups in the two groups of house holds were deficient in protein A comparison between two groups revealed that the protein intake for all groups were better in group 1

A comparison among different age groups revealed that 80 percent or above protein requirement was met for adult males in the two groups adult female in the 1 group While and 60 0 to 80 0 percent was met for adult females in the second group Less than 60 0 percent was met for

adolescent male on the second group adolescent female in the first group and second group male children and females in the two groups. A report from Sundhar Raj and Sheila (1976) revealed that adult intake was significantly deficient protein as in the present study. Energy intake is found to be in the range of 852 20 kilo *calories* to 2179 30 kilo *calores*

A comparison among different age groups revealed that 80 00 percent or more of energy requirement was met for adult female in the second group and adolescent female in the first group. Less than 60 00 percent of required weight for adult males in both the two groups adult females in the second group adolescent male and female in the second group both male and female children in the two groups

Fat intake was found to be in the range of 13 00 to 22 00 grams. A comparison among different age groups revealed that 80 00 percent or above of fat requirement was met by adult male of both groups and adult female of first group Adolescent male of second group adolescent females in both groups and female children in first group

The deficiency protein fat calcium niacin and carotene iron compared to RDA was higher and bad it all compared to adult females Their diseructio is in the

3

ag es with the findings of Renu Seshadri atl (193)) Ajul et al (1983) reported that calories consumed by low one groups were below the body requirer in large fam 17 and labour class categorie in Punjab Families w th 3 or les number of children were observed to have better t t t of calories and protien than the families with 1 or more children as reported by Kumar et al (1976) ron was deficient amoig adult female compared to adult iles Iro lef ciercy of females was also observed by Jy th A g sl (19 3) who coiducted studies among onei e g ig l t breal ing Adult male net more perceitage of RAA (72 8  per ceit in group 1) and iron requiremeit vas leastly m ly adul females (18 per cent in group 2)

Low intake of nutrients from d etaries as reported in a study conducted by Natio al Nutr i n Mon tor ng Bureau (NNMB) (1984)

Tl iamine Riboflavin iron and Niac le s fou d to be in the range of 0 80 to 1 30 mgs

A conparison among different age gro is eve lcl that tlc iitake of all three vitamins were meet g 70 to 100 percent of tle requirement

According to Laisanma Churiyar (1982) the RDA the average intake of energy thiamine r b fl c a g fi i tly adequate in the diets of al t r labourers Ajula et al (1983) reported that v n ( l N ic were below the recommended allow es a l l income occupation and family size i different categories

Calcium intake is found to be in the a ge of 3 36 grams A comparison with RDA i d cat d that the l cl of all age g oups ii the wo groups of hous lol l c def cient in calcium A comparison betwee the t vo gr ps revealed that the ca cium intake for differe t age g o is were better in g oup i A comparison among d ffere t age groups revealed that 80 00 percent or above of calc n requiremen was met by all the house holds of d ffe ent age groups

carotene intake is found to be ir the r n ge of 151 2 0 grams A comparison with RDA i dicated that diet of all age group in the two groups of house holds were deficient in carotene A comparison between the t o gro i revealed that the carotene intake of differe t age g ou s er better in group i A comparison amor g d ffe c t g grou s revealed that 80 percent or above of ca ote e

Table 51. Haemoglob  level of di fe ent age g oups from the households
t e two  oup

| Haemoglob n (gms | n ra ge | 1 t group Adult  ale | nd group ndult male | 1st group Adolescent male | 2nd g oup Ado escent male | Ch ldren 1 t group  na e | nd group male |
|---|---|---|---|---|---|---|---|
| Felow |  |  |  |  |  | 1(25) | 2(50 |
| 1 4  14 |  | 7 ° | ( 8 4) |  | (100) | 3(75) | 2 ᶠ0 |
| 14 2  16 |  | 1 7 2 | 8 1 6 |  |  |  |  |
| T tal |  | 18 0 | ( 0 |  | 2(100 | 4(100) | 4 100) |

| Haemcglcb n ( gms d | nge) | 1st g oup hd lt  male | nd g oup nd t ferale | 1st g  up A oles er female | d group Adoles ent female | 1st gro p Ch ldren e ale | 2nd g  up Ch lorer  e ale |
|---|---|---|---|---|---|---|---|
| Below  0 |  | 1 | (1  10 |  | 0 | 1 3 | 1  0 |
| 1  ? |  | 4 2 | 2  2 | 1(ᶠ | 0 | (66 7) | 1  0 |
| 1 2  1? |  |  | 8(4  0 |  |  |  |  |
| abo e 1 |  | 6 | ? |  |  |  |  |
| T t |  | ( 0 ) | 8(10 ) | 100) | 2 100 | 3 130 | 2 10 |

requir aects was met for adult males of the first g  1
While 60 00 to 80 00 percent was met for adult male 1 the
second group 2 adult females of both groups and male children
less than 60 00 percent was met for adol scent male f s  1
groups Adolescent females of both groups and male  1 d
female children in the first group

A general observation made in this respect is that
the  embers of the house holds in group 1 (who spent lo er
percentage of money income on food) had slightly 1 gher
achievement rations for some specific nutrients such as
riboflavin than the house hold members of group 2

A scale to measure general health status of ar
indi idual 1 the assessment of hemoglobin level 11 tle
blood Soof (1987) reported that the hemoglobin levels vere
found to be at satisfactory for detecting iron deficiency for
survey purposes Estimation of hemoglobin was loer_l
cyanmethemoglobin method among the different age group
two groups of house holds and results presented in Iable 51
In case of adult males about 72 2 percent in the first group
and 61 6 percent in the second group came in the raige of
11 2 to 16 8 percent of male children were in the range of
12 4 to 11 0 the first group while 50 00 percent of male
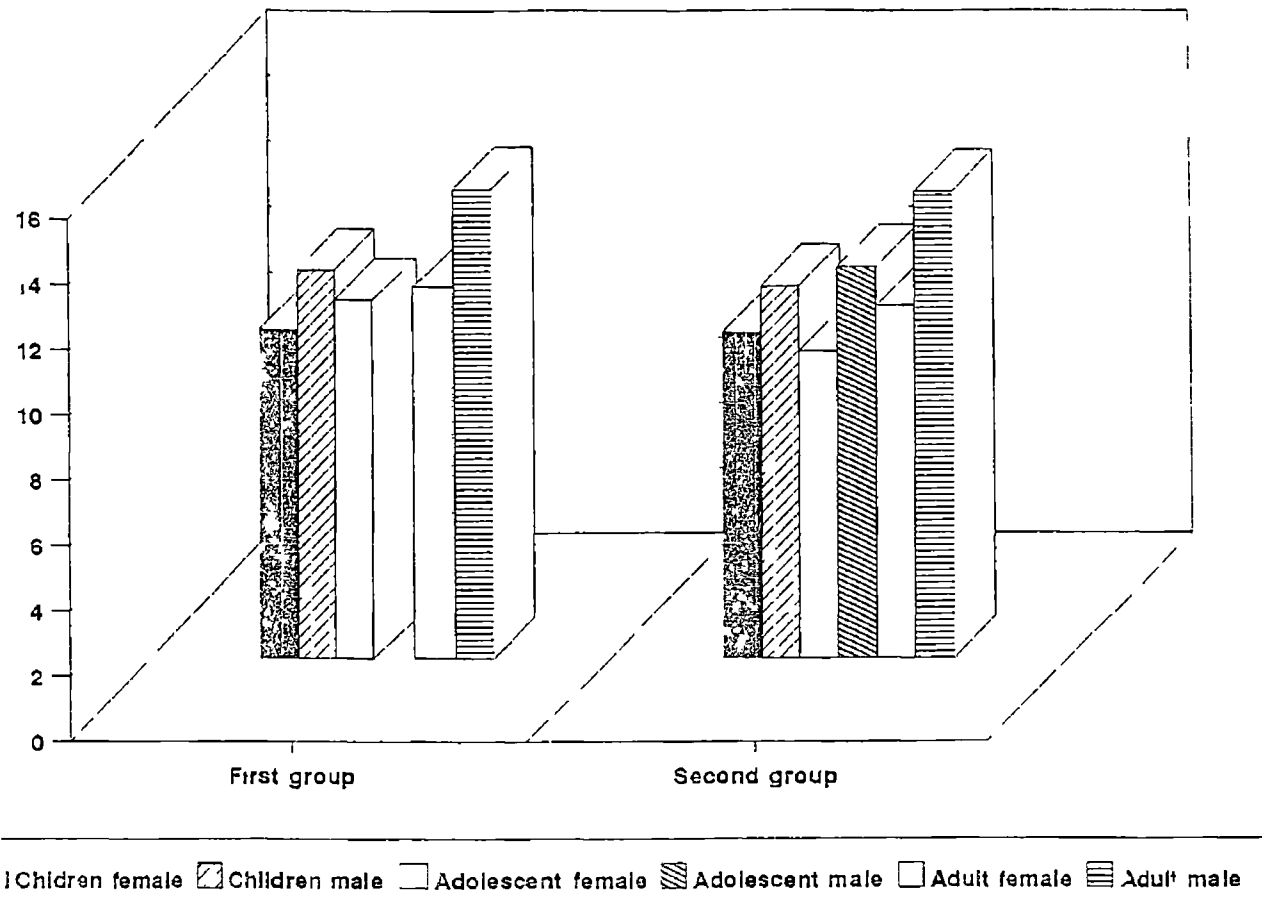
Fig. 4. haemoglobin level of different age groups of households

TABLE 55 Incidence of clinical symptoms among the members households of different age groups in the 2 categories

| Symptoms | Adult Male | | Adult Female | | Adolescent Male | | Adolescent Female | | Children Male | | Children Female | | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | 1 | 2 | |
| Odema | | 2(15 3) | 1(6 7) | 3(16 7) | | | | | | | 1 | | 7(8 4) |
| Guns Spongy bleeding | | 3 (23 0) | 2 (13 3) | 4 (22 2) | 1 (50 0) | | 1 (50 0) | | 2 (50 0) | 2 (50 0) | | | 15(18 0) |
| Anemia | | | | 2 (11 1) | | | | 2 (100 0) | | | 1 (33 3) | | 5(6 0) |
| Angular Stomatitis | | 2 (15 30) | 1 (6 67) | 2 (11 10) | 1 (50 00) | | 1 (50 00) | | 2 (50 0) | 1 (25 0) | | 1 (50 0) | 11(13 2) |
| Teethcaries | 3 (16 7) | 2 (15 3) | 2 (13 3) | 3 (16 3) | | | | | | 1 (25) | 1 (33 3) | 1 (50) | 13(15 6) |
| Total (No) | 3 | 9 | 6 | 14 | | 2 | 2 | 2 | 4 (100) | 4 | 3 | 2 | 15(81 4) |
| Normal Healthy | 15 | 4 | 9 | 4 | | | | | | | | | |
| Total No Of Individuals | 18 | 13 | 15 | 18 | | 2 | 2 | 2 | 4 | 4 | 3 | 2 | |

Table 56 Clinical score obta ned for the different age

groups of households in the two different groups

| Individual classes | 1st group clinical score | 2nd group cl n cal score |
|---|---|---|
| Adult male | | 7 |
| Adult female | 23 | 21 |
| Adolescent male | | 2 |
| Adolescent female | 2 | 6 |
| Children male | 6 | 4 |
| Children Female | 7 | |

children were in the range of both below 12 in the case of male children 66 7 and 50 per cent come under the range of 10 2 11

In case of adult of females 33 30 percent (first group) and 14 5 percent (second group) came the range of 11 2 to 12 0 About 13 3 percent in the first group and 10 in the Second group were found to be anemic about 0 percent of the adolescent female in both the two groups in the range of below 10 and 10 2 11 Adolescent female in the range of below 10 were considered as anemic In the case of male children 66 7 and 50 0 percent were under the range of 10 2 11 Adolescent female came under the range of below 10 were undered as anemies

Fig 4 illustrates the hemoglobin level f members of the different age groups in the twenty house holds

Clinical symptoms were studied for individuals of 20 house holds selected from the two extreme groups and were scored based on the manifestation for each deficiency and thus the total score for each individual in the study group was assessed From the above table it was seen that maximum score was obtained for the adult females

(23) in the first group followed by adult females in the second group (21)

Results of the clinical examination of individual family members of each household was computed to the basis of the occurrence of various nutritional disorders like oedema Gum Spongy bleeding anemia angular stomatitis and dental caries

Among the various age groups clinically tested only among adult males and adult females normal and healthy individuals were located A comparison among the two groups revealed that healthy adults were more in group 1 Compared to adults number of person in the groups of adolescents and children were less and they were also found to be suffering from one or the other deficient disorders A comparison between the two groups also did not reveal any variation

Among the various disorders spongy bleeding of gums was found to be very common 18 00 percent followed by dental caries (15 60 percent) and angular stomatities (13 20 percent) and (8 43 percent) odema and anemia (6 02 percent)

Table- 57 Nutritional status index of the different adult males
in the two groups of house hold

| Nutritional status index (in range ) | Distribution of members | | average Nutritional status index | |
|---|---|---|---|---|
| | G – 1 | G – 2 | G – 1 | G – 2 |
| 85 and below | – | 8(61 5) | –– | 73 2 |
| 85    90 | 8(44 4) | 5(38 5) | 88 8 | 89 1 |
| 90   1 95 | 10(55 6) | –– | 91 6 | –– |
| Total | 18(100) | 13(100) | 94 2 | 71 2 |

Table-58    Nutritional   status index of the different   adult   fe-
males
in the   two different groups of house hold

| Nutritional status index (in range) | Distribution of members G - 1 | G - 2 | Average Nutritional status index G - 1 | G - 2 |
|---|---|---|---|---|
| 40 - 45 | - | 7(38 9) | | 42 8 |
| 45  1-50 | 1(6 6) | 7(38 9) | 47 8 | 45 9 |
| 51  1-56 | 9(60 0) | 4(22 2) | 53 9 | 52 7 |
| 56 and above | 5(3 3) | - | 57 8 | |
| Total | 15(100 0) | 18(100 0) | 53 1 | 47 1 |

In earlier studies an mia is report l f l ve y common amo g the low in come strata of the p j l l i oi (Jyothi Augustere 1993)

Table 58 presents the nutritio al latus lex of adult females about 60 00 percent of adult f nales vere coming under the range of 50 1 56 in the first group while 38 9 percent females came under the range of boll 40 to 15 1 50 in the second group

Nutritional status index of the adult males the two different groups of household was presented in Table 57

Nutritional stuats index was worked out using anthropometric data and haemoglobin values Nut itional statu inde was in the range of 85 and below to 90 1 to Jo 4 to 15 and 56 and above in adult females Nutritional stat s index worked out for adult male was classified into three groups and the distribution of samples lasel i ti ritional status index obtained for each ii lividial s present ed in table 57

In group 2 61 5 per cent of the adult males were identified under the class of persons who lad nitrit o al status index of > 85 which indicates that they were iot as

... nutritional status index of 85.1 to 90 there were 38 per cent of the adult males in group 2. Average nutritional status index for the former class was 73.2 and for the latter group nutritional status index was in the range of 85.1 to 95.00 were 55.60 per cent of the adult males obtained a nutritional status index of 90.1 to 95.0 and 11.4 per cent 85.1 to 90.0. This indicate that the general overall average nutritional status index for group 1 was 94.2 and for group 2 was 71.2. health profile of adult male in group 1 were better than their counterparts in group 2. Average nutritional status index developed for adult females are presented in table 58. Based on nutritional status index adult females were classified into four groups adult females with nutritional status index in the range of 40 to 45 were not present in group1 and 39.9 per cent of adult females in group2 were identified under this groups. Among the women survive 6.6 per cent of adult females with nutritional status index in the range of 45.1 to 50.0 was present in group 1 while in group 2 38.9 per cent of adult females were included under this class. In group 1 60 per cent of the females had nutritional status index of 51.1 to 56.0 per cent while in group 2 22.2 per cent of the women had similar nutritional status index. Only in group 1 women in the high nutritional status index (3.3 per cent) were located average nutritional status index for each class of adult females also reveals that adult females of group 1 are having better health status

# SUMMARY

# SUMMARY

Present study entitled Food consumption pattern of rural households below poverty line as influenced by the food subsidies distributed through fair priceshops was undertaken among 120 households of four groups classified on the basis of their level of participation in the food subsidy programme group 1 with 76 to 100 per cent participation group 2 51 to 75 per cent participation group 3 with 26 to 50 per cent participation and group 4 less than 25 per cent participation

The Socio economic background of the families with reference to caste family size family composion possession of land employment status and income level mere more or less similar in all the households identified under the four groups

On analysing the personal characteristics of the respondents and family members it was observed that the family members were well exposed to media like radio and television, eventhough their Social participation was negligible

All the households surveyed were found to spend major part of their income for food (41 to 80 per cent) With the major expenditure on cereal This indicates the significant role of public distribution system in their dietaries Foods ration expenditure was lowest for households in group 1 and it was gradually increasing from group 2 to group 1

Significant association between monthly income and total food expenditure was observed in all the four groups While a significant association between family size and ration expenditure was also observed Among the four groups households in group 1 utilised efficiently the benefits of public distribution system Dietary habits of the beneficiary population were also found to improve by inclusion of wheat in the dietaries

All the households in the four groups were found to include rice sugar coconut milk spices and condiments and oils every day in their dietaries Distribution of households based on food use frequency score revealed that greater percent of households from group 1 had higher scores

However the food use frequency score did not have significant positive association with any of the socioeconomic factors except monthly income and food expenditure of households in group 3  Regarding the source of purchase of rice and oil it was found that rice and oil supplied through fair price shops were insufficient and hence open market services were also utilised  Wheat and sugar were purchased only from fair price shops by all the house holds

Comparison with respect to years of possession of ration card, revealed that there is a direct relationship between years of possession of ration cards and extent of utilisation  Unlike other groups  house holds under group-1 were found to be using the ration cards regularly every week  Reasons for not using this facility were observed to be lack of money  lack of credit facility and pledging of ration cards  Frequency of purchasing ration foods was also influenced by the time taken for this work and distance of the ration shops from their houses

Among the various food commodities rice and wheat were purchased once in a week  palm oil once in fort night and sugar once in a month by all the households in the four

groups  The availability of these foods to the households
was influenced by the regularity in utilising this facility

All the respondents surveyed had favourable views
about the quality and quantity of the foods distributed under
the public distribution system but none of the respondents
felt that these subsidies played an important role in
improving their health status

Influence of variables like family size
educational level of head of the family and respondent
monthly income  expenditure on food and total food
expenditure were tested against the amount spent for buying
ration and public distribution score obtained for each
household in the four groups  A positive significant
correlation was observed for expenditure on food  with
monthly income  total household expenditure with food
expenditure and for purchase of ration food with family size
in all the 4 groups  Family size was significantly
influenced by the amount spent for buying ration for all the
four groups studied

Benefits of public distribution system  on
consumers of different groups  revealed that households under

group 1 were move effectively compared to other groups
Influence of monthly income on ration subsidy was found to be
greater in group-1 and lesser in group 3 influence of total
food expenditure on ration subsidy was higher in group 4
Influence of occupational status of the family members on
ration subsidy revealed that average occupational status of
the households identified under group 3 were higher Food use
frequency scores were higher for households identified under
group

Anthropometric assessment of the family members
indicated that for adult males in four groups of the
households mean height was below standard recommendations
while only in group-1 the average weight of was above
standard recommended Mean height of the women in the four
groups were above the standard Mean weights and heights of
the adolescent males and females were above standards Mean
heights of male children in group 1 and mean weights of male
children were above standards While in the case of female
children height and weights were below the standard recommended

An assessment of the influence of subsidised foods
on th daily food consumption patt rn of differ nt members of

the households of four groups  through recall revealed  that
the quantity of the subsidised foods included in the
dietaries of group 1 and the nutrients available from the
diets were more than the other three groups    Food
consumption pattern of the households belonging to the four
groups were also ascertained and found that households in
group 1 had better intake of all food sfuffs than the other
three groups of households

        Better health status of adult males and females in
group 1 were also observed when anthropometric  studies with
reference  to  height   weight  and  BMI  of  adults  and
adolescents were ascertained

        Based  on  the  monthly  income  the  house  holds  were
divided  in  to  three  groups   About  50  per  cent  of  the
households in the three different income levels were in the
habit of using ration cards once in a week and in all the
three income level of households  quantity of rice and wheat
purchased every was in the range of 6 to 10 kilograms  Ration
subsidy was significantly associated with food expenditure of
the households in the first and last groups  Monthly income
                                                    the
of the households had positively influenced ^utilisation of

requirements different age groups in group 1    Clinical

examination of the members of the households conducted by a

qualified physician revealed the prevalence of disorder s

like spongy  bleeding gums and teeth caries  Haemoglobin

level indicated the prevalence of anemia among the adult

females and adolescent females of the second group


It was also observed that the food subsidies

available from the public distribution system helped to

improve the caloric intake  which is the deciding factor of
the
the health status of rural poor

the Public distribution system in the first group   Where
income level is below It was also found that as income
increased  quantity of materials such as rice  sugar and oil
purchased from open market also increased

A detailed study was conducted among 20 households
10 households each from group 1 and group 4 for assessing the
nutritional status of family members  Actual food intake of
the households revealed that  food intake of different age
groups of households  in group 1 were better  However all the
food items included in the dietaries of the households in
both the groups were below Dietary Allowances suggested by
ICMR (1984)

Contribution of ration food an actual food intake
and the calorie and protein supply in the diets of different
family members were effective on the rate of utilisation of
public distribution system improved

Similar deficiency was observed in the nutrient
intake also   However nutrients present in the diets of the
households of group 1 were better than the households in the
other group  even though the diets were deficient to meet the

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# APPENDICES

KERALA AGRICULTURAL UNIVERSITY

Department of Home Science   Vellayani

Food consumption pattern of rural house holds  below
poverty line as influenced by food subsidies distributed
through fair price shops

1   Name of the Panchayath

2   Name of Village

3   Name and Address of the
    respondent

A    Socio economic background of the family

4   Religion

5   Caste

6   Type of family

7   Family system

8   Family size

9   No  of adult males in the
    family (Original No )

10  No  of adult females in the
    family (Original No )

11  No  of childre  in the age group
    of 0 4 years (Original No )

12  No  of children in the age group
    of 5 9 years (Original No )

13  No  of children in the age group
    of 10 14 years (Original No )

14  No  of children between
    (15 19)  ears (Original No )

15  Cucational status of the head
    of the family

16  ᴿducational status of the
    responde t

17  Possession of land

18  Possession of domestic animals
    (Cattle)

19  Possession of domestic animals
    (birds)

20  Employment status of the Respondent

21  Employment status of the Head
    of the family

22  Total number of persons employed
    in the family

23  Income from the job of the
    respondent/month (actual)

24  Income from the job of the
    respondent/month (range)

25  Income from the job of the Head
    of the family/month (actual)

26  Income from the job of the Head
      f tl  fam ly/month (range)

27 Income from domestic animals
(cattle)/month

28 Income from domestic animals
(birds)/month

29 Income from farm

30 Total family income

31 Location of the house

32 Possession of the house

33 Type of house

34 Material assets of the family

B Personal characteristics of the respondents

35 Age (Original)

36 Age (range)

37 Possession of newspapers

38 Frequency of reading newspaper

39 Possession of Radio

40 Frequency of listening of radio

41 Possession of Television

42 Frequency of watching TV

43 Type of leisure time activity

44 Details of social participation
by the respondent

C  Monthly expenditure on the basic needs of life
   (Actual amount to be recorded)

15  Food

16  Clothing

17  Education

18  Personal expenditure of the
    respondent of the family

49  Expenditure on health

50  Transport

51  Recreation/entertainment

52  Fuel

53  Electricity

5   Rent

55  Purchase of book/magazines/
    newspaper

5   Savings

57  Personal expenses of
    your children

5   Stationary items (Miscellaneous)

59  Remittance (debtre payments)

60  Other  (Specify)

61     Total

D Frequency of purchasing pattern of various food articles
by the house holds


62 Rice

63 Wheat

64 Sugar

65 Oils

66 Pulses

67 Vegctables

68 M lk and milk products

69 Meat products

70 Egg

71 F sl

72 Sp ces

73 Co idiments

71 Beverages (Coffee Powder/tea
powder)

Frequency of use of varous food articles by the house holds

75 R ce

76 Wheat

77 Sugar

78 Oil

79 Pulses

80 Vcgetables

81 Milk and milk products

82 animal food (Meat chickens beef)

83  Egg

84  Fish

85  Spices

86  Condiments

87  Beverages (Coffee powder/Tea powder)


F  Monthly food expenditure pattern


88  Rice

   a

   b

89  Wheat

   a

   b

90  Sugar

   a

   b

91  Oil

   a

   b

92  Pulse

   a

   b

93  Vegetables

    a

    b

94  Spices

    a

    l

95  Cordiments

    a

    b

96  Beverages

    a

    b

97  Kerosene

    l

    b


C   Rate of utilizing public food distribution system

98  Possession of the ration card

99  No  of years of possessing the
    ration cards (in original)

100  Frequency of  sing the ration card

101  R asors for using the card
     R gularly

102 Reasons for not using the card
    Regularly

103 Food materials pu clased every
    week with the ration card

104 I ood ma crials purclased o ce
    1 fort ight

10  Food materials purchased once
    11 month

106 Food materials purchased
    occasionally

107 Food materials never purchased

108 Quality of rice purchased
    (a tual)

109 Quality of wheat purchased

110 Quality of sugar purchased

111 Quality of palm oil purchased

112 Q ality of kerosene purchased

113 Distance of the relationship
    from your home (actual)

114 Person respons ble for
    purchasing the relation items

115 Time spent every week for
    purchasing food articles

116 Time spent every week for
    purchasig food articles
    from fair price shopes (range)

117 Views of the respondent about the
    quality of products distributed
    through fair price shopes

118 Views of the respondent about the
quantity of products distributed
through fair price shopes

119 Views of the respondent about
the time spent at the fair
price slopes

120 Vie s of the respondent about the
piblic distribution system in
lelping to improve health status
of lle family

II Frequency of use of food articles

Freque cy Q   t l

Iool articles

121   Rice

122   Wheat

123   Pulse

124   Sugar

125   Nuts & Oils

126   Fresh foods (meat and fish)

127   Vegetables

128   Coconut

129   Green leafy vegetable

130   Milk and milk products

131   Spices

132   Condinc ts

*(A tul q ar lity of each food article used ly lle f
  1  a week v ll be reco ded)

APPENDIX   II


KERALA AGRICULTURAL UNIVERSITY

Department of Home Science  Vellayani


Individual dietary survey   24 hour recall method


Serial Number

Name of the respondent

Age


I   One day meal pattern of the family

| | Composition of the meals | Quantity of food articles taken |
|---|---|---|
| Early morning | | |
| Morning | | |
| Afternoon | | |
| Evening | | |
| Night | | |

KERALA AGRICULTURAL UNIVERSITY

Department of Home Science   Vellayani

Health profile of the family members

Occurrence of disease
during last one year

Anthropometric measurements

Adult (Male)

Height (actual)

Weight (actual)

Adults (females)

Height (actual)

Height (range)

Weight (actual)

Weight (range)

Children (Pl   specify age)

Height (range)

Weight (actual)

C C    (actual)

H C    (actual)

H C    (actual)

( umber to be added   according to the number of children )

## 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 photoelectric calorimeter at 540 mm against a standard solution. Since cyanide has the maximum affinity for haemoglobin this method estimates the total haemoglobin

### Reagent

Drabkin s solution. Dissolve 0 05 g of potassium cyanide 0 2 of potassium ferricyanide and 1 g of sodium bicarbonate in one litre distilled water

### Procedure

20 ml of blood are measured accurately for haemoglobin pipette and delivered on to a whatman No 1 filter paper disc. The filter paper is air dried labelled and can be stored upto one week. The portion of filter paper

co taining the blood is cut and dipped in o ml Drabkin s
so ut or taken in a test tube Wait for 30 m nutes a l m
tle contents on a mixture and take the readings

## Construction of standard curve

If the blood drawn from the subject co ta s
haemoglobin 15 g/dl after estimation then prepare three
c f rence standards as follows

1  Reference standard A

4 ml blood in 1000 ml Drabkin s reage t o 1 s
haemoglobin 15 g/dl

2  Reference standard B

300 ml of reference standard A + 200 n l D al     s
eagent co tains haemoglobin concentration of 10 g/dl

3  Reference standard C

200 ml of reference standard A a d 300 n l Dr b s
reagent contains a haemoglobin concentration of 7 5 g/dl

Thus we have three reference sta dard at three
levels of haemoglobin concentration  5 ml from each sta d
whenever haemoglobin estimations are d e

# APPENDIX V

Age height Weight and Bodymass index of households of different age groups belonging to four groups

I<sup>st</sup> Group

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|-----|-----|-----|-----|-----|-----|-----|-----|
| 68 | 172 | 63 | 21 29 | 60 | 160 | 50 | 19 53 |
| 34 | 170 | 65 | 22 49 | 28 | 161 | 49 | 18 90 |
| 30 | 169 | 62 | 21 70 | 48 | 160 | 50 | 19 53 |
| 26 | 171 | 63 | 21 54 | 18 | 159 | 43 | 17 00 |
| 20 | 172 | 62 | 20 95 | 54 | 153 | 51 | 21 78 |
| 50 | 171 | 65 | 22 22 | 26 | 155 | 50 | 20 81 |
| 60 | 166 | 65 | 23 58 | 40 | 160 | 50 | 19 53 |
| 30 | 164 | 63 | 23 42 | 26 | 160 | 48 | 18 75 |
| 48 | 171 | 66 | 22 57 | 64 | 161 | 50 | 18 59 |
| 60 | 172 | 67 | 22 65 | 26 | 160 | 48 | 18 75 |
| 30 | 171 | 62 | 20 47 | 22 | 153 | 41 | 17 51 |
| 70 | 171 | 67 | 22 91 | 30 | 162 | 49 | 18 67 |
| 30 | 168 | 67 | 23 73 | 36 | 161 | 49 | 18 90 |
| 28 | 163 | 63 | 23 71 | 26 | 163 | 50 | 18 81 |
| 38 | 173 | 60 | 20 04 | 36 | 160 | 48 | 18 75 |
| 40 | 173 | 62 | 20 71 | 46 | 156 | 50 | 20 51 |
| 32 | 170 | 63 | 21 80 | 21 | 163 | 45 | 16 93 |
| 43 | 171 | 61 | 20 86 | 36 | 150 | 46 | 20 44 |
| 50 | 173 | 64 | 21 38 | 26 | 160 | 50 | 19 53 |
| 39 | 170 | 60 | 27 76 | 28 | 151 | 48 | 21 05 |
| 29 | 171 | 61 | 20 86 | 46 | 160 | 50 | 19 53 |
| 33 | 173 | 63 | 21 30 | 21 | 1623 | 51 | 19 20 |

| Age | Adult Male Height | Weight | BMI | Age | Adult Female Height | Weight | BMI |
|---|---|---|---|---|---|---|---|
| 58 | 170 | 63 | 21 80 | 50 | 161 | 51 | 19 68 |
| 28 | 173 | 65 | 21 72 | 25 | 156 | 16 | 18 90 |
| 52 | 171 | 64 | 21 89 | 49 | 159 | 50 | 19 78 |
| 20 | 170 | 65 | 22 49 | 26 | 159 | 50 | 19 78 |
| 39 | 170 | 65 | 22 49 | 31 | 152 | 45 | 19 18 |
| 40 | 166 | 60 | 21 77 | 26 | 150 | 15 | 20 00 |
| 32 | 164 | 59 | 21 94 | 54 | 160 | 50 | 19 53 |
| 60 | 172 | 64 | 21 63 | 54 | 160 | 50 | 19 53 |
| 30 | 171 | 65 | 22 23 | 28 | 160 | 50 | 19 53 |
| 26 | 170 | 65 | 22 49 | 46 | 160 | 52 | 20 01 |
| 58 | 170 | 65 | 22 49 | 20 | 158 | 50 | 22 0 |
| 32 | 173 | 67 | 22 38 | 60 | 152 | 18 | 20 78 |
| 50 | 171 | 65 | 22 22 | 32 | 158 | 50 | 20 07 |
| 25 | 172 | 67 | 22 65 | 21 | 146 | 13 | 20 17 |
| 68 | 173 | 67 | 22 38 | 30 | 159 | 50 | 19 78 |
| 35 | 171 | 65 | 22 22 | 68 | 160 | 50 | 19 53 |
| 30 | 170 | 65 | 22 49 | 36 | 161 | 52 | 20 06 |
| 10 | 166 | 60 | 21 77 | 30 | 160 | 51 | 19 92 |
| 37 | 179 | 65 | 22 49 | 30 | 161 | 51 | 19 68 |
| 34 | 165 | 60 | 21 26 | 40 | 151 | 48 | 20 21 |
| 30 | 170 | 65 | 22 49 | 29 | 160 | 50 | 19 3 |
| 74 | 170 | 63 | 21 80 | 34 | 161 | 50 | 19 21 |
| 40 | 172 | 65 | 21 97 | | | | |
| 36 | 171 | 65 | 22 22 | | | | |
| 38 | 38 | 65 | 21 72 | | | | |
| 45 | 170 | 65 | 22 49 | | | | |
| 38 | 1170 | 65 | 22 49 | | | | |
| 40 | 171 | 21 | 14 83 | | | | |

II<sup>nd</sup> Group

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|---|---|---|---|---|---|---|---|
| 58 | 170 | 65 | 22 49 | 63 | 163 | 52 | 19 57 |
| 56 | 170 | 63 | 21 80 | 23 | 160 | 50 | 19 53 |
| 25 | 175 | 64 | 21 89 | 50 | 160 | 52 | 20 31 |
| 52 | 173 | 65 | 21 72 | 22 | 158 | 48 | 19 23 |
| 21 | 171 | 63 | 21 55 | 48 | 154 | 49 | 20 66 |
| 60 | 168 | 60 | 21 26 | 19 | 160 | 50 | 19 53 |
| 30 | 171 | 64 | 21 89 | 54 | 160 | 50 | 19 53 |
| 68 | 171 | 63 | 21 55 | 26 | 163 | 53 | 19 95 |
| 32 | 170 | 61 | 21 10 | 22 | 155 | 48 | 19 98 |
| 44 | 172 | 64 | 21 63 | 60 | 160 | 50 | 19 ⌐3 |
| 34 | 170 | 64 | 22 15 | 26 | 155 | 48 | 19 98 |
| 37 | 163 | 60 | 22 58 | 38 | 160 | 50 | 19 53 |
| 58 | 170 | 64 | 21 15 | 28 | 163 | 51 | 19 20 |
| 30 | 167 | 62 | 21 97 | 30 | 160 | 49 | 19 14 |
| 46 | 164 | 10 | 22 31 | 26 | 152 | 60 | 21 51 |
| 34 | 167 | 62 | 22 23 | 40 | 155 | 19 | 20 40 |
| 39 | 164 | 60 | 22 30 | 64 | 158 | 50 | 20 03 |
| 52 | 171 | 64 | 21 88 | 28 | 157 | 50 | 20 28 |
| 20 | 173 | 66 | 22 05 | 30 | 150 | 45 | 20 00 |
| 58 | 170 | 65 | 22 49 | 46 | 162 | 52 | 19 81 |
| | | | | 24 | 162 | 52 | 19 70 |
| | | | | 43 | 162 | 49 | 18 67 |
| | | | | 24 | 164 | 52 | 19 33 |
| | | | | 22 | 161 | 51 | 19 68 |

III$^{\text{rd}}$ Group

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|---|---|---|---|---|---|---|---|
| 56 | 171 | 65 | 22 22 | 50 | 162 | 50 | 19 05 |
| 1J | 169 | 60 | 21 00 | 50 | 160 | ᴦ0 | 1J J |
| 86 | 170 | 65 | 22 49 | 42 | 152 | 1ᴦ | 19 18 |
| 46 | 171 | 67 | 22 91 | 66 | 160 | 50 | 19 53 |
| 29 | 173 | 65 | 21 72 | 55 | 153 | 48 | 20 50 |
| 37 | 170 | 65 | 22 49 | 31 | 150 | 45 | 20 00 |
| 32 | 173 | 66 | 22 05 | 43 | 160 | 50 | 19 53 |
| 30 | 170 | 64 | 22 14 | 40 | 163 | 51 | 19 20 |
| 28 | 172 | 65 | 21 97 | 45 | 152 | 46 | 19 90 |
| 22 | 169 | 60 | 21 00 | 45 | 153 | 50 | 21 36 |
| 68 | 170 | 35 | 22 49 | 28 | 154 | 48 | 20 24 |
| 43 | 170 | 65 | 22 49 | 55 | 164 | 52 | 19 J3 |
| 70 | 171 | 65 | 22 23 | 19 | 151 | 46 | 20 17 |
| ⌢ | 173 | 66 | 22 05 | 30 | 164 | 54 | 20 07 |
| 50 | 166 | 60 | 21 77 | 53 | 161 | 50 | 19 29 |
| 37 | 164 | 60 | 22 30 | 30 | 164 | 54 | 20 4J |
| 29 | 162 | 60 | 22 86 | 28 | 163 | 53 | 19 95 |
| 59 | 170 | 65 | 2 49 | 70 | 160 | 50 | 19 53 |
| 31 | 172 | 66 | 22 30 | 46 | 161 | 53 | 20 45 |
| 25 | 170 | 65 | 22 49 | 50 | 160 | 50 | 19 J |
| 40 | 172 | 65 | 21 97 | 25 | 163 | 53 | 19 95 |
| 35 | 170 | 65 | 22 49 | 20 | 160 | 53 | 20 70 |

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|---|---|---|---|---|---|---|---|
| 13 | 171 | 61 | 21 68 | 30 | 152 | 50 | 21 01 |
| 35 | 170 | 65 | 22 49 | 35 | 151 | 51 | 22 07 |
| 10 | 168 | 64 | 22 67 | 30 | 156 | 4 | 18 1? |
| 37 | 171 | 60 | 20 52 | 36 | 153 | 18 | ? 0 |
| 10 | 170 | 68 | 23 52 | 39 | 151 | 19 | 20 6? |
| 14 | 163 | 62 | 21 70 | 13 | 153 | 17 | 18 ?? |
| 58 | 173 | 62 | 20 72 | 31 | 153 | 12 | 17 91 |
| 35 | 169 | 51 | 18 90 | 55 | 158 | 98 | 19 2? |
| 60 | 169 | 59 | 20 65 | 24 | 159 | 15 | 17 80 |
| 30 | 170 | 60 | 20 76 | 38 | 154 | 47 | 19 82 |
| 11 | 173 | 65 | 21 72 | 50 | 158 | 18 | 19 27 |
| 54 | 72 | 64 | 21 63 | 24 | 154 | 4? | 18 97 |
| 27 | 173 | 65 | 21 71 | 43 | 154 | 15 | 18 97 |
| 49 | 169 | 60 | 18 97 | 30 | 152 | 1? | 9 17 |
| 37 | 172 | 61 | 21 63 | 19 | 160 | 50 | 1? ?? |
| 56 | 169 | 61 | 21 35 | 19 | 158 | 19 | 19 ?? |
| 23 | 169 | 61 | 21 35 | 50 | 162 | 52 | 1? 81 |
| 53 | 173 | 65 | 21 72 | 19 | 159 | 49 | 19 38 |
| 22 | 171 | 63 | 21 54 | 50 | 164 | 54 | 20 07 |
| 58 | 169 | 62 | 21 70 | 20 | 153 | 10 | 17 08 |
| 25 | 170 | 63 | 21 80 | | | | |
| 22 | 173 | 65 | 21 72 | | | | |
| 24 | 172 | 63 | 21 30 | | | | |
| 21 | 171 | 62 | 20 95 | | | | |

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|--|--|--|--|--|--|--|--|
| 20 | 173 | 65 | 21 72 | 19 | 161 | 1 | |
| 21 | 173 | 66 | 22 05 | 37 | 161 | 55 | 21 8 |
| 53 | 170 | 65 | 22 19 | 13 | 158 | 19 | 1) 3 |
| 31 | 173 | 67 | 22 39 | 46 | 161 | 51 | ) 1 |
| 29 | 170 | 68 | 23 53 | 45 | 160 | 0 | 11 3 |
| 27 | 173 | 66 | 22 05 | 24 | 154 | 18 | 2 |
| 22 | 170 | 65 | 22 49 | 21 | 160 | 0 | 9 3 |
| 58 | 170 | 67 | 23 18 | 27 | 162 | 54 | 3 |
| 42 | 170 | 65 | 22 49 | 33 | 160 | 3 | 2) 70 |
| 49 | 169 | 62 | 21 70 | 35 | 161 | 51 | 20 3 |
| 0 | 167 | 60 | 21 51 | 33 | 160 | 50 | 19 3 |
| 30 | 166 | 60 | 21 77 | 25 | 160 | 1 | 0) 3 |
| 21 | 167 | 60 | 21 51 | 21 | 154 | 49 | 20 66 |
| 30 | 170 | 63 | 21 80 | 22 | 160 | 51 | 19 92 |
| 10 | 170 | 65 | 22 49 | 58 | 151 | 49 | 20 66 |
| 25 | 170 | 66 | 22 84 | 45 | 151 | 18 | 21 05 |
| 41 | 173 | 67 | 22 39 | 20 | 150 | 10 | 0 11 |
| 29 | 171 | 67 | 22 91 | 21 | 158 | 50 | 20 02 |
| 28 | 168 | 60 | 21 25 | 60 | 153 | 18 | 20 3) |
| 65 | 170 | 65 | 22 49 | 30 | 160 | 50 | 19 53 |
| 25 | 170 | 63 | 21 80 | 68 | 160 | 50 | 13 33 |
| 20 | 171 | 65 | 22 22 | 26 | 150 | 95 | 20 00 |
| 55 | 169 | 60 | 21 00 | 31 | 160 | 50 | 13 33 |
| 28 | 170 | 65 | 22 49 | 36 | 158 | 50 | 2 0 |
| 25 | 173 | 67 | 22 38 | 30 | 161 | 50 | 1) 2) |
| 55 | 173 | 76 | 25 40 | | | | |
| 27 | 171 | 76 | 25 99 | | | | |
| 75 | 170 | 65 | 22 40 | | | | |
| 37 | 163 | 58 | 21 83 | | | | |
| 16 | 160 | 70 | 19 53 | | | | |

Group IV.

| Ag | Adult Male Height | Weight | BMI | Age | Adult Female Height | Weight | BMI |
|---|---|---|---|---|---|---|---|
| 54 | 168 | 60 | 21 25 | 50 | 150 | 45 | 20 00 |
| 20 | 154 | 48 | 20 23 | 29 | 149 | 45 | 20 26 |
| 40 | 168 | 60 | 21 25 | 25 | 160 | 50 | 19 53 |
| 38 | 170 | 65 | 22 49 | 32 | 153 | 49 | 20 93 |
| 40 | 167 | 60 | 21 51 | 43 | 159 | 50 | 19 78 |
| 50 | 169 | 62 | 21 70 | 46 | 161 | 50 | 19 29 |
| 50 | 170 | 65 | 22 49 | 54 | 158 | 49 | 19 02 |
| 21 | 167 | 60 | 21 51 | 24 | 159 | 50 | 19 78 |
| 58 | 169 | 62 | 21 70 | 20 | 160 | 52 | 20 31 |
| 28 | 167 | 60 | 23 15 | 45 | 160 | 50 | 19 53 |
| 50 | 171 | 63 | 21 54 | 24 | 154 | 48 | 20 24 |
|  |  |  |  | 21 | 160 | 50 | 19 53 |
| 49 | 166 | 60 | 21 77 | 68 | 160 | 50 | 19 53 |
| 19 | 165 | 59 | 21 67 | 40 | 151 | 48 | 20 23 |
| 49 | 170 | 65 | 22 49 | 45 | 160 | 50 | 19 83 |
| 60 | 163 | 65 | 24 46 | 54 | 151 | 46 | 20 17 |
| 28 | 165 | 58 | 21 30 | 36 | 151 | 48 | 20 24 |
| 23 | 163 | 57 | 21 45 | 10 | 153 | 48 | 20 30 |
| 40 | 168 | 60 | 21 25 | 30 | 150 | 48 | 21 33 |
| 44 | 165 | 60 | 22 03 | 40 | 152 | 48 | 20 77 |
| 36 | 167 | 60 | 21 51 | 33 | 151 | 45 | 19 73 |
| 44 | 167 | 60 | 21 51 | 42 | 151 | 45 | 19 74 |
| 21 | 170 | 65 | 22 49 | 20 | 160 | 50 | 19 53 |

| Age | Adult Height | Male Weight | BMI | Age | Adult Height | Female Weight | BMI |
|---|---|---|---|---|---|---|---|
| 20 | 169 | 62 | 21 70 | 34 | 156 | 48 | 19 72 |
| 40 | 165 | 58 | 21 30 | 40 | 160 | 50 | 19 53 |
| 48 | 169 | 60 | 21 00 | 59 | 160 | 50 | 19 53 |
| 38 | 173 | 65 | 21 72 | 30 | 158 | 19 | 19 63 |
| 52 | 170 | 65 | 22 49 | 28 | 151 | 46 | 20 17 |
| 20 | 163 | 58 | 21 83 | 40 | 152 | 40 | 19 90 |
| 47 | 164 | 58 | 21 56 | 58 | 162 | 52 | 19 81 |
| 76 | 173 | 67 | 22 38 | 24 | 159 | 50 | 19 78 |
| 43 | 170 | 65 | 22 49 | 22 | 160 | 52 | 20 31 |
| 70 | 168 | 60 | 21 25 | 54 | 150 | 45 | 20 00 |
| 44 | 164 | 60 | 22 30 | 46 | 154 | 19 | 20 06 |
| 64 | 164 | 60 | 22 30 | 35 | 151 | 50 | 21 93 |
| 34 | 163 | 59 | 22 20 | 24 | 150 | 15 | 20 00 |
| 56 | 171 | 65 | 22 22 | 30 | 154 | 48 | 20 23 |
| 19 | 159 | 58 | 22 94 | 50 | 158 | 50 | 20 02 |
| 20 | 167 | 60 | 21 51 | 64 | 150 | 15 | 20 00 |
| 67 | 163 | 60 | 22 58 | 28 | 160 | 51 | 19 92 |
| 32 | 165 | 60 | 22 03 | 37 | 154 | 50 | 21 08 |
| 28 | 164 | 58 | 21 56 | 66 | 160 | 50 | 19 53 |
| 32 | 171 | 64 | 21 88 | | | | |
| 42 | 167 | 60 | 21 51 | | | | |
| 29 | 171 | 65 | 22 22 | | | | |

# FOOD CONSUMPTION PATTERN OF RURAL HOUSE-HOLDS BELOW POVERTY LINE AS INFLUENCED BY FOOD SUBSIDIES DISTRIBUTED THROUGH FAIR PRICE SHOPS

BY
**PRIYA GOPINATH. R.**

## ABSTRACT OF THE THESIS

*Submitted in partial fulfilment of the requirement for the degree of*

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**COLLEGE OF AGRICULTURE**
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**1994**

# ABSTRACT


A study on the food consumption pattern of rural households below poverty line as influenced by the food subsidies distributed through fair price shops was taken up to evaluate the socio economic and personal characteristic of the beneficiaries daily food consumption pattern and contribution of food subsidies available through fair price shops on their daily diet


On the basis of their participation in Public distribution system 120 households of 4 groups with 76 to 100 per cent participation 51 to 75 per cent participation 26 to 50 per cent participation and less than 25 per cent participation were selected for the study


All the house holds surveyed were more or less in similar socio economic back ground Percent of the monthly income in all the four groups was incurred for food especially for cereals It was also found that percentage cereal expenditure was increasing from group 1 to group 4

Among the house holds in the four groups more percentage of house holds were spending less than ten per cent of their total food expenditure for purchasing food ration A comparison among four groups revealed that percentage of ration expenditure against total food expenditure was low in group 1 and this was gradually increasing from group 1 to group 4

All households in the four groups were found to include rice sugar coconut milk spices and condiments and oil every day Rice wheat sugar and oil were purchased from fair price shops Rice and oil distributed through this shops were not adequate for the house holds and hence open market services were utilised House holds under group 1 were found using the ration cards regularly in every week and households in group 4 were not in the habit of purchasing ration regularly The beneficiaries had favourable views about the quantity and quality of food subsidies supplied through this system Food consumption pattern of all house holds in 4 groups revealed that the food consumption of households were better in group 1 than the house holds in other 3 groups But the diets of all the four groups were below the recommended daily allowances

Nutritional status of different age groups was ascertained in the 20 households selected (10 each from Group 1 and Group 4). It was found that clinical scores based on various deficiency diseases was higher for family members belonging to group 2. Teethcarries and spongy bleeding of gums were common among the children of the two groups of the house holds. Haemoglobin level was below average in adult females and adolescent females in both the groups.

The present study gives an indication that Public Distribution System has positively influenced the regular beneficiaries and prolonced implementation of the programme is one of the methods to achieve sufficient health profile for the population in below poverty line the country.