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NATIONAL NUTRITION MONITORING BUREAU

Diet & Nutritional Status of Population and Prevalence of Hypertension among Adults in Rural Areas

NATIONAL INSTITUTE OF NUTRITION
Indian Council of Medical Research
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CONTENTS

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EXECUTIVE SUMMARY

During the year 2004-05, the NNMB carried out surveys in the rural communities of nine States viz., Kerala, Karnataka, Tamil Nadu, Andhra Pradesh, Maharashtra, Madhya Pradesh, Gujarat, Orissa and West Bengal. The villages covered by NSSO for its 54th round of Consumer Expenditure surveys, formed the sample frame. In addition to routine diet and nutrition assessment, prevalence of obesity according to waist circumference and Waist Hip Ratio, Hypertension and Diabetes Mellitus (in Andhra Pradesh only) were also assessed. Haemoglobin levels among adult men and NPNL women, who were not covered earlier in MND surveys, were also assessed.

The investigations included, collection of data on demographic and socioeconomic particulars of the households (HHs), nutritional anthropometry, clinical examination for nutritional deficiencies, 24-hour recall method of diet survey to assess food and nutrient intakes of households and individuals, history of morbidity during the preceding 15 days, blood pressure measurement, fasting blood glucose levels (in Andhra Pradesh) and estimation of Haemoglobin levels among adult men and women.

About 51,700 individuals of different ages from 14,256 HHs in 713 villages were surveyed for anthropometry, clinical examination and prevalence of morbidity. Information on food and nutrient intake was collected from 30,244 individuals from 7,078 households.

The analysis of data revealed that a majority of the HHs covered belonged to Hindu religion (88%). About 37% of HHs belonged to backward communities, while 22% belonged to Scheduled Castes and 11% to Scheduled Tribes. Nearly two-thirds of the houses were semi-pucca. The average family size was 4.9. Agriculture was the major occupation in about a quarter (25%) of HHs, while about 44% were either agricultural (15%) or other labour (28%). However, about 49% of the HHs did not possess any agricultural land. About 32% of the adult men and 48% women were illiterate. The average monthly per capita income was Rs. 660 at the current value, while 29% of HH had a monthly per capita income of less than 300 Rs. per day. A majority were nuclear families (64%), while 18% each were either extended nuclear or joint families.

About 39% of the HHs had taps as source of drinking water, while in about 35%, the drinking water source was tube wells. In general, about 27% of the HHs had sanitary latrine, about 76% of the HHs possessed separate kitchen and about two thirds of the houses were electrified.

Cereals & millets formed the bulk of the rural dietaries. Millets constituted only about 13% of the total cereals consumed, and was found consumed in varying quantities mostly in the States of Gujarat, Maharashtra, Karnataka and Madhya

Pradesh. The consumption of all foods except roots and tubers was below the RDI in all the age/sex/physiological groups. The consumption of protective foods such as pulses, GLV, milk and fruits were grossly inadequate. Consequently, the intakes of micronutrients such as iron, vitamin A, riboflavin and folic acid were far below the recommended levels in all the age groups. Only a fourth of the preschool and school age children were consuming diets adequate in protein and energy, the proportion of which was higher in adolescents (about 30-60%) and in adults (about 70-80%).

None of the children under the age of 5 years exhibited signs of kwashiorkor, while the prevalence of marasmus was about 0.1%. The prevalence of Bitot spots, an objective sign of vitamin A deficiency and that of angular stomatitis, indicative of B-complex deficiency, was about 0.6% and 0.8% respectively among the preschool children. Among the school age children, the common deficiency signs noted were conjunctival xerosis (1.9%), Bitot spots (1.6%), angular stomatitis (1.9%); the prevalence of dental fluorosis was 2%.

The median heights and weights of the population studied were comparable to 5th centile values of NCHS standards in the 1-4 year age group while they were lower in the older age groups. The prevalence of undernutrition according to weight for age by IAP classification tended to increase sharply from about 40% in 6-12 months age group to about 60% in 12-24 months age and continued to be at that level till 60 months. This indicates the critical period of 6-18 months of age, where the infant and young child feeding practices could be faulty.

In general, the proportion of preschool children with underweight (<Median – 2 SD) was about 55%, while that of severe underweight (<Median–3SD) was 18%. The proportion of under-weight among <3 year children was comparable with that reported in NFHS-2 surveys for the country. The extent of stunting (<Median–2SD) was about 52%, while about 15% of preschool children were wasted (<Median–2SD). No significant gender differentials were observed in the prevalence of undernutrition. A decrease in the prevalence of under weight (55% Vs 60%) and wasting (15% Vs 23%) was observed as compared to the figures reported in NNMB surveys of 2000-01. The prevalence of stunting however remained similar (52% Vs 49%).

The prevalence of underweight, stunting and wasting, according to revised WHO child growth standards among 0-60 months children was about 40%, 45% and 20% respectively. The prevalence of overweight/obesity (BMI> Median+2SD) was about 2.5%.

The prevalence of underweight tended to decrease from about 41% among children in 6-9 year age group to 38% in 10-13 years and then declined to about 38% in 14-17 year age group.

The prevalence of overall undernutrition was relatively higher among the children of Hindus and those belonging to Scheduled Tribes. The proportion of moderate to severe underweight was marginally higher in those from nuclear families and in those living in kutcha houses. The extent of underweight tended to increase with decrease in average monthly per capita income (PCI), from about 46% in HHs with PCI of ≥Rs.900, to 60% in HHs with PCI of < Rs.300.

At the aggregate level, about 33% of the males and 36% of the females had chronic energy deficiency (BMI:<18.5). The prevalence of overweight was marginally higher among females (10.9%) than males (7.8%). The most common forms of morbidities among different age groups were fever, diarrhoea, dysentery and acute respiratory infections, the prevalence of which ranged from 2 to 10%.

The mean Haemoglobin levels among adult men and NPNL women (≥20 years) were below the cut-off points suggested by WHO to diagnose anaemia. About 55% of adult men and 75% of NPNL women were found anaemic. The prevalence anaemia was highest in the States of West Bengal (men: 84%; women: 91%) compared to other States.

The overall prevalence of hypertension (by JNC VII criteria) was found to be very high 25% and 24% among adult men and NPNL women respectively. The prevalence was highest in the State of Kerala (men: 51%; women: 47%) compared to other States. A positive association was observed between prevalence of hypertension and obesity, WHR and WC. The prevalence of diabetes and impaired glucose tolerance was about 4% and 2% respectively. Prevalence of DM/IGT was significantly associated with obesity, WHR, and WC.

About two third of men (66.5%) and women (60.5%) were aware of hypertension, of them about only 4% of them were known hypertensives and 2-3% were on treatment. Similarly, about 56% men and 49% women aware of diabetes mellitus, of them only about 1-2% had known diabetics and 1% were on treatment.

There is also an urgent need to sensitize the community regarding the causes and consequences of obesity, HTN and DM and to educate them about the need for adopting appropriate life styles and dietary habits.

1. INTRODUCTION

The National Nutrition Monitoring Bureau (NNMB) carries out diet and nutrition surveys routinely once in every 5 years, and special studies during the intervening period. Accordingly, subsequent to the diet and nutrition survey (1999-2000), micronutrient deficiency (MND) survey was carried out in 8 NNMB States during the period 2002-03. The current survey was, therefore, initiated during 2004-05, to assess the diet and nutritional status among the rural communities in 10 States viz., Andhra Pradesh, Gujarat, Kerala, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Several sporadic studies carried out in the developing countries, including India[1] have been reporting a steady increase in the prevalence of diet related chronic diseases like obesity, hypertension, diabetes mellitus, etc. in urban as well as rural areas. However, no large-scale systematic studies have been carried out in India, especially among rural communities, to assess the prevalence of these disorders. Therefore, in the present survey, in addition to assessment of diet and nutrition status, prevalence of obesity and hypertension among adult men and women (≥20 years) was also investigated. Estimation of Haemoglobin from finger prick blood samples was also carried out among adult men and NPNL women, as these two groups were not covered in the MND survey carried out earlier. In the State of Andhra Pradesh, the assessment of prevalence of Diabetes Mellitus (DM)/ hyperglycemia was also carried out among adults. The study protocol was reviewed and approved by the Steering Committee of NNMB in its annual meeting held on 11th September 2003.

2. OBJECTIVES

2.1 General Objective

To assess the diet and nutritional status of the individuals, prevalence of obesity, hypertension, diabetes (only in Andhra Pradesh) among adults of ≥20 years of age and anaemia among adult men and NPNL women in the rural communities.

2.2 Specific Objectives

1. To assess the food and nutrient intake among different age/sex/physiological groups in the rural communities,
2. To assess the nutritional status of individuals in terms of anthropometry and prevalence of clinical signs of nutritional deficiencies,
3. To assess the prevalence of morbidity during previous fortnight,
4. To assess the prevalence of obesity among the adult men and women (≥20 years) in terms of BMI, waist circumference and waist-hip ratio (WHR),
5. To assess the prevalence of anaemia among adult (≥ 18 years) men and non-pregnant and non-lactating (NPNL) women
6. To assess the prevalence of hypertension among the adult (≥20 years) men and women, and
7. To assess knowledge and practices about disorders such as hypertension and diabetes mellitus among adults.

3. METHODOLOGY

3.1 Study design

It was a cross-sectional study, carried out by adopting multistage stratified random sampling procedure in 9 States, viz., Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Gujarat, Tamil Nadu and West Bengal.

3.2 Sample Frame

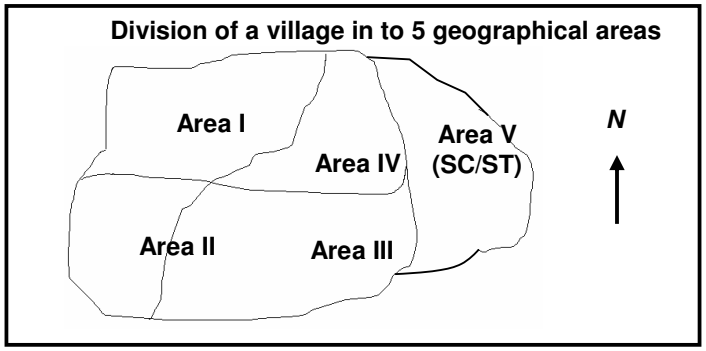
The villages covered by NSSO for its 54th round of consumer expenditure survey carried out during 1998 formed the sample frame[2]. Based on agro-climatic criteria, NSSO divides each State into several strata; each stratum consisting of about 1.8 million rural populations. Districts with rural population of more than 1.8 million are divided in to two or more strata by grouping contiguous *talukas/tehsils* having similar cropping pattern and population density. It also adopts two stage stratified random sampling procedure, in which the villages formed the first stage units (FSUs), while the households (HHs) formed the Second Stage Units (SSUs). Keeping in view the manpower resources available with the NNMB, it was decided to cover 16 strata from each State.

3.3 Selection of villages

In each selected stratum, five villages were randomly selected from the list of villages covered by NSSO for the consumer expenditure survey.

3.3.1 Formation of geographical groups of HHs in the village

The households in each village were selected by adopting cluster-sampling procedure. For the purpose, the entire village was divided into 5 geographical areas based on natural groups of houses, streets or mohallas. Households belonging to SC/ST community, who generally live in a group, were considered as one of the five areas, as shown in the figure below. In each village, a total of 20 HHs were covered (@ 4 HHs per geographical area).



3.3.2 Selection of HHs within each geographical area

In each geographical area, the HHs were enumerated starting from northeast corner and by continuing in a serpentine order. In the case of a large village, where the number of HHs in a geographical area was more than 100, such area was subdivided into

2 or more sub-areas, based on natural groups of HHs and from them one group was selected randomly for enumeration. The first HH (with random start) for survey was selected randomly using random number tables. Starting from this household, four consecutive HHs were covered for the survey. In case, the selected house was found locked, next adjacent HH was covered. Similar procedure was adopted for covering HHs in all the remaining geographical areas. Thus, in each village, a total of 20 HHs were covered.

3.4 Sampling Procedure

3.4.1. Socio-economic & demographic information of HHs

Socio-economic and demographic particulars were collected from all the 20 HHs covered in each selected village.

3.4.2 Nutritional status

All the available individuals in the selected HHs were covered for anthropometry, clinical examination and collection of history of morbidity during previous fortnight.

3.4.3 Diet survey

Twenty-four hour recall method of diet survey was carried out in a sub sample of 10 HHs (every alternate household covered for anthropometry) to assess the food and nutrient intake at the household as well as individual level.

3.4.4 Computation of sample size for diet related chronic diseases

3.4.4.1 Hypertension

Studies carried out in the past have shown that the overall prevalence of hypertension among the rural adults of 20 years and above was about 8-10%[3]. By assuming the prevalence of Hypertension as 8% and with 95% confidence interval and 20% relative precision, the sample size required for each State was computed as 1,104 adults for each gender. Therefore, from each village, a minimum of 15 adult men and women each were required to be covered for the measurement of blood pressure. However, all the available adults were covered for the purpose of the survey.

3.4.4.2 Fasting blood glucose levels

Earlier studies carried out in India have revealed that the overall prevalence of diabetes mellitus in the rural areas was about 5%[4]. Thus, assuming a prevalence of 5% of diabetes mellitus with 95% confidence interval and 20% relative precision, a sample of 1,825 adults of ≥ 20 years would be required for each gender for the estimation of fasting blood glucose levels.

3.4.4.3 Haemoglobin levels

Assuming a prevalence of anaemia of 50% among adult men and NPNL women (≥ 20 years)[5], 95% confidence interval and a relative precision of 10%, a sample size of about 400 individuals in each of the gender was arrived at, for the estimation of haemoglobin levels. Therefore, 5 adult men and women each in the age group of ≥ 20 years were covered for the purpose from every alternate HH covered for the diet survey.

3.5 Investigations

3.5.1 Household socio-economic and demographic particulars

Household demographic and socio-economic particulars, such as family size, type of dwelling, age/sex/occupation, income and literacy level of all the individuals, household possession of agricultural land, live stock, agricultural production, etc. were collected from all the 20 households selected for the survey.

3.5.2 Nutrition Assessment

All the available individuals from the 20-selected HHs in each village were covered for the assessment of the nutritional status in terms of anthropometry and clinical examination.

3.5.2.1 Anthropometry

Anthropometric measurements such as height, weight, mid upper arm circumference and fat fold thickness at triceps were taken on all the individuals in the selected HHs by adopting standard procedures. In addition, waist and hip circumferences were also measured on adults of ≥20 years of age (excluding pregnant women). All the measurements were taken by using standard equipment and procedues[6].

3.5.2.2 *Clinical Examination*

All the individuals covered for anthropometry were examined for presence of clinical signs of nutritional deficiencies. In addition, history of prevalence of symptoms such as night blindness was elicited from the subjects (from mothers of young children).

3.5.2.3 Estimation of Haemoglobin

Procedure

20 µl of finger prick blood sample was collected using fixed volume Finn pipettes with disposable tip, by standard procedures and transferred into a test tube containing 5 ml of Drabkin's reagent. The haemoglobin was estimated using a photoelectric digital colorimeter by cyanmethaemoglobin method[7]. Commercial Haemoglobin kits (of Dr. Reddy's Laboratories or Glaxo Laboratories or Zydus Pathline) were used for the purpose.

3.5.2.4 *Diet Survey*

Food intakes of the individuals were assessed by carrying out 24-hour recall method of diet survey in every alternate household (10 HHs) covered for nutrition assessment[8].

3.5.3 History of Morbidity

Information on morbidity such as fever, dysentery, diarrhoea and acute respiratory infections during the preceding 15 days was collected among all the individuals covered for Nutrition Assessment.

3.5.4 Chronic Diet related morbidities

3.5.4.1 Measurement of blood pressure

Systolic and diastolic blood pressure was measured in recumbent posture using mercury sphygmomanometer on all the available adults of ≥ 20 years covered for

anthropometry and clinical examination. The measurements were made for three consecutive times, with a gap of 5 minutes between measurements.

3.5.4.2 Estimation of Fasting blood glucose levels

This investigation was carried out only in the State of Andhra Pradesh on a pilot basis. Fasting Blood glucose levels were measured after a 12 hours fast, using portable Glucometer (*Boots*) among the adults of ≥20 years covered for anthropometry and clinical examination. For this purpose, all the selected adults were contacted on the previous day, and were instructed to maintain 12 hours fasting before blood glucose level was estimated around 7 am on the next day.

3.5.4.3 Waist circumference

Waist circumference was measured with a fiber reinforced plastic tape at point mid way between the lowest margin of the ribs and the iliac crest.

3.5.4.4 Hip Circumference

Hip circumference was measured with the tape a point of maximum protuberance of buttocks.

3.6 Data Analysis

3.6.1 Diet and Nutritional status

3.6.1.1 Food and Nutrient Intakes of households / Individuals

The average daily intakes of different foods by individuals were calculated according to different age/sex, physiological status (pregnant women of ≥ 12 weeks gestation and Lactating women of <12 months duration) and physical activity groups and were compared with the recommended least cost balanced diets provided in 'Recommended dietary Intakes for Indians' (1981)[9]. The average nutrient intakes were calculated by using food composition tables in 'Nutritive value of Indian Foods'[10]. The median as well as mean±SD intakes of various nutrients were computed and compared with 'Recommended Dietary Allowances for Indians' (1991)[11] suggested by the ICMR Expert Committee**.** In addition, the average intake of various foods and nutrients (per CU/day) at the household level was also computed.

3.6.1.2 Protein /Calorie Adequacy Status of Individuals

The individuals were categorized in to different groups based on the protein/calorie adequacy status according to age/sex/physiological groups and activity. The protein and energy requirement curves are assumed to follow Gaussian distribution, with a coefficient of variation of 15%. The Expert Committee of Indian Council of Medical Research (ICMR) has suggested "requirements" for energy as the "recommended allowances", while in the case of protein, the "allowances" corresponded to Mean ± 2 SD of the "requirements". Therefore, for defining the energy/protein adequacy status, 70% of requirements (Requirements-2SD)[11] were used as cut-off points for different age/sex/physiological and activity groups.

3.6.1.2.1 Protein /Calorie Adequacy Status of households

The households were categorized according to the protein/calorie adequacy status by considering average consumption of protein/calorie per Consumption Unit (the requirements of reference man is considered as one Unit) per day and by adopting similar procedure described above. However, the cut-off level used to define the adequacy status of a household was "Requirement-2 SE", since the intakes at HH level are mean values, unlike in the case of individuals. It may also be mentioned here that the SE differ between HHs, since the total CUs for each of the HHs are variable.

3.6.1.3 Anthropometry

Mean height, weight, mid-upper arm circumference and fat fold thickness at triceps were calculated according to age group and gender.

Preschool Children

The <5-year children were categorized according to their nutritional status by different Classification as described below:

Gomez Classification[12]

Weight for age (% of NCHS Standard)	Nutritional Grade
≥ 90	Normal
75 - 89.99	Grade I (Mild undernutrition)
60 - 74.99	Grade II (Moderate undernutrition)
< 60	Grade III (Severe undernutrition)

The children were distributed according to Gomez grades by comparing with NCHS standards[13], to facilitate comparison with earlier data of NNMB, wherein only Gomez classification was used, in seventies and early eighties.

IAP Classification[14]

The 6-59 months children were distributed according to IAP classification as follows using Harvard standards[6], to help comparison with ICDS data, in different States.

Weight for age (% of Harvard Standard)	Nutritional Grade
≥ 80	Normal
70 – 79.99	Grade I Undernutrition
60 – 69.99	Grade II Undernutrition
50 – 59.99	Grade III Undernutrition
< 50	Grade IV Undernutrition

Standard Deviation (SD) Classification[15]

The World Health Organization recommends use of SD classification to categorize 1-5 year children into different nutritional grades. Therefore, the percent distribution of preschool children according to weight for age, height for age and weight for height using NCHS reference values, was done as described below:

SD Classification	Weight for age	Height for age	Weight for height
≥ Median – 2SD	Normal	Normal	Normal
Median –2SD to ≥Median–3SD	Moderate undernutrition	Moderate stunting	Moderate wasting
< Median–3 SD	Severe undernutrition	Severe stunting	Severe wasting

School age Children and Adolescents

Children of 6-9, 10-13, and 14-17 year age groups were distributed according to Weight for age, Height for age and Weight for Height by SD classification using NCHS standards. In addition, 10-13 and 14-17 year age group of children were distributed according to nutritional status based on Body Mass Index (BMI) by using the NHANES age/gender specific BMI centile values, as mentioned below [16].

BMI Age centiles	Nutritional grade
< 5th centile	Undernutrition
≥ 5th - < 85th centile	Normal
≥ 85th - < 95th centile	Overweight
≥ 95th centile	Obesity

Adults

Body Mass Index (BMI)

The nutritional status of adults was assessed according to BMI based on James et al[17] and WHO classification[18] as follows:

BMI	Nutritional Grade	Classification
<16.0	III degree CED	James et al
16.0 – 17.0	II degree CED	
17.0 – 18.5	I degree CED	
18.5 – 20.0	Low Normal	
20.0 – 25.0	Normal	
25.0 – 30.0	Over weight	
≥ 30	Obesity	
20.0 – 23.0	Normal*	WHO
23.0 – 30.0	Over weight	
30 – 35	Obesity I	
35 – 40	Obesity II	
≥ 40	Obesity III	

CED: Chronic Energy Deficiency * For Asian Populations

Waist Circumference

Adult men with waist circumference ≥ 102 cm and adult women with ≥88 cm were considered as having abdominal obesity[19].

Waist hip ratio (WHR)

Adult men with waist hip ratio of **≥** 0.95 and women with **≥** 0.80 were considered as having abdominal obesity[20]

3.6.1.4 Anaemia

The criteria suggested by the WHO[21] were used to define the extent and degree of anaemia. The cut off values suggested for men and NPNL women (≥ 20 years) by the WHO are presented below:

Gender	Normal	Degree of Anaemia (g/dL)		
		Mild	Moderate	Severe
Men	≥ 13	10 -13	7-10	<7
Women	≥ 12	10 -12	7-10	<7

3.6.1.5 Hypertension

Subjects with systolic blood pressure of ≥140 mmHg and /or diastolic pressure of ≥90 mm Hg were considered as hypertensive (WHO-TRS 862, 1996[22] & JNC Criteria[23] VII). In the present study, the average of these consecutive reading of blood pressure was considered to categorizing the individuals in the different grades of hypertension as follows:

Grades of Hypertension	Blood pressure (mm/Hg)	
	Systolic	Diastolic
Normal	< 120	< 80
Pre-hypertension	120 - 139	80 - 89
Stage 1 Hypertension	140 - 160	90 - 99
Stage 2 Hypertension	≥ 160	≥ 100

3.6.1.6 Diabetes Mellitus

The following ICMR/WHO cut-off levels were used to categorize individuals with Diabetes Mellitus/ Hyperglycaemia (DM/HG)[24].

Category	Fasting blood glucose (mg/dl)
Normal	<110
Hyperglycemic	110 –125.99
Diabetes Mellitus	≥126

3.7 Training and Standardization of Investigators

The Medical Officers, Nutritionists, Social Workers and Technicians of all the NNMB Units were trained and standardized at the NIN for a period of three weeks, in various techniques of investigations, including diet surveys, anthropometry, identification of clinical signs of nutritional deficiencies, measurement of blood glucose, haemoglobin estimation, measurement of blood pressure, and administration of various questionnaires before the initiation of the survey. During the training, emphasis was given to achieve the maximum intra and inter-individual agreement in respect of all the measurements. During the training, the teams carried out mock surveys.

3.8 Quality Control

To ensure quality control in the estimation of haemoglobin, every 10^{th} sample was collected in duplicate by the investigators, while every alternate duplicate sample was analyzed by the NNMB team to ensure internal consistency; the remaining duplicate samples were collected on Whatman No.1 filter paper using glass haemoglobin pipettes. They were sent immediately by courier to NNMB CRL for analysis to ensure inter lab consistency.

In addition, anthropometric measurements, assessment of haemoglobin, blood glucose levels, and blood pressure were repeated in a sub-sample of individuals in the field during periodical visits by the staff of CRL as a quality control measure. In case of haemoglobin values, the intra-individual variation was less than $\pm$ 0.5 g/dl in 48% of duplicate samples, while it was 0.5 to 1.0 g/dl in 25% of the samples. During the survey, the intra class correlation was 0.81, indicating good agreement between the estimations of haemoglobin by NIN and field investigations.

3.9 Ethical Issues

Clearance from Institutional ethical review board (IRB) was obtained before initiation of the study. Informed oral consent was obtained from all the subjects, who participated in the survey.

4. RESULTS

4.1 Coverage

The particulars of the coverage for various investigations are provided in **Table 1**. The coverage of villages was 100% of the target in all the States, except in West Bengal (91.3%), where 7 villages could not be covered due to un- approachability. In the State of Uttar Pradesh, the survey could not be completed due to frequent turn over of the staff. Since Uttar Pradesh could cover only 30 villages out of the targeted 80, the data could not be included in the compilation of final report. A total of 713 villages were covered from 9 States.

About 51,700 individuals of different age group and gender from 14,256 HHs were covered for anthropometry, clinical examination and prevalence of morbidity during the preceding 15 days. Information on food and nutrient intake was collected from 30,244 individuals from 7,078 HHs. A total of 3,391 adult men and 3,384 NPNL women of $\geq$ 20 year were covered for estimation of Haemoglobin, while measurement of blood pressure was done

on 11,927 men and 13,702 women of ≥ 20 years. A total of 25,242 individuals of ≥ 20 years were covered for the measurement of hip and waist circumference. Fasting blood glucose levels were assessed in 1803 adult men and 1883 women of ≥ 20 year in the State of Andhra Pradesh.

4.2 Household Socio-economic and demographic profile

The household socioeconomic and demographic particulars are provided in **Tables 2.1 to 2.4 and Fig. 1**.

4.2.1 Religion

A majority of the HHs (87.8%) belonged to Hindu religion, while the rest were Muslims (7.9%), Christians (2.5%) or others (1.8%). The proportion of Muslims was significantly higher ($p<0.05$) in the States of Kerala (25.9%) and West Bengal (21.6%), compared to other States.

4.2.2 Community

About 37% of the HHs, in general, belonged to backward communities, while 22% belonged to Scheduled Castes and 11% to Scheduled Tribes. The proportion of tribal HHs was maximum in Madhya Pradesh (24.1%) followed by Orissa (22.9%) and Gujarat (14.6%), while it was least in the States of Tamil Nadu (1.4%), Kerala (2%) and Andhra Pradesh (2.8%).

The proportion of Scheduled Caste HHs covered was higher in the States of West Bengal (40.5%) and Tamil Nadu (28.9%), while it was low in the States of Gujarat (13.6%), Kerala (14.4%) and Madhya Pradesh (15.6%).

4.2.3. Type of house

The type of house is considered as an index of economic status of the HHs. A majority of HHs surveyed lived in semi-pucca houses (62%), followed by kutcha (22.3%) and pucca (15.8%). The proportion of HHs living in kutcha houses was highest in the States of Orissa (49.5%), followed by Gujarat (39.9%) and Tamil Nadu (27.4%), with least in Maharashtra (3.8%)

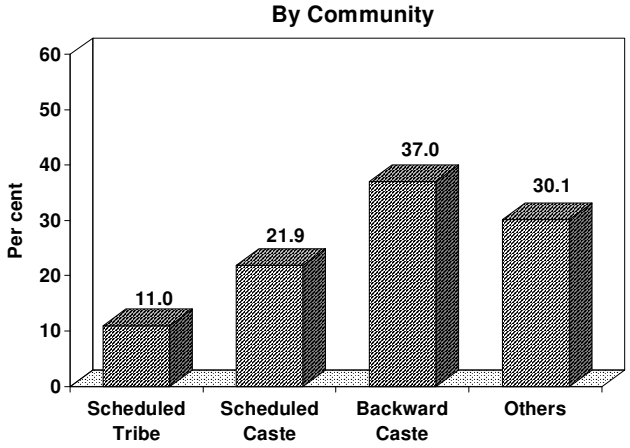
4.2.4. Type of family

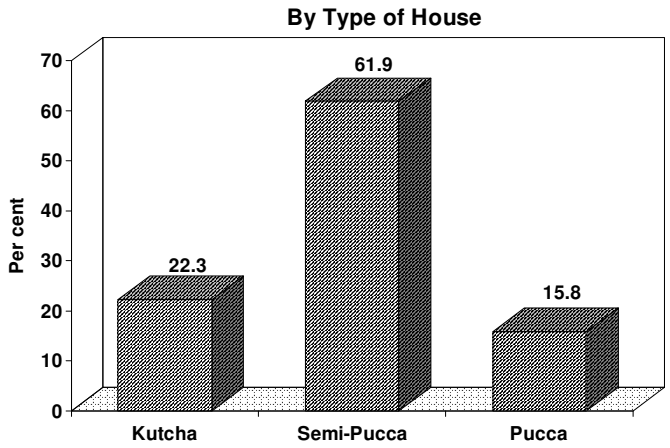
A majority (63.5%) of the families were nuclear, followed by 18.4% each of extended nuclear and joint families. The proportion of nuclear families ranged from 56.7% in Gujarat to 73.6% in Tamil Nadu. The proportion of joint families was relatively higher in Karnataka (24.7%) and Orissa (21.6%) compared to the States of the Madhya Pradesh (12.2%) and Tamil Nadu (15.2%).

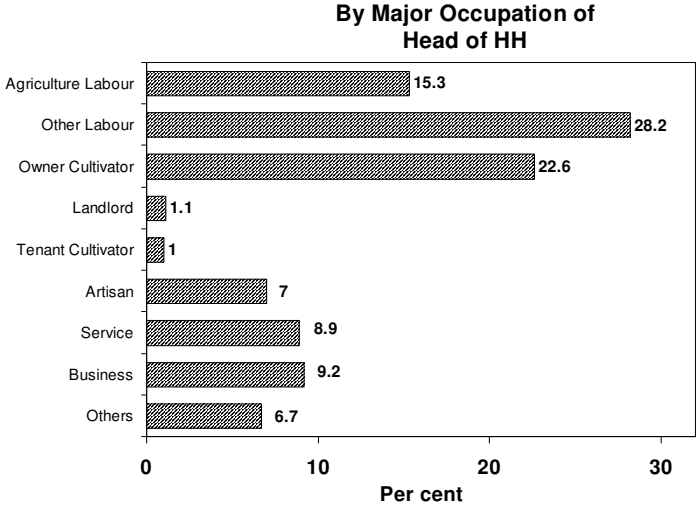
4.2.5 Family size

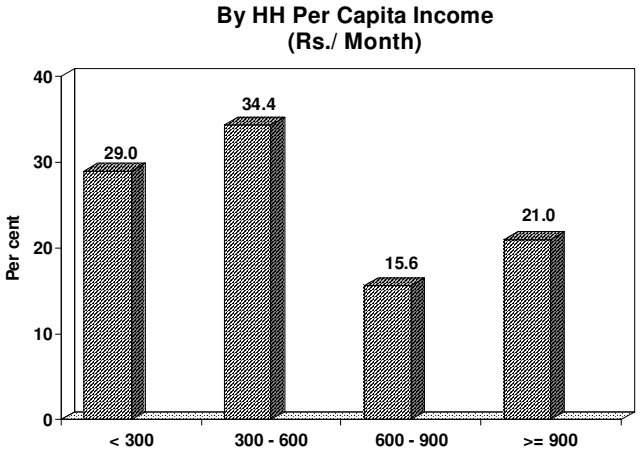
The average family size was 4.9. About 46% of the HHs had family size of 1-4 and 5-7 each, while 8% of the HHs had more than 8 members. A relatively higher proportion of HHs had less than 5 members in the States of Kerala (58.5%), Tamil Nadu (55.3%) and Andhra Pradesh (52.2%) compared to other States like Maharashtra (35.5%), Orissa (36.6%) and Gujarat (38.5%).

Fig. 1 Distribution (%) of Households by Socio-economic Variables









4.2.6 Literacy status of adult men

About 32% of adult men in the HHs surveyed were illiterate, the proportion of which ranged from a high of about 46% in West Bengal and Andhra Pradesh to a low of about 8% in Kerala. About 14% had primary education; 24% had secondary education; 22% had higher secondary education, while only 6% had college education.

4.2.7 Literacy status of adult women

About half of the adult females (48%) in the HHs surveyed were illiterate, the proportion of which ranged from a high of 65% in Madhya Pradesh and Andhra Pradesh to a low of 12% in Kerala. About 12% had primary education; 21% had secondary education; 15% had higher secondary education, while only 2% had college education.

4.2.8 Major occupation of the head of the household

In about 43% of the HHs in general, major occupation of the head of the household was agricultural labour (15%) or other labour (28%), while in about 23%, the head of the HHs was owner cultivator. The proportion of HHs engaged in labour activity was maximum (55%) in the State of Gujarat and least in the State of Kerala (38%).

The proportion of cultivators was highest in the State of Madhya Pradesh (46%) and least in Kerala (3%). About 18% of HHs in general, were engaged in either service (8.9%) or business (9.2%). Their proportion was highest in Kerala (34%) and least in Madhya Pradesh (10.7%).

4.2.9 Household Landholding

In general, about 49% of the HHs did not possess any agricultural land, the proportion of which ranged from a high 66.4% in Gujarat to a low 35.9% in Orissa. About 32% were marginal farmers, 9% were small and 10% were large farmers. The proportion of marginal farmers was maximum in the States of Orissa (49.1%) and Kerala (48.8%) and least in Gujarat (15.2%). The proportion of large farmers was maximum in the State of Maharashtra (19.7%) and least in Kerala (0.1%).

4.2.10 Per capita monthly Income

The average monthly per capita income was Rs. 660/- at the current rupee value. Gujarat had highest average per capita monthly income of Rs.1057/-, while Orissa had lowest of Rs.330/-. In general, two thirds of HHs (63.4%) had monthly per capita income of either Rs.300/- or Rs.300-600, while one fifth (21%) had ≥ Rs.900/- month. The proportion of HHs with ≥ Rs.900/- per month was maximum in the State of Gujarat (45.3%) and lowest in Orissa (4.8%).

4.2.11 Household physical facilities and access to safe drinking water

In general, about 27% of the HHs had sanitary latrine the proportion of which was highest in Kerala (88.3%), and least in Madhya Pradesh (7.4%) and Orissa (8.6%). About three fourth of HHs (75.5%) had separate kitchen, the proportion of which was highest in Kerala (97.4%) and Tamil Nadu (92.1%) and lowest in Andhra Pradesh (47.4%).

About 86% of HHs in general used firewood as cooking fuel, followed by LPG (10%) and kerosene (0.9%). About 72% of houses were electrified, the proportion of which ranged from a high (95% each) in Gujarat and Andhra Pradesh to a low 26.8% in Orissa and 32.9% in West Bengal. About 39% of the HHs had protected water supply (tap), while rest of HHs had either tube well (35%) or open well (24%) as source of drinking water.

4.3 Food and Nutrient Intakes

4.3.1 Food and Nutrient intakes of Households

4.3.1.1 Household Food intakes

The State-wise average daily consumption of foods (g/CU/day) is provided in **Table 3 and Fig. 2**. In general, cereals formed the bulk of the dietaries of the population surveyed. The millets intake was relatively higher in the States of Gujarat (maize, *bajra*), Maharashtra (*Jowar*), Karnataka (*ragi*) and Madhya Pradesh. The consumption of nuts and oil seeds was high in Kerala (coconuts), while the State of Gujarat had maximum intake of milk.

Cereals & millets

The average intake of cereals and millets was about 396 g/CU/day, which is about 86% of RDI. The Intakes ranged from a low of 320g in Kerala to a high of 477g in the State of West Bengal.

Pulses& legumes

The average intake of pulses & legumes was low (28 g/CU/day) in all the States and was about 70% of RDA. The intakes ranged from a low 18g in West Bengal to a maximum of 37g in Tamil Nadu and Karnataka.

Green leafy vegetables

The average consumption of green leafy vegetables (16g/CU/day) was much below the suggested levels of 40g in all the States, except in Orissa (43 g) and West Bengal (41 g). The intakes were very low in the States Andhra Pradesh (6 g), Kerala (7g), Karnataka (8 g) and Gujarat (9 g).

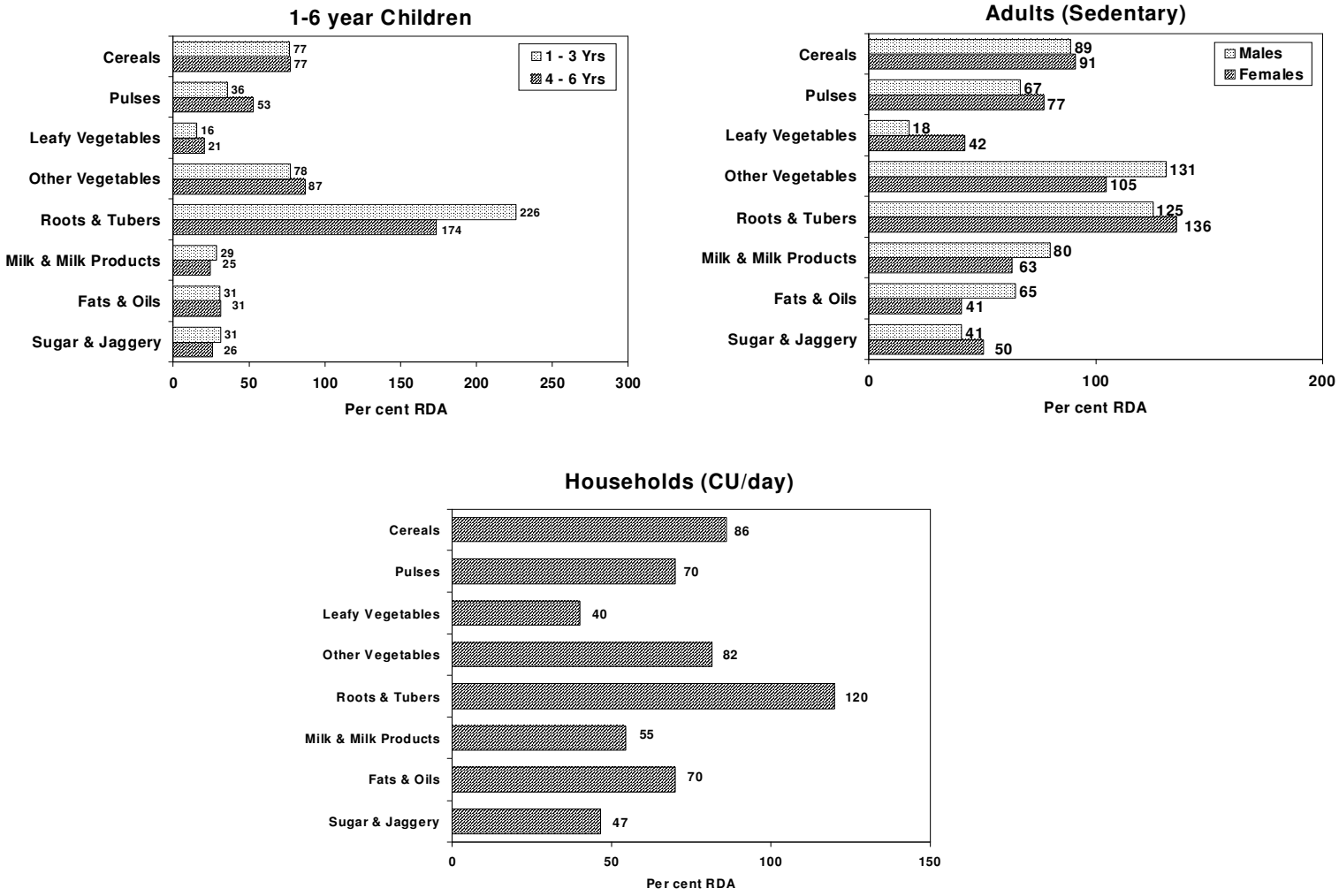
Other vegetables

The average consumption of other vegetables was relatively better in all the States (49g/CU/day) and was 82% of the recommended level. The intakes ranged from a low of 23 g in Karnataka and a high 78 g in Gujarat.

Roots & tubers

The intake of roots & tubers (60 g/CU/day) was higher than the suggested level of 50g at aggregate level. However, the intakes were lower than the suggested levels in the States of Maharashtra (20g), Andhra Pradesh (34g), Karnataka (40g) and Tamil Nadu (41g).

Fig. 2 Average daily Intake of Food Stuffs as % of RDA



Milk & milk products

The average consumption of milk & milk products was about 82 g /CU/day. Except in the State of Gujarat (170 g), the consumption was less than the recommended level of 150 g in all the States. The intakes was lowest in the State of in Orissa 14 g followed by Madhya Pradesh (59 g), Kerala (66 g).

Fats & Oils

The average consumption of fats and oils (14g/CU/day) was less than the suggested levels of 20g, in all the States, barring the States of Maharashtra (22 g) and Gujarat (21 g). The average intake was least in Kerala (6 g), followed by Karnataka (9 g), Madhya Pradesh (9 g) and Orissa (10 g).

Sugar & Jaggery

The average consumption of sugar & jaggery was about 14g /CU/day, which was about 47% of recommended levels (30 g). The consumption levels ranged from a low of 7g in Orissa to a high of 29g in Maharashtra.

4.3.1.2 Household Nutrient intakes

The median intake of nutrients at household level (CU/day) compared with RDA (ICMR 1991), are provided in **Table 4 and Fig. 3.**

Protein

The median intake of protein for the States pooled was 47 g. The intakes were less than RDI of 60g in all the States and ranged from a low 41g in Tamil Nadu to a maximum 53g in Gujarat.

Total Fats

The median intake of total fats ranged from a low 7g in the States of Orissa and West Bengal to a high 34g/CU/day in Kerala.

Energy

The overall median intake of energy was 1787kcals/CU/day, which was about 74% of recommended level. The intakes were less than the RDA in all the States and ranged from a low of 1594 kcals in Gujarat to a high of 2061kcals/CU/day in Andhra Pradesh.

Calcium

The median daily intake of calcium pooled for the States was 335 mg and was about 84% of RDA. The intakes were less than the RDA of 400 mg/CU/day in all the States, except in the State of Gujarat, ranged from a low of 239 mg in the State of Madhya Pradesh to a high 417mg in Gujarat.

Iron

The overall median intake of iron (12.3mg) was much below the RDA (28mg). The intakes were much lower than the RDA in all the States and ranged from a low 8.3mg in Andhra Pradesh to a maximum of 23mg/CU/day in Gujarat.

Vitamin A

The overall median intake of vitamin A was 115 µg/CU/day, which is about 19% of the RDA. The intakes were much below the RDA of 600µg and ranged from a low of 80µg in Orissa and to a maximum of 170µg/CU/day in Gujarat.

Thiamin

The overall median intake of thiamin was about 1.1mg/CU/day, which is about 92% of the recommended level. The median intakes were comparable to RDA in all the States, except in Andhra Pradesh (0.6mg), Kerala (0.9mg), Madhya Pradesh (1.0mg) and Karnataka (1.1mg), where it was low.

Riboflavin

The median intake of riboflavin pooled for the States (0.6mg/CU/day) was less than the recommended level of 1.4mg. The intakes were well below RDA and ranged from a low of 0.5mg in the States of Kerala, Orissa and West Bengal and to a high of 0.9mg/CU/day in Gujarat.

Niacin

The overall median intake of niacin was 14mg/CU/day and was 88% of the recommended levels of 16mg. The intakes ranged from a low of 11mg/CU/day in Karnataka to a high 21mg in West Bengal.

Vitamin C

The median intake of Vitamin C pooled for the States was about 28mg/CU/day, which is about 78% of RDA. The intakes ranged from a low of 14mg in Maharashtra to a high of 50mg per CU/day in West Bengal.

Free folic acid

The overall median intake of free folic acid was 50µg/CU/day, and was half the suggested level of 100µg. The intakes were less than the RDA in all the Sates and ranged from a low of 40µg in Andhra Pradesh to a high of 64µg/CU/day in Gujarat.

4.3.2 Food and Nutrient intakes of Individuals

4.3.2.1 Food intakes of Individuals

The average daily intakes of food and nutrients among individuals of different age and sex groups are given in **Tables 5.1 - 5.15.**

1-3 year children

The average daily intake of cereals and millets among 1-3 year children was (135 g) about 77% of RDI. The intakes were lower than the RDI in all the States except in Andhra Pradesh (102% of RDI). The extent of deficit was highest in Kerala (42%), followed by Maharashtra (35%), Tamil Nadu (34%), Gujarat (30%), Karnataka (26%), West Bengal (20%), Orissa (19%) and Madhya Pradesh (7%). The mean intake of pulses and legumes (13 g) was about a third of the RDI (35 g). The consumption of green leafy vegetables, a rich source of

vitamin A, was negligible (6 g). The average daily intakes of other protective foods like milk and milk products (86 g) were less than a third of the recommended level of 300 g. The daily intake of fats and oils, an energy dense food was observed to be a fifth (5 g) of RDI (25 g) **(Table 5.1 & Fig.2).**

4-6 Year children

The mean intake of cereals and millets among 4-6 year children was (209g) about 77% of the RDI (270 g). The intakes ranged from a low of about 164g in Gujarat and Kerala, to a high of about 250 g in the States of Madhya Pradesh and Andhra Pradesh. The intake of all other foodstuffs was less than the RDA, except for roots & tubers **(Table 5.2 & Fig.2).**

The intake of protective foods such as pulses and legumes was about a half of the recommended levels, while that of milk and milk products was grossly inadequate. The consumption of green leafy vegetables was negligible (10 g).

7-9 year children

The mean intake of cereals and millets was 260 g, while that of the pulses and legumes was 22g. The levels of consumption of other foods such as GLV (12g), milk (62 ml), fats and oils (9 g) and sugar and *jaggery* (11 g) were very low **(Table 5.3)**. The intakes of cereals & millets were lowest (190 g) in Kerala and maximum in Orissa (292 g)**.**

10-12 year Boys

The mean intakes of cereals & millets and pulses & legumes were 308g and 23g as against RDI of 420g and 45g respectively. The intake of all other foods, except roots and tubers was lower than the RDI **(Table 5.4)**. The intake of cereals and millets was least (229 g) in Kerala and maximum in Andhra Pradesh (365 g).

10-12 year Girls

As in the case of boys, the intake of cereals and millets among girls was also less (303 g) than the RDI (380 g). The intake of pulses, GLV, milk and sugar were grossly inadequate and was less than half the suggested levels **(Table 5.5)**. The intake of staple food was lowest (214 g) in Kerala and maximum (372 g) in Andhra Pradesh.

13-15 year Boys

The mean intake of cereals and millets was 362g, which ranged from a low of 282 g in the State of Kerala to a high 460 g in Andhra Pradesh. There was a wide variation in the mean intake of most of other foods among the States surveyed **(Table 5.6).**

13-15 year Girls

The mean intake of cereals & millets among girls was 341 g, while that of pulses was 24 g. The intake of cereals & millets ranged from a low of 255 g in Kerala to a high of 412 g in West Bengal. The pulse intake was lowest in Gujarat (13 g) and maximum in the States of Tamil Nadu, Maharashtra and Karnataka (about 31 g) **(Table 5.7).**

16-17 year Boys

The average daily intake of cereals & millets was 426 g, which ranged from a low 324 g in Gujarat to a high 604 g in West Bengal. The mean intake of pulses was 29 g while that of GLV was 14 g. The intake of GLV ranged from a low of 7g in Andhra Pradesh to a maximum of about 25g in West Bengal and Orissa. The consumption of milk and milk products ranged from a low 6 g in Orissa to a high 144 g in Gujarat **(Table 5.8)**

16-17 year Girls

The average daily consumption of cereals and millets was 354g, while the pulses intake was 24g. The intake of all other foods was comparable with their male counterparts. **(Table 5.9)**

Adult Men

The average intake of cereals and millets among adult men engaged in sedentary work (418g) was about 91% of the RDI (460 g). Barring other vegetables and roots & tubers, the intake of all other foods was lower than the suggested levels. However, the milk intake was higher than the recommended levels only in the State of Gujarat, while that of intake of oils & fats was higher than the recommended levels in the States of Maharashtra (26g), Gujarat (25g) and West Bengal (22g) **(Table 5.10 & Fig.2.)**

In case of adult males engaged in moderate activity, the average intake of cereals &millets (494 g) was less than the RDI of 520 g. Except for roots and tubers, the intake of all other foods was lower than the suggested levels **(Table 5.11)**.

Adult Women

The average consumption of cereals & millets among NPNL women engaged in sedentary work (365 g) was about 90% of RDI (410 g). However, the intakes were marginally higher than the recommended levels in the States of West Bengal (432 g) and Orissa (435 g). Barring roots & tubers and other vegetables, the average intake of all the other foods was lower than the suggested levels. The extent of deficit was highest with respect to green leafy vegetables (82%) **(Table 5.12 & Fig.2).** Among those engaged in moderate activity, the average intake of cereals & millets (410g) was 93% of the RDI (440g). Barring other vegetables, the intake of all the other foods was lower than the suggested levels **(Table 5.13).** The average intake of cereals & millets among pregnant women (362g) was comparable to that observed among NPNL women, indicating inadequate intakes despite increased demand due to pregnancy. Similar pattern was observed in the intakes of cereals & millets with respect to Kerala, Gujarat and Orissa. The intake of milk and milk products was relatively higher than the suggested levels in the State of Gujarat **(Table 5.14).**

Lactating Women

The average consumption of cereals & millets among lactating women of less than one year was 406 g, against 410 g among NPNL women. Similarly, the intake of all the other foods was also comparable with that of NPNL women **(Table 5.15)**.

4.3.2.2 Nutrient intakes of Individuals

In view of large variation in the mean intakes of nutrients, the medians were considered for comparison with RDI. The median intakes of different nutrients according to age, sex, activity and physiological groups are given in **Tables 6.1- 6.15.** The means and standard deviation are also presented along with median intakes.

1-3 Year children

In general, the median intakes of all the nutrients were less than RDA. The median intake of energy was less than RDA of 1240 kcals in all the States and ranged from a low 536 kcals in Gujarat to a high 876 kcals in Andhra Pradesh. The median intake of protein ranged from a low 16g in Kerala to a maximum of 21g in Madhya Pradesh and West Bengal as against RDA of 22g. The intakes of micronutrients such as vitamin A, Vitamin C, Calcium, iron and riboflavin (57%) were found to be grossly inadequate **(Table 6.1 & Fig.3).**

4-6 year children

The median intakes of all the nutrients were below the RDA. The median intake of energy was less than RDA (1690 kcals) in all the States and ranged from a low 791 kcals in Gujarat to a maximum of 1107 kcals in Andhra Pradesh. The protein intake was below the recommended level, in the States of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Gujarat, Orissa and West Bengal. As observed in 1-3 year children, the extent of deficit was high with respect to micronutrients such as vitamin A, riboflavin, Vitamin C and iron **(Table 6.2 & Fig.3).**

7-9 year children

In general, the median intakes of all the nutrients were less than the RDA in all the States. The extent of deficit was relatively high with respect to intake of micronutrients **(Table 6.3).**

10-12 year Boys

The consumption levels of all the nutrients were less than RDA in all the States. The intake of energy ranged from a low 1058 kcals in Gujarat to a high of 1623 kcals in Andhra Pradesh as against RDA of 2190 kcals. The diets were grossly deficient in micronutrients such as vitamin A, iron and riboflavin **(Table 6.4)**.

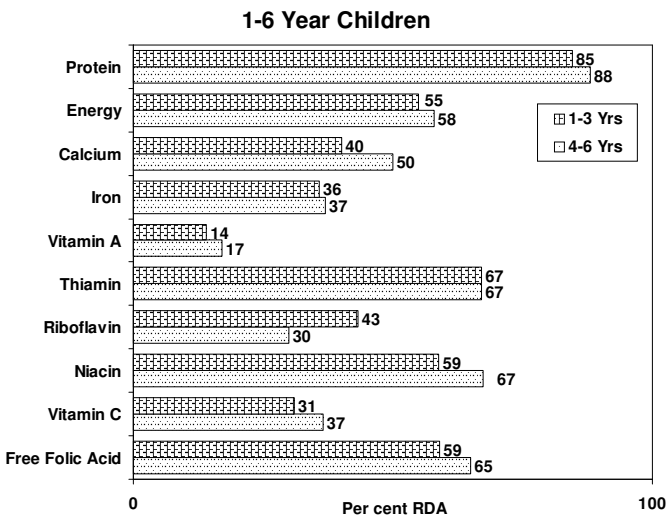
10-12 year Girls

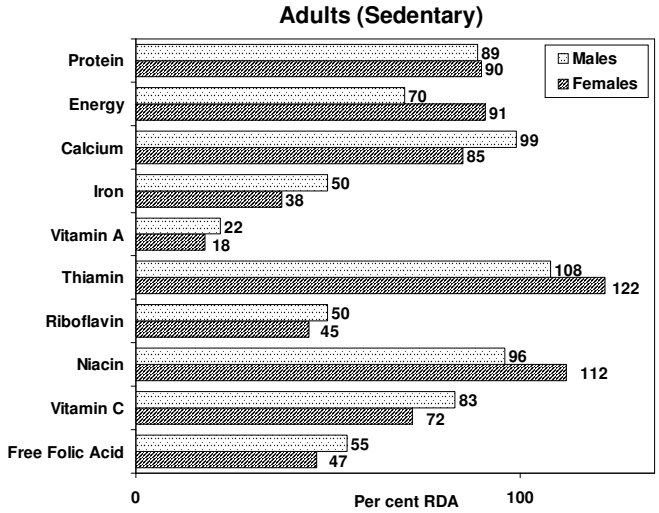
As observed in the case of boys, the median intake of all the nutrients was less than the RDA. The intake of energy ranged from a low 1217 kcals in Tamil Nadu to a high of 1656 kcals in Andhra Pradesh as against RDA of 1970 kcals. The extent of deficit was much higher in case of micronutrients such as vitamin A, riboflavin and iron **(Table 6.5)**.

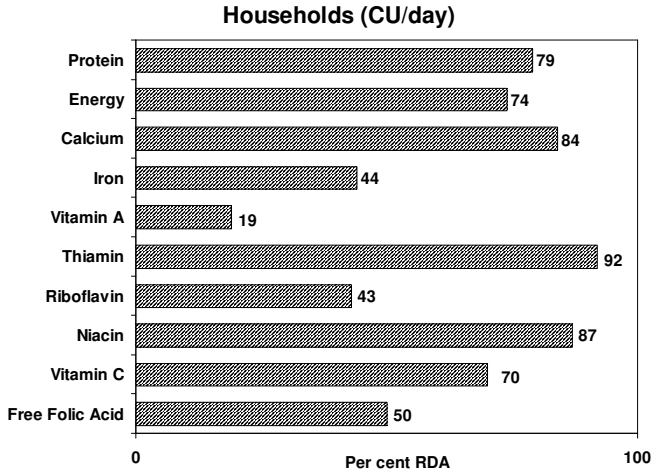
13-15 year Boys

In general, the median intake of all the nutrients was less than the RDA in all the States, except for thiamin in the States of Maharashtra, West Bengal and Gujarat and

Fig. 3 Median Intake of Nutrients as % of RDA







niacin and vitamin C in West Bengal and Orissa. The median intakes of energy were least in Gujarat (1290 kcals) and maximum in Andhra Pradesh (1996 kcals) against RDA of 2450 kcals **(Table 6.6)**.

13-15 year Girls

The median intakes of all the nutrients except thiamin, were less than the RDA in all the States. The median intakes of energy were least in Gujarat (1307kcal) and maximum in Andhra Pradesh (1780kcal) as against RDA of 2060kcal. The intakes of vitamin A, riboflavin and iron were also grossly inadequate **(Table 6.7).**

16-17 year Boys

In general, the median intakes of all the nutrients were less than the RDA. The intake of thiamin was above RDA in Maharashtra, Gujarat and West Bengal and was equivalent to RDA in Karnataka and Orissa. The intake of niacin and vitamin C was above RDA in Orissa and West Bengal. The intake of micronutrients such as vitamin A, riboflavin and iron were however, grossly inadequate **(Table 6.8).**

16-17 year Girls

The median intake of energy was lower than the RDA of 2060 kcals in all the States. The median intakes of energy were least in Gujarat (1525kcal) and maximum in West Bengal (1872kcal). The intake of micronutrients such as iron, vitamin A, and riboflavin were not even meeting the 50% of the recommended levels **(Table 6.9).**

Adult Men

Barring Calcium, thiamin and niacin, the median intakes of all other nutrients among sedentary adult men were lower than RDA. The median intake of energy ranged from a low 1721 kcals in Maharashtra to a maximum of 2188 kcals in West Bengal, as against RDA of 2425 Kcal **(Table 6.10 & Fig.3).**

In case of adult males engaged in moderate work, the median intake of energy (2118 kcals) was much below the RDA of 2875 kcals, which ranged from a low 1841kcals in Maharashtra to a high 2529 kcals in West Bengal. The intakes of vitamin A and riboflavin were grossly inadequate in all the states **(Table 6.11)**.

Adult Females

Among adult females engaged in sedentary work, the median intakes of all the nutrients barring thiamin and niacin were below the recommended levels. The energy intake ranged from 1425 kcals in Maharashtra to 1910 kcals in Andhra Pradesh against RDA of 1875 kcal. Barring Gujarat, the median intake of protein was lower than the recommended level in all the States The intakes of iron, vitamin A, riboflavin and free folic acid were grossly deficient **(Table 6.12 & Fig.3)**.

In case of those engaged in moderate work, the median intakes of all the nutrients barring thiamin were below the recommended levels. The energy intake was least in Kerala (1547 kcal) and maximum in Andhra Pradesh (2096 kcals) as against RDA of 2225 kcal. The median protein intake was low in Kerala (38g), Tamil Nadu (38g) and Orissa

(42g), while it was comparable with RDA (50g) in other states. The intakes of iron, vitamin A, riboflavin and free folic acid were grossly deficient, as compared to RDA **(Table 6.13)**.

Among pregnant women, the median intake of energy was lower than the RDA in all the States, and was comparable with the intakes observed among NPNL women in the states of Tamil Nadu, Andhra Pradesh, Maharashtra, Gujarat and Madhya Pradesh. The intake of micronutrients such as free folic acid, vitamin A, iron, and riboflavin was grossly inadequate **(Table 6.14).**

The median intakes of energy (1852kcals) and protein (47g) among lactating women were much below the recommended levels of 2425 kcals and 75g respectively. The intakes of micronutrients such as iron, calcium, vitamin A, riboflavin, free folic acid and vitamin C were much below the recommended levels **(Table 6.15).**

4.3.3 Protein calorie adequacy status

4.3.3.1 Households

The distribution of HHs according to protein calorie energy adequacy status is presented in **Table 7.**

About 30% of HHs consumed adequate amounts of both protein and calorie, while 26% of HHs consumed inadequate amounts of the same. The proportion of HHs consuming adequate amounts of protein and energy ranged from a low 15% in Gujarat to 52% in Andhra Pradesh. The proportion of HHs consuming inadequate amounts of both protein and calorie ranged from a low 17.6% in West Bengal to 39% in Tamil Nadu. About 69% of the HHs in general were consuming inadequate amounts of dietary energy, and the proportion ranged from a least 47% in Andhra Pradesh to a maximum of 85% in Gujarat. Similarly, about 27% of the HHs in general were consuming inadequate amounts of proteins, the proportion of which ranged from a least 18% in Gujarat & West Bengal to a maximum of 40% in Tamil Nadu.

4.3.3.2 Individuals

The distribution of individuals according to protein calorie energy adequacy status is presented in **Table 8.1 - 8.13.**

1-3 year children

Only about a third (30.1%) of 1-3 year children were consuming adequate amounts of both protein and energy, while about a fifth (22.5%) were consuming diets deficient in both the nutrients. About 47% of the children were consuming adequate amounts of protein, but inadequate amounts of calories. Thus, it was observed that the diets were predominantly deficient in calories than protein **Table 8.1.** The proportion of children consuming adequate amounts of both protein and energy ranged fro a low 19% in Kerala to a maximum of 52% in Andhra Pradesh.

4-6 Year children

About a fourth of children (24%) were consuming adequate amounts of both protein and calories, the proportion of which ranged from a low of about 11-12% in Gujarat and

Tamil Nadu to a high of 42% in Andhra Pradesh. About 65% of the children were consuming adequate amounts of protein, but inadequate amounts of calories. In general, 75% of children consuming inadequate amounts of calorie, the proportion of which ranged from a low 58% in Andhra Pradesh to a high of about 89% in Gujarat and Tamil Nadu **Table 8.2.**

7-9 Year children

Only a fourth of the children (24%) were consuming adequate amounts of protein and calorie, the proportion of which ranged from a low 12% in Tamil Nadu to a high 43% in Andhra Pradesh. About 68% of the children were consuming adequate amounts of protein, but inadequate amounts of energy. The proportion of children, who are consuming inadequate amounts of protein, was only about 8%, while that of calorie inadequacy was about 76% (**Table 8.3).**

10-12 Year Boys and Girls

About 22% of boys and 29% of girls were consuming adequate amounts of both protein and calories, while 9% boys and 11% girls were consuming inadequate amounts of both protein and calories (**Tables 8.4 & 8.5**.). In general, about 78% of boys and girls each were consuming inadequate amounts of energy, while about 10% were consuming inadequate amounts of protein.

13-15 Years Boys and Girls

About 29% of boys and 38% girls were consuming adequate amounts of both protein and calories, while about 13% of boys and 6% girls were consuming inadequate amounts of both the nutrients (**Tables 8.6 & 8.7)**. About 71% of the boys and 62% girls were consuming inadequate amounts of energy, while about 13% of boys and 6% of girls were consuming inadequate amounts of proteins.

16-17 Year Boys and Girls

About 45% of boys and 61% of girls were consuming adequate amounts of protein and energy, while 28% of boys and 22% of girls were consuming inadequate amounts of both the nutrients **(Table 8.8 & 8.9)**. About 51% of the boys and 35% girls were consuming inadequate amounts of energy, while about 31% of boys and 25% of girls were consuming inadequate amounts of proteins.

Adult Men

About two thirds of sedentary adult men (68%) were consuming adequate amounts of both protein and calories, while about 9% were consuming inadequate amounts of both the nutrients. The proportion of men consuming adequate amounts of both protein and calories was high in the State of Orissa (79%) and least in Maharashtra (51%) **(Table 8.10).**

Ault women

About 80% of adult NPNL women were consuming adequate amounts of protein and calories, the proportion of which ranged from a low 59% in Maharashtra to a high 93% in Orissa. Only about 7% were consuming inadequate amounts of both the nutrients **(Table 8.11).**

Among the pregnant women, 61% were consuming adequate amounts of both protein and calories, while about 23% were consuming inadequate amounts of both protein and calories. The proportion of pregnant women consuming adequate amounts both protein and calories ranged from a high of about 78% in the States of West Bengal and Orissa to low 39% in Maharashtra **Table 8.12.**

About 60% of lactating women were consuming adequate amounts of protein and calories, while 18% were consuming inadequate amounts of both the nutrients. Only 15% of lactating women were consuming adequate amounts of protein, but inadequate amounts of energy. The proportion of lactating women consuming adequate amounts of both protein and calories was maximum in the State of Andhra Pradesh (74%) and least in Kerala and Maharashtra (about 50%) **Table 8.13.**

4.4 Nutritional Status

4.4.1 Clinical Examination

Infants

A total of 978 infants were examined for the presence of various nutritional deficiency signs. The prevalence of clinical cases of protein energy malnutrition such as kwashiorkor and marasmus were absent in all the States surveyed, except Tamil Nadu, where the prevalence of marasmus was reported to be 0.5% **(Table 9.1-9.3)**.

Preschool Children

About 4,859 preschool children were examined in 9 States during the present survey, of which about 6% exhibited one or more clinical signs of nutritional deficiencies. The prevalence of conjunctival xerosis and Bitot spots, the signs of vitamin A deficiency was reported in 0.9% and 0.6% of pre-school children respectively, with highest (1.3%) proportion of children having Bitot spots in the State of Maharashtra. The prevalence of Bitot spots, the objective sign of vitamin A deficiency was more than the WHO cut-off level (0.5%) in the States of Maharashtra, Tamil Nadu, Karnataka, Madhya Pradesh and Orissa. The prevalence of angular stomatitis, a sign of B-complex deficiency was observed in 0.8% of the preschool children, while the prevalence of dental caries was about 2.3% **(Table 9.4 - 9.6).**

School Age Children

A total of 7697 school age children were examined for the presence of various nutritional deficiency signs. The prevalence of conjunctival xerosis and Bitot spots was observed among 1.9% and 1.6% of the children respectively. About 1.9% of children had angular stomatitis, 13% had dental caries, 2.3% had dental fluorosis and 1.4% had goitre **(Table 9.7-9.9).**

Adolescents

About 5530 adolescents were examined clinically for the presence of various nutritional deficiency signs. About 1.3% of adolescents had Bitot spots, with highest prevalence being in Tamil Nadu (6.2%). About 6.4% of adolescents had dental caries and 1.2% had angular stomatitis. The prevalence of total goiter was about 3.3% with the highest prevalence (13.7%) in the State of West Bengal fallowed by Kerala (5.5%) Maharashtra (4.3%) and Karnataka (3.3%) **(Table 9.10 - 9.12)**.

Adults

Of the 14,039 men and 18,603 women examined, 0.4% of men and 0.3% women had Bitot spots, with a relatively higher prevalence in the State of Tamil Nadu. About 1.5% men and 1.3% women had glossitis, while 0.5% men and 0.8% women had angular stomatitis. About 7% of men and 12% of women had dental caries. About 0.5% each had Dental fluorosis. About 2.3% women had goitre, while its prevalence was negligible among men **(Tables 9.13 - 9.15)**.

4.4.2 Anthropometry

4.4.2.1 Under 5 year children

Gomez Classification

The distribution of 1-5 year children according to Gomez classification is presented in **Tables 10.1 & 10.2 and Fig.4).** The overall proportion of children with moderate to severe undernutrition, who are considered as 'at risk' group from public health point of view, was observed to be 43% and ranged from a low 22% in Kerala to a high 54% in Madhya Pradesh.

The prevalence of severe undernutrition was maximum in the State of Gujarat (9.2%), followed by Madhya Pradesh (8.7%) and Orissa (5.3%), with lowest prevalence of 1% in Kerala. The prevalence of undernutrition (<75% of weight for age) was marginally higher in the age group 3-5 years (42.8%) compared to 1-3 year age group (41.6%). No significant sex differentials were observed in the prevalence of undernutrition.

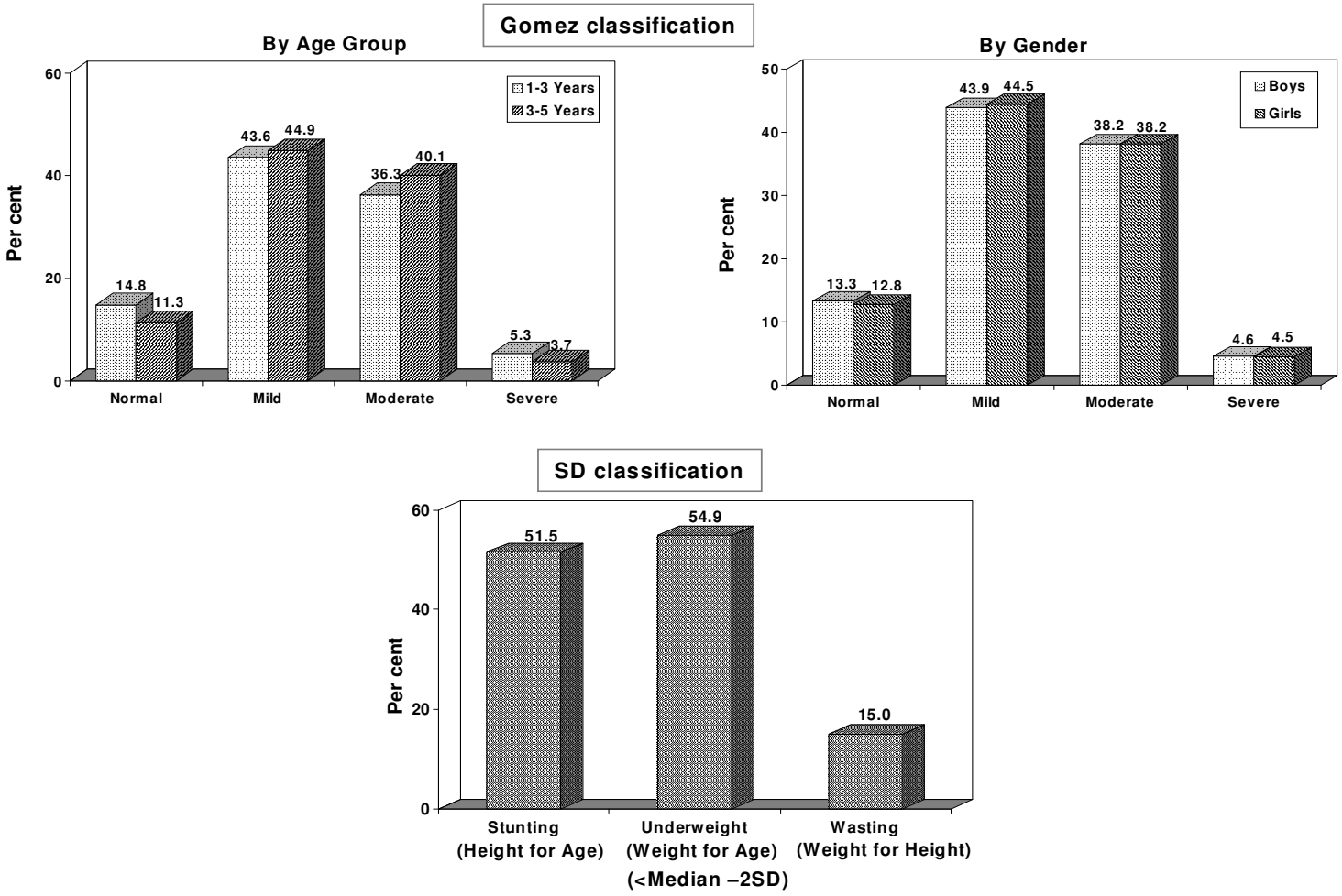
IAP Classification

The distribution of 6-59 months children according to weight for age by IAP classification using Harvard standards is presented in **Table 11.** The overall prevalence of grade III & IV undernutrition among 6-60 months children was about 4%. It ranged from a low 1.3% in the State of Kerala, through 2-3% in Andhra Pradesh, Tamil Nadu, Maharashtra and West Bengal to a high 8% in Gujarat. The prevalence of undernutrition tended to increase steeply from 40% in 6-12 months age group to 59% in 12-24 months age group. It remained same up to 48 months and then increased to 61% in 48-60 months age group**.**

SD Classification

The distribution of <5 year children according to weight for age, height for age, and weight for height by SD classification using NCHS standards, is presented in **Tables 12.1-15.2 & Fig.4.**

Fig. 4 Distribution (%) of 1-5 Year Children According to Nutritional Grades



Weight for Age

The prevalence of overall underweight among infants (<1 yr old) was about 22%. The prevalence of underweight among 1-5 yr old children (Weight for age < Median –2SD) was observed to be 55%, while that of severe underweight (Weight for age < Median –3SD) was 18%. The prevalence of underweight ranged from a low 35% in Kerala, followed by 49.2% in Tamil Nadu, to a high 60-64% in the States of Orissa and Madhya Pradesh.

Though the overall prevalence of underweight was comparable between age groups (about 55%), the prevalence of severe underweight was found to be relatively higher in 1-3 years (20.2%) compared to 3-5 years (14.9%). The prevalence of underweight was observed to be essentially similar between genders (boys: 54.8%; girls: 55.1%).

Height for Age

The prevalence of overall stunting among infants was 19%. The prevalence of stunting among 1-5 yr old children (Height for age <Median –2SD) was observed to be 51%, while that of severe stunting (Height for age <Median –3SD) was 25%. The prevalence of stunting ranged from a low 33% in Kerala, to a high 73% in Madhya Pradesh.

The overall prevalence of stunting was comparable between age groups (about 51%). However, the prevalence of severe stunting was found to be marginally higher in 1-3 year age group (26.5%) compared to 3-5 years (23.5%). The prevalence of stunting was observed to be marginally higher among girls (53%) compared to boys (50 %).

Weight for Height

The prevalence of overall wasting among infants was about 13%. The prevalence of wasting among 1-5 yr old children (Weight for Height <Median –2SD) was observed to be 15%, while that of severe wasting (Weight for Height <Median –3SD) was 2.4%. The prevalence of wasting ranged from a low 11% in Kerala, to a high 24% in Gujarat.

The overall prevalence of wasting was comparable between age groups, and gender (about 15%).

SD Classification using WHO Child Growth standards

The distribution of 0-60 months children according to weight for age, height for age, weight for height and BMI by SD classification using WHO (MGRS) standards, is presented in **Tables 16.**

Weight for Age

The overall prevalence of underweight (Weight for age < Median –2SD) was observed to be 40%, while that of severe underweight (Weight for age < Median –3SD) was 14%. The prevalence of underweight was relatively lower in < 6 months children compared to the children ≥6 months of age. It ranged from a low of 26.5% in the <6 months age group to a high of 53% in the 54-60 months age group. The prevalence of severe underweight was relatively higher among children aged 18 -24 month, 30-36 month and 54-60 month compared to other age groups.

Height for Age

The overall prevalence of stunting (Height for age <Median –2SD) was observed to be 45%, while that of severe stunting (Height for age <Median –3SD) was 20%. The prevalence of stunting was relatively lower in < 12 months children compared to the older age groups. The prevalence ranged from a low of 17% among <6 months children to a high of 56% among children in the age group of 18-24 months. The prevalence of severe stunting was also highest in the 18-24 month age group (29%) and lowest in the <6 months age group (6%).

Weight for Height

The overall prevalence of wasting (Weight for Height <Median –2SD) was observed to be 20%, while that of severe wasting (Weight for Height <Median –3SD) was 7%. The prevalence of wasting was observed to be relatively higher among <6 months children compared to older children. It ranged from a low of 17% in the 24-30 month age group to a high of 29% in the <6 months age group. The prevalence of severe wasting was also observed to be higher among younger children (<18 months age group) compared to the older age groups (18-60 months)

BMI

The prevalence of overall undernutrition (BMI<Median –2SD) was observed to be 16%, while that of severe undernutrition (BMI<Median –3SD) was about 6%. A higher proportion of <6 months children had BMI<Median –2SD, compared to older children, which ranged from a low of 12% in the 42-48 month age group to a high of 31% in the <6 months age group. The overall prevalence of overweight/obesity (BMI $\geq$ Median+2SD) was 2.5% and ranged from 2 to 3% in different age groups.

4.4.3 School age children and adolescents

Weight for Age

The overall prevalence of underweight (Weight for Age < Median –2SD) was marginally higher (41.3%) among 6-9 year age group, compared to 10-13 (38.5%) and 14-17 year (37.8%) age groups **(Tables 17.1 & 17.2)**. In 6-9 year age group, the prevalence of underweight was higher among boys (46.7%) compared to girls (35.3%). Similar observation was made with respect to 14 -17 year age group (Boys: 45% Vs Girls: 32%). In 10–13 year age group, the prevalence was relatively higher among girls (45%) compared to 42% among boys. The prevalence of severe underweight was about 3-6% in different age groups.

Height for Age

The overall prevalence of stunting (Height for Age < Median –2SD) tended to increase with age 30.1% in 6-9 year age group, through 34.2% in 10-13 years to 36.8% in 14-17 year age group. About 8-9% of children in various age groups had severe stunting. In 6-9 year age group, the prevalence of stunting was relatively higher among boys (33%) compared to girls (28%). In 10–13 year age group, the prevalence was relatively higher among girls (35%) compared to 33% among boys. Among 14 -17 year age group 38% boys and 36% girls were stunted. The prevalence of stunting (Height for Age < Median –2SD) was higher among the age group of 14-17 years (36.8%) as compared to the age groups of 6-9 years (30.1%) and 10-13 years (34.2%). However, no significant gender differentials were observed among all the age groups **(Tables 18.1 & 18.2)**.

Body Mass Index (BMI)

The distribution of 10-13 and 14-17 year children according to nutritional status based on BMI compared with age/sex specific BMI centiles of NHANES is presented in **Tables 19.1 & 19.2.** The overall prevalence of underweight was about 57% among 10-13 year age group, which tended to decrease with age to 30% in 14-17 year age group.

The prevalence in the 10-13 years age group ranged from a low 48% in the State of Kerala to a high 69% in Maharashtra. Among 14-17 year children the prevalence ranged from a low 17% in Madhya Pradesh to a high 43% in Maharashtra. The prevalence was much higher among boys compared to girls in both 10-13 year (65% Vs 49%) and 14-17 year (45% Vs 18%) age groups.

4.4.4 Adults

The distribution of adult men and women according to nutritional status based on BMI is given in **Tables 20 & 21** and **Figs. 5.1 and 5.2.**

The overall prevalence of Chronic Energy Deficiency (CED: BMI <18.5) was about 33% among men and 36% among women. The prevalence of CED among men was observed to be maximum in the State of Karnataka (42.4%) and lowest in Kerala (27.7%). Similarly, the prevalence of CED among women was maximum in the State of Orissa (47.6%) and least in Kerala (21.1%).

The prevalence of overweight / obesity (≥ 25 BMI) was significantly higher among the women (10.9%) compared to men (7.8%). The prevalence was maximum in the State of Kerala (men: 14.5%; women: 24%) and least in Madhya Pradesh (men: 2.8%; women: 4.7%) and Orissa (men: 4.2%; women: 4.6%).

WHO consultative group (2004) suggested that among Asian population, individuals with a BMI of ≥ 23 is a risk factor for coronary artery diseases. According to this, a higher proportion of men (17.2%) and women (19.9%) were found to be having overweight/obesity.

4.4.5 Nutritional status Vs Demographic & Socio-economic Variables

4.4.5.1 Preschool Children

The results of the study of association between nutritional status of preschool children according to weight for age, height for age and weight for height by SD classification and household demographic and Socio-economic variables is presented in **Table 22 and Fig. 6.**

The prevalence of underweight among preschool children was found to be significantly associated with religion, community, type of house, monthly per capita income of household, major occupation of head of the household, parental literacy, electrification of house, source of drinking water, presence of sanitary latrine and type of cooking fuel used and prevalence of morbidity during previous fortnight.

Similarly, the prevalence of stunting was found to be significantly associated with community, type of house, monthly per capita income of household, major occupation of head of the household, parental literacy, electrification of house, source of drinking water, presence of sanitary latrine and type of cooking fuel used, and prevalence of morbidity during previous fortnight.

The prevalence of wasting was found to be significantly associated with religion, type of family, major occupation of head of the household, parental literacy and prevalence of morbidity during previous fortnight.

Fig. 5.1 Distribution (%) of Adults by BMI Grades and Gender (James et al./ WHO)

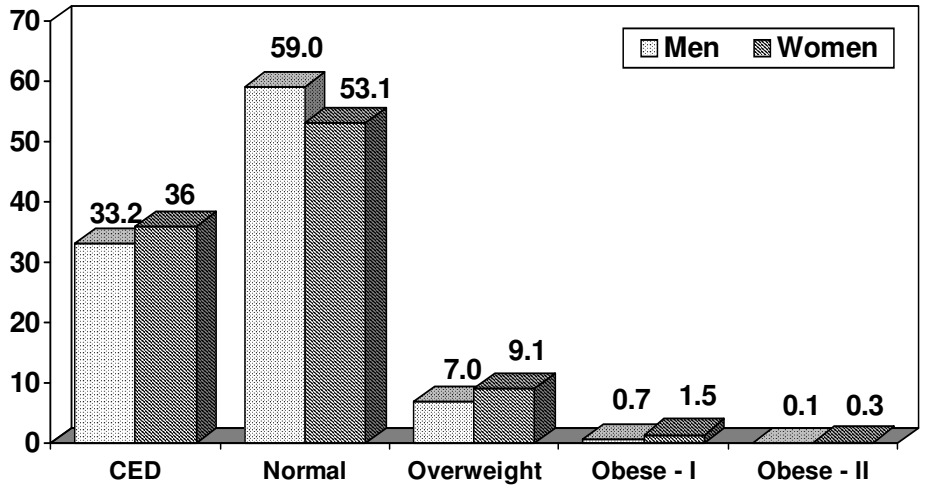


Fig. 5.2 Distribution (%) of Adults by BMI Grades* and Gender

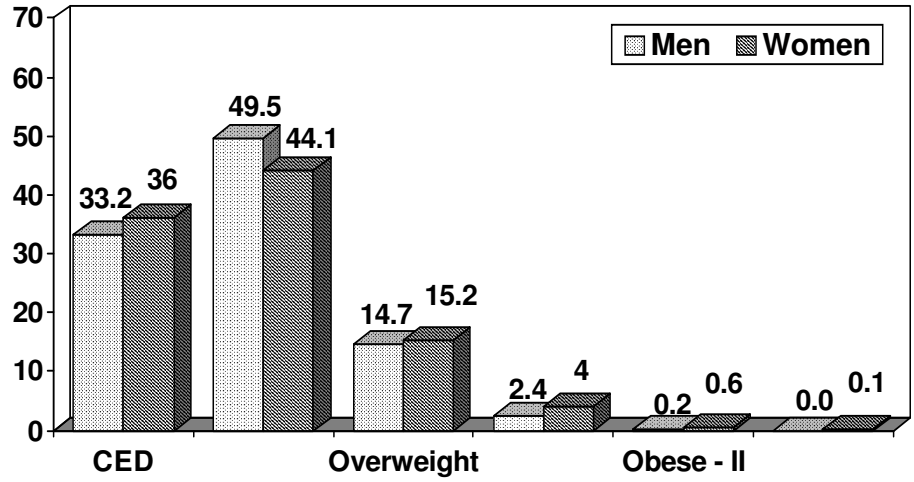
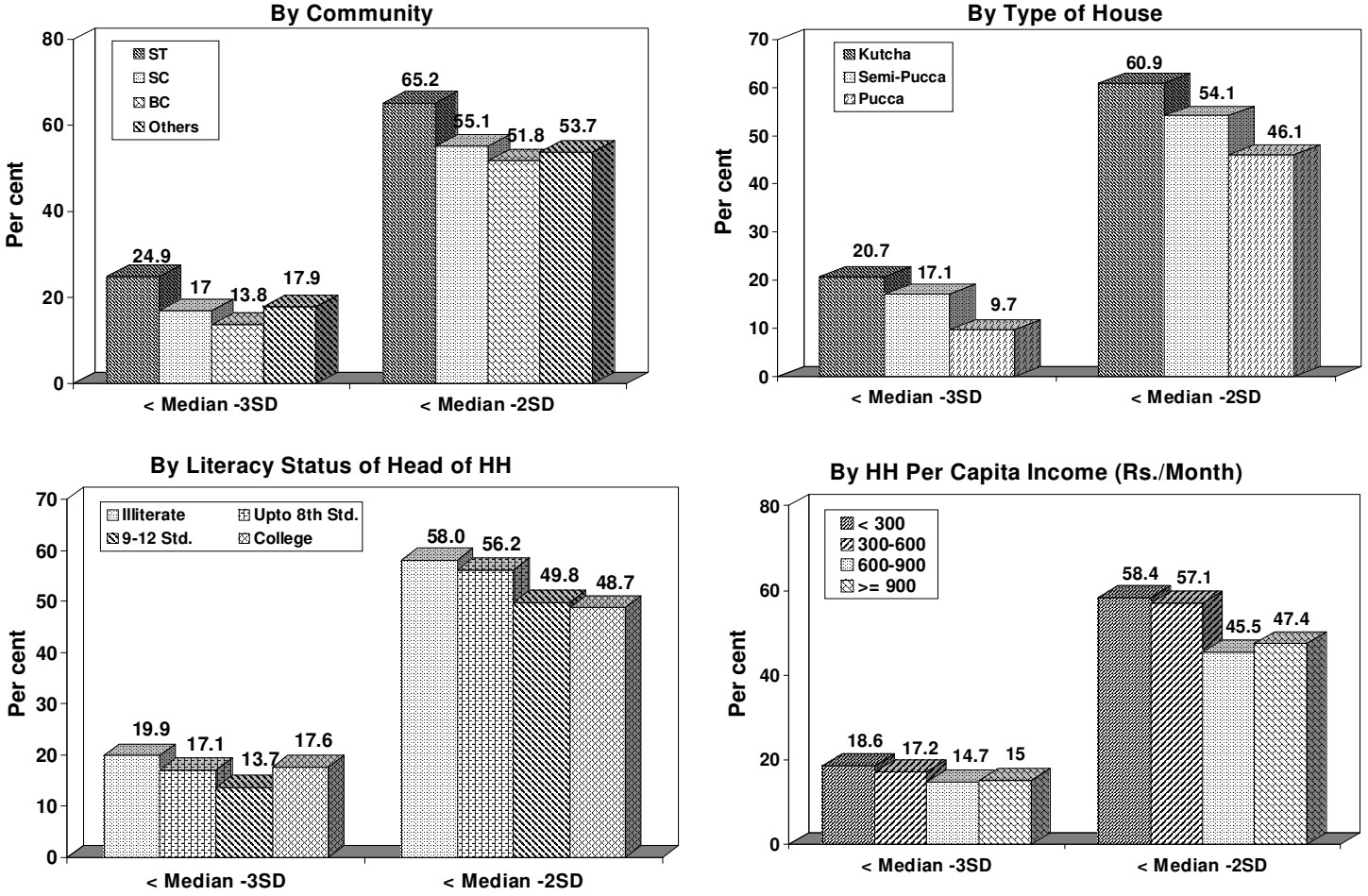


Fig. 6 Prevalence (%) of Undernutrition (Weight for age) among 1-5 Year Children by HH Socio- economic variables



4.4.5.2 Adults

The results of the study of association between nutritional status of adults according to nutritional status by BMI classification and household demographic and Socio-economic variables are presented in **Table 23.**

The distribution of adults by BMI was found to be significantly associated with religion, community, type of house, type of family, monthly per capita income of household, major occupation of head of the household, literacy status, size of land holding, family size, electrification of house, source of drinking water, presence of sanitary latrine and type of cooking fuel used and prevalence of morbidity during previous fortnight.

4.4.6 Diet and nutritional status comparison with earlier data

The diet and nutritional status of the populations observed in the current study for the States pooled is compared with that reported in NNMB surveys carried out during the year 200-01.

The daily average per CU intake of foodstuffs (as % recommended intakes) and median intake of nutrients (as % RDA) at two time periods is provided in the **Figs.7 & 8**.

A marginal decline in the average daily intake of cereals & millets, green leafy vegetables, roots and tubers and sugar & jaggery was observed over period of five years **(Fig. 7)**. An increase of about 10% of RDI was observed with respect to consumption of milk & milk Products and fats & oils, while the intake of pulses and legumes and other vegetables remained similar.

The median intake of protein, energy, thiamine, riboflavin and niacin decreased marginally, over the period **(Fig. 8)**. There was a marginal increase in the intake of micronutrients such as vitamin A, vitamin C and calcium while that of iron remained similar over the period.

The nutritional status of preschool children in a different time periods is provided in the **Fig.9**. There was a decrease in the overall prevalence of underweight (60% Vs 55%) and wasting (23% Vs 15%) over the period, while that of stunting increased marginally (49% Vs 52%). A decrease in the prevalence of chronic energy deficiency was observed among both men (37% Vs 33%) and women (39% Vs. 36%) **(Fig.10.1 & 10.2)**. Concurrently, an increase in the prevalence of overweight/obesity was observed among men (6% Vs 8%) and women (8% Vs 11%).

4.5 Prevalence of Anaemia

A total of 3,397 adult men and 3,329 NPNL women were covered for estimation of Haemoglobin. The mean Haemoglobin level was 12.6 g/dL among men and 10.7g/dL among women (**Tables 24-25).** The mean Haemoglobin levels among adult men tended to decrease with age from 12.9 g/dl in 20-30 year group to 11.1 g/dL in the age group of ≥ 80 years, while it remained similar in females **(Tables 26-27).** The mean Haemoglobin levels among men ranged from a low 11.1 g/dL in West Bengal to a high of about 13.5 g /dL in Tamil Nadu and Andhra Pradesh. Among females it ranged from a very low 9.1 g/dL in Gujarat to a maximum of about 12g/dL in Tamil Nadu and Karnataka.

Fig.7 Average (% of RDI) Intake of Foodstuffs (g/CU/day) by Period of Survey

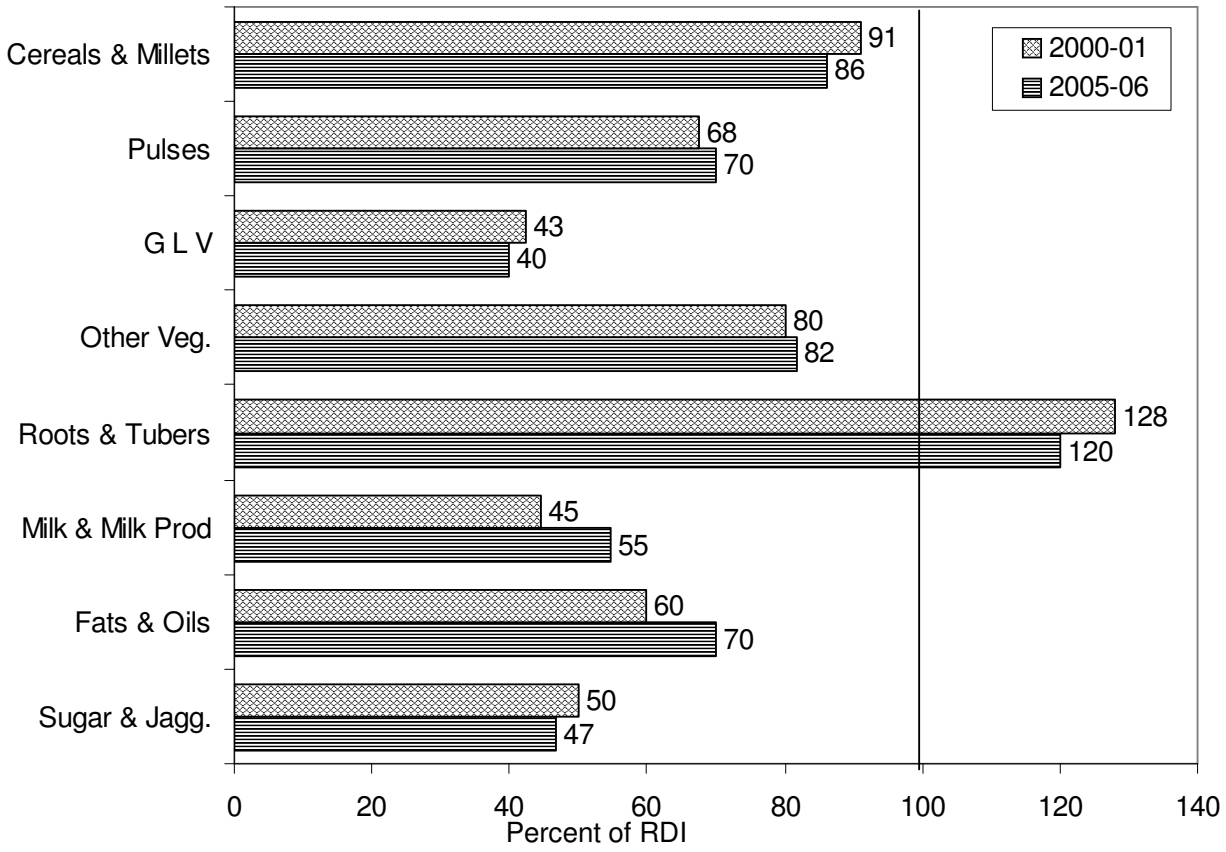


Fig.8 Average (% of RDA) Intake of Nutrients (g/CU/day) by Period of Survey

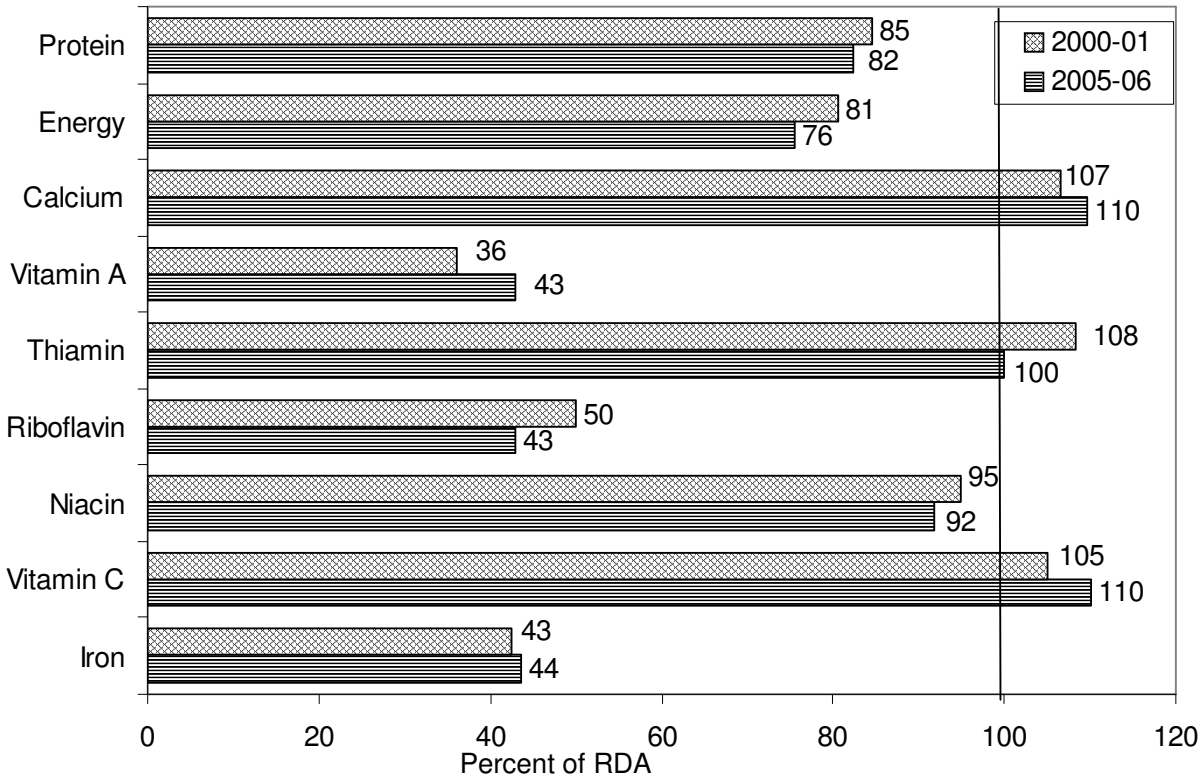
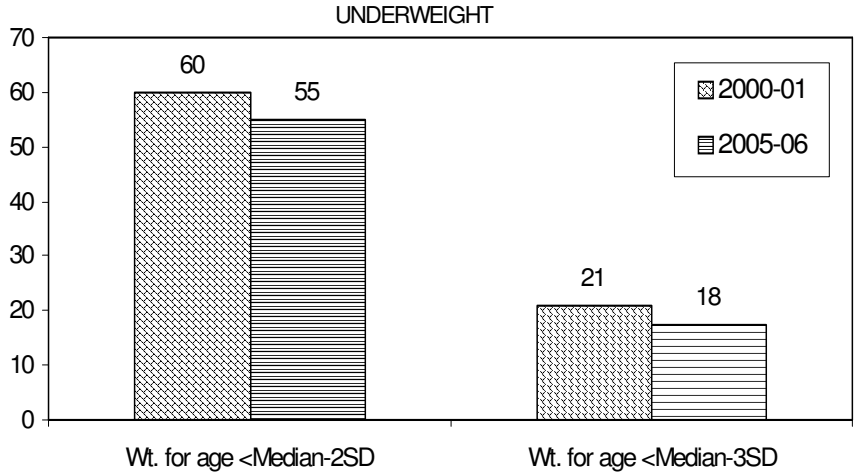
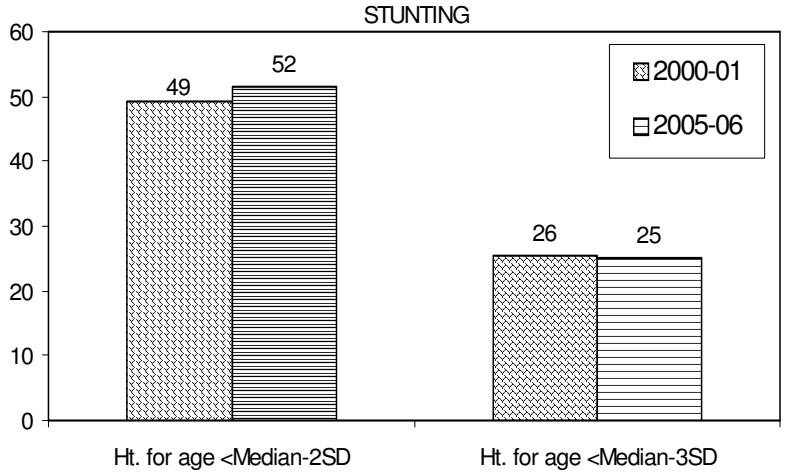


Fig.9 Prevalence (%) of Undernutrition among 1-5 Year children according to SD Classification by Period of Survey





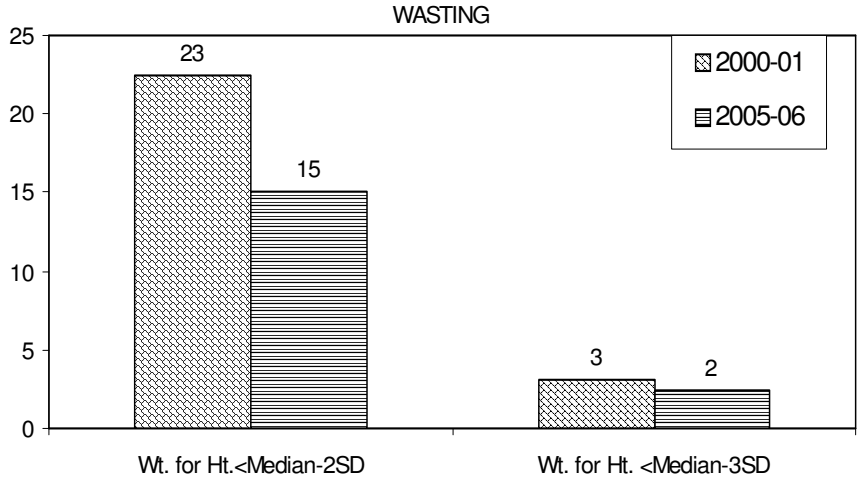


Fig. 10.1 Distribution (%) of Adult Males by BMI* Grades and Period of Survey

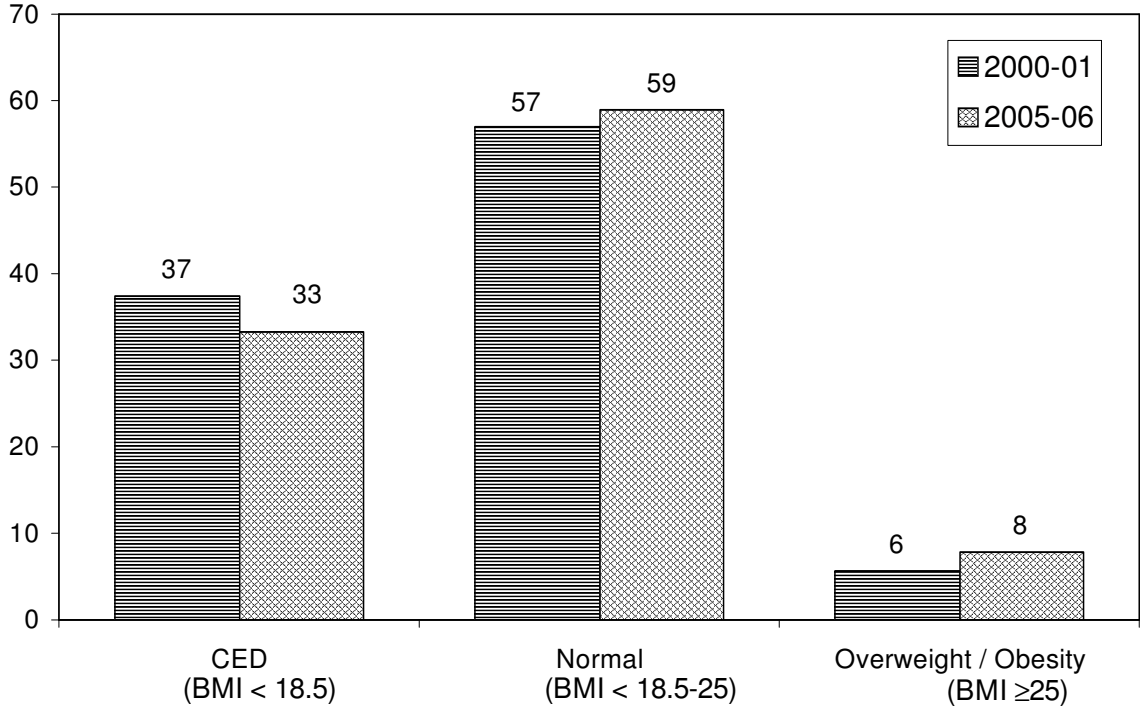
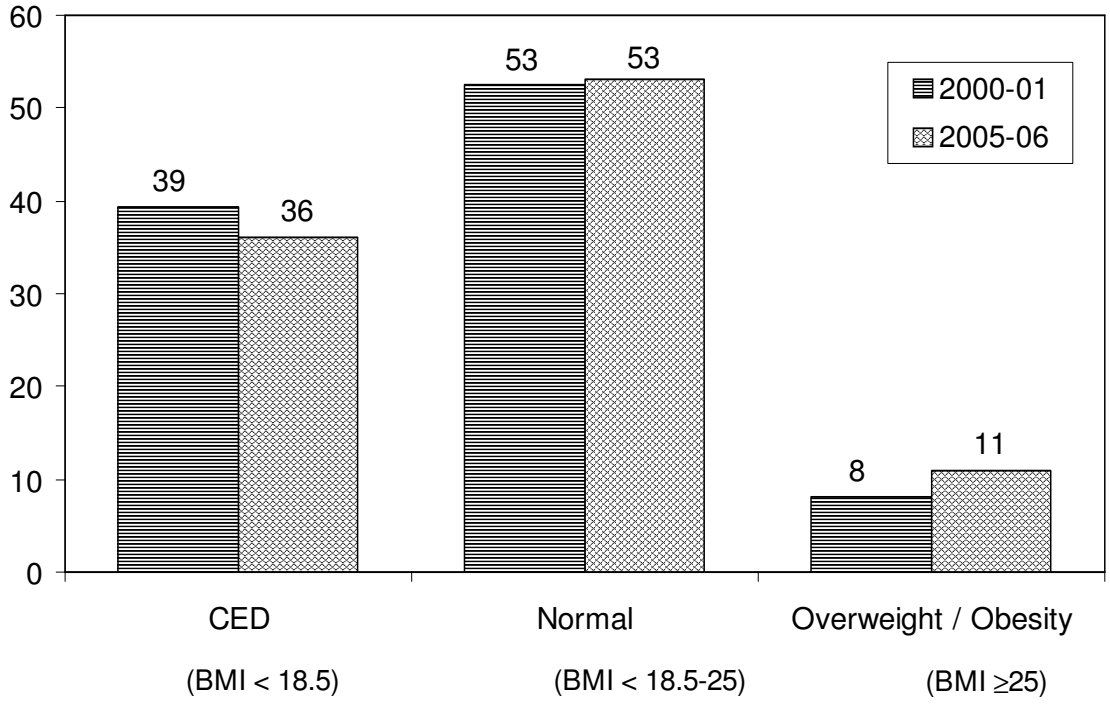


Fig. 10.2 Distribution (%) of Adult Females by BMI* Grades and Period of Survey



The overall prevalence of anaemia among adult men was about 55%, with 8% having moderate and 0.6% severe anaemia. Highest prevalence of anaemia was observed among the elderly (≥80 years) population (89%) compared to younger age (20-30 years) groups (48%). The prevalence of anaemia was maximum in West Bengal (84%), followed by Madhya Pradesh (68%), Kerala (68%), Gujarat (65%) and lowest observed in the States of Tamil Nadu (29%), Andhra Pradesh (35%) and Karnataka (44%) **(Fig. 11)**.

The overall prevalence of anaemia among women was about 75%, with about 31% having moderate and 3% severe anaemia. The prevalence of anaemia among NPNL women was maximum in the State of Gujarat (95%), followed by West Bengal (91.5%), Kerala (89%) and Madhya Pradesh (87.4%), while it was least in the State of Tamil Nadu (49%) **(Fig. 11)**.

4.5.1 Prevalence of anaemia Vs Socio-economic and demographic variables

The results of study of association between prevalence of anaemia among adult men and NPNL women and demographic and socioeconomic variables are presented in the **Table 28 & Fig. 12**.

The prevalence of anaemia among adult men was found to be significantly associated with religion, community, type of house, major occupation of head of the household, literacy status, electrification of house, source of drinking water, and type of cooking fuel used. Similarly, the prevalence of anaemia among adult NPNL women was found to be significantly associated with religion, community, major occupation of head of the household, monthly per capita income of household, literacy status, electrification of house, and source of drinking water.

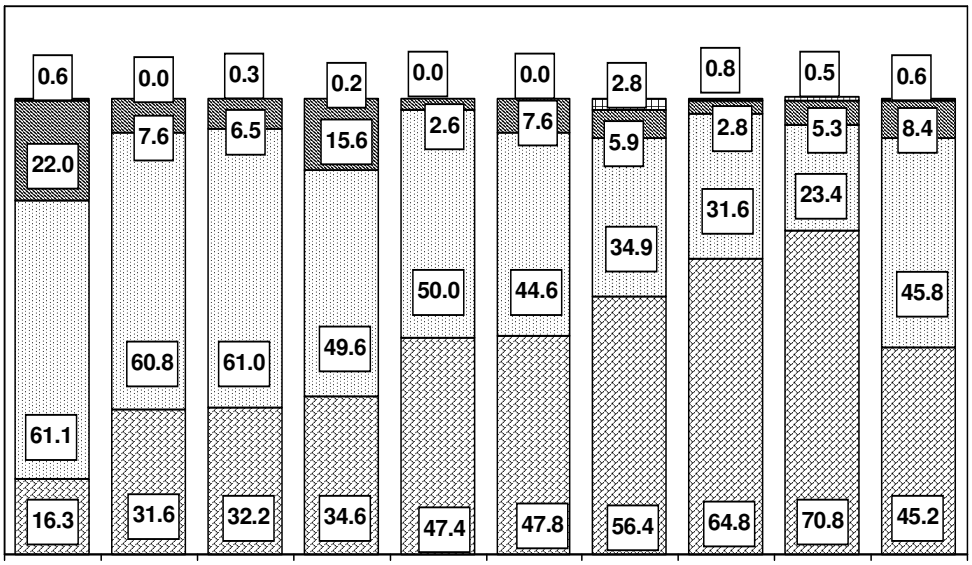
4.6 Prevalence of Morbidity

The prevalence of morbidities such as fever, diarrhoea, dysentery and acute respiratory infections (ARI) during the preceding 15 days, according to physiological groups, age and gender are provided in **Tables 29.1 - 29.3.**

About 8% of the infants reportedly suffered from fever, 4% had followed by acute Respiratory Infection (ARI) and 2.5% had diarrhoea. The prevalence of the morbidities was marginally higher among the boys compared to girls.

Among preschool children, about 10% reportedly had fever, 5.1% had ARI, 2.1% had diarrhoea and 0.4% had dysentery. No gender differentials were observed in the prevalence of these morbidities.

Fig.11 Prevalence(%) of Anaemia among Adult Men & Women



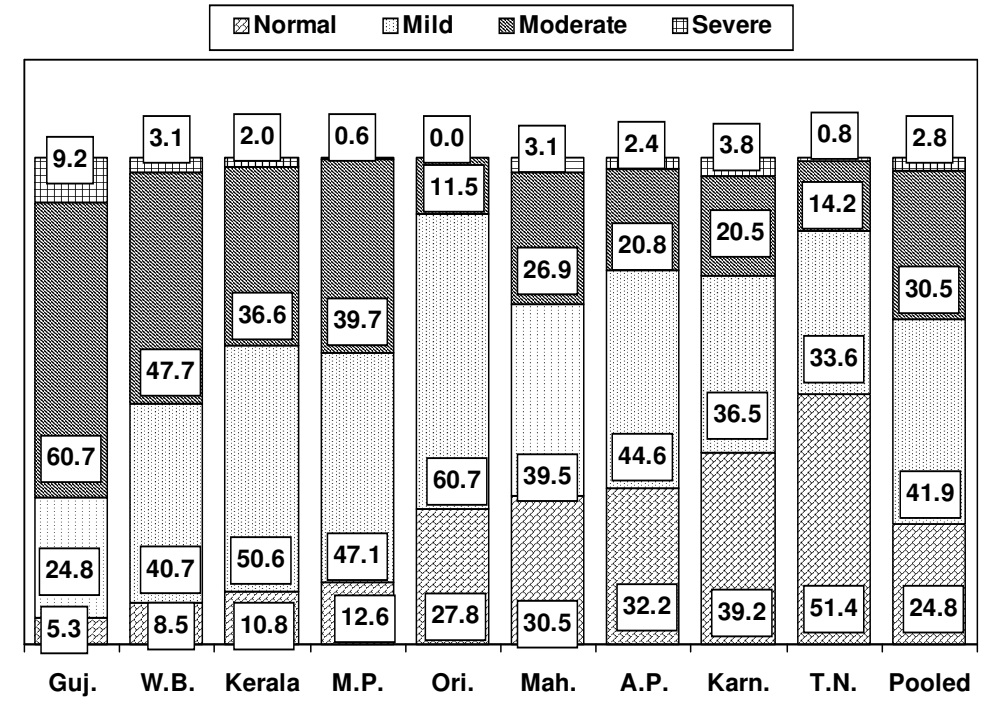
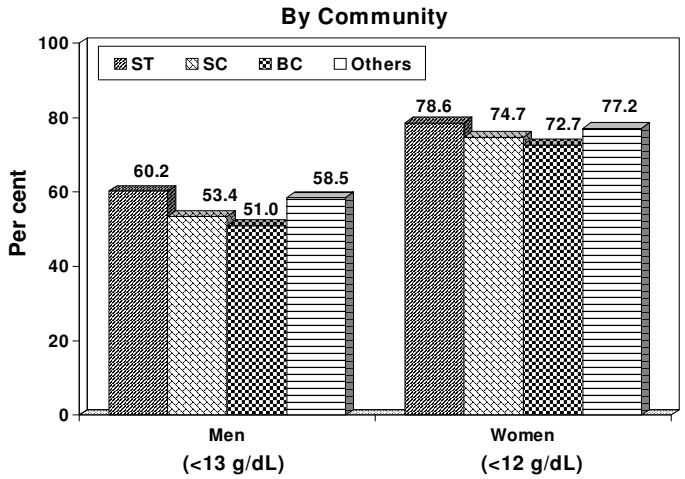
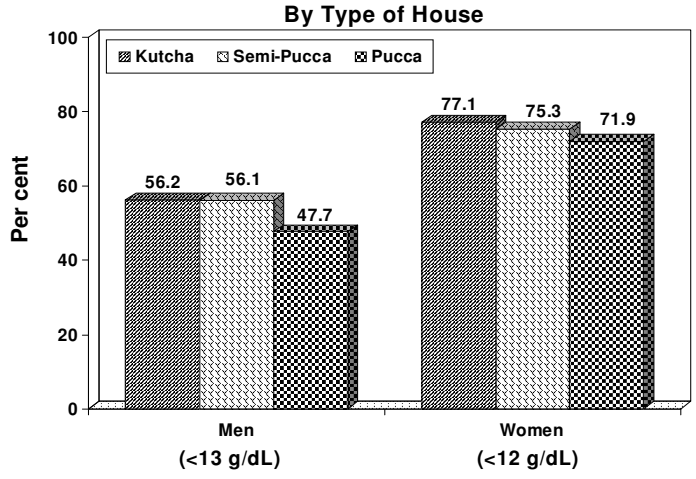
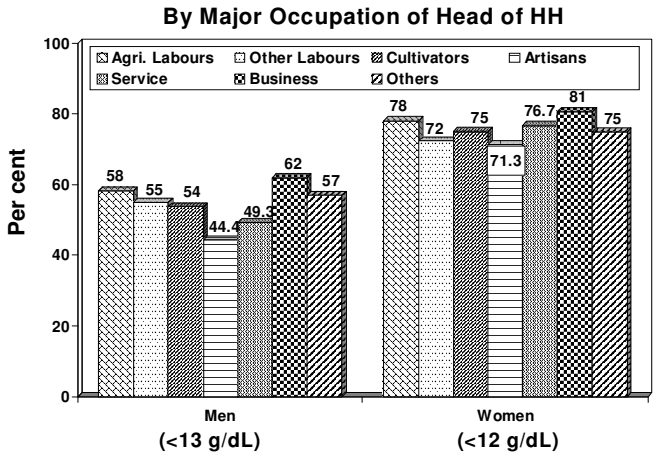
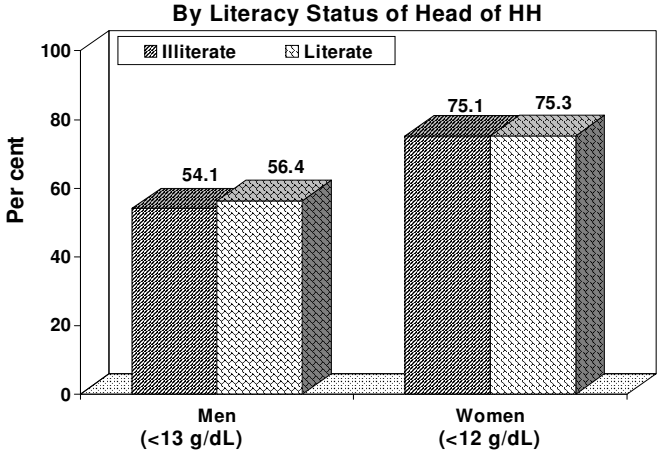


Fig. 12 Prevalence (%) of Anaemia among Adults by HH Socio-economic Variables









Among the school age children, about 7% reportedly had fever, 2.8% had ARI, 0.8% had diarrhoea and 0.1% had dysentery. The prevalence was observed to be similar among boys and girls. About 4% of the adolescents had fever and 1.5% had acute respiratory infection, while less than 1% had diarrhoea or dysentery. No gender differences were observed in the incidence of morbidities. The morbidities reported among adult males and females were fever (5%), respiratory infection (1.4%), diarrhoea (0.5%) and dysentery (0.1%).

4.7 Diet Related Chronic Diseases

A total of 25,242 adults of ≥ 20 years were covered for the anthropometry viz., measurement of height, weight, waist and hip circumference.

4.7.1 Mean Anthropometric Measurements

The mean age of the men covered for the various investigations was 41.3 years, while that of women was 39.6 years. The mean weight and height of the adult men and women was 54.2 Kg & 163.4 cm and 46.9 Kg and 151.1cm respectively. The mean BMI of men was 20.3 kg/m^2 and 20.5 kg/m^2 for women. The mean waist and hip circumferences for men and women were 75.1 cm & 82.6 cm and 69.9 cm and 83 cm respectively **(Table 30)**. The mean waist and hip circumferences among men and women tended to increase with age up to 60 years.

4.7.2 Prevalence of Abdominal Obesity According to Waist circumference

The overall prevalence of abdominal obesity (WC ≥102 Cm) was about 1% among men, and 7% among women (WC ≥ 88Cm).

The prevalence of abdominal obesity among men ranged from a low of 0.4% in West Bengal to a maximum of 2% in Andhra Pradesh. In case women, the prevalence ranged from a low 0.6% in Madhya Pradesh to a high of 20% in Kerala. The prevalence in case of male tended to increase with age from 0.2% in 20-30 year age group to 2.9% in 70-80 years, and in females from 2.4% in 20-30 years age group to 13.9% in 70-80 years age group **(Tables 31, 42 & 43)**.

4.7.3 Prevalence of Abdominal Obesity According to Waist/Hip Ratio (WHR)

The prevalence of obesity according to WHR was about 25% among men (WHR ≥ 0.95) and 69% among women (WHR ≥ 0.80). The prevalence among men ranged from a low 8.7% in 20-30 year age group to a high of 39.3% in 70-80 years. Similarly, the prevalence in women ranged from a low 60.5% in 20-30 years to a high of 77.6% in 70-80 years. The prevalence among men was observed to be least in the State of Madhya Pradesh (10.1%) and highest in Kerala (40.4%), while in case of women, it was highest in Kerala (91.8%) and least in Maharashtra (36.7%) **(Tables 31, 42 & 43).**

4.7.4 Prevalence of Obesity (BMI ≥ 25)

Prevalence of overweight and obesity (BMI ≥ 25) was about 8.5% and 12.7% among men and women respectively. The highest prevalence of overweight and obesity was observed among men and women in the State of Kerala and lowest in the States of Orissa and Madhya Pradesh (3-5%) **Tables 42 & 43** .

4.7.5 Hypertension

Mean blood pressure levels

Among men, the mean systolic blood pressure was 126 mm and diastolic 79 mm of Hg. In case of women it was 125 mm and 78 mm of Hg respectively. The mean blood pressure levels tended to increase with age from 20 years in both men and women (**Tables 32 & 33)**.

Prevalence of hypertension (HTN)

About 25% men and 24% women had hypertension (≥140 mm of Hg SBP and /or ≥ 90 mm of Hg DBP). The prevalence of HTN was maximum in the State of Kerala (men: 50.9%; women: 46.8%) and lowest in Gujarat (men: 14.2%; women: 10.3%) **(Tables 34 & 35)**.

According to JNC-VII criteria, the prevalence of stage II HTN (SBP ≥ 160 mm Hg and/or DBP ≥ 100 mm Hg) was about 7% each among men and women **(Tables 36 & 37).** The prevalence among men and women ranged from a low of about 1% in Gujarat to about 18% in Kerala. The prevalence tended to increase from a low 13.6% in 20-30 years age group to a high 56.4% among ≥ 80 years. In case of women, it ranged from a low 9% in the age group of 20-30 years to high of 66.2% in ≥80 years **(Tables 38 & 39).** The prevalence of stage II HTN among men tended to increase from a low 1.6 % in 20-30 years to 31.7% in ≥80 years age group **(Tables 40 & 41).** In case of women, the prevalence tended to increase from a low 1.2 % in 20-30 years to 32.5% in ≥80 years age group.

4.7.6 Prevalence of Diabetes Mellitus (DM) / Impaired Glucose Tolerance (IGT)

About 2% each of adult men and women examined in the State of Andhra Pradesh had impaired glucose tolerance (Fasting blood glucose level ≥110 -126mg/dL) while 4% men and 3% women were found to be having diabetes mellitus (Fasting blood glucose level ≥126mg/dL). The prevalence in men tended to increase with age from 20-30 years (DM: 0.4%; IGT: 0.4%) up to 80 years (IGT: 3.8%; DM: 9.4%;). Similar trends were observed in case of women **(Table 44 - 45)**.

4.7.7 Awareness of Hypertension and Diabetes mellitus and use of Tobacco and Alcohol

Hypertension

The particulars of knowledge and practices of adults on hypertension and diabetes mellitus are provided in **Table 46 - 49**. Nearly two thirds of men (66.5%) and women (60.5%) were aware of hypertension. About 4% of men and women each were known hypertensives, while 3% men and 2% of women were on treatment. The proportion of known hypertensives was maximum in the age group of ≥ 70 years among men (about12%) and women (17%). The signs and symptoms of hypertension as perceived by the adult men and women were nausea/vomiting (5%), giddiness (40%), and palpitation and headache (15%).

Diabetes

About 56% men and 49% women were aware of diabetes mellitus, while about 1-2% was known diabetics. The proportion of known diabetics increased with age from about 0.1% 20-30 years age group to about 6% in 70-80 years. About 55% men and 18% women were smokers. The proportion of smokers was maximum in the age group of 40-80 years. About 52% of men and 26% of women were smoking ≥10 cigarettes/*beedis* per day. Among the smokers, 75% men and 80% women were reportedly smoking for more than 10 years. Delayed wound healing (22-26%), frequent urination (7-11%), tiredness (20%), loss of weight (5-9%) and increased thirst and hunger were some of the signs and symptoms of diabetes, as reported by men and women interviewed.

Tobacco use

About 2% each of men and women were snuffing tobacco. Of them, about 60-65% of them were using snuff for ≥10 years. About 28% men and 15% women were reportedly chewing tobacco and of these, about 55% in men and 67% women were doing so for ≥10 years.

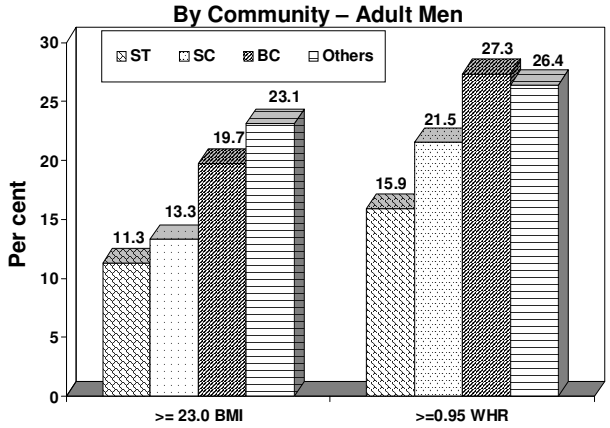
Consumption of Alcoholic Beverages

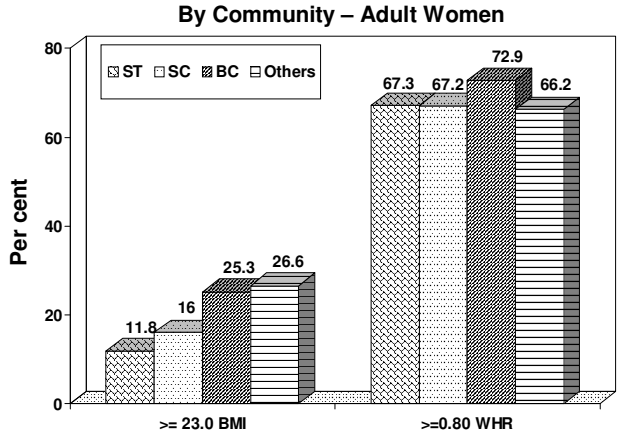
About 31% men and 2% women reportedly were consuming alcohol respectively. The proportion of men consuming alcohol was maximum in the age group of 30-50 years (37%). About 4% men and 0.1% women were consuming alcohol, every day.

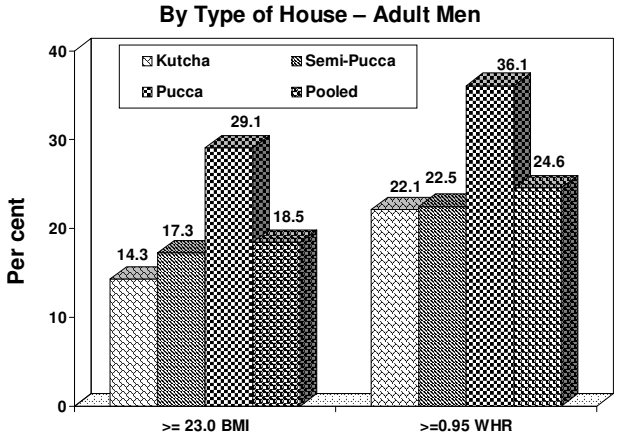
4.7.8 Prevalence of HTN, DM and Obesity Vs Demographic & Socio- economic Variables

Results of study on association between prevalence of hypertension, diabetes mellitus, obesity and use of tobacco and alcohol among adults and household demographic and socio-economic variables are presented in **Tables 50 & 51 & Figs. 13-15.**

Fig. 13 Prevalence (%) of Obesity according to BMI and WHR among Adult Men & Women by HH Socio-economic Variables







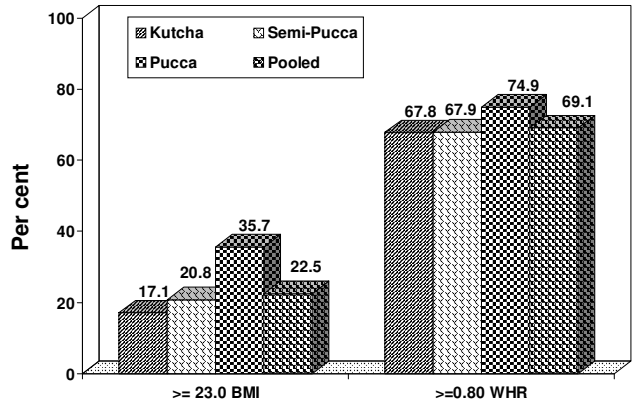
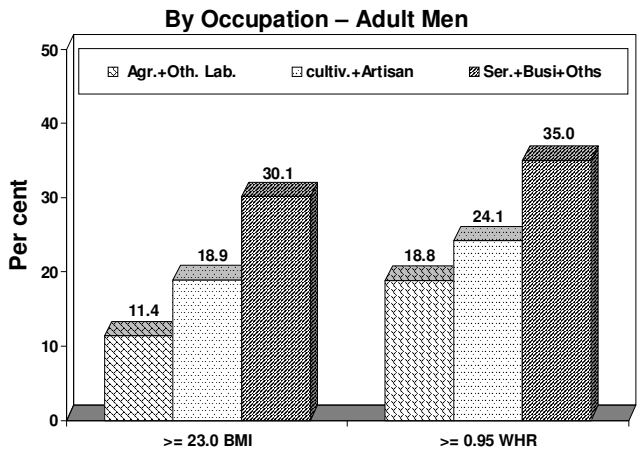
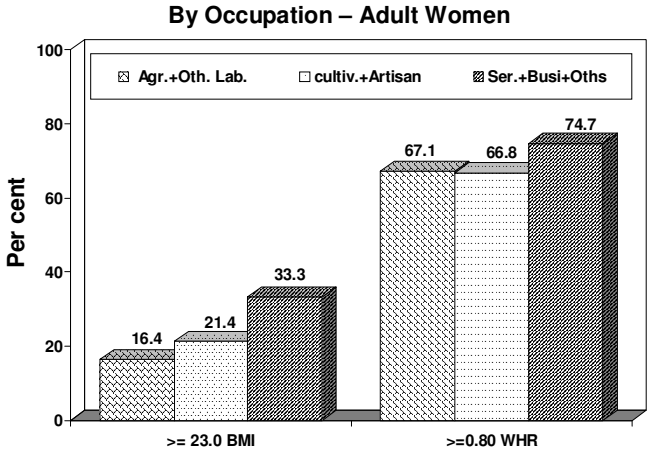
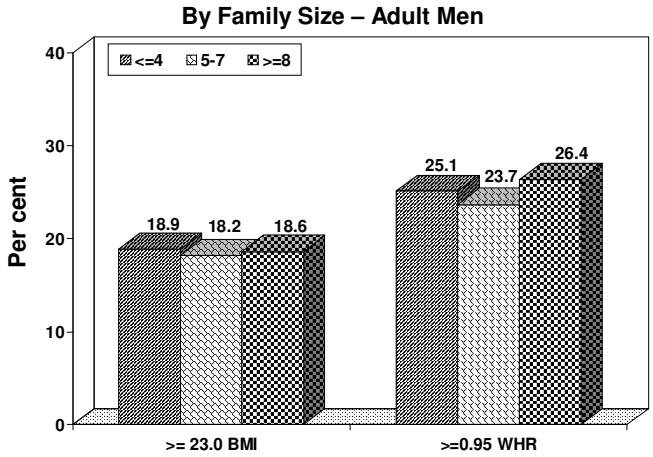


Fig. 14 Prevalence (%) of Obesity according to BMI and WHR among Adults by HH Socio-economic Variables







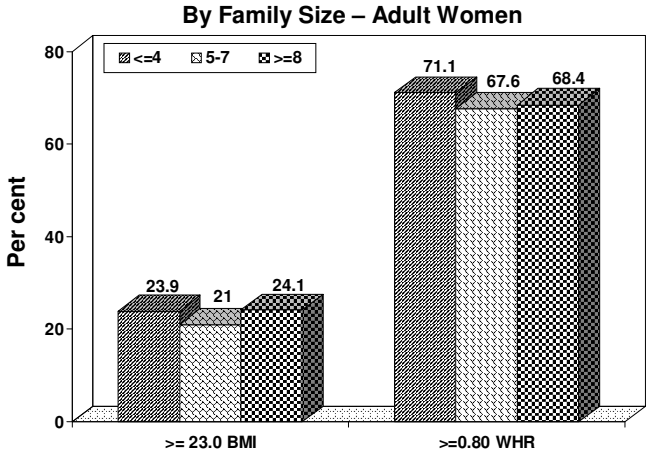
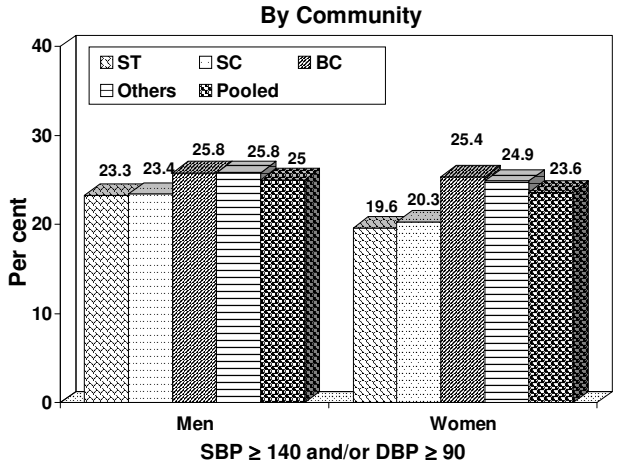
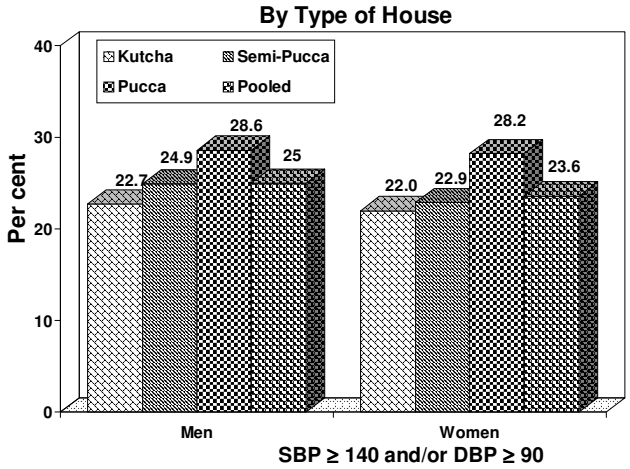
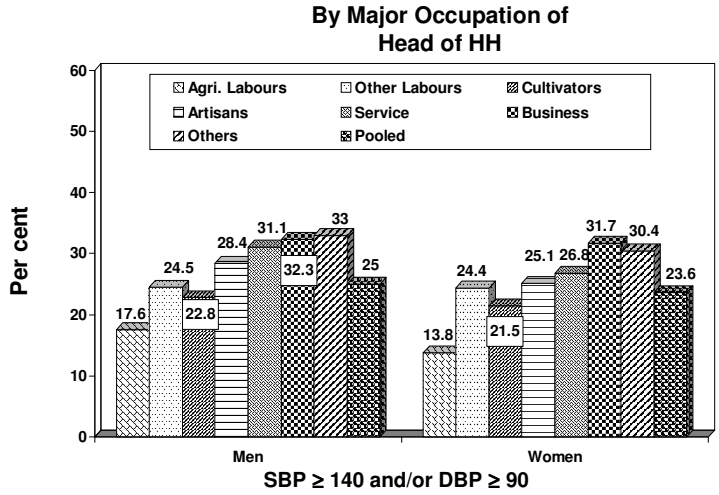


Fig. 15 Prevalence (%) of Hypertension (WHO) among Adults by HH Socio-economic Variables







The prevalence of hypertension was significantly associated with religion, community, major occupation of head of the household, per capita monthly income of HH, family size, and type of house and literacy status.

Similarly, the prevalence of IGT and DM in the State of Andhra Pradesh was significantly associated with major occupation of head of the household, per capita monthly income of HH, type of house and literacy status **(Fig 16.1 & 16.2)**.

The prevalence of overweight/Obesity (by BMI as well WHR) was significantly associated with religion, community, major occupation of head of the household, per capita monthly income of HH, type of house, literacy status.

4.7.9 Association between Prevalence of hypertension and Obesity

Among the adult men, the prevalence of hypertension was significantly ($p<0.001$) higher among those having abdominal obesity as indicated by higher Waist Circumference (55% Vs 25%), Waist Hip Ratio (40% Vs 20%) and those who were obese (BMI ≥25) (48% Vs 26%) **(Tables 52 - 54).**

Among the women, the prevalence of hypertension was significantly ($p<0.001$) higher among those having abdominal obesity as indicated by higher Waist Circumference (55% Vs 21%), Waist Hip Ratio (28% Vs 15%) and those who were obese (BMI ≥25) (45% Vs 24%) **(Tables 55 - 57).**

The study revealed that the risk of having hypertension was 2 to 4 times higher among these having higher WC, WHR and BMI among both men and women.

4.7.10 Impaired Glucose Tolerance & Diabetes Mellitus Vs abdominal Obesity

Among the adult men, the prevalence of Impaired Glucose Tolerance (IGT) & Diabetes Mellitus was significantly ($p<0.001$) higher among those having abdominal obesity as indicated by higher Waist Circumference (27.7% Vs 5.6%), Waist Hip Ratio (14.6% Vs 3.9%) and those who were obese (BMI ≥25) (12.3% Vs 5.9%) **(Tables 58 - 60).**

Among the women, the prevalence of IGT & Diabetes Mellitus was significantly ($p<0.001$) higher among those having abdominal obesity as indicated by higher Waist Circumference (23.2% Vs 4.2%), Waist Hip Ratio (5.8% Vs 3.8%) and those who were obese (BMI ≥25) (13.5% Vs 4.7%) **(Table 61 - 63).**

The study revealed that the risk of having IGT & Diabetes Mellitus was 7 times higher among those having higher WC, 2-4 times higher among those having higher WHR and 3-4 times higher among those with BMI ≥25.

Fig. 16.1 Prevalence (%) of Impaired Fasting Glucose (IFG) and Diabetes among Adults by HH Socio-economic Variables – Andhra Pradesh

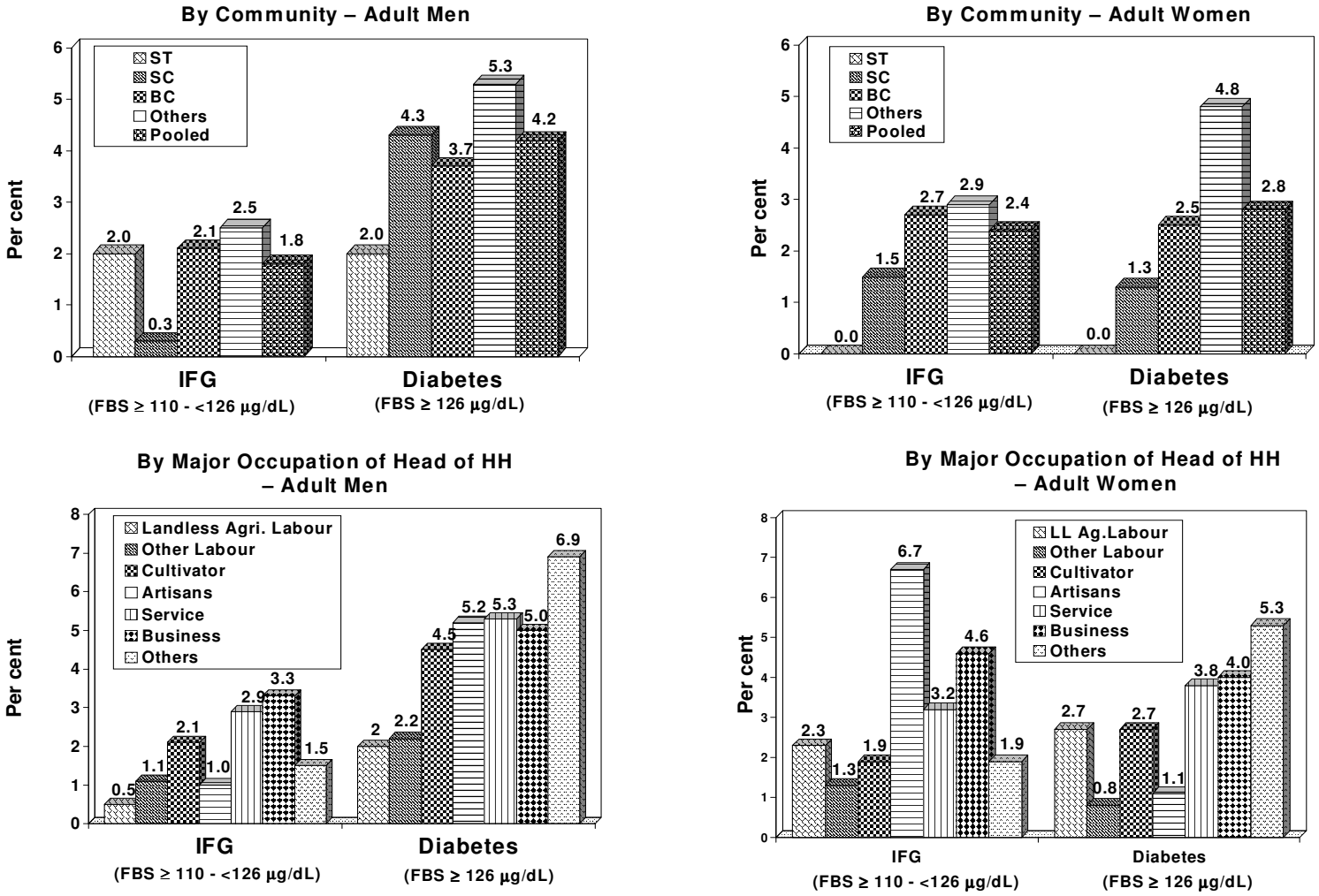
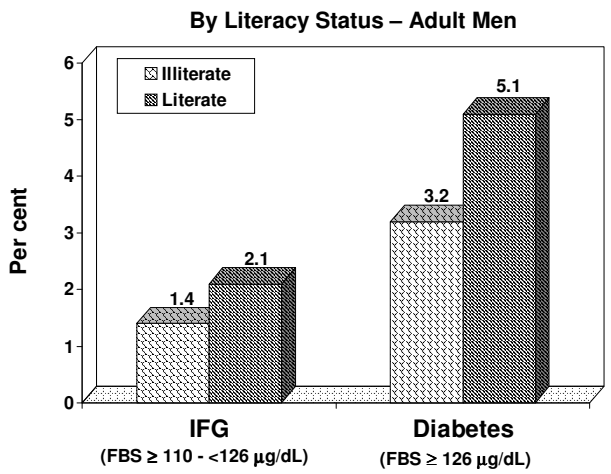
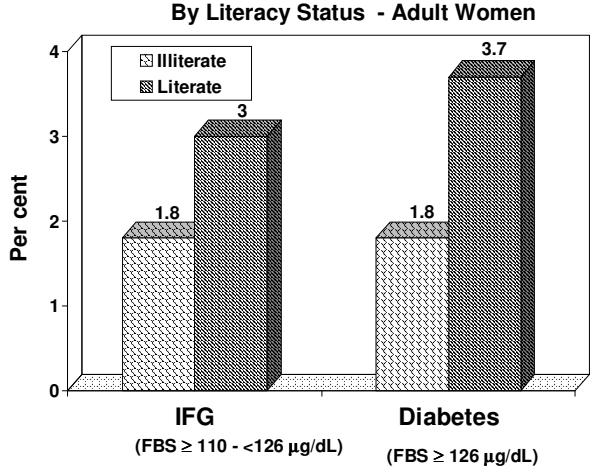
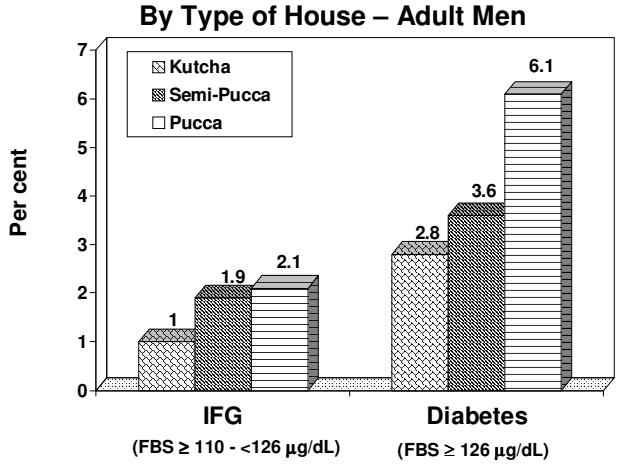
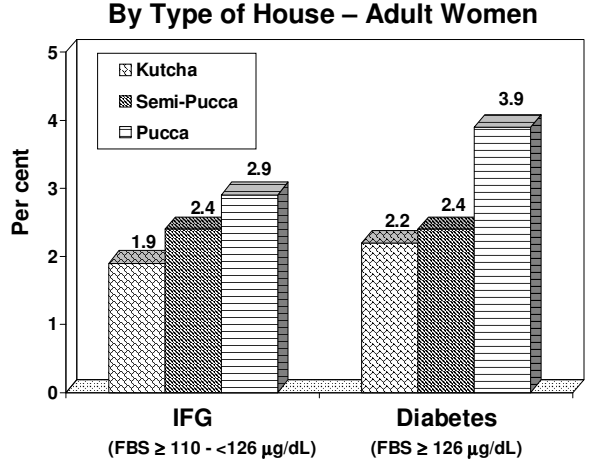


Fig. 16.2 Prevalence (%) of Impaired Fasting Glucose (IFG) and Diabetes among Adults by HH Socio-economic Variables – Andhra Pradesh









5. DISCUSSION AND CONCLUSIONS

Diet and Nutritional Status of rural population

The present survey was carried out during 2004-06, to assess the current diet and nutritional status of rural population, 5 years after the earlier survey carried out in 2000-01. For the first time, investigations to assessment of prevalence of abdominal obesity, hypertension, and diabetes mellitus (in Andhra Pradesh) among adults were included in the study. The survey was carried out in the rural areas of 9 States viz., Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Orissa and West Bengal.

A total of 14,256 households were covered from 713 villages (out of the target of 720) in nine States. Twenty-four hour recall method of diet survey was carried out in a sub-sample of 10 households covered for nutrition assessment in each village, to assess food and nutrient intakes at household and individual levels. All the available individuals were covered for anthropometry.

The study revealed that about 33% of the households surveyed belonged to scheduled caste/scheduled tribe communities and about 22% were living in *kutcha* houses. The average family size was 4.9, with about 46% of the households having 4 or fewer members. About 32% of men and 48% women were illiterate. About 49% of the households did not possess any land, while another 32% were marginal farmers.

The dietary surveys revealed that cereals and millets formed the bulk of the diets, with millets constituting 13%. The intake of protective / income elastic foods such as green leafy vegetables, milk and milk products (barring Gujarat), and fats & oils was well below the recommended levels both at household as well as individual levels. The inadequacy was more among younger age groups. It was also revealed that deficiency in the intakes of dietary energy was more pronounced, compared to that of proteins, reiterating that fact that, it is essentially 'food gap'. The intakes of various micronutrients, specifically that of iron, vitamin A, riboflavin and folic acid was grossly inadequate, which is in consonance with poor quality of diets observed. A decline in the average energy intakes by about 110 kcals/CU/day was observed, in the present survey, compared to that reported in 2000-01 surveys.

The current prevalence of underweight and wasting among preschool children was relatively less 55% and 15% respectively compared to that reported during 2000-01 survey (NNMB 2002). However, the prevalence of stunting remained similar (51%vs 49%). There was a marginal decrease in the prevalence of chronic energy deficiency over the period, both among men (37% Vs 33%) and women (39% Vs 36%). There was a concomitant marginal increase in the prevalence of overweight, among men (5.3% Vs 7.8%) and women (8.7% Vs 10.9%).

The study revealed that about 55% of adult men and 75% of NPNL women were had anaemia, with 9% males and 34% females having moderate to severe anaemia. The

prevalence of Bitot spots among 1-5 year children was more that the WHO cut-off level of 0.5%, in the States of Maharashtra, Tamil Nadu, Karnataka, Madhya Pradesh and Orissa. It may be mentioned here that the prevalence in Orissa is showing the increasing trend after registering a low prevalence during NNMB-MND survey carried out during 2003 (0.3% to 1.0%).

Diet related chronic diseases

It has been reported that India is experiencing a rapid health transition, with rising burden of chronic diseases, which estimated to account for 53% of all deaths and 44% of disability adjusted life years (DALY) in 2005[25]. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India[3]. Several community based surveys revealed that hypertension is rapidly emerging as major public health problem even in developing countries[26]. A study carried out during 2005 in different parts of India revealed that the prevalence of hypertension increased by about 30 times among urban communities and 10 times among the rural inhabitants during the past four decades[27].

For the first time, the prevalence of hypertension was assessed in adults in the rural population by NNMB in nine States, covering a large population and using JNC VII Criteria. It was observed that the prevalence of hypertension was as high 25% among both men and women.

The prevalence of diabetes and impaired glucose tolerance was about 4% and 2% respectively among women and men in rural Andhra Pradesh. It was significantly associated with higher waist circumference, WHR and general obesity. The study also revealed that the risk of having IGT and DM was several times higher among those who were obese.

The overall prevalence of abdominal obesity as indicated by waist circumference was 1% in men and 7% in women. However, by the criteria of WHR, the prevalence was observed to be much higher (25% in men and 69% in women). About 17% men and 20% women had BMI levels of ≥ 23, a cut-off level suggested for the Asian population by the WHO consultative group, indicating risk of developing chronic degenerative disorders.

Cross sectional, as well as prospective observational cohort studies, have consistently demonstrated a positive relation between age and blood pressure[28]. The present study also revealed that prevalence of hypertension was significantly associated with higher waist circumference, WHR and general obesity. It was also observed that the risk of having hypertension was 2-4 times higher among the obese.

In societies that are in transitional (India) or pre-transitional phase, a higher prevalence of hypertension has been reported, especially among upper socio-economic groups. Of all the States studied, the prevalence of hypertension in Kerala was maximum (about 50%), where the prevalence of various types of obesity was also very high. It is

consistent with other studies, where overweight is associated with 2-6 fold increase in the risk of developing hypertension[29].

About two-thirds of men (66.5%) and women (60.5%) were aware of hypertension, but very few (about 4%) could state the associated signs and symptoms. Similarly, about half the men and women were aware of diabetes mellitus.

The study revealed that the food and nutrient intake levels in general, were relatively lower in Kerala compared to other States. Contrary to this, the prevalence of undernutrition among young children was low and prevalence of obesity and hypertension was markedly high among adults.

Therefore, there is need to carry out in depth studies to assess the lifestyle practices and other associated factors contributing to these disorders. There is also an urgent need to sensitize the community regarding the causes and consequences of obesity, HTN and DM and to educate them about the need for adopting appropriate life styles and dietary habits.

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Table 1: Coverage Particulars

STATE	No. of Villages	No. of HHs	INVESTIGATIONS									
			Diet & Nutritional Status					Diet Related chronic diseases				
			Nutri-tional Asse-ssment (Indivi-duals)	Diet Survey		Haemoglobin (≥20 years)		Anthro-pometry	Blood Pressure (Individuals) (≥20 years)		Fasting Blood Sugar (≥20 years)	
				HHs	Indivi-duals	Men	NPNL Women		Men	Women	Men	Women
Kerala	80	1600	4597	797	3180	339	344	2562	880	1710	-	-
Tamil Nadu	80	1600	5792	798	3114	397	395	2963	1306	1681	-	-
Karnataka	80	1600	5816	773	3069	351	369	3230	1412	1881	-	-
Andhra Pradesh	80	1600	5896	798	3241	395	370	3650	1810	1898	1803	1883
Maharashtra	80	1600	6794	796	3846	406	414	2900	1542	1401	-	-
Gujarat	80	1600	6512	793	3658	423	434	3258	1536	1796	-	-
Madhya Pradesh	80	1600	5364	797	3682	329	325	2309	1200	1138	-	-
Orissa	80	1600	5768	800	3560	388	381	2202	1136	1120	-	-
West Bengal	73	1456	5166	726	2894	363	352	2168	1101	1077	-	-
Pooled	**713**	**14256**	**51705**	**7078**	**30244**	**3391**	**3384**	**25242**	**11923**	**13702**	**1803**	**1883**
Target	**720**	**14400**	**-**	**7200**	**-**	**3600**	**3600**		**9936**	**9936**	**1800**	**1800**

Table 2.1: Distribution (%) of Households by Socio-economic and Demographic profile

Socio Economic Parameters	STATES									Pooled
	Kerala	Tamil Nadu	Karna-taka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	
n	1600	1600	1600	1600	1600	1600	1600	1600	1456	14256
Religion										
Hindu	61.8	91.1	91.4	97.3	82.4	93.4	97.6	96.9	77.5	87.8
Muslim	25.9	3.3	6.0	2.1	3.4	6.1	2.3	1.4	21.6	7.9
Christian	12.3	5.6	1.7	.6	.1	.1	.0	1.7	.8	2.5
Others	.0	.0	.9	.0	14.2	.5	.1	.0	.0	1.8
Community										
Scheduled Tribes	2.0	1.4	10.4	2.8	11.5	14.6	24.1	22.9	8.9	11.0
Scheduled Castes	14.4	28.9	19.3	22.3	22.2	13.6	15.6	21.9	40.5	21.9
Other Backward Castes	60.3	69.0	23.9	48.4	25.4	21.6	42.7	35.8	3.6	37.0
Others	23.3	.7	46.4	26.5	40.9	50.3	17.6	19.5	47.0	30.1
Type of House										
Kutcha	6.4	27.4	14.2	22.2	3.8	39.9	14.4	49.5	22.6	22.3
Semi Pucca	60.1	43.6	80.8	48.3	90.4	49.5	85.3	35.8	64.0	61.9
Pucca	33.6	28.9	5.1	29.5	5.8	10.6	.3	14.7	13.4	15.8
Type of Family										
Nuclear	67.6	73.6	58.3	63.3	56.8	56.7	69.9	58.1	67.6	63.5
Joint	18.4	15.2	24.7	19.1	19.1	17.8	12.2	21.6	17.0	18.4
Extended Nuclear	14.0	11.3	17.0	17.6	24.2	25.5	17.9	20.3	15.5	18.2

Table 2.2: Distribution (%) of Households by Socio-Economic and Demographic profile

Socio Economic Parameters	STATES									Pooled
	Kerala	Tamil Nadu	Karna-taka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	
n	1600	1600	1600	1600	1600	1600	1600	1600	1456	14256
Family Size										
1-4	58.5	55.3	46.9	52.2	35.5	38.5	40.6	36.6	48.7	45.8
5-7	36.2	41.9	44.0	42.3	51.5	51.4	49.2	50.4	45.9	45.9
≥8	5.3	2.9	9.1	5.5	13.0	10.1	10.2	13.0	5.4	8.3
Average	4.5	4.5	4.9	4.6	5.4	5.2	5.1	5.4	4.8	4.9
Literacy Status of Adult men										
Illiterate	7.7	26.0	38.5	46.1	22.4	22.3	39.2	38.3	45.5	31.6
Read & Write	.5	.3	1.5	2.1	.3	11.6	.8	.7	4.7	2.5
1-4 std.	23.9	12.3	12.0	8.3	20.1	19.5	7.3	14.6	9.3	14.2
5-8 std.	23.1	35.9	21.0	21.3	21.3	22.9	30.5	22.6	20.6	24.4
9-12 std.	40.4	21.1	20.5	18.3	30.1	18.1	13.1	18.0	15.7	21.8
College	4.3	4.4	6.5	4.0	5.8	5.7	9.1	5.8	4.3	5.5
Literacy Status of Adult Women										
Illiterate	11.5	40.6	51.7	64.1	43.6	39.0	64.9	60.4	56.8	48.0
Read & Write	.3	.2	1.2	1.3	.4	12.9	.5	.1	4.5	2.4
1-4 std.	20.1	9.3	11.5	5.1	14.8	18.9	6.3	9.3	9.1	11.6
5-8 std.	18.4	31.5	18.5	18.9	21.7	17.9	21.2	19.0	17.6	20.5
9-12 std.	44.6	16.9	15.0	9.2	17.9	9.4	4.7	9.1	11.1	15.4
College	5.3	1.6	2.1	1.4	1.6	1.8	2.4	2.1	.9	2.1

Table 2.3: Distribution (%) of Households by Socio-Economic and Demographic profile

Socio Economic Parameters	STATES									Pooled
	Kerala	Tamil Nadu	Karna-taka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	
n	1600	1600	1600	1600	1600	1600	1600	1600	1456	14256
Occupation of Head of Household										
Agri. Labour	.0	8.8	21.3	11.8	26.6	40.9	1.1	3.1	24.6	15.3
Other Labour	38.3	37.3	25.3	21.9	11.6	14.4	35.9	50.8	17.0	28.2
Owner Cultivation	2.4	13.4	21.0	30.0	34.9	15.9	43.6	17.9	24.5	22.6
Land Lord	.0	.1	4.0	.9	.1	1.6	2.3	.5	.9	1.1
Tenant Cultivation	.1	.1	.8	2.9	1.1	.3	.2	1.6	2.5	1.0
Artisan	13.1	18.8	5.1	5.3	3.8	1.5	4.6	6.1	4.3	7.0
Service	8.9	8.1	10.3	9.8	10.2	10.1	7.1	8.8	6.9	8.9
Business	25.1	7.1	7.6	7.1	5.6	4.2	3.6	8.2	15.1	9.2
Others	12.1	6.4	4.6	10.5	6.2	11.1	1.7	3.1	4.1	6.7
Land Ownership (Acres)										
No land	50.6	61.6	39.6	41.9	42.7	66.4	46.6	35.9	57.4	49.1
Marginal farmers (<2.5)	48.8	26.4	32.3	34.4	23.8	15.2	21.6	49.1	34.3	31.7
Small farmers (2.5 - 5.0)	.5	7.0	12.8	11.3	13.9	5.1	14.0	8.4	6.3	8.8
Large farmers (≥ 5)	.1	4.9	15.4	12.5	19.7	13.4	17.8	6.6	2.0	10.4
Monthly Per Capita Income (Rs.)										
< 300	21.0	16.0	44.3	22.4	42.9	4.6	30.6	64.4	13.0	29.0
300-600	31.6	40.1	31.6	38.5	32.6	24.3	45.8	25.3	40.9	34.4
600-900	17.8	20.8	10.3	17.1	11.3	25.8	12.4	5.6	20.1	15.6
≥900	29.7	23.1	13.9	21.9	13.3	45.3	11.2	4.8	26.1	21.0
Average PCI (Rs./Month)	776	718	531	713	536	1057	533	330	751	660

Table 2.4: Distribution (%) of Households by Socio-Economic and Demographic profile

Socio Economic Parameters	STATES									Pooled
	Kerala	Tamil Nadu	Karna-taka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	
n	1600	1600	1600	1600	1600	1600	1600	1600	1456	14256
Source of Drinking Water										
Open well	81.9	1.5	10.7	10.1	18.9	5.6	55.7	23.7	6.0	24.0
Tube well	1.8	15.9	17.8	32.9	30.3	24.8	38.1	70.6	87.9	35.0
Tap	15.6	82.2	67.9	56.2	50.2	64.3	4.9	2.0	5.8	39.1
Pond/ Tank	.3	.4	3.2	.6	.1	4.0	.1	1.2	.0	1.1
Stream/ River/ Canal	.4	.0	.4	.3	.6	1.3	1.1	2.5	.2	.8
Amenities Present										
Sanitary Latrine	88.3	16.1	20.5	25.7	16.4	32.0	7.4	8.6	31.9	27.4
Electrification	84.6	87.6	87.8	94.5	80.1	94.6	56.9	26.8	32.9	72.1
Separate Kitchen	97.4	92.1	84.4	47.4	72.2	83.6	51.6	70.0	81.5	75.5
Type of cooking fuel										
Fire wood	85.8	85.2	90.6	74.6	78.1	88.7	97.9	97.8	98.9	88.5
Kerosene	.3	1.9	.6	.6	2.8	1.1	.3	.7	.3	.9
Bio-gas	.1	.6	1.0	.3	1.4	.5	.7	.4	.0	.6
LPG	13.8	12.3	7.8	24.5	17.6	9.8	1.1	1.1	.8	10.0

Table 3: Average Household consumption of Food stuffs (g/CU/day)

STATE			FOODS											
		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Veg.	Roots & Tubers	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (N=797)	**Mean**	**320**	**0**	**320**	**23**	**7**	**56**	**53**	**38**	**56**	**8**	**66**	**6**	**18**
	SD	71	1	72	28	25	69	57	49	61	33	78	6	9
Tamil nadu (N=798)	**Mean**	**383**	**3**	**386**	**37**	**10**	**46**	**41**	**42**	**9**	**2**	**102**	**12**	**11**
	SD	87	23	110	29	27	49	41	32	34	12	111	9	13
Karnataka (N=773)	**Mean**	**354**	**75**	**429**	**37**	**8**	**23**	**40**	**36**	**2**	**3**	**84**	**9**	**19**
	SD	171	130	301	31	20	42	39	41	15	21	103	9	17
Andhra Pradesh (N=798)	**Mean**	**433**	**16**	**449**	**30**	**6**	**38**	**34**	**49**	**5**	**14**	**112**	**18**	**10**
	SD	125	53	178	32	17	50	38	64	23	38	122	13	11
Maharashtra (N=796)	**Mean**	**197**	**132**	**329**	**33**	**10**	**26**	**20**	**15**	**4**	**4**	**77**	**22**	**29**
	SD	142	139	281	27	24	38	23	36	19	19	98	14	18
Gujarat (N=793)	**Mean**	**133**	**200**	**333**	**20**	**9**	**78**	**53**	**15**	**2**	**3**	**170**	**21**	**11**
	SD	122	171	293	30	32	75	57	32	18	20	168	15	10
Madhya Pradesh (N=797)	**Mean**	**366**	**32**	**398**	**29**	**16**	**35**	**59**	**13**	**2**	**2**	**59**	**9**	**10**
	SD	148	96	244	33	37	53	54	26	14	15	120	12	12
Orissa (N=800)	**Mean**	**443**	**1**	**444**	**29**	**43**	**73**	**99**	**20**	**9**	**2**	**14**	**10**	**7**
	SD	77	22	99	31	65	79	75	39	28	15	40	7	10
West Bengal (N=726)	**Mean**	**477**	**0**	**477**	**18**	**41**	**71**	**144**	**14**	**33**	**14**	**49**	**18**	**10**
	SD	146	7	153	25	74	89	95	56	50	44	94	11	19
Total (N=7078)	**Mean**	**344**	**52**	**396**	**28**	**16**	**49**	**60**	**27**	**13**	**6**	**82**	**14**	**14**
	SD	**164.9**	**115.6**	**280.5**	**30.4**	**42.4**	**65.4**	**66.6**	**45.1**	**37.3**	**26.5**	**116.6**	**12.2**	**15.2**
	RDA			***460***	***40***	***40***	***60***	***50***	**-**	**-**	**-**	***150***	***20***	***30***

Table 4 : Average household Intake of Nutrients (CU/day)

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit. -A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (N=797)	**Median**	**47.5**	**34.0**	**1774**	**399**	**11.5**	**91**	**0.9**	**0.5**	**13.9**	**28**	**47.2**
	Mean	49.1	36.3	1799	477	12.5	162	1.0	0.6	14.2	41	50.4
	SD	16.2	19.5	375	341	6.1	271	0.3	0.2	3.5	38	18.1
Tamil Nadu (N=798)	**Median**	**41.3**	**15.2**	**1740**	**322**	**8.8**	**132**	**1.2**	**0.6**	**16.1**	**31**	**55.5**
	Mean	43.3	17.6	1772	393	10.2	199	1.2	0.6	16.2	45	58.2
	SD	12.3	11.3	367	284	5.6	253	0.3	0.2	4.2	43	17.9
Karnataka (N=773)	**Median**	**48.0**	**15.9**	**1865**	**380**	**12.1**	**131**	**1.1**	**0.7**	**10.9**	**23**	**43.4**
	Mean	49.8	19.3	1912	569	13.9	178	1.2	0.7	11.7	28	47.4
	SD	17.3	13.0	589	500	8.8	194	0.6	0.3	4.7	24	22.0
Andhra Pradesh (N=798)	**Median**	**48.0**	**26.3**	**2061**	**333**	**8.3**	**123**	**0.6**	**0.6**	**11.3**	**27**	**39.8**
	Mean	50.1	31.1	2113	414	9.2	245	0.7	0.6	11.9	35	43.6
	SD	15.9	18.5	503	288	4.0	357	0.3	0.2	3.9	33	18.6
Maharashtra (N=796)	**Median**	**47.8**	**21.0**	**1597**	**304**	**16.5**	**114**	**1.4**	**0.7**	**12.4**	**14**	**49.9**
	Mean	49.0	24.9	1647	384	17.3	198	1.4	0.7	13.1	22	50.9
	SD	14.6	17.5	424	272	7.3	240	0.5	0.3	4.7	24	19.0
Gujarat (N=793)	**Median**	**52.5**	**24.3**	**1594**	**417**	**22.8**	**170**	**1.6**	**0.9**	**11.9**	**31**	**63.7**
	Mean	53.5	27.8	1614	526	24.6	207	1.6	0.9	12.3	43	68.2
	SD	15.6	16.5	454	331	13.2	272	0.5	0.3	3.9	38	28.1
Madhya Pradesh (N=797)	**Median**	**48.3**	**11.0**	**1655**	**239**	**14.0**	**85**	**1.0**	**0.6**	**12.3**	**19**	**34.7**
	Mean	50.9	15.6	1715	317	15.5	184	1.2	0.6	13.3	32	38.6
	SD	16.4	18.7	475	293	8.9	340	0.7	0.3	4.8	40	23.7
Orissa (N=800)	**Median**	**43.5**	**6.7**	**1854**	**273**	**11.9**	**80**	**1.2**	**0.5**	**19.4**	**49**	**53.5**
	Mean	45.3	9.5	1888	377	14.7	523	1.3	0.5	19.0	76	55.5
	SD	12.4	7.9	336	322	9.0	1017	0.4	0.2	4.7	79	18.9
West Bengal (N=726)	**Median**	**51.6**	**7.1**	**2032**	**372**	**13.0**	**94**	**1.3**	**0.5**	**20.6**	**50**	**54.3**
	Mean	54.3	11.5	2071	505	15.0	431	1.4	0.6	20.9	77	58.4
	SD	19.1	11.2	539	476	8.0	899	0.4	0.3	6.5	75	25.8
Total (N=7078)	**Median**	**47.4**	**17.0**	**1787**	**335**	**12.3**	**115**	**1.1**	**0.6**	**13.9**	**28**	**49.6**
	Mean	49.4	21.6	1834	439	14.8	257	1.2	0.6	14.7	44	52.3
	SD	16.0	17.6	485	360	9.3	525	0.5	0.3	5.5	51	23.1
	RDA	***60***	***-***	***2425***	***400***	***28***	***600***	***1.2***	***1.4***	***16***	***40***	***100***

Table 5.1: **Average consumption of Foodstuffs (g/day) among 1-3 year Boys and Girls**

STATE		Cereals	Millets	Cereals & MIllets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=170)	**Mean**	**101**	*	**101**	**8**	**2**	**14**	**13**	**16**	**6**	**22**	**20**	**3**	**65**	**2**	**11**
	SD	46	*	46	11	10	24	18	15	4	37	25	14	77	3	8
Tamil Nadu (n=250)	**Mean**	**114**	**1**	**115**	**13**	**5**	**19**	**14**	**2**	**5**	**14**	**2**	**3**	**152**	**4**	**12**
	SD	57	4	61	12	20	24	18	4	7	13	9	9	213	5	22
Karnataka (n=165)	**Mean**	**116**	**13**	**129**	**15**	**2**	**7**	**13**	**4**	**4**	**14**	**1**	**1**	**70**	**3**	**13**
	SD	67	30	97	15	9	16	16	9	3	16	4	6	84	4	14
Andhra Pradesh (n=176)	**Mean**	**174**	**4**	**178**	**12**	**1**	**11**	**12**	**1**	**5**	**33**	**2**	**4**	**81**	**7**	**8**
	SD	92	14	106	15	6	19	19	6	5	60	7	11	105	8	10
Maharashtra (n=266)	**Mean**	**77**	**36**	**113**	**19**	**2**	**6**	**6**	**2**	**4**	**10**	**1**	**1**	**107**	**7**	**15**
	SD	65	61	126	23	10	13	10	4	5	32	7	8	146	7	13
Gujarat (n=165)	**Mean**	**44**	**78**	**122**	**7**	**3**	**16**	**16**	*	**3**	**5**	*	**1**	**103**	**6**	**4**
	SD	54	95	149	13	9	28	25	1	5	12	*	12	122	6	6
Madhya Pradesh (n=329)	**Mean**	**151**	**12**	**163**	**14**	**6**	**15**	**26**	*	**4**	**6**	**1**	**1**	**47**	**4**	**8**
	SD	92	44	136	17	16	28	29	3	4	15	7	10	89	6	12
Orissa (n=241)	**Mean**	**141**	*	**141**	**15**	**19**	**30**	**45**	*	**4**	**8**	**3**	**1**	**17**	**4**	**5**
	SD	64	4	68	14	32	38	42	1	3	25	11	6	52	3	7
West Bengal (n=186)	**Mean**	**139**	*	**139**	**6**	**13**	**20**	**56**	*	**3**	**8**	**17**	**7**	**146**	**5**	**7**
	SD	69	3	72	11	36	41	57	1	4	41	32	24	205	5	18
Pooled (n=1948)	**Mean**	**120**	**15**	**135**	**13**	**6**	**16**	**23**	**2**	**4**	**12**	**4**	**2**	**86**	**5**	**9**
	SD	79	47	**126**	16	20	28	33	7	5	31	16	12	140	6	14
	RDI			***175***	***35***	***40***	***20***	***10***	**-**	**-**	**-**	**-**	**-**	***300***	***25***	***30***

* Indicates <1g

Table 5.2: Average consumption of Foodstuffs (g/day) among 4-6 year Boys and Girls

STATE		Cereals	Millets	Cereals & MIllets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=173)	**Mean**	**164**	*	**164**	**15**	**3**	**25**	**23**	**27**	**8**	**32**	**31**	**8**	**50**	**4**	**14**
	SD	54	*	54	19	13	34	26	22	5	51	35	28	74	5	8
Tamil Nadu (n=210)	**Mean**	**190**	**1**	**191**	**22**	**6**	**30**	**22**	**3**	**10**	**19**	**4**	**3**	**79**	**6**	**10**
	SD	64	10	74	13	24	32	24	6	12	14	15	11	96	4	12
Karnataka (n=182)	**Mean**	**168**	**31**	**199**	**21**	**5**	**13**	**17**	**7**	**6**	**19**	**1**	**1**	**68**	**5**	**16**
	SD	82	54	136	17	13	26	17	11	4	19	11	5	82	4	13
Andhra Pradesh (n=178)	**Mean**	**243**	**6**	**249**	**18**	**3**	**19**	**17**	**2**	**8**	**34**	**2**	**7**	**77**	**9**	**8**
	SD	101	27	128	18	10	29	22	5	6	59	8	17	91	6	12
Maharashtra (n=272)	**Mean**	**138**	**59**	**197**	**26**	**4**	**12**	**11**	**5**	**6**	**16**	**4**	**3**	**75**	**13**	**20**
	SD	103	85	188	24	13	19	15	10	5	44	18	16	126	10	14
Gujarat (n=254)	**Mean**	**59**	**104**	**163**	**9**	**5**	**35**	**27**	**1**	**6**	**8**	**1**	**1**	**104**	**11**	**7**
	SD	90	108	198	16	16	45	33	1	7	13	8	8	104	11	8
Madhya Pradesh (n=324)	**Mean**	**230**	**20**	**250**	**23**	**9**	**22**	**38**	*	**6**	**8**	**1**	**1**	**46**	**6**	**8**
	SD	113	64	177	23	23	35	39	1	4	19	9	12	93	8	10
Orissa (n=233)	**Mean**	**222**	**1**	**223**	**19**	**31**	**42**	**59**	*	**5**	**9**	**4**	**1**	**8**	**5**	**5**
	SD	68	13	81	19	45	48	46	1	4	17	13	8	31	4	8
West Bengal (n=214)	**Mean**	**229**	*	**229**	**12**	**25**	**37**	**95**	**1**	**5**	**7**	**26**	**9**	**53**	**10**	**8**
	SD	74	*	74	16	50	51	63	5	5	33	41	31	118	8	18
Pooled (n=2040)	**Mean**	**181**	**28**	**209**	**19**	**10**	**26**	**35**	**4**	**7**	**15**	**7**	**3**	**62**	**8**	**10**
	SD	105	68	**173**	20	29	38	43	11	6	34	23	17	99	8	13
	RDI	**-**	**-**	***270***	***35***	***50***	***30***	***20***	**-**	**-**	**-**	**-**	**-**	***250***	***25***	***40***

* Indicates <1g

Table 5.3: Average consumption of Foodstuffs (g/day) among 7-9 year Boys and Girls

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala	**Mean**	**190**	*	**190**	**22**	**4**	**27**	**34**	**29**	**10**	**31**	**30**	**6**	**51**	**4**	**14**
(n=163)	SD	57	*	57	23	14	40	49	21	6	45	32	26	73	6	8
Tamil Nadu	**Mean**	**234**	*	**234**	**27**	**7**	**32**	**23**	**3**	**14**	**23**	**5**	**2**	**77**	**8**	**10**
(n=202)	SD	68	*	68	18	26	33	24	5	16	22	16	8	84	6	10
Karnataka	**Mean**	**223**	**40**	**263**	**28**	**6**	**14**	**22**	**9**	**7**	**20**	*	**2**	**63**	**6**	**15**
(*n=171)	SD	101	68	169	19	17	25	25	13	5	24	4	10	93	5	14
Andhra Pradesh	**Mean**	**295**	**12**	**307**	**22**	**4**	**22**	**21**	**2**	**11**	**39**	**2**	**9**	**78**	**12**	**6**
(n=215)	SD	120	38	158	24	14	33	25	7	7	62	15	25	106	11	9
Maharashtra	**Mean**	**160**	**84**	**244**	**26**	**6**	**17**	**12**	**6**	**7**	**16**	**3**	**2**	**73**	**15**	**23**
(n=246)	SD	119	100	219	28	17	24	14	9	4	45	16	11	117	11	15
Gujarat	**Mean**	**76**	**127**	**203**	**12**	**8**	**44**	**33**	**1**	**8**	**7**	**1**	**1**	**128**	**12**	**7**
(n=228)	SD	76	131	207	16	25	42	37	1	6	13	7	10	137	9	7
Madhya Pradesh	**Mean**	**266**	**31**	**297**	**28**	**11**	**26**	**50**	*	**6**	**10**	**1**	**2**	**36**	**7**	**9**
(n=304)	SD	129	87	216	29	27	42	45	1	4	19	8	13	70	8	11
Orissa	**Mean**	**290**	**2**	**292**	**22**	**35**	**45**	**75**	**1**	**6**	**12**	**6**	**1**	**8**	**6**	**5**
(n=239)	SD	77	22	99	21	53	53	57	3	5	25	18	8	25	4	8
West Bengal	**Mean**	**283**	*	**283**	**10**	**27**	**44**	**118**	*	**6**	**16**	**24**	**13**	**52**	**11**	**8**
(n=196)	SD	100	1	101	16	53	60	81	2	5	70	40	35	114	7	17
Pooled	**Mean**	**225**	**35**	**260**	**22**	**12**	**30**	**43**	**5**	**8**	**19**	**7**	**4**	**62**	**9**	**11**
(n=1964)	***SD***	121	83	**204**	23	33	42	54	12	7	41	22	18	101	9	13

* Indicates <1g

Table 5.4: Average consumption of Foodstuffs (g/day) among 10-12 year Boys

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=86)	**Mean**	**229**	*	**229**	**22**	**4**	**36**	**33**	**34**	**10**	**32**	**39**	**13**	**49**	**4**	**16**
	SD	63	*	63	23	14	52	35	29	6	50	40	34	67	5	8
Tamil Nadu (n=88)	**Mean**	**268**	*	**268**	**32**	**4**	**39**	**29**	**3**	**12**	**32**	**7**	**3**	**93**	**9**	**11**
	SD	73	3	76	23	13	40	31	6	13	31	28	12	103	7	9
Karnataka (n=101)	**Mean**	**247**	**68**	**315**	**29**	**5**	**18**	**25**	**7**	**9**	**34**	**1**	**2**	**55**	**7**	**17**
	SD	129	131	260	25	14	31	22	11	9	59	10	13	75	5	16
Andhra Pradesh (n=102)	**Mean**	**347**	**18**	**365**	**22**	**6**	**27**	**24**	**3**	**14**	**47**	**1**	**12**	**82**	**13**	**7**
	SD	131	54	185	25	20	41	26	15	11	88	7	31	112	11	10
Maharashtra (n=144)	**Mean**	**160**	**124**	**284**	**28**	**7**	**18**	**16**	**6**	**8**	**9**	**5**	**4**	**63**	**20**	**25**
	SD	124	135	259	23	19	30	23	13	6	18	22	16	102	29	20
Gujarat (n=107)	**Mean**	**75**	**166**	**241**	**16**	**9**	**49**	**36**	**1**	**9**	**11**	**3**	**3**	**151**	**24**	**8**
	SD	72	166	238	23	41	57	39	1	5	16	18	16	171	88	6
Madhya Pradesh (n=161)	**Mean**	**297**	**35**	**332**	**26**	**11**	**29**	**51**	*	**7**	**13**	*	**2**	**59**	**8**	**9**
	SD	133	98	231	28	24	47	50	*	4	25	2	14	109	11	10
Orissa (n=126)	**Mean**	**339**	**3**	**342**	**22**	**37**	**55**	**80**	**1**	**7**	**18**	**7**	**2**	**4**	**7**	**5**
	SD	76	30	106	22	53	51	65	4	5	29	21	15	20	5	7
West Bengal (n=115)	**Mean**	**357**	*	**357**	**12**	**46**	**55**	**119**	**1**	**7**	**10**	**26**	**5**	**37**	**11**	**7**
	SD	104	*	104	16	73	69	80	3	5	51	39	20	91	6	10
Pooled (n=1030)	**Mean**	**259**	**49**	**308**	**23**	**15**	**36**	**47**	**5**	**9**	**21**	**9**	**5**	**64**	**12**	**12**
	SD	139	111	**250**	24	39	50	56	15	8	46	26	20	109	32	13
	RDI	**-**	**-**	**420**	**45**	**50**	**50**	**30**	**-**	**-**	**-**	**-**	**-**	**250**	**22**	**45**

* Indicates <1g

Table 5.5: Average consumption of Foodstuffs (g/day) among 10-12 year Girls

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=66)	**Mean**	**214**	*	**214**	**23**	**3**	**38**	**38**	**34**	**9**	**26**	**25**	**11**	**47**	**5**	**15**
	SD	53	*	53	22	11	48	55	25	6	40	36	33	76	6	9
Tamil Nadu (n=88)	**Mean**	**270**	**4**	**274**	**29**	**8**	**35**	**22**	**2**	**16**	**26**	**5**	*	**47**	**8**	**7**
	SD	86	33	119	20	16	34	28	4	19	22	17	1	59	7	8
Karnataka (n=91)	**Mean**	**247**	**52**	**299**	**27**	**7**	**14**	**28**	**12**	**8**	**24**	*	**5**	**48**	**7**	**14**
	SD	127	95	222	32	14	25	29	15	5	54	1	31	77	7	14
Andhra Pradesh (n=106)	**Mean**	**362**	**10**	**372**	**25**	**4**	**24**	**26**	**3**	**14**	**51**	**3**	**10**	**83**	**12**	**6**
	SD	131	38	169	25	10	39	28	7	9	73	19	24	112	9	8
Maharashtra (n=119)	**Mean**	**178**	**108**	**286**	**28**	**7**	**17**	**16**	**5**	**8**	**16**	**4**	**1**	**50**	**16**	**26**
	SD	141	137	278	24	17	28	17	8	4	58	20	5	90	11	18
Gujarat (n=110)	**Mean**	**79**	**161**	**240**	**12**	**5**	**48**	**40**	**1**	**17**	**9**	*	**3**	**129**	**14**	**9**
	SD	86	165	251	18	18	42	41	1	78	12	*	23	124	8	10
Madhya Pradesh (n=139)	**Mean**	**288**	**42**	**330**	**26**	**13**	**29**	**53**	*	**6**	**11**	**1**	**2**	**36**	**6**	**6**
	SD	137	108	245	31	31	41	51	1	4	21	6	14	80	7	9
Orissa (n=115)	**Mean**	**331**	*	**331**	**21**	**38**	**47**	**79**	*	**7**	**17**	**4**	**2**	**8**	**7**	**5**
	SD	63	*	63	22	62	58	59	1	4	33	13	14	23	5	6
West Bengal (n=108)	**Mean**	**337**	**1**	**338**	**15**	**31**	**52**	**123**	*	**8**	**20**	**26**	**14**	**43**	**13**	**8**
	SD	*121*	*6*	127	*31*	*69*	*74*	*93*	*1*	*6*	*71*	*40*	*41*	*105*	*9*	*12*
Pooled (n= 942)	**Mean**	**258**	**45**	**303**	**23**	**13**	**34**	**49**	**5**	**10**	**21**	**7**	**5**	**54**	**10**	**10**
	SD	141	106	**247**	26	38	47	60	13	28	49	22	24	94	9	13
	RDI	**-**	**-**	***380***	***45***	***50***	***50***	***30***		**-**	**-**	**-**	**-**	***250***	***22***	***45***

* Indicates <1g

Table 5.6: **Average consumption of Foodstuffs (g/day) among 13-15 year Boys**

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=91)	**Mean**	**281**	*	**281**	**21**	**8**	**48**	**44**	**49**	**13**	**36**	**40**	**8**	**59**	**5**	**17**
	SD	85	3	88	29	24	54	60	37	8	52	48	36	71	5	9
Tamil Nadu (n=97)	**Mean**	**330**	**1**	**331**	**36**	**7**	**33**	**39**	**4**	**17**	**34**	**11**	**1**	**55**	**10**	**9**
	SD	100	5	105	24	21	39	44	7	14	24	31	4	64	7	11
Karnataka (n=100)	**Mean**	**288**	**75**	**363**	**29**	**4**	**17**	**35**	**9**	**13**	**29**	**3**	**4**	**57**	**7**	**17**
	SD	149	135	284	25	8	31	34	14	33	30	18	21	82	6	20
Andhra Pradesh (n=97)	**Mean**	**440**	**20**	**460**	**23**	**9**	**30**	**30**	**5**	**16**	**38**	**6**	**16**	**71**	**14**	**6**
	SD	164	57	221	25	28	36	28	25	11	53	22	41	96	8	7
Maharashtra (n=122)	**Mean**	**187**	**148**	**335**	**30**	**10**	**27**	**20**	**7**	**10**	**16**	**5**	**4**	**65**	**21**	**27**
	SD	141	158	299	27	26	38	28	14	6	60	24	18	105	12	23
Gujarat (n=108)	**Mean**	**125**	**161**	**286**	**18**	**7**	**62**	**37**	**1**	**11**	**10**	**2**	**3**	**143**	**16**	**8**
	SD	188	148	336	25	22	65	46	1	7	15	14	23	141	9	6
Madhya Pradesh (n=145)	**Mean**	**326**	**48**	**374**	**23**	**13**	**24**	**50**	*	**7**	**13**	**3**	**2**	**70**	**8**	**10**
	SD	164	116	280	23	33	39	54	*	4	25	33	13	134	10	11
Orissa (n=105)	**Mean**	**413**	*	**413**	**20**	**30**	**64**	**97**	**1**	**7**	**19**	**10**	**1**	**10**	**8**	**6**
	SD	88	*	88	23	42	64	57	1	6	37	29	13	40	6	9
West Bengal (n=78)	**Mean**	**435**	*	**435**	**19**	**46**	**61**	**117**	**1**	**7**	**9**	**24**	**9**	**37**	**16**	**8**
	SD	144	*	144	29	74	77	95	6	5	23	40	30	90	10	14
Pooled (n=943)	**Mean**	**307**	**55**	**362**	**25**	**14**	**39**	**50**	**8**	**11**	**22**	**10**	**5**	**64**	**12**	**12**
	SD	174	117		26	36	53	59	21	14	40	32	24	105	10	15

* Indicates <1g

Table 5.7: Average consumption of Foodstuffs (g/day) among 13-15 year Girls

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=97)	**Mean**	**255**	*	**255**	**20**	**5**	**41**	**47**	**42**	**12**	**29**	**39**	**9**	**52**	**5**	**17**
	SD	62	*	62	27	19	56	53	31	7	34	47	30	75	4	9
Tamil Nadu (n=90)	**Mean**	**310**	**7**	**317**	**32**	**6**	**35**	**32**	**5**	**16**	**32**	**4**	**2**	**65**	**9**	**9**
	SD	74	41	115	22	17	37	32	13	13	27	22	8	80	7	9
Karnataka (n=94)	**Mean**	**252**	**83**	**335**	**31**	**10**	**15**	**31**	**8**	**9**	**33**	**1**	**2**	**79**	**7**	**23**
	SD	124	147	271	29	19	28	31	14	6	59	10	13	122	5	29
Andhra Pradesh (n=89)	**Mean**	**377**	**22**	**399**	**24**	**4**	**29**	**22**	**5**	**16**	**58**	**1**	**8**	**82**	**14**	**9**
	SD	124	53	177	25	12	41	25	20	10	80	6	23	95	10	12
Maharashtra (n=136)	**Mean**	**173**	**145**	**318**	**31**	**8**	**21**	**19**	**7**	**9**	**13**	**4**	**7**	**50**	**19**	**25**
	SD	**140**	**155**	295	**25**	**20**	**33**	**26**	**11**	**4**	**42**	**14**	**32**	**73**	**12**	**17**
Gujarat (n=92)	**Mean**	**88**	**196**	**284**	**13**	**9**	**49**	**33**	**1**	**10**	**8**	**3**	**3**	**168**	**16**	**8**
	SD	92	163	255	16	26	51	39	1	8	11	19	19	199	17	5
Madhya Pradesh (n=106)	**Mean**	**345**	**13**	**358**	**21**	**16**	**43**	**60**	*	**7**	**15**	**1**	*	**63**	**10**	**10**
	SD	131	62	193	26	37	60	54	4	4	26	7	3	117	12	12
Orissa (n=133)	**Mean**	**396**	*	**396**	**22**	**41**	**63**	**87**	*	**6**	**16**	**5**	**1**	**7**	**7**	**6**
	SD	70	*	70	23	59	64	63	1	3	28	18	10	20	4	8
West Bengal (n=76)	**Mean**	**412**	*	**412**	**20**	**37**	**63**	**116**	*	**8**	**5**	**27**	**10**	**32**	**13**	**9**
	SD	156	*	156	34	65	83	73	*	7	15	46	31	93	8	14
Pooled (n=913)	**Mean**	**287**	**54**	**341**	**24**	**15**	**40**	**49**	**8**	**10**	**23**	**9**	**4**	**63**	**11**	**13**
	SD	151	119	**270**	26	38	54	55	19	8	43	27	22	112	11	16

* Indicates <1g

Table 5.8: **Average consumption of Foodstuffs (g/day) among 16-17 year Boys**

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=58)	**Mean**	**336**	*	**336**	**30**	**9**	**42**	**58**	**46**	**17**	**31**	**63**	**4**	**63**	**6**	**16**
	SD	100	*	100	31	31	49	59	28	10	39	58	17	76	5	8
Tamil Nadu (n=53)	**Mean**	**386**	**4**	**390**	**33**	**12**	**45**	**41**	**3**	**17**	**45**	**3**	**4**	**63**	**9**	**8**
	SD	106	20	126	26	26	46	38	6	15	36	18	13	95	6	10
Karnataka (n=52)	**Mean**	**350**	**118**	**468**	**34**	**10**	**21**	**30**	**9**	**10**	**37**	*	**5**	**93**	**8**	**16**
	SD	179	184	363	36	15	42	28	13	7	45	*	39	149	8	14
Andhra Pradesh (n=47)	**Mean**	**510**	**12**	**522**	**37**	**7**	**48**	**44**	**5**	**19**	**45**	**5**	**23**	**106**	**23**	**9**
	SD	164	47	211	55	16	54	52	12	11	55	17	45	94	22	10
Maharashtra (n=82)	**Mean**	**271**	**138**	**409**	**33**	**11**	**25**	**29**	**6**	**12**	**17**	**5**	**13**	**69**	**23**	**24**
	SD	172	186	358	30	23	34	38	12	6	52	19	47	118	17	16
Gujarat (n=92)	**Mean**	**122**	**202**	**324**	**19**	**10**	**75**	**43**	**1**	**11**	**10**	**2**	**2**	**144**	**17**	**9**
	SD	106	174	280	25	32	73	49	1	5	14	15	18	149	8	7
Madhya Pradesh (n=65)	**Mean**	**377**	**46**	**423**	**34**	**22**	**35**	**55**	*	**7**	**18**	**1**	*	**67**	**7**	**8**
	SD	173	140	313	47	43	50	53	*	4	29	9	*	161	10	13
Orissa (n=54)	**Mean**	**484**	*	**484**	**28**	**24**	**68**	**103**	**1**	**8**	**17**	**14**	**2**	**6**	**10**	**7**
	SD	103	*	103	35	40	65	78	1	8	34	33	11	19	6	10
West Bengal (n=44)	**Mean**	**604**	*	**604**	**19**	**25**	**102**	**167**	**2**	**8**	**22**	**39**	**20**	**60**	**23**	**7**
	SD	285	*	285	27	56	96	121	8	6	82	54	61	147	19	11
Pooled (n=547)	**Mean**	**353**	**73**	**426**	**29**	**14**	**50**	**59**	**8**	**12**	**25**	**13**	**8**	**79**	**14**	**12**
	SD	209	148	**357**	36	33	63	70	18	9	45	35	33	128	14	13

* Indicates <1g

Table 5.9: Average consumption of Foodstuffs (g/day) among 16-17 year Girls

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=66)	**Mean**	**280**	*	**280**	**17**	**4**	**35**	**38**	**47**	**14**	**47**	**55**	**4**	**50**	**5**	**16**
	SD	83	3	86	23	17	51	50	30	9	68	50	20	56	7	8
Tamil Nadu (n=49)	**Mean**	**353**	**4**	**357**	**34**	**5**	**32**	**32**	**4**	**15**	**32**	**15**	*	**76**	**10**	**8**
	SD	85	26	111	25	18	37	31	6	7	26	40	2	98	9	7
Karnataka (n=63)	**Mean**	**305**	**71**	**376**	**23**	**6**	**18**	**38**	**12**	**9**	**32**	**2**	**1**	**74**	**7**	**14**
	SD	181	116	297	20	13	32	40	18	5	26	14	7	82	6	16
Andhra Pradesh (n=57)	**Mean**	**380**	**15**	**395**	**28**	**5**	**25**	**30**	**2**	**16**	**42**	**2**	**8**	**63**	**14**	**6**
	SD	161	39	200	32	18	42	28	5	12	52	10	21	89	11	7
Maharashtra (n=80)	**Mean**	**163**	**143**	**306**	**30**	**15**	**23**	**18**	**10**	**10**	**17**	**3**	**3**	**43**	**19**	**30**
	SD	160	149	309	27	41	39	23	14	7	67	19	13	62	10	24
Gujarat (n=81)	**Mean**	**82**	**221**	**303**	**22**	**1**	**61**	**43**	**1**	**9**	**12**	*	*	**177**	**15**	**9**
	SD	92	161	253	33	8	64	50	1	5	16	*	*	171	8	12
Madhya Pradesh (n=57)	**Mean**	**357**	**33**	**390**	**24**	**24**	**30**	**56**	*	**8**	**12**	*	**4**	**80**	**9**	**12**
	SD	163	104	267	26	43	42	66	1	5	24	*	18	118	10	17
Orissa (n=65)	**Mean**	**429**	*	**429**	**23**	**36**	**72**	**99**	**1**	**8**	**25**	**7**	**2**	**11**	**10**	**6**
	SD	69	*	69	24	59	74	64	4	8	43	27	13	41	7	9
West Bengal (n=39)	**Mean**	**415**	*	**415**	**15**	**55**	**85**	**100**	*	**7**	**21**	**32**	**7**	**30**	**15**	**10**
	SD	151	*	151	20	81	81	81	1	5	77	41	19	66	8	18
Pooled (n=557)	**Mean**	**288**	**66**	**354**	**24**	**15**	**41**	**48**	**9**	**11**	**26**	**12**	**3**	**71**	**12**	**13**
	SD	176	127	**303**	27	41	57	56	20	8	50	32	14	108	10	16

* Indicates <1g

Table 5.10: Average consumption of Foodstuffs (g/day) among adult men ≥18 year - Sedentary Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=515)	**Mean**	**340**	*	**340**	**26**	**9**	**74**	**60**	**63**	**18**	**38**	**61**	**9**	**68**	**7**	**17**
	SD	92	*	92	30	28	78	62	42	12	48	68	36	74	7	8
Tamil Nadu (n=236)	**Mean**	**421**	**2**	**423**	**47**	**11**	**49**	**54**	**8**	**18**	**45**	**12**	**5**	**122**	**14**	**11**
	SD	124	25	149	35	26	59	51	14	10	37	44	19	122	11	10
Karnataka (n=317)	**Mean**	**388**	**80**	**468**	**37**	**7**	**26**	**46**	**13**	**15**	**35**	**1**	**4**	**93**	**10**	**20**
	SD	204	142	346	32	15	48	45	19	40	34	12	21	112	9	17
Andhra Pradesh (n=343)	**Mean**	**426**	**11**	**437**	**32**	**7**	**41**	**39**	**5**	**17**	**44**	**6**	**14**	**139**	**20**	**10**
	SD	155	43	198	34	19	57	45	12	12	58	24	39	130	16	12
Maharashtra (n=311)	**Mean**	**225**	**127**	**352**	**35**	**15**	**37**	**24**	**11**	**11**	**14**	**3**	**8**	**88**	**26**	**28**
	SD	163	153	316	32	32	49	28	17	5	36	19	32	118	17	21
Gujarat (n=381)	**Mean**	**180**	**214**	**394**	**25**	**11**	**93**	**61**	**2**	**16**	**15**	**4**	**4**	**183**	**25**	**12**
	SD	141	193	334	41	40	90	72	1	11	34	25	24	165	14	11
Madhya Pradesh (n=154)	**Mean**	**420**	**29**	**449**	**34**	**27**	**40**	**73**	**1**	**9**	**17**	**2**	*	**73**	**13**	**15**
	SD	203	91	294	49	52	58	61	4	6	30	10	5	124	18	15
Orissa (n=304)	**Mean**	**468**	**4**	**472**	**34**	**42**	**100**	**116**	**1**	**9**	**19**	**13**	**2**	**21**	**12**	**10**
	SD	113	45	158	28	66	89	72	3	6	34	34	13	46	7	12
West Bengal (n=286)	**Mean**	**509**	*	**509**	**21**	**38**	**80**	**154**	**1**	**9**	**12**	**45**	**16**	**45**	**22**	**13**
	SD	195	4	199	25	68	93	97	5	7	39	56	49	103	13	26
Pooled (n=2847)	**Mean**	**363**	**55**	**418**	**31**	**17**	**63**	**68**	**16**	**14**	**27**	**20**	**7**	**94**	**16**	**15**
	SD	185	128	**313**	34	43	77	72	31	17	43	47	31	123	14	16
	RDI	**-**	**-**	***460***	***40***	***40***	***60***	***50***	**-**	**-**	**-**	**-**	**-**	***150***	***20***	***30***

Table 5.11: Average consumption of Foodstuffs (g/day) among adult men (≥18 Years) - Moderate Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=464)	**Mean**	**380**	*	**380**	**24**	**7**	**59**	**58**	**59**	**19**	**38**	**61**	**6**	**50**	**6**	**18**
	SD	102	2	104	32	26	76	70	40	12	52	68	34	65	6	10
Tamil Nadu (n=673)	**Mean**	**500**	**5**	**505**	**42**	**12**	**55**	**48**	**5**	**19**	**53**	**12**	**2**	**78**	**14**	**10**
	SD	136	33	169	34	33	59	48	10	10	41	40	10	100	10	12
Karnataka (n=639)	**Mean**	**429**	**112**	**541**	**40**	**9**	**32**	**46**	**13**	**14**	**40**	**2**	**5**	**84**	**9**	**18**
	SD	230	196	426	34	20	54	44	20	8	49	16	25	115	10	17
Andhra Pradesh (n=702)	**Mean**	**545**	**25**	**570**	**32**	**7**	**42**	**37**	**5**	**19**	**51**	**5**	**18**	**104**	**19**	**9**
	SD	186	78	264	37	19	58	44	18	13	73	25	51	134	13	13
Maharashtra (n=832)	**Mean**	**227**	**177**	**404**	**35**	**10**	**32**	**23**	**8**	**12**	**15**	**5**	**5**	**62**	**24**	**29**
	SD	193	190	383	31	26	49	28	14	6	36	24	24	88	16	27
Gujarat (n=861)	**Mean**	**154**	**273**	**427**	**24**	**12**	**89**	**64**	**2**	**16**	**17**	**2**	**3**	**184**	**24**	**12**
	SD	155	225	380	34	40	94	70	3	17	38	19	24	177	16	12
Madhya Pradesh (n=892)	**Mean**	**440**	**43**	**483**	**33**	**16**	**38**	**64**	**1**	**9**	**13**	**1**	**2**	**62**	**10**	**9**
	SD	188	125	313	39	37	64	62	18	6	28	9	17	141	13	14
Orissa (n=762)	**Mean**	**518**	**1**	**519**	**29**	**44**	**76**	**95**	**1**	**9**	**21**	**11**	**2**	**10**	**10**	**7**
	SD	93	21	114	34	65	82	75	3	7	40	31	17	36	6	11
West Bengal (n=647)	**Mean**	**633**	**1**	**634**	**19**	**48**	**79**	**162**	**1**	**10**	**12**	**30**	**13**	**33**	**18**	**9**
	SD	231	15	246	28	90	100	114	5	12	50	47	44	79	11	17
Pooled (n=6472)	**Mean**	**415**	**79**	**494**	**31**	**18**	**56**	**65**	**8**	**14**	**27**	**12**	**6**	**77**	**15**	**13**
	SD	231	166	**397**	35	48	76	75	22	11	48	36	30	125	14	17
	RDI	**-**	**-**	***520***	***50***	***40***	***70***	***60***	***45***	-	-	-	-	***200***	***20***	***35***

* Indicates <1g

Table 5.12: Average consumption of Foodstuffs (g/day) among adult women ≥18 year - NPNL Sedentary Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=1083)	**Mean**	**298**	*	**298**	**21**	**7**	**53**	**47**	**51**	**15**	**32**	**53**	**7**	**56**	**6**	**17**
	SD	78	1	79	26	24	67	51	35	10	42	57	30	68	6	8
Tamil Nadu (n=613)	**Mean**	**351**	**2**	**353**	**36**	**10**	**42**	**41**	**5**	**15**	**41**	**9**	**2**	**105**	**12**	**11**
	SD	97	20	117	32	30	49	42	10	9	32	32	11	114	9	13
Karnataka (n=670)	**Mean**	**345**	**62**	**407**	**34**	**8**	**26**	**38**	**14**	**11**	**32**	**2**	**4**	**92**	**9**	**18**
	SD	181	118	299	33	18	45	36	19	19	38	14	24	110	8	17
Andhra Pradesh (n=531)	**Mean**	**383**	**11**	**394**	**30**	**6**	**37**	**36**	**5**	**16**	**45**	**6**	**14**	**135**	**18**	**11**
	SD	128	42	170	32	18	50	38	13	12	63	27	32	127	14	13
Maharashtra (n=468)	**Mean**	**181**	**101**	**282**	**30**	**11**	**30**	**20**	**10**	**10**	**13**	**3**	**5**	**68**	**22**	**31**
	SD	130	124	254	29	25	39	23	15	5	29	18	21	85	14	23
Gujarat (n=596)	**Mean**	**140**	**168**	**308**	**21**	**10**	**70**	**47**	**2**	**13**	**10**	**2**	**2**	**181**	**20**	**12**
	SD	118	153	271	31	34	69	55	7	8	16	20	17	163	17	12
Madhya Pradesh (n=237)	**Mean**	**337**	**42**	**379**	**30**	**23**	**38**	**63**	**1**	**8**	**16**	**1**	*	**66**	**11**	**12**
	SD	164	124	288	40	49	59	57	3	5	28	10	7	116	15	12
Orissa (n=765)	**Mean**	**433**	**2**	**435**	**30**	**40**	**76**	**105**	**1**	**9**	**19**	**11**	**2**	**16**	**10**	**8**
	SD	91	27	118	30	62	75	68	2	6	40	29	12	44	6	11
West Bengal (n=719)	**Mean**	**431**	**1**	**432**	**18**	**42**	**74**	**144**	**1**	**8**	**14**	**34**	**14**	**39**	**18**	**10**
	SD	157	9	166	26	75	90	97	5	10	54	49	46	86	11	21
Pooled (n=5682)	**Mean**	**328**	**37**	**365**	**27**	**18**	**52**	**63**	**14**	**12**	**26**	**18**	**6**	**80**	**13**	**14**
	SD	157	97	**254**	31	45	67	69	26	11	43	41	27	112	12	16
	RDI	**-**	**-**	***410***	***40***	***100***	***40***	***50***	**-**	**-**	**-**	**-**	**-**	***100***	***20***	***35***

* Indicates <1g

Table 5.13: Average consumption of Foodstuffs (g/day) among adult women (≥ 18 Years) - NPNL Moderate Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=61)	**Mean**	**316**	*	**316**	**16**	**4**	**32**	**52**	**33**	**15**	**31**	**32**	**1**	**20**	**4**	**17**
	SD	77	*	77	23	16	45	57	32	10	42	45	4	42	5	7
Tamil Nadu (n=331)	**Mean**	**393**	**7**	**400**	**30**	**9**	**41**	**39**	**3**	**15**	**41**	**8**	**1**	**58**	**10**	**9**
	SD	100	38	138	28	29	46	39	6	8	34	36	7	88	7	11
Karnataka (n=351)	**Mean**	**355**	**107**	**462**	**35**	**8**	**17**	**39**	**10**	**13**	**38**	**3**	**2**	**55**	**8**	**18**
	SD	201	170	371	32	20	32	38	16	8	42	20	18	83	6	18
Andhra Pradesh (n=500)	**Mean**	**457**	**24**	**481**	**25**	**6**	**39**	**31**	**3**	**17**	**49**	**5**	**13**	**84**	**16**	**9**
	SD	153	67	220	31	19	53	36	11	12	68	26	45	118	11	11
Maharashtra (n=649)	**Mean**	**167**	**167**	**334**	**32**	**10**	**26**	**20**	**8**	**10**	**13**	**4**	**4**	**62**	**20**	**31**
	SD	150	164	314	27	26	40	26	14	5	32	20	18	93	14	23
Gujarat (n=464)	**Mean**	**112**	**225**	**337**	**19**	**7**	**74**	**52**	**2**	**13**	**15**	**1**	**3**	**144**	**19**	**10**
	SD	123	176	299	26	25	79	52	9	14	28	11	19	153	11	9
Madhya Pradesh (n=645)	**Mean**	**387**	**33**	**420**	**28**	**15**	**36**	**60**	**1**	**9**	**12**	**1**	**2**	**55**	**9**	**8**
	SD	169	99	268	29	35	55	57	17	6	26	11	19	119	10	10
Orissa (n=295)	**Mean**	**471**	*	**471**	**21**	**48**	**57**	**67**	**1**	**8**	**22**	**6**	**1**	**5**	**8**	**5**
	SD	74	*	74	27	63	72	64	4	7	36	22	10	21	5	9
West Bengal (n=131)	**Mean**	**533**	*	**533**	**14**	**47**	**58**	**117**	**1**	**8**	**6**	**16**	**8**	**9**	**14**	**5**
	SD	184	*	184	22	82	77	87	7	8	19	34	30	33	10	11
Pooled (n=3427)	**Mean**	**327**	**83**	**410**	**27**	**14**	**41**	**46**	**4**	**12**	**24**	**4**	**4**	**66**	**13**	**14**
	SD	201	147	348	29	37	58	52	14	9	42	23	24	112	11	17
	RDI	**-**	**-**	***440***	***45***	***100***	***40***	***50***	***25***	**-**	**-**	**-**	**-**	***150***	***20***	***20***

* Indicates <1g

Table 5.14: Average consumption of Foodstuffs (g/day) among Pregnant women ≥18 year - Sedentary Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legu-mes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=25)	**Mean**	**280**	*	**280**	**24**	**11**	**56**	**55**	**56**	**14**	**26**	**48**	**9**	**62**	**5**	**16**
	SD	65	*	65	28	38	74	60	34	7	44	50	29	86	3	9
Tamil Nadu (n=23)	**Mean**	**366**	**7**	**373**	**35**	**12**	**47**	**48**	**3**	**17**	**41**	**13**	*	**127**	**15**	**13**
	SD	78	18	96	27	33	45	51	6	9	26	60	*	127	12	11
Karnataka (n=29)	**Mean**	**325**	**82**	**407**	**36**	**8**	**31**	**33**	**10**	**12**	**31**	*	**3**	**75**	**10**	**16**
	SD	171	115	286	25	14	47	37	17	7	35	*	14	88	21	13
Andhra Pradesh (n=21)	**Mean**	**401**	**11**	**412**	**14**	**14**	**47**	**33**	**7**	**18**	**58**	**6**	**31**	**141**	**14**	**9**
	SD	149	35	184	29	27	44	43	12	14	80	21	69	198	8	11
Maharashtra (n=28)	**Mean**	**209**	**95**	**304**	**25**	**10**	**26**	**19**	**5**	**10**	**13**	**12**	*	**68**	**22**	**26**
	SD	139	130	269	21	20	37	17	7	6	19	33	*	89	12	15
Gujarat (n=22)	**Mean**	**134**	**146**	**280**	**20**	**19**	**58**	**102**	**1**	**13**	**6**	**7**	*	**177**	**27**	**12**
	SD	100	129	229	30	41	67	296	1	7	14	31	*	127	19	12
Madhya Pradesh (n=8)	**Mean**	**403**	*	**403**	**31**	**22**	**116**	**19**	*	**8**	**3**	*	*	**22**	**8**	**13**
	SD	96	*	96	27	40	121	25	*	6	9	*	*	26	6	7
Orissa (n=22)	**Mean**	**411**	**13**	**424**	**25**	**38**	**65**	**99**	*	**9**	**11**	**14**	**14**	**22**	**9**	**5**
	SD	123	61	184	29	56	66	56	*	7	20	32	64	56	6	7
West Bengal (n=9)	**Mean**	**490**	*	**490**	**35**	**20**	**38**	**114**	**1**	**9**	**23**	**11**	**51**	**28**	**11**	**12**
	SD	196	*	196	33	59	53	66	1	8	67	22	87	66	7	19
Pooled (n=187)	**Mean**	**314**	**48**	**362**	**27**	**16**	**49**	**55**	**11**	**13**	**25**	**13**	**9**	**87**	**14**	**14**
	SD	160	98	**258**	28	36	61	113	23	9	42	37	40	119	15	13

* Indicates <1g

Table 5.15: Average consumption of Foodstuffs (g/day) among Lactating women ≥18 year - Sedentary Workers

STATE		Cereals	Millets	Cereals & Millets	Pulses & Legumes	Green Leafy Veg.	Other Vege-tables	Roots & Tubers	Nuts & Oil seeds	Condi-ments & Spices	Fruits	Fish	Other Flesh Foods	Milk & Milk Prod.	Fats & oils	Sugar & Jaggery
Kerala (n=52)	**Mean**	**317**	*	**317**	**25**	**8**	**60**	**36**	**62**	**16**	**30**	**57**	**10**	**78**	**6**	**17**
	SD	57	*	57	27	26	68	31	36	10	37	61	46	84	6	10
Tamil Nadu (n=87)	**Mean**	**425**	**2**	**427**	**41**	**8**	**47**	**44**	**4**	**16**	**46**	**8**	**3**	**84**	**12**	**11**
	SD	109	20	129	28	22	50	41	6	8	32	31	11	113	6	13
Karnataka (n=33)	**Mean**	**332**	**82**	**414**	**39**	**6**	**24**	**36**	**11**	**9**	**27**	**5**	**2**	**68**	**7**	**15**
	SD	145	108	253	39	18	36	32	11	5	32	14	6	68	5	13
Andhra Pradesh (n=42)	**Mean**	**413**	**16**	**429**	**30**	**7**	**44**	**42**	**6**	**18**	**41**	**6**	**17**	**143**	**25**	**9**
	SD	142	50	192	33	19	52	48	12	9	50	26	39	166	13	9
Maharashtra (n=49)	**Mean**	**176**	**168**	**344**	**30**	**9**	**28**	**19**	**9**	**10**	**6**	**4**	**6**	**66**	**21**	**33**
	SD	164	163	327	27	20	50	26	13	5	15	20	41	73	15	32
Gujarat (n=48)	**Mean**	**127**	**213**	**340**	**25**	**10**	**75**	**41**	**1**	**13**	**12**	*	**4**	**217**	**20**	**11**
	SD	140	152	292	31	34	71	60	1	7	26	*	19	163	11	7
Madhya Pradesh (n=18)	**Mean**	**410**	**32**	**442**	**36**	**27**	**40**	**52**	*	**9**	**7**	*	*	**41**	**8**	**10**
	SD	181	98	279	37	51	65	51	1	6	12	*	*	61	6	10
Orissa (n=84)	**Mean**	**465**	**5**	**470**	**26**	**36**	**84**	**103**	**1**	**8**	**15**	**6**	**1**	**9**	**9**	**7**
	SD	98	47	145	26	65	91	81	1	5	31	24	7	25	6	10
West Bengal (n=41)	**Mean**	**442**	*	**442**	**21**	**36**	**65**	**183**	**2**	**8**	**14**	**39**	**7**	**38**	**18**	**9**
	SD	106	*	106	27	79	89	109	13	8	35	55	25	108	11	19
Pooled (n=454)	**Mean**	**355**	**51**	**406**	**30**	**17**	**56**	**63**	**11**	**12**	**24**	**14**	**5**	**80**	**14**	**13**
	SD	168	114	**282**	30	44	70	75	24	8	35	38	26	119	11	17

* Indicates <1g

Table 6.1: Average Intake of Nutrients (per day) among 1-3 year Boys and Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=170)	**Median**	**16.3**	**12.8**	**607**	**184**	**3.5**	**49**	**.3**	**.2**	**4.3**	**9**	**16.0**
	Mean	18.1	14.0	653	223	4.4	69	.3	.3	4.6	13	17.5
	SD	9.1	8.8	262	176	3.4	78	.2	.2	2.3	16	9.4
Tamil Nadu (n=250)	**Median**	**17.4**	**8.6**	**691**	**198**	**3.1**	**79**	**.4**	**.3**	**4.9**	**13**	**23.1**
	Mean	17.9	11.7	680	283	3.7	144	.4	.4	5.1	18	26.2
	SD	8.0	10.2	254	265	3.1	169	.2	.4	2.4	20	14.6
Karnataka (n=165)	**Median**	**16.9**	**8.2**	**653**	**164**	**3.3**	**60**	**.3**	**.2**	**3.6**	**8**	**14.5**
	Mean	18.1	9.6	681	220	3.9	78	.4	.3	3.9	11	16.7
	SD	8.5	6.7	300	199	2.9	70	.2	.2	2.2	14	9.6
Andhra Pradesh (n=176)	**Median**	**19.6**	**11.9**	**876**	**172**	**3.3**	**53**	**.3**	**.3**	**4.5**	**8**	**15.4**
	Mean	21.6	15.1	917	237	3.8	130	.3	.3	4.8	16	18.2
	SD	10.6	12.1	423	215	2.5	270	.2	.2	2.7	29	12.1
Maharashtra (n=266)	**Median**	**20.4**	**10.6**	**694**	**185**	**4.8**	**59**	**.4**	**.3**	**3.9**	**4**	**17.5**
	Mean	20.9	12.9	699	277	6.0	113	.5	.3	4.4	7	19.1
	SD	11.1	10.0	327	262	5.1	164	.3	.2	2.9	8	12.9
Gujarat (n=165)	**Median**	**17.8**	**10.0**	**536**	**194**	**6.5**	**64**	**.4**	**.3**	**3.3**	**7**	**18.7**
	Mean	20.7	12.6	627	272	8.6	97	.6	.4	4.2	11	24.8
	SD	14.3	10.9	416	253	7.7	129	.4	.3	3.1	13	18.9
Madhya Pradesh (n=329)	**Median**	**20.9**	**5.7**	**717**	**129**	**6.4**	**46**	**.5**	**.3**	**5.5**	**7**	**13.9**
	Mean	22.5	8.0	756	171	7.2	80	.6	.3	6.0	14	16.2
	SD	11.6	9.4	370	175	5.1	134	.5	.2	3.5	20	12.0
Orissa (n=241)	**Median**	**17.1**	**2.7**	**661**	**115**	**5.1**	**32**	**.4**	**.2**	**6.3**	**18**	**18.6**
	Mean	17.8	4.8	677	185	6.6	230	.5	.2	6.4	31	20.7
	SD	8.5	4.5	266	212	5.1	542	.2	.2	3.0	42	11.7
West Bengal (n=186)	**Median**	**21.4**	**6.6**	**738**	**298**	**4.7**	**93**	**.5**	**.3**	**6.6**	**19**	**21.8**
	Mean	23.0	10.4	776	382	6.2	220	.5	.4	6.6	28	24.7
	SD	11.7	10.0	299	361	6.4	405	.2	.4	3.3	34	16.4
Pooled (n=1948)	**Median**	**18.6**	**7.9**	**687**	**161**	**4.3**	**56**	**.4**	**.3**	**4.7**	**9**	**17.7**
	Mean	**20.2**	**10.7**	**719**	**245**	**5.7**	**129**	**.5**	**.3**	**5.2**	**17**	**20.3**
	SD	*10.7*	*9.9*	*336*	*246*	*5.1*	*272*	*.3*	*.3*	*3.0*	*25*	*13.7*
	RDA	***22***	***-***	***1240***	***400***	***12***	***400***	***0.6***	***0.7***	***8***	***30***	***30***

Table 6.2: Average Intake of Nutrients (per day) among 4-6 year Boys and Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=173)	**Median**	**26.8**	**18.2**	**963**	**220**	**6.1**	**53**	**.5**	**.3**	**6.8**	**13**	**24.4**
	Mean	28.3	20.7	989	290	7.1	102	.5	.3	7.4	20	26.5
	SD	11.8	13.1	268	223	4.5	176	.2	.2	2.8	20	12.5
Tamil Nadu (n=210)	**Median**	**23.5**	**9.5**	**944**	**204**	**4.5**	**90**	**.6**	**.3**	**8.2**	**18**	**32.6**
	Mean	23.8	10.7	945	246	5.3	136	.6	.4	8.2	25	33.3
	SD	7.2	6.6	249	192	2.8	169	.2	.2	2.7	23	12.1
Karnataka (n=182)	**Median**	**24.8**	**9.8**	**951**	**216**	**5.8**	**73**	**.5**	**.3**	**5.7**	**11**	**22.6**
	Mean	25.8	11.8	974	267	6.7	104	.6	.4	6.0	15	24.6
	SD	9.7	7.7	328	199	4.6	92	.3	.2	2.7	15	12.8
Andhra Pradesh (n=178)	**Median**	**26.8**	**15.4**	**1107**	**205**	**4.5**	**67**	**.4**	**.3**	**6.1**	**12**	**21.2**
	Mean	28.3	17.3	1201	249	5.1	168	.4	.4	6.6	22	25.1
	SD	10.3	10.0	409	190	2.8	333	.2	.2	2.7	36	14.3
Maharashtra (n=272)	**Median**	**29.6**	**13.5**	**1008**	**203**	**8.7**	**68**	**.7**	**.4**	**7.0**	**8**	**27.6**
	Mean	31.8	16.3	1062	298	10.2	131	.8	.4	7.7	13	29.0
	SD	14.8	14.0	410	307	5.8	206	.4	.3	3.6	17	15.5
Gujarat (n=254)	**Median**	**25.4**	**13.7**	**791**	**235**	**9.5**	**87**	**.7**	**.4**	**4.9**	**13**	**29.0**
	Mean	27.0	16.9	832	305	12.1	115	.8	.5	5.9	20	34.0
	SD	14.7	12.7	425	221	9.5	126	.5	.3	4.1	21	21.7
Madhya Pradesh (n=324)	**Median**	**32.6**	**7.5**	**1064**	**169**	**9.1**	**56**	**.7**	**.4**	**7.9**	**11**	**21.3**
	Mean	33.8	10.2	1106	219	10.6	112	.8	.4	8.8	19	24.4
	SD	12.5	10.9	376	199	6.0	212	.5	.2	3.8	25	16.0
Orissa (n=233)	**Median**	**24.2**	**3.1**	**950**	**180**	**7.1**	**43**	**.6**	**.3**	**9.5**	**27**	**28.3**
	Mean	24.9	5.1	983	243	8.9	380	.7	.3	9.5	46	30.2
	SD	8.5	4.3	269	222	5.9	765	.2	.2	3.2	47	13.3
West Bengal (n=214)	**Median**	**28.1**	**4.2**	**1041**	**219**	**7.3**	**64**	**.7**	**.3**	**10.7**	**33**	**27.4**
	Mean	30.8	7.8	1090	341	8.3	250	.7	.4	10.7	50	31.6
	SD	13.9	8.6	325	312	5.0	551	.3	.3	3.6	55	16.2
Pooled (n=2040)	**Median**	**26.5**	**9.7**	**978**	**202**	**6.8**	**66**	**.6**	**.3**	**7.4**	**15**	**26.1**
	Mean	28.7	12.7	1020	272	8.6	166	.7	.4	7.9	25	28.8
	SD	12.5	11.4	365	238	6.2	370	.4	.2	3.7	34	15.9
	RDA	***30***	***-***	***1690***	***400***	***18***	***400***	***0.9***	***1***	***11***	***40***	***40***

Table 6.3: Average Intake of Nutrients (per day) among 7-9 year Boys and Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=163)	**Median**	**30.6**	**20.6**	**1106**	**269**	**7.3**	**54**	**.6**	**.3**	**8.0**	**15**	**27.3**
	Mean	31.3	21.8	1131	313	7.7	102	.6	.4	8.4	24	30.2
	SD	10.5	12.6	279	239	3.7	152	.2	.2	2.6	25	11.9
Tamil Nadu (n=202)	**Median**	**27.3**	**9.9**	**1110**	**221**	**5.6**	**91**	**.7**	**.4**	**10.2**	**22**	**38.0**
	Mean	28.1	11.6	1129	251	6.5	132	.7	.4	10.1	28	38.3
	SD	8.1	6.5	264	180	3.1	172	.2	.2	2.9	23	11.4
Karnataka (n=171)	**Median**	**31.7**	**10.7**	**1205**	**239**	**7.1**	**74**	**.7**	**.4**	**7.4**	**13**	**27.6**
	Mean	31.9	13.2	1225	313	8.3	103	.7	.4	7.7	17	30.0
	SD	10.8	9.3	388	249	4.9	100	.3	.2	3.0	20	14.0
Andhra Pradesh (n=215)	**Median**	**31.4**	**16.7**	**1354**	**219**	**5.6**	**77**	**.5**	**.4**	**7.5**	**16**	**26.7**
	Mean	33.8	20.3	1432	264	6.2	207	.5	.4	8.1	26	30.5
	SD	13.1	14.3	470	191	3.1	372	.3	.2	3.2	34	15.6
Maharashtra (n=246)	**Median**	**34.3**	**16.3**	**1212**	**210**	**11.5**	**81**	**.9**	**.5**	**9.0**	**9**	**35.3**
	Mean	35.9	18.9	1240	306	12.4	160	1.0	.5	9.3	14	36.6
	SD	12.9	13.8	389	260	6.5	232	.4	.2	3.9	15	15.8
Gujarat (n=228)	**Median**	**30.2**	**16.6**	**901**	**259**	**12.5**	**100**	**.9**	**.5**	**6.5**	**19**	**35.5**
	Mean	33.0	19.1	1006	360	15.3	137	1.0	.6	7.3	26	40.7
	SD	13.7	11.5	412	287	11.7	161	.4	.3	3.2	22	20.9
Madhya Pradesh (n=304)	**Median**	**38.7**	**8.2**	**1261**	**194**	**11.4**	**69**	**.8**	**.4**	**9.5**	**15**	**28.4**
	Mean	40.2	11.3	1298	237	12.4	137	1.0	.5	10.3	25	31.4
	SD	14.9	9.7	417	207	7.6	221	.6	.2	4.2	30	19.4
Orissa (n=239)	**Median**	**29.5**	**4.6**	**1248**	**191**	**7.9**	**50**	**.8**	**.3**	**12.8**	**33**	**36.9**
	Mean	30.5	6.8	1262	262	10.5	429	.8	.3	12.6	53	38.0
	SD	8.5	5.6	278	199	6.9	885	.3	.2	3.6	57	15.6
West Bengal (n=196)	**Median**	**33.5**	**5.5**	**1251**	**254**	**8.4**	**69**	**.8**	**.3**	**12.4**	**36**	**32.8**
	Mean	35.3	8.4	1303	349	9.7	357	.8	.4	12.9	52	36.8
	SD	13.9	7.7	381	324	5.6	797	.3	.3	4.4	48	18.6
Pooled (n=1964)	**Median**	**31.5**	**10.9**	**1199**	**224**	**8.2**	**75**	**.8**	**.4**	**9.2**	**18**	**32.6**
	Mean	**33.8**	**14.4**	**1230**	**291**	**10.2**	**199**	**.8**	**.4**	**9.7**	**29**	**34.9**
	SD	12.7	11.7	392	243	7.2	457	.4	.2	4.0	36	16.9
	RDA	***41***	***-***	***1950***	***400***	***26***	***600***	***1.0***	***1.2***	***13***	***40***	***60***

Table 6.4: Average Intake of Nutrients (per day) among 10-12 year Boys

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala	**Median**	**34.6**	**22.7**	**1188**	**290**	**7.8**	**71**	**.6**	**.4**	**9.1**	**17**	**33.9**
(n=86)	Mean	37.3	25.0	1306	319	8.6	128	.7	.4	9.7	26	36.4
	SD	13.0	15.5	336	196	4.5	170	.2	.2	2.8	23	15.2
Tamil Nadu	**Median**	**32.1**	**11.6**	**1259**	**257**	**6.4**	**100**	**.9**	**.4**	**11.9**	**23**	**43.4**
(n=88)	Mean	32.6	13.6	1289	296	7.4	159	.9	.5	11.6	30	44.9
	SD	9.7	8.6	300	195	3.6	151	.2	.2	3.3	22	13.5
Karnataka	**Median**	**34.8**	**11.8**	**1365**	**282**	**8.4**	**99**	**.8**	**.5**	**8.1**	**19**	**31.5**
(n=101)	Mean	37.7	14.1	1425	353	10.6	162	.9	.5	9.2	22	36.8
	SD	16.3	8.9	502	261	8.5	363	.5	.3	4.5	20	22.5
Andhra Pradesh	**Median**	**37.0**	**21.8**	**1623**	**251**	**6.6**	**95**	**.6**	**.5**	**9.1**	**21**	**34.2**
(n=102)	Mean	39.6	23.7	1684	306	7.7	230	.6	.5	9.5	32	37.3
	SD	15.5	16.2	532	212	5.1	411	.3	.3	3.6	40	18.7
Maharashtra	**Median**	**41.2**	**17.2**	**1372**	**224**	**14.3**	**80**	**1.0**	**.5**	**10.3**	**10**	**39.5**
(n=144)	Mean	42.0	20.4	1400	312	14.5	143	1.1	.6	11.0	16	43.0
	SD	15.7	16.5	436	274	7.4	181	.6	.3	4.6	20	20.4
Gujarat	**Median**	**34.7**	**19.4**	**1058**	**306**	**14.8**	**132**	**1.0**	**.6**	**7.4**	**21**	**42.9**
(n=107)	Mean	40.4	23.8	1209	437	19.5	153	1.1	.7	8.4	34	48.7
	SD	18.2	17.8	523	431	17.7	107	.5	.4	3.5	33	25.9
Madhya Pradesh	**Median**	**45.0**	**10.1**	**1442**	**218**	**13.2**	**90**	**.9**	**.5**	**11.4**	**16**	**32.9**
(n=161)	Mean	44.4	13.3	1442	269	13.5	154	1.1	.5	11.4	25	34.7
	SD	14.4	14.1	429	221	7.0	193	.6	.2	4.2	27	19.9
Orissa	**Median**	**34.4**	**4.6**	**1454**	**195**	**8.9**	**60**	**.9**	**.4**	**14.6**	**37**	**41.5**
(n=126)	Mean	34.9	7.0	1450	314	11.5	469	1.0	.4	14.5	60	42.7
	SD	9.2	5.6	266	302	8.2	1096	.3	.2	3.8	58	14.7
West Bengal	**Median**	**40.0**	**4.8**	**1523**	**340**	**10.3**	**53**	**1.0**	**.4**	**15.6**	**42**	**38.1**
(n=115)	Mean	39.7	8.2	1552	393	11.7	364	1.0	.4	15.8	69	42.9
	SD	12.4	8.1	402	339	6.6	730	.3	.3	4.7	78	19.9
	Median	**36.6**	**12.3**	**1387**	**247**	**9.6**	**90**	**.9**	**.5**	**10.7**	**21**	**38.1**
Pooled	**Mean**	**39.2**	**16.2**	**1423**	**330**	**12.0**	**221**	**.9**	**.5**	**11.4**	**35**	**40.7**
(n=1030)	*SD*	14.5	14.6	442	285	9.2	513	.5	.3	4.6	44	19.9
	RDA	***54***	***-***	***2190***	***600***	***34***	***600***	***1.1***	***1.3***	***15***	***40***	***70***

Table 6.5: Average Intake of Nutrients (per day) among 10-12 year Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala	**Median**	**30.7**	**22.1**	**1224**	**235**	**6.8**	**51**	**.7**	**.3**	**9.4**	**18**	**32.6**
(n=66)	Mean	33.8	24.5	1242	292	8.2	118	.7	.4	9.5	24	33.9
	SD	12.3	16.6	299	219	5.0	204	.2	.2	2.6	22	13.7
Tamil Nadu	**Median**	**29.7**	**9.9**	**1217**	**218**	**6.5**	**86**	**.8**	**.4**	**10.8**	**22**	**38.5**
(n=88)	Mean	30.2	11.0	1246	247	7.8	116	.8	.4	11.5	27	40.6
	SD	8.8	7.9	326	190	4.3	119	.2	.1	3.4	20	13.4
Karnataka	**Median**	**34.4**	**12.5**	**1311**	**227**	**7.7**	**83**	**.7**	**.4**	**8.5**	**15**	**28.0**
(n=91)	Mean	36.2	14.4	1359	361	10.0	153	.8	.5	8.7	17	32.0
	SD	14.4	9.1	464	351	7.7	365	.5	.2	3.8	12	16.7
Andhra Pradesh	**Median**	**36.5**	**19.5**	**1656**	**233**	**7.2**	**86**	**.5**	**.5**	**9.6**	**22**	**31.3**
(n=106)	Mean	39.6	22.2	1700	286	7.4	251	.6	.5	9.7	29	34.2
	SD	13.0	12.8	497	201	3.0	434	.3	.2	3.5	33	15.3
Maharashtra	**Median**	**38.8**	**13.1**	**1316**	**205**	**13.0**	**73**	**1.1**	**.5**	**10.4**	**9**	**40.2**
(n=119)	Mean	39.8	17.0	1371	291	14.3	132	1.1	.6	10.7	16	41.4
	SD	14.0	12.0	430	245	7.1	156	.5	.2	4.2	20	16.7
Gujarat	**Median**	**34.7**	**20.6**	**1059**	**299**	**14.2**	**118**	**1.0**	**.6**	**7.8**	**20**	**41.4**
(n=110)	Mean	38.3	22.2	1192	385	18.0	132	1.1	.7	8.5	29	46.6
	SD	17.0	12.6	501	245	14.7	65	.5	.4	3.7	26	24.6
Madhya Pradesh	**Median**	**39.3**	**7.5**	**1354**	**171**	**10.1**	**66**	**.8**	**.4**	**9.9**	**15**	**28.8**
(n=139)	Mean	42.2	11.0	1393	240	12.6	160	1.0	.5	11.0	26	34.2
	SD	15.6	9.9	428	244	7.8	303	.7	.3	4.5	34	23.1
Orissa	**Median**	**33.0**	**5.8**	**1390**	**217**	**8.6**	**58**	**.9**	**.3**	**14.3**	**34**	**41.0**
(n=115)	Mean	33.8	7.3	1408	275	10.6	381	.9	.4	14.0	62	43.6
	SD	8.5	5.6	241	206	6.5	705	.3	.1	3.5	76	16.8
West Bengal	**Median**	**39.6**	**5.2**	**1515**	**295**	**10.7**	**63**	**1.0**	**.4**	**15.5**	**38**	**40.9**
(n=108)	Mean	42.1	8.2	1515	399	11.5	353	1.0	.5	15.5	60	44.8
	SD	16.9	7.1	448	333	5.5	699	.4	.3	5.2	70	22.9
	Median	**35.1**	**11.3**	**1337**	**228**	**9.2**	**79**	**.9**	**.4**	**10.5**	**20**	**36.7**
Pooled	**Mean**	**37.8**	**14.8**	**1389**	**307**	**11.5**	**205**	**.9**	**.5**	**11.1**	**33**	**39.3**
(n=942)	*SD*	14.3	12.1	440	259	8.3	425	.5	.3	4.5	45	19.6
	RDA	***57***	**-**	***1970***	***600***	***19***	***600***	***1.0***	***1.2***	***13***	***40***	***70***

Table 6.6: Average Intake of Nutrients (per day) among 13-15 year Boys

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala	**Median**	**38.4**	**27.3**	**1566**	**323**	**9.3**	**75**	**.8**	**.5**	**11.7**	**26**	**42.4**
(n=91)	Mean	41.6	31.9	1592	382	10.5	177	.8	.5	12.2	36	46.3
	SD	15.4	17.2	385	247	5.7	303	.3	.2	3.7	31	21.2
Tamil Nadu	**Median**	**35.8**	**12.7**	**1476**	**257**	**7.9**	**94**	**1.0**	**.4**	**14.4**	**28**	**45.5**
(n=97)	Mean	37.3	14.6	1524	312	8.9	179	1.0	.5	14.3	38	48.6
	SD	10.5	9.2	406	242	4.8	297	.3	.2	4.6	41	15.5
Karnataka	**Median**	**40.8**	**13.2**	**1627**	**300**	**9.4**	**103**	**.8**	**.5**	**9.7**	**19**	**34.7**
(n=100)	Mean	41.9	15.7	1610	438	12.3	121	1.0	.6	10.1	22	39.5
	SD	14.7	10.4	514	434	9.0	83	.6	.3	4.2	13	20.8
Andhra Pradesh	**Median**	**45.6**	**21.9**	**1996**	**275**	**7.6**	**98**	**.6**	**.5**	**11.4**	**27**	**36.2**
(n=97)	Mean	48.5	25.8	2042	356	8.5	212	.7	.6	11.5	33	41.0
	SD	19.4	16.4	686	269	4.5	349	.5	.2	4.5	34	21.5
Maharashtra	**Median**	**46.2**	**18.7**	**1596**	**272**	**17.7**	**104**	**1.5**	**.7**	**13.3**	**11**	**50.7**
(n=122)	Mean	48.4	22.7	1618	357	17.6	213	1.4	.7	13.2	21	51.6
	SD	16.1	16.3	460	287	7.7	291	.6	.3	5.5	25	20.6
Gujarat	**Median**	**42.2**	**19.1**	**1290**	**308**	**15.3**	**132**	**1.3**	**.7**	**9.4**	**21**	**54.0**
(n=108)	Mean	45.3	21.4	1343	422	19.6	150	1.3	.8	10.7	33	56.0
	SD	23.0	13.6	635	284	13.1	116	.9	.4	7.5	32	29.0
Madhya Pradesh	**Median**	**46.0**	**10.7**	**1531**	**209**	**13.3**	**93**	**1.0**	**.5**	**12.2**	**13**	**35.4**
(n=145)	Mean	48.0	14.3	1583	311	14.6	188	1.2	.6	12.4	24	39.1
	SD	17.6	13.9	482	334	7.7	347	.7	.3	4.9	33	22.8
Orissa	**Median**	**38.3**	**8.0**	**1766**	**206**	**9.6**	**57**	**1.1**	**.4**	**18.5**	**42**	**49.5**
(n=105)	Mean	40.2	9.4	1740	312	11.6	372	1.2	.4	17.8	61	51.8
	SD	11.4	7.7	347	353	6.0	687	.3	.2	4.1	52	15.8
West Bengal	**Median**	**45.6**	**4.9**	**1748**	**367**	**12.3**	**94**	**1.2**	**.5**	**18.4**	**48**	**50.2**
(n=78)	Mean	47.9	9.6	1859	412	13.4	354	1.3	.5	19.3	80	54.5
	SD	14.2	10.6	488	314	7.3	627	.5	.2	6.2	87	24.8
	Median	**42.4**	**14.6**	**1611**	**266**	**11.0**	**95**	**1.0**	**.5**	**12.6**	**23**	**44.1**
Pooled	**Mean**	**44.6**	**18.3**	**1645**	**363**	**13.3**	**215**	**1.1**	**.6**	**13.3**	**37**	**47.3**
(n=943)	*SD*	16.8	14.9	531	316	8.6	390	.6	.3	5.8	45	22.5
	RDA	***70***	***-***	***2450***	***600***	***41***	***600***	***1.2***	***1.5***	***16***	***40***	***100***

Table 6.7: Average Intake of Nutrients (per day) among 13-15 year Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=97)	**Median**	**37.9**	**25.9**	**1424**	**268**	**8.3**	**63**	**.7**	**.4**	**10.6**	**22**	**38.0**
	Mean	39.8	27.7	1439	365	9.8	112	.8	.4	11.2	31	40.2
	SD	14.8	16.0	313	297	5.4	168	.2	.2	3.0	29	17.8
Tamil Nadu (n=90)	**Median**	**32.7**	**12.4**	**1465**	**208**	**7.2**	**90**	**1.0**	**.4**	**14.0**	**26**	**47.1**
	Mean	34.6	14.2	1449	263	8.4	139	1.0	.4	13.8	34	47.6
	SD	11.0	9.6	318	195	4.2	186	.3	.2	4.0	30	12.9
Karnataka (n=94)	**Median**	**38.2**	**13.1**	**1527**	**327**	**10.2**	**122**	**.9**	**.6**	**8.5**	**19**	**32.0**
	Mean	40.5	15.0	1536	425	12.0	204	1.0	.6	9.5	23	39.9
	SD	17.8	10.2	563	322	9.0	376	.6	.3	4.5	24	25.9
Andhra Pradesh (n=89)	**Median**	**41.2**	**21.8**	**1780**	**253**	**7.2**	**106**	**.6**	**.5**	**10.6**	**25**	**33.1**
	Mean	42.5	24.9	1835	311	8.2	271	.7	.5	10.7	31	35.4
	SD	12.6	15.4	496	215	3.9	510	.4	.2	3.9	28	15.9
Maharashtra (n=136)	**Median**	**44.9**	**17.8**	**1484**	**224**	**15.5**	**92**	**1.2**	**.6**	**11.0**	**11**	**45.3**
	Mean	45.8	21.2	1526	297	16.2	167	1.3	.6	12.2	19	48.5
	SD	16.3	14.4	462	214	7.6	225	.5	.2	4.9	20	21.2
Gujarat (n=92)	**Median**	**44.6**	**23.8**	**1307**	**334**	**17.1**	**165**	**1.2**	**.8**	**9.6**	**21**	**50.6**
	Mean	45.3	26.4	1362	466	22.6	201	1.2	.8	9.6	30	54.1
	SD	16.4	14.7	431	318	13.8	271	.4	.3	2.9	28	27.2
Madhya Pradesh (n=106)	**Median**	**45.2**	**12.7**	**1532**	**243**	**13.0**	**101**	**.9**	**.5**	**11.6**	**23**	**33.5**
	Mean	45.7	16.6	1569	297	14.4	181	1.1	.6	12.6	35	37.9
	SD	15.6	17.0	446	218	7.5	308	.7	.3	5.2	40	24.5
Orissa (n=133)	**Median**	**37.4**	**5.6**	**1646**	**237**	**9.9**	**74**	**1.1**	**.4**	**17.0**	**45**	**46.7**
	Mean	37.9	7.4	1647	309	12.2	625	1.1	.4	16.7	68	49.6
	SD	8.2	5.1	261	255	7.1	1148	.3	.1	3.8	68	17.5
West Bengal (n=76)	**Median**	**44.0**	**4.8**	**1638**	**290**	**10.8**	**56**	**1.1**	**.4**	**16.9**	**40**	**44.0**
	Mean	45.8	8.1	1764	376	11.9	251	1.2	.5	17.6	66	49.8
	SD	15.8	10.2	579	314	5.4	542	.4	.2	6.4	67	22.6
Pooled (n=913)	**Median**	**39.8**	**13.7**	**1533**	**261**	**10.7**	**94**	**1.0**	**.5**	**12.1**	**23**	**41.9**
	Mean	**42.0**	**17.8**	**1566**	**341**	**13.0**	**251**	**1.0**	**.5**	**12.7**	**37**	**45.0**
	SD	14.9	14.8	453	268	8.6	559	.5	.3	5.1	44	21.8
	RDA	***65***	***-***	***2060***	***600***	***28***	***600***	***1.0***	***1.2***	***14***	***40***	***100***

Table 6.8: Average Intake of Nutrients (per day) among 16-17 year Boys

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=58)	**Median**	**51.3**	**30.6**	**1809**	**436**	**12.2**	**87**	**1.0**	**.5**	**15.2**	**28**	**45.4**
	Mean	51.6	32.3	1831	502	13.6	158	1.0	.5	14.8	38	50.2
	SD	17.8	15.1	427	342	8.1	270	.3	.2	4.1	28	16.4
Tamil Nadu (n=53)	**Median**	**38.9**	**13.1**	**1670**	**281**	**9.0**	**103**	**1.2**	**.5**	**15.9**	**37**	**56.7**
	Mean	40.5	14.0	1713	370	10.6	240	1.2	.6	16.3	54	56.8
	SD	8.5	8.2	393	226	6.6	357	.3	.2	4.9	50	15.7
Karnataka (n=52)	**Median**	**49.1**	**16.0**	**1911**	**398**	**15.4**	**135**	**1.3**	**.7**	**10.6**	**22**	**47.6**
	Mean	53.2	17.7	1982	600	15.7	198	1.4	.8	12.4	26	53.0
	SD	24.1	10.8	742	473	8.9	240	.8	.3	6.1	19	26.3
Andhra Pradesh (n=47)	**Median**	**56.1**	**29.0**	**2368**	**377**	**9.5**	**160**	**.7**	**.7**	**12.6**	**29**	**45.0**
	Mean	58.5	37.4	2449	425	9.9	272	.8	.7	13.5	42	48.2
	SD	20.2	28.3	788	237	4.5	374	.4	.2	4.5	37	23.7
Maharashtra (n=82)	**Median**	**52.1**	**20.6**	**1810**	**303**	**17.6**	**101**	**1.4**	**.7**	**13.6**	**17**	**49.2**
	Mean	57.7	24.5	1900	380	19.3	210	1.5	.8	15.5	22	57.6
	SD	23.6	19.4	622	272	10.8	262	.9	.4	7.2	19	28.5
Gujarat (n=92)	**Median**	**49.9**	**21.9**	**1541**	**367**	**22.7**	**158**	**1.5**	**.8**	**11.4**	**26**	**64.6**
	Mean	50.5	24.2	1503	471	23.9	212	1.5	.9	11.4	41	66.7
	SD	13.0	12.9	395	283	12.6	349	.4	.3	2.5	38	26.9
Madhya Pradesh (n=65)	**Median**	**50.2**	**10.1**	**1829**	**231**	**13.5**	**102**	**.9**	**.6**	**13.1**	**25**	**34.9**
	Mean	53.6	14.6	1806	329	16.8	273	1.2	.6	13.7	38	42.3
	SD	19.9	14.9	570	289	9.6	582	.7	.3	4.6	44	28.5
Orissa (n=54)	**Median**	**47.6**	**7.5**	**1984**	**244**	**12.0**	**65**	**1.3**	**.4**	**21.5**	**42**	**59.8**
	Mean	47.3	9.2	2007	293	13.2	301	1.3	.5	21.1	61	57.0
	SD	11.5	6.7	385	184	6.3	611	.4	.2	4.5	50	18.1
West Bengal (n=44)	**Median**	**61.6**	**6.9**	**2404**	**455**	**14.9**	**68**	**1.7**	**.7**	**25.9**	**57**	**65.5**
	Mean	66.1	12.2	2536	577	17.4	367	1.7	.7	26.8	76	73.9
	SD	23.5	11.7	963	473	9.1	773	.6	.3	11.3	61	40.9
Pooled (n=547)	**Median**	**49.7**	**17.5**	**1832**	**337**	**13.3**	**116**	**1.2**	**.6**	**13.8**	**28**	**53.0**
	Mean	**53.0**	**21.0**	**1913**	**433**	**16.4**	**241**	**1.3**	**.7**	**15.6**	**42**	**56.5**
	SD	19.5	17.4	662	327	10.2	440	.6	.3	7.1	42	27.2
	RDA	***78***	***-***	***2640***	***500***	***50***	***600***	***1.3***	***1.6***	***17***	***40***	***100***

Table 6.9: Average Intake of Nutrients (per day) among 16-17 year Girls

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=66)	**Median**	**39.1**	**28.8**	**1539**	**343**	**9.8**	**68**	**.8**	**.4**	**11.9**	**19**	**39.6**
	Mean	42.0	30.5	1572	372	10.6	140	.8	.5	12.2	29	41.1
	SD	12.7	17.1	347	189	4.7	240	.2	.2	3.3	28	11.5
Tamil Nadu (n=49)	**Median**	**40.0**	**13.2**	**1593**	**307**	**8.3**	**99**	**1.1**	**.5**	**14.4**	**24**	**51.4**
	Mean	40.3	14.6	1604	347	9.3	132	1.1	.5	14.6	35	48.8
	SD	11.8	8.6	358	208	3.9	214	.3	.2	4.2	42	13.1
Karnataka (n=63)	**Median**	**39.6**	**13.5**	**1577**	**296**	**9.1**	**110**	**.8**	**.6**	**8.9**	**20**	**39.2**
	Mean	41.4	16.8	1634	472	11.3	151	1.0	.6	9.7	25	42.6
	SD	15.1	11.1	572	571	7.7	120	.7	.3	3.6	19	18.0
Andhra Pradesh (n=57)	**Median**	**41.9**	**19.7**	**1782**	**215**	**7.2**	**97**	**.6**	**.5**	**10.2**	**26**	**35.8**
	Mean	41.4	23.4	1785	287	7.5	193	.6	.5	10.1	31	38.1
	SD	13.5	14.8	573	204	2.9	309	.2	.2	3.4	28	17.8
Maharashtra (n=80)	**Median**	**44.7**	**18.9**	**1536**	**231**	**16.0**	**106**	**1.2**	**.6**	**11.9**	**11**	**46.7**
	Mean	44.6	20.8	1509	319	16.6	212	1.3	.6	12.3	22	48.5
	SD	16.7	11.4	492	260	7.9	344	.5	.3	5.1	31	20.9
Gujarat (n=81)	**Median**	**47.6**	**22.5**	**1525**	**319**	**20.5**	**163**	**1.4**	**.9**	**10.0**	**22**	**63.1**
	Mean	48.2	25.0	1448	472	21.6	172	1.4	.9	10.1	29	59.4
	SD	13.3	13.6	415	322	10.6	87	.4	.3	2.6	24	22.1
Madhya Pradesh (n=57)	**Median**	**48.3**	**12.0**	**1676**	**254**	**13.3**	**98**	**.9**	**.6**	**11.6**	**19**	**37.3**
	Mean	48.3	16.2	1686	310	14.9	211	1.1	.6	12.6	36	39.1
	SD	16.4	14.9	523	212	9.3	331	.7	.3	4.8	43	21.3
Orissa (n=65)	**Median**	**42.1**	**8.1**	**1804**	**226**	**10.1**	**92**	**1.2**	**.4**	**19.2**	**43**	**50.3**
	Mean	42.5	9.2	1815	325	12.2	488	1.2	.5	18.7	83	53.6
	SD	9.8	7.7	261	353	5.8	902	.3	.2	3.6	95	15.2
West Bengal (n=39)	**Median**	**45.5**	**6.8**	**1872**	**400**	**11.4**	**169**	**1.1**	**.6**	**16.1**	**47**	**48.2**
	Mean	44.6	7.8	1769	446	12.9	891	1.1	.6	17.7	70	53.1
	SD	12.0	5.1	544	287	6.5	1559	.5	.3	7.2	68	26.4
Pooled (n=557)	**Median**	**43.1**	**15.9**	**1618**	**281**	**11.2**	**106**	**1.0**	**.5**	**11.9**	**24**	**45.4**
	Mean	**43.9**	**19.1**	**1630**	**373**	**13.5**	**261**	**1.1**	**.6**	**12.8**	**38**	**47.5**
	SD	14.0	14.1	474	320	8.4	593	.5	.3	5.1	50	20.1
	RDA	***63***	***-***	***2060***	***500***	***30***	***600***	***1.0***	***1.2***	***14***	***40***	***100***

Table 6.10: Average Intake of Nutrients (per day) among adult men (≥18 years) - Sedentary Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=515)	**Median**	**51.1**	**38.4**	**1937**	**427**	**12.6**	**101**	**1.0**	**.6**	**14.9**	**34**	**51.8**
	Mean	52.9	41.1	1935	519	13.7	176	1.1	.6	15.3	49	55.7
	SD	18.1	20.7	472	394	6.4	281	.3	.2	4.3	42	20.7
Tamil Nadu (n=236)	**Median**	**48.9**	**18.1**	**1995**	**386**	**10.2**	**164**	**1.3**	**.7**	**17.8**	**34**	**65.7**
	Mean	50.7	22.1	1995	462	12.4	224	1.3	.7	18.3	51	67.8
	SD	17.3	14.6	517	428	8.4	258	.4	.3	6.0	48	23.1
Karnataka (n=317)	**Median**	**50.7**	**17.4**	**2011**	**441**	**13.6**	**138**	**1.2**	**.7**	**11.5**	**23**	**48.0**
	Mean	53.4	21.5	2071	642	15.9	181	1.3	.8	12.5	27	52.0
	SD	19.9	14.7	745	540	11.0	157	.7	.3	5.4	20	25.8
Andhra Pradesh (n=343)	**Median**	**49.0**	**29.4**	**2079**	**386**	**8.3**	**146**	**.7**	**.6**	**11.2**	**28**	**39.6**
	Mean	50.8	34.6	2128	479	9.3	246	.7	.6	11.9	34	44.5
	SD	18.1	20.9	635	341	4.3	324	.3	.2	4.4	28	20.7
Maharashtra (n=311)	**Median**	**52.6**	**23.4**	**1721**	**335**	**18.2**	**121**	**1.4**	**.7**	**14.1**	**18**	**53.2**
	Mean	53.8	29.7	1791	428	18.7	240	1.5	.8	14.8	30	56.4
	SD	19.6	22.8	577	300	8.5	308	.7	.3	6.3	33	23.1
Gujarat (n=381)	**Median**	**61.0**	**26.0**	**1839**	**508**	**28.4**	**188**	**1.8**	**1.1**	**15.2**	**36**	**72.1**
	Mean	63.2	30.7	1880	594	29.2	285	1.9	1.1	15.1	49	80.2
	SD	18.7	19.0	521	309	13.1	501	.6	.4	4.8	43	36.2
Madhya Pradesh (n=154)	**Median**	**54.2**	**14.2**	**1881**	**284**	**15.5**	**126**	**1.2**	**.6**	**14.7**	**24**	**45.1**
	Mean	58.0	20.8	1989	372	17.8	305	1.4	.7	15.3	47	48.2
	SD	23.1	23.7	671	268	10.8	542	.8	.3	6.3	53	28.5
Orissa (n=304)	**Median**	**51.2**	**7.9**	**2052**	**318**	**15.2**	**98**	**1.4**	**.5**	**21.4**	**58**	**59.6**
	Mean	51.1	11.3	2049	428	18.2	441	1.4	.6	21.0	82	60.2
	SD	13.0	9.5	423	357	11.2	751	.4	.2	5.3	76	18.0
West Bengal (n=286)	**Median**	**57.7**	**8.4**	**2188**	**458**	**14.9**	**86**	**1.4**	**.6**	**21.5**	**57**	**58.6**
	Mean	59.9	13.8	2233	572	16.0	386	1.5	.6	22.3	82	63.3
	SD	20.6	13.2	706	486	7.8	722	.6	.3	8.2	76	30.7
Pooled (n=2847)	**Median**	**53.3**	**21.9**	**1964**	**398**	**14.1**	**132**	**1.3**	**.7**	**15.3**	**33**	**55.3**
	Mean	**54.8**	**26.9**	**2000**	**511**	**16.9**	**267**	**1.3**	**.7**	**16.1**	**50**	**59.1**
	SD	19.0	20.7	595	399	10.8	463	.6	.3	6.5	52	27.6
	RDA	***60***	***-***	***2425***	***400***	***28***	***600***	***1.2***	***1.4***	***16***	***40***	***100***

Table 6.11: Average Intake of Nutrients (per day) among adult men (≥18 Years) - Moderate Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala	**Median**	**52.4**	**35.7**	**1997**	**378**	**12.4**	**82**	**1.1**	**.5**	**16.2**	**28**	**52.2**
(n=464)	Mean	54.0	37.6	2026	492	14.1	164	1.1	.6	16.6	42	55.8
	SD	18.9	19.2	463	383	7.8	352	.3	.2	4.6	41	20.9
Tamil Nadu	**Median**	**50.8**	**16.7**	**2214**	**330**	**10.7**	**131**	**1.5**	**.6**	**21.1**	**36**	**68.2**
(n=673)	Mean	52.5	19.0	2208	426	12.4	219	1.5	.7	20.8	55	70.6
	SD	14.8	11.8	530	301	6.6	322	.4	.3	6.0	53	22.4
Karnataka	**Median**	**56.6**	**18.0**	**2256**	**447**	**15.1**	**147**	**1.4**	**.8**	**13.2**	**26**	**52.3**
(n=639)	Mean	60.3	21.5	2317	701	17.2	191	1.5	.9	14.3	33	57.8
	SD	23.8	14.0	804	689	11.2	189	.9	.4	6.5	30	30.3
Andhra Pradesh	**Median**	**57.4**	**28.8**	**2516**	**327**	**9.8**	**124**	**.7**	**.6**	**13.8**	**30**	**46.3**
(n=702)	Mean	60.2	32.6	2564	435	11.1	255	.9	.7	14.7	39	51.5
	SD	22.1	19.4	742	347	5.7	392	.5	.3	5.5	36	24.4
Maharashtra	**Median**	**55.7**	**22.3**	**1841**	**316**	**19.7**	**117**	**1.6**	**.8**	**14.8**	**14**	**59.4**
(n=832)	Mean	57.8	27.4	1922	394	21.2	206	1.7	.8	15.8	24	61.4
	SD	20.7	19.7	604	295	10.3	266	.8	.3	6.5	28	26.1
Gujarat	**Median**	**63.3**	**27.6**	**1879**	**480**	**28.2**	**197**	**1.9**	**1.1**	**14.6**	**35**	**78.0**
(n=861)	Mean	65.9	32.3	1987	586	31.3	223	2.0	1.1	15.2	52	84.3
	SD	21.0	19.0	635	348	18.7	193	.7	.5	5.5	53	35.7
Madhya Pradesh	**Median**	**56.8**	**11.9**	**1960**	**263**	**15.8**	**95**	**1.1**	**.6**	**14.4**	**19**	**38.5**
(n=892)	Mean	59.8	16.9	2026	344	17.8	187	1.4	.7	15.6	33	43.7
	SD	20.3	20.6	593	327	10.0	338	.9	.3	5.8	43	27.9
Orissa	**Median**	**48.4**	**6.3**	**2129**	**294**	**12.4**	**82**	**1.4**	**.5**	**22.3**	**48**	**60.9**
(n=762)	Mean	50.0	9.1	2136	394	15.0	513	1.4	.5	21.5	75	62.2
	SD	13.0	6.9	364	323	8.9	1003	.4	.2	5.3	76	21.2
West Bengal	**Median**	**61.8**	**7.0**	**2529**	**366**	**15.1**	**84**	**1.7**	**.6**	**26.6**	**55**	**67.4**
(n=647)	Mean	64.6	10.5	2604	494	17.8	438	1.7	.7	26.9	84	71.2
	SD	24.6	9.7	841	420	10.5	927	.6	.3	9.4	87	31.6
	Median	**55.6**	**17.6**	**2118**	**350**	**14.5**	**121**	**1.4**	**.7**	**16.7**	**30**	**59.1**
Pooled	**Mean**	**58.6**	**22.6**	**2184**	**468**	**18.1**	**267**	**1.5**	**.8**	**17.8**	**48**	**62.2**
(n=6472)	*SD*	20.8	18.9	676	403	12.4	536	.7	.4	7.4	56	30.0
	RDA	***60***	***-***	***2875***	***400***	***28***	***600***	***1.4***	***1.6***	***18***	***40***	***100***

Table 6.12 : Average Intake of Nutrients (per day) among adult women (≥18 years) - NPNL Sedentary Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=1083)	**Median**	**43.7**	**31.1**	**1655**	**363**	**10.7**	**82**	**.9**	**.5**	**12.8**	**26**	**43.9**
	Mean	45.1	33.2	1659	433	11.5	145	.9	.5	13.2	39	46.2
	SD	15.4	17.4	371	329	5.4	250	.3	.2	3.5	37	16.5
Tamil Nadu (n=613)	**Median**	**38.9**	**14.7**	**1629**	**306**	**8.1**	**124**	**1.1**	**.5**	**15.1**	**30**	**51.9**
	Mean	41.1	17.4	1653	385	9.7	191	1.1	.6	15.0	46	54.4
	SD	13.3	11.6	416	313	6.1	281	.4	.3	4.5	47	18.9
Karnataka (n=670)	**Median**	**45.4**	**17.3**	**1782**	**396**	**11.6**	**130**	**1.0**	**.6**	**10.0**	**21**	**39.6**
	Mean	47.7	20.3	1839	599	13.3	177	1.1	.7	10.8	27	45.7
	SD	19.0	13.5	643	538	8.8	197	.7	.3	4.8	25	22.6
Andhra Pradesh (n=531)	**Median**	**46.0**	**27.3**	**1910**	**362**	**7.8**	**128**	**.6**	**.6**	**10.5**	**24**	**37.6**
	Mean	46.9	31.9	1940	425	8.5	248	.7	.6	10.8	32	41.4
	SD	15.0	19.8	530	265	3.8	375	.3	.2	3.7	33	18.6
Maharashtra (n=468)	**Median**	**41.4**	**18.6**	**1425**	**284**	**13.6**	**107**	**1.1**	**.6**	**11.0**	**15**	**42.8**
	Mean	43.2	24.4	1479	352	15.1	187	1.2	.6	11.8	23	44.7
	SD	16.4	18.6	501	266	8.1	229	.6	.3	5.2	24	20.8
Gujarat (n=596)	**Median**	**50.8**	**23.6**	**1534**	**421**	**22.1**	**159**	**1.5**	**.8**	**11.6**	**28**	**62.3**
	Mean	50.7	26.8	1524	529	23.2	208	1.5	.9	11.8	40	64.3
	SD	15.0	19.8	438	312	11.9	312	.5	.3	4.0	36	27.3
Madhya Pradesh (n=237)	**Median**	**48.1**	**11.5**	**1563**	**264**	**14.2**	**98**	**1.2**	**.6**	**12.3**	**20**	**40.0**
	Mean	50.3	17.8	1687	357	17.1	240	1.3	.7	13.2	38	43.2
	SD	17.0	20.2	531	294	11.9	425	.7	.3	5.1	46	27.2
Orissa (n=765)	**Median**	**44.0**	**6.8**	**1874**	**264**	**11.7**	**77**	**1.3**	**.5**	**19.5**	**54**	**53.7**
	Mean	45.1	9.5	1870	357	14.8	470	1.3	.5	19.2	78	55.4
	SD	11.6	7.6	348	290	9.1	871	.3	.2	4.4	75	18.5
West Bengal (n=719)	**Median**	**48.5**	**6.5**	**1878**	**365**	**12.7**	**78**	**1.2**	**.5**	**18.9**	**51**	**51.1**
	Mean	50.8	10.9	1904	479	14.0	406	1.3	.5	19.3	78	55.4
	SD	19.8	11.6	575	437	7.5	830	.5	.3	6.8	78	27.1
Pooled (n=5682)	**Median**	**45.2**	**17.3**	**1703**	**342**	**11.4**	**109**	**1.1**	**.5**	**13.4**	**29**	**47.2**
	Mean	**46.5**	**21.8**	**1738**	**443**	**13.8**	**254**	**1.1**	**.6**	**14.2**	**47**	**50.6**
	SD	16.2	17.8	504	365	8.9	512	.5	.3	5.7	53	22.7
	RDA	***50***	***-***	***1875***	***400***	***30***	***600***	***0.9***	***1.1***	***12***	***40***	***100***

Table 6.13: Average Intake of Nutrients (per day) among adult women (≥18 Years) - NPNL Moderate Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=61)	**Median**	**37.5**	**21.1**	**1547**	**196**	**8.4**	**53**	**.9**	**.4**	**13.1**	**20**	**39.3**
	Mean	38.6	21.7	1571	285	10.3	98	.9	.4	13.5	27	42.1
	SD	14.3	13.0	393	210	8.2	197	.3	.2	3.6	32	14.9
Tamil Nadu (n=331)	**Median**	**38.1**	**12.4**	**1721**	**255**	**8.0**	**102**	**1.1**	**.5**	**16.0**	**27**	**52.2**
	Mean	40.3	14.3	1734	328	9.6	180	1.2	.5	16.3	42	54.6
	SD	12.7	8.5	393	231	5.0	281	.3	.2	4.5	45	16.4
Karnataka (n=351)	**Median**	**48.4**	**14.2**	**1947**	**332**	**13.2**	**120**	**1.2**	**.7**	**11.3**	**23**	**43.9**
	Mean	51.3	17.0	1969	574	14.8	155	1.3	.7	12.3	27	49.7
	SD	19.1	11.2	670	544	8.5	146	.7	.3	5.4	22	24.9
Andhra Pradesh (n=500)	**Median**	**46.7**	**23.1**	**2096**	**283**	**8.3**	**102**	**.6**	**.5**	**11.6**	**28**	**39.4**
	Mean	49.5	26.4	2132	357	9.0	231	.7	.6	12.3	36	42.9
	SD	18.6	16.0	606	363	4.4	391	.4	.2	4.6	33	18.7
Maharashtra (n=649)	**Median**	**45.9**	**19.2**	**1574**	**262**	**16.3**	**106**	**1.4**	**.6**	**12.1**	**13**	**49.6**
	Mean	48.5	23.3	1632	346	17.8	192	1.4	.7	13.0	21	52.4
	SD	17.6	16.7	500	281	8.8	243	.6	.3	5.2	24	22.6
Gujarat (n=464)	**Median**	**51.8**	**23.5**	**1581**	**367**	**21.3**	**163**	**1.6**	**.8**	**11.6**	**28**	**65.3**
	Mean	52.2	25.4	1576	459	24.0	178	1.6	.9	11.8	41	67.5
	SD	15.5	14.2	472	267	14.0	138	.5	.4	3.7	39	27.3
Madhya Pradesh (n=645)	**Median**	**49.9**	**10.7**	**1698**	**238**	**13.6**	**87**	**1.0**	**.6**	**12.6**	**19**	**34.8**
	Mean	52.3	14.5	1773	317	15.4	173	1.2	.6	13.6	32	38.2
	SD	17.6	16.1	527	303	9.0	314	.7	.3	5.1	40	23.0
Orissa (n=295)	**Median**	**42.1**	**5.6**	**1859**	**300**	**10.6**	**85**	**1.2**	**.4**	**19.5**	**43**	**51.6**
	Mean	42.7	8.1	1892	398	13.7	649	1.2	.5	18.3	67	53.2
	SD	10.1	6.5	300	329	9.2	1173	.3	.2	5.0	76	18.8
West Bengal (n=131)	**Median**	**47.9**	**4.6**	**2051**	**215**	**12.4**	**58**	**1.4**	**.5**	**22.5**	**44**	**52.6**
	Mean	50.1	6.6	2117	360	14.5	423	1.4	.5	22.7	75	58.6
	SD	15.1	7.0	645	308	9.3	813	.5	.2	7.5	89	26.4
Pooled (n=3427)	**Median**	**46.5**	**15.0**	**1752**	**280**	**12.4**	**106**	**1.1**	**.6**	**12.8**	**23**	**47.5**
	Mean	**48.8**	**18.9**	**1808**	**383**	**15.2**	**234**	**1.2**	**.6**	**13.9**	**37**	**50.4**
	SD	17.0	15.3	554	341	10.1	477	.6	.3	5.6	45	24.1
	RDA	***50***	***-***	***2225***	***400***	***30***	***600***	***1.1***	***1.3***	***14***	***40***	***100***

Table 6.14: Average Intake of Nutrients (per day) among Pregnant women (≥18 years) - Sedentary Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala (n=25)	**Median**	**41.6**	**32.6**	**1586**	**417**	**9.4**	**69**	**.8**	**.4**	**11.8**	**26**	**42.4**
	Mean	44.7	34.9	1631	449	10.1	240	.8	.5	12.9	43	48.8
	SD	12.3	16.1	348	362	4.2	571	.2	.3	3.5	55	23.0
Tamil Nadu (n=23)	**Median**	**40.6**	**14.9**	**1665**	**387**	**9.3**	**150**	**1.0**	**.6**	**14.5**	**38**	**49.1**
	Mean	42.7	18.6	1749	581	13.2	281	1.1	.7	15.5	49	56.3
	SD	14.2	12.8	398	877	13.4	472	.3	.3	4.6	45	19.2
Karnataka (n=29)	**Median**	**44.2**	**11.9**	**1735**	**338**	**10.9**	**93**	**1.1**	**.6**	**10.4**	**18**	**43.4**
	Mean	46.9	16.9	1785	524	14.7	176	1.2	.6	11.1	27	44.3
	SD	14.2	13.1	525	456	15.1	198	.6	.3	4.6	32	20.5
Andhra Pradesh (n=21)	**Median**	**48.4**	**23.7**	**2193**	**287**	**7.1**	**175**	**.6**	**.6**	**12.4**	**31**	**32.2**
	Mean	49.6	32.1	1995	473	8.1	339	.7	.6	12.9	43	37.7
	SD	18.5	19.3	562	435	3.7	426	.3	.2	5.0	28	17.6
Maharashtra (n=28)	**Median**	**43.3**	**22.0**	**1474**	**248**	**15.0**	**118**	**1.3**	**.5**	**11.6**	**16**	**44.2**
	Mean	43.6	24.2	1509	363	14.3	172	1.2	.6	11.6	21	44.6
	SD	14.3	17.0	376	277	5.9	176	.6	.2	4.1	15	19.0
Gujarat (n=22)	**Median**	**47.2**	**28.6**	**1490**	**566**	**22.9**	**154**	**1.4**	**.8**	**11.1**	**38**	**57.4**
	Mean	48.9	32.5	1544	569	21.7	194	1.4	.8	11.4	59	63.7
	SD	13.6	20.0	498	262	9.1	123	.6	.3	5.6	64	26.1
Madhya Pradesh (n=8)	**Median**	**45.0**	**8.5**	**1807**	**270**	**16.5**	**85**	**.6**	**.6**	**12.0**	**38**	**41.8**
	Mean	48.3	13.0	1705	312	16.6	519	1.2	.6	13.3	47	53.7
	SD	20.9	11.6	432	225	9.3	1231	1.0	.3	6.3	43	42.6
Orissa (n=22)	**Median**	**42.4**	**5.3**	**1737**	**385**	**13.0**	**60**	**1.3**	**.5**	**18.6**	**31**	**50.8**
	Mean	46.9	8.5	1787	354	14.4	349	1.3	.5	18.4	63	52.9
	SD	19.7	6.3	333	206	8.6	626	.3	.2	4.9	70	19.3
West Bengal (n=9)	**Median**	**61.1**	**6.3**	**1998**	**238**	**13.7**	**60**	**1.4**	**.5**	**21.0**	**25**	**46.5**
	Mean	60.1	6.6	2110	289	15.7	361	1.4	.5	23.4	47	62.2
	SD	25.1	3.6	656	230	6.8	801	.4	.2	9.5	54	32.9
Pooled (n=187)	**Median**	**44.9**	**19.0**	**1654**	**352**	**11.9**	**111**	**1.0**	**.5**	**12.4**	**26**	**47.7**
	Mean	**46.8**	**22.5**	**1726**	**456**	**14.0**	**261**	**1.1**	**.6**	**13.7**	**42**	**50.3**
	SD	16.2	17.5	475	443	10.0	487	.5	.3	5.8	48	23.6
	RDA	***65***	***-***	***2175***	***1000***	***38***	***600***	***1.1***	***1.3***	***14***	***40***	***400***

Table 6.15: Average Intake of Nutrients (per day) among Lactating women (≥18 years) - Sedentary Workers

STATE		Protein (g)	Total Fat (g)	Energy (Kcal)	Calcium (mg)	Iron (mg)	Vit.-A (µg)	Thiamin (mg)	Riboflavin (mg)	Niacin (mg)	Vit.-C (mg)	Free Folic Acid (µg)
Kerala	**Median**	**44.2**	**36.5**	**1763**	**334**	**11.0**	**97**	**.9**	**.5**	**13.8**	**26**	**48.6**
(n=52)	Mean	49.1	39.7	1810	480	11.9	180	.9	.5	14.2	44	54.0
	SD	16.9	19.7	324	344	5.8	287	.2	.2	3.8	44	19.6
Tamil Nadu	**Median**	**44.6**	**14.3**	**1869**	**288**	**8.9**	**122**	**1.2**	**.6**	**16.6**	**28**	**56.3**
(n=87)	Mean	45.9	16.1	1895	397	10.8	186	1.3	.6	17.0	42	60.7
	SD	13.7	10.3	435	309	5.7	243	.4	.3	5.0	38	23.3
Karnataka	**Median**	**48.5**	**13.5**	**1807**	**355**	**11.2**	**116**	**1.1**	**.6**	**11.1**	**18**	**44.6**
(n=33)	Mean	47.4	15.8	1807	500	12.2	131	1.1	.7	11.0	24	45.0
	SD	13.1	8.2	428	406	5.0	113	.5	.2	3.5	24	16.6
Andhra Pradesh	**Median**	**49.1**	**37.9**	**2134**	**368**	**8.8**	**161**	**.7**	**.6**	**11.7**	**29**	**44.8**
(n=42)	Mean	52.2	40.8	2151	515	9.6	238	.8	.6	12.0	36	47.2
	SD	18.0	20.1	551	386	3.6	280	.3	.2	3.2	25	20.4
Maharashtra	**Median**	**47.0**	**20.7**	**1703**	**302**	**19.6**	**119**	**1.4**	**.7**	**13.1**	**12**	**50.1**
(n=49)	Mean	51.5	26.7	1708	358	19.7	182	1.5	.7	14.1	19	51.5
	SD	15.9	21.4	418	219	8.4	216	.6	.3	5.5	23	20.6
Gujarat	**Median**	**56.3**	**33.1**	**1713**	**484**	**25.5**	**185**	**1.6**	**1.0**	**11.9**	**28**	**72.7**
(n=48)	Mean	56.0	31.5	1685	616	26.3	238	1.6	1.0	12.2	35	72.4
	SD	15.9	16.9	473	348	15.0	312	.5	.3	4.5	31	26.3
Madhya Pradesh	**Median**	**49.4**	**10.3**	**1693**	**264**	**15.4**	**84**	**1.0**	**.6**	**12.1**	**15**	**30.4**
(n=18)	Mean	55.5	13.0	1861	279	16.3	347	1.1	.6	13.6	26	37.5
	SD	19.6	9.7	641	115	8.6	643	.6	.3	5.3	27	37.7
Orissa	**Median**	**42.5**	**5.6**	**1926**	**265**	**11.7**	**67**	**1.3**	**.5**	**19.5**	**45**	**55.9**
(n=84)	Mean	45.3	9.3	1955	384	15.0	475	1.3	.5	19.4	63	55.7
	SD	11.8	7.7	357	405	9.8	986	.4	.2	5.0	61	18.2
West Bengal	**Median**	**49.0**	**8.0**	**1915**	**279**	**12.2**	**56**	**1.4**	**.5**	**18.3**	**58**	**48.3**
(n=41)	Mean	53.2	11.6	1982	510	12.7	162	1.3	.5	19.6	100	53.0
	SD	17.7	11.1	408	729	4.6	382	.4	.2	5.6	112	21.2
Pooled	**Median**	**46.7**	**16.5**	**1852**	**320**	**11.8**	**107**	**1.2**	**.6**	**14.4**	**28**	**52.5**
(n=454)	**Mean**	**49.6**	**22.1**	**1878**	**447**	**14.7**	**249**	**1.2**	**.6**	**15.5**	**46**	**55.2**
	SD	15.6	18.5	448	399	9.5	513	.5	.3	5.6	55	23.2
	RDA	***75***	***-***	***2425***	***1000***	***30***	***950***	***1.2***	***1.4***	***16***	***80***	***150***

Table 7: Percent Distribution of Households according to Protein Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	797	28.4	.4	44.0	27.2
Tamil Nadu	798	39.2	.3	36.3	24.2
Karnataka	773	25.4	.0	37.3	37.3
Andhra Pradesh	798	24.3	.8	23.3	51.6
Maharashtra	796	26.0	.0	58.2	15.8
Gujarat	793	17.7	.0	67.2	15.1
Madhya Pradesh	797	22.7	.0	58.0	19.3
Orissa	800	35.3	.5	35.3	28.9
West Bengal	726	17.6	.1	33.3	49.0
Pooled	**7078**	**26.4**	**.2**	**43.8**	**29.6**

P –: Protein Inadequate P+: Protein Adequate
C – : Calorie Inadequate C+: Calorie Adequate

Table 8.1: Distribution (%) of 1-3 year Children by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	170	25.3	55.3	19.4
Tamil Nadu	250	21.2	55.2	23.2
Karnataka	165	26.7	47.9	25.5
Andhra Pradesh	176	18.2	29.5	52.3
Maharashtra	266	27.1	42.1	30.8
Gujarat	165	30.3	45.5	24.2
Madhya Pradesh	329	15.5	50.8	33.7
Orissa	241	26.6	48.5	24.9
West Bengal	186	15.6	47.3	37.1
Pooled	**1948**	**22.5**	**47.3**	**30.1**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.2: Distribution (%) of 4-6 year Children by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	173	12.1	67.1	20.8
Tamil Nadu	210	14.8	72.8	12.4
Karnataka	182	12.1	68.1	19.8
Andhra Pradesh	178	6.7	51.2	42.1
Maharashtra	272	10.7	61.8	27.6
Gujarat	254	22.0	66.6	11.4
Madhya Pradesh	324	5.2	60.8	34.0
Orissa	233	14.2	69.1	16.7
West Bengal	214	5.6	66.8	27.6
Pooled	**2040**	**11.4**	**64.8**	**23.8**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.3: Distribution (%) of 7-9 year Children by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	163	9.8	77.9	12.3
Tamil Nadu	202	10.9	79.2	9.9
Karnataka	171	8.8	67.2	24.0
Andhra Pradesh	215	7.4	49.8	42.8
Maharashtra	246	7.3	67.5	25.2
Gujarat	228	9.6	76.8	13.6
Madhya Pradesh	304	4.3	60.8	34.9
Orissa	239	3.8	76.1	20.1
West Bengal	196	8.2	61.7	30.1
Pooled	**1964**	**7.5**	**68.1**	**24.4**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.4: Distribution (%) of 10-12 year Boys by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	86	10.5	74.4	15.1
Tamil Nadu	88	14.8	76.1	9.1
Karnataka	101	12.9	64.3	22.8
Andhra Pradesh	102	4.9	53.9	41.2
Maharashtra	144	8.3	68.8	22.9
Gujarat	107	10.3	74.7	15.0
Madhya Pradesh	161	6.2	67.7	26.1
Orissa	126	7.1	75.4	17.5
West Bengal	115	6.1	66.1	27.8
Pooled	**1030**	**8.6**	**69.0**	**22.4**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.5: Distribution (%) of 10-12 year Girls by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	66	13.6	77.3	9.1
Tamil Nadu	88	23.9	68.1	8.0
Karnataka	91	18.7	59.3	22.0
Andhra Pradesh	106	5.7	49.0	45.3
Maharashtra	119	11.8	63.0	25.2
Gujarat	110	8.2	78.2	13.6
Madhya Pradesh	139	5.0	72.0	23.0
Orissa	115	7.8	80.9	11.3
West Bengal	108	6.5	63.0	30.5
Pooled	**942**	**10.5**	**67.8**	**21.7**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.6: Distribution (%) of 13-15 year Boys by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	91	20.9	59.3	19.8
Tamil Nadu	97	19.6	62.9	17.5
Karnataka	100	16.0	55.0	29.0
Andhra Pradesh	97	9.3	32.0	58.7
Maharashtra	122	9.0	63.9	27.1
Gujarat	108	15.7	74.1	10.2
Madhya Pradesh	145	11.0	59.3	29.7
Orissa	105	13.3	54.3	32.4
West Bengal	78	.0	60.3	39.7
Pooled	**943**	**12.8**	**58.2**	**29.0**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.7: Distribution (%) of 13-15 year Girls by Protein - Calorie Adequacy Status

STATE	n	P- C-	P+ C-	P+ C+
Kerala	97	12.4	60.8	26.8
Tamil Nadu	90	5.6	70.0	24.4
Karnataka	94	18.1	43.6	38.3
Andhra Pradesh	89	5.6	30.3	64.1
Maharashtra	136	2.2	63.2	34.6
Gujarat	92	2.2	75.0	22.8
Madhya Pradesh	106	7.5	54.8	37.7
Orissa	133	.8	51.8	47.4
West Bengal	76	2.6	48.7	48.7
Pooled	**913**	**6.0**	**55.8**	**38.2**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.8: Distribution (%) of 16-17 year Boys by Protein - Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	58	25.9	5.2	25.9	43.0
Tamil Nadu	53	52.9	7.5	11.3	28.3
Karnataka	52	32.7	1.9	7.7	57.7
Andhra Pradesh	47	10.6	4.3	10.6	74.5
Maharashtra	82	26.8	.0	26.8	46.4
Gujarat	92	30.4	.0	55.5	14.1
Madhya Pradesh	65	27.7	1.5	26.2	44.6
Orissa	54	22.2	14.8	7.4	55.6
West Bengal	44	13.6	.0	11.4	75.0
Pooled	**547**	**27.6**	**3.5**	**23.6**	**45.3**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.9: Distribution (%) of 16-17 year Girls by Protein - Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	66	22.7	6.1	19.7	51.5
Tamil Nadu	49	28.6	.0	6.1	65.3
Karnataka	63	33.3	3.2	7.9	55.6
Andhra Pradesh	57	26.3	3.5	1.8	68.4
Maharashtra	80	26.3	2.5	18.8	52.4
Gujarat	81	16.0	.0	28.4	55.6
Madhya Pradesh	57	17.5	.0	17.5	65.0
Orissa	65	4.6	10.8	3.1	81.5
West Bengal	39	20.5	2.6	12.8	64.1
Pooled	**557**	**21.5**	**3.2**	**13.8**	**61.5**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.10: Distribution (%) of Adult Men (Sedentary) by Protein-Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	515	8.7	1.0	21.7	68.6
Tamil Nadu	236	11.4	.0	18.6	70.0
Karnataka	317	13.9	.0	19.2	66.9
Andhra Pradesh	343	14.6	.3	13.1	72.0
Maharashtra	311	11.6	.0	37.6	50.8
Gujarat	381	3.7	.0	34.1	62.2
Madhya Pradesh	154	7.8	.0	27.9	64.3
Orissa	304	7.9	.0	13.2	78.9
West Bengal	286	5.6	.7	16.1	77.6
Pooled	**2847**	**9.4**	**.3**	**22.4**	**67.9**

P –: Protein Inadequate P+: Protein Adequate
C– : Calorie Inadequate C+ : Calorie Adequate

Table 8.11: Distribution (%) of Adult Women (NPNL- Sedentary) by Protein-Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	1083	7.8	3.1	10.5	78.6
Tamil Nadu	613	9.8	.8	8.8	80.6
Karnataka	670	10.0	.1	9.7	80.2
Andhra Pradesh	531	7.0	.6	4.7	87.7
Maharashtra	468	12.0	.2	28.6	59.2
Gujarat	596	4.9	.0	25.3	69.8
Madhya Pradesh	237	5.5	.0	16.9	77.6
Orissa	765	2.4	.4	4.1	93.1
West Bengal	719	6.1	1.0	8.1	84.8
Pooled	**5682**	**7.2**	**1.0**	**11.8**	**80.0**

P –: Protein Inadequate P+: Protein Adequate
C – : Calorie Inadequate C+: Calorie Adequate

Table 8.12: Distribution (%) of Adult Women (Pregnant-Sedentary) by Protein- Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	25	16.0	.0	28.0	56.0
Tamil Nadu	23	26.1	13.0	4.3	56.6
Karnataka	29	24.1	.0	3.4	72.5
Andhra Pradesh	21	19.0	.0	4.8	76.2
Maharashtra	28	39.3	.0	21.4	39.3
Gujarat	22	13.6	.0	40.9	45.5
Madhya Pradesh	8	37.5	.0	.0	62.5
Orissa	22	13.6	4.5	4.5	77.4
West Bengal	9	11.1	11.1	.0	77.8
Pooled	**187**	**22.4**	**2.7**	**13.9**	**61.0**

P –: Protein Inadequate P+: Protein Adequate
C – : Calorie Inadequate C+: Calorie Adequate

Table 8.13: Distribution (%) of Adult Women (Lactating- Sedentary) by Protein-Calorie Adequacy Status

STATE	n	P- C-	P- C+	P+ C-	P+ C+
Kerala	52	19.2	9.6	21.2	50.0
Tamil Nadu	87	23.0	8.0	9.2	59.8
Karnataka	33	30.3	3.0	9.1	57.6
Andhra Pradesh	42	16.7	7.1	2.4	73.8
Maharashtra	49	20.4	2.0	26.6	51.0
Gujarat	48	10.4	.0	35.4	54.2
Madhya Pradesh	18	16.7	.0	27.8	55.5
Orissa	84	14.3	20.2	2.4	63.1
West Bengal	41	14.6	.0	14.6	70.8
Pooled	**454**	**18.3**	**7.5**	**14.5**	**59.7**

P –: Protein Inadequate P+: Protein Adequate
C – : Calorie Inadequate C+: Calorie Adequate

Table 9.1: Prevalence (%) of Nutritional Deficiency Signs among Infants - Boys

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	55	100	43	53	52	77	40	69	13	502
NAD	100.0	99.0	100.0	100.0	100.0	98.7	100.0	100.0	100.0	99.6
Marasmus	.0	1.0	.0	.0	.0	.0	.0	.0	.0	.2

Table 9.2: Prevalence (%) of Nutritional Deficiency Signs among Infants - Girls

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	51	99	43	50	60	58	39	60	16	476
NAD	100.0	100.0	100.0	100.0	100.0	98.3	100.0	100.0	100.0	99.8
Oedema	.0	.0	.0	.0	.0	1.7	.0	.0	.0	.2

Table 9.3: Prevalence (%) of Nutritional Deficiency Signs among Infants - Boys + Girls Pooled

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	106	199	86	103	112	135	79	129	29	978
NAD	100.0	99.5	100.0	100.0	100.0	98.5	100.0	100.0	100.0	99.7
Oedema	.0	.0	.0	.0	.0	.7	.0	.0	.0	.1
Marasmus	.0	.5	.0	.0	.0	.0	.0	.0	.0	.1

Table 9.4 : Prevalence (%) of Nutritional Deficiency Signs: 1-5 year Children - Boys

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	200	344	258	228	373	291	253	294	217	2458
NAD	94.0	92.4	91.9	94.3	92.0	94.5	95.7	98.0	91.2	93.7
Moon Face	.0	.0	.0	.0	.0	.0	.4	.0	.0	*
Emaciation	.0	.0	.0	.0	.5	.0	.0	.0	.0	.1
Marasmus	.0	.0	.0	.0	.3	.0	.0	.0	.0	*
Night Blindness (XN)	.0	.0	.4	.0	.5	.0	.0	.3	.0	.2
Conjuctival Xerosis (XIA)	.0	1.7	1.6	.0	1.3	.7	2.8	1.0	2.3	1.3
Bitot Spots (XIB)	.0	.9	1.2	.4	2.4	.3	.4	1.0	.9	.9
Angular Stomatitis	.0	1.7	.4	.9	.3	.7	.0	.3	2.3	.7
Glossitis	.0	.0	.0	.0	.0	.0	.0	.0	.5	*
Phrynoderma	.0	.0	.0	.0	.0	2.7	.0	.0	.0	.3
Gums-Spongy bleeding	.0	.0	.0	.0	.3	.0	.0	.0	.0	*
Dental - Caries	6.0	3.5	5.4	1.8	1.9	1.0	.0	.3	1.4	2.3
Thyroid Gland Palpable	.0	.0	.4	.0	.0	.0	.0	.0	.0	*
Others	.0	.6	.8	2.2	1.6	.0	.0	.0	1.8	.8

* Indicates <0.1

Table 9.5: Prevalence (%) of Nutritional Deficiency Signs: 1-5 year Children - Girls

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	196	331	256	203	329	274	252	331	229	2401
NAD	98.0	89.7	94.9	98.5	92.7	97.1	95.2	97.3	94.3	95.0
Hair Discoloured	.0	.0	.0	.0	.6	.0	.0	.0	.9	.2
Moon Face	.0	.0	.0	.0	.3	.0	.0	.0	.0	*
Emaciation	.0	.0	.0	.0	.9	.0	.0	.0	.0	.1
Night Blindness (XN)	.0	.0	.0	.0	.9	.0	.4	.0	.0	.2
Conjuctival Xerosis (XIA)	.0	.0	.0	.0	.3	.0	4.0	.3	.0	.5
Bitot Spots (XIB)	.0	.6	.0	.0	.0	.0	.8	.3	.0	.2
Angular Stomatitis	.0	3.6	.0	.0	.3	.0	.0	.3	3.5	.9
Phrynoderma	.0	.0	.0	.0	.0	1.1	.0	.0	.0	.1
Dental - Caries	2.0	6.0	4.3	.0	1.8	.7	.0	2.1	1.7	2.2
Others	.0	.0	.8	1.5	2.4	.0	.0	.3	.4	.6

Table 9.6: Prevalence (%) of Nutritional Deficiency Signs: 1-5 year Children – Boys and Girls Pooled

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	396	675	514	431	702	565	505	625	446	4859
NAD	96.0	91.1	93.4	96.3	92.3	95.8	95.4	97.6	92.8	94.4
Hair Sparse	.0	.0	.0	.0	.0	.0	.2	.2	.0	*
Hair Discoloured	.0	.0	.0	.2	.4	.0	.4	.2	.9	.2
Moon Face	.0	.0	.0	.0	.1	.0	.2	.0	.0	*
Emaciation	.0	.0	.0	.0	.7	.0	.0	.0	.0	.1
Marasmus	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Night Blindness (XN)	.0	.0	.2	.0	.7	.0	.2	.2	.0	.2
Conjuctival Xerosis (XIA)	.0	.9	.8	.0	.9	.4	3.4	.6	1.1	.9
Bitot Spots (XIB)	.0	.7	.6	.2	1.3	.2	.6	.6	.4	.6
Angular Stomatitis	.0	2.7	.2	.5	.3	.4	.0	.3	2.9	.8
Glossitis	.0	.0	.0	.0	.0	.0	.0	.0	.2	*
Phrynoderma	.0	.0	.0	.0	.0	1.9	.0	.0	.0	.2
Gums-Spongy bleeding	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Dental - Caries	4.0	4.7	4.9	.9	1.9	.9	.0	1.3	1.6	2.3
Thyroid Gland Palpable	.0	.0	.2	.0	.0	.0	.0	.0	.0	*
Others	.0	.3	.8	1.9	2.0	.0	.0	.2	1.1	.7

- Indicates <0.1

Table 9.7: Prevalence (%) of Nutritional Deficiency Signs : 5-12 year Children - Boys

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	261	429	374	369	560	551	551	498	431	3883
NAD	72.8	63.2	70.3	75.9	75.7	85.1	92.7	84.3	73.8	77.6
Night Blindness (XN)	.0	.0	.0	.0	1.3	.0	.2	.2	.2	.3
Conjuctival Xerosis (XIA)	.0	1.2	2.9	1.4	1.8	3.1	3.9	1.8	3.7	2.3
Bitot Spots (XIB)	.0	3.3	2.9	1.6	2.5	1.3	1.7	2.0	.7	1.9
Angular Stomatitis	.0	4.0	2.1	2.2	.7	.4	.5	2.4	6.0	2.0
Glossitis	.0	.0	.0	.0	.2	.0	.2	.4	2.3	.4
Phrynoderma	1.1	.7	.8	.5	.4	3.6	.0	1.2	.5	1.1
Knock - Kness/ Bow legs	.0	.0	.0	.0	.2	.2	.0	.0	.0	.1
Dental - Caries	26.4	24.5	20.9	12.5	16.1	4.9	.2	10.6	9.3	13.1
Dental - Fluorosis	.0	7.2	1.1	7.0	.5	3.6	1.2	.0	.7	2.4
Thyroid Gland Palpable	.0	.2	.8	.0	2.1	.0	.0	.0	4.4	.9
Thyroid Gland Visible	.0	.0	.0	.0	.4	.0	.0	.0	.0	.1
Others	.0	.7	.5	.8	1.6	.0	.0	.0	1.4	.6

* Indicates <0.1

Table 9.8: Prevalence (%) of Nutritional Deficiency Signs : 5-12 year Children - Girls

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	253	401	464	398	476	512	384	478	448	3814
NAD	70.8	60.8	72.0	80.9	73.9	89.5	91.7	84.1	70.3	77.6
Night Blindness (XN)	.0	.0	.2	.0	1.1	.0	.8	.0	.0	.2
Conjuctival Xerosis (XIA)	.0	1.0	1.3	1.0	.8	1.4	3.9	1.0	2.2	1.4
Bitot Spots (XIB)	.0	3.0	1.1	1.3	2.5	.4	1.6	1.0	1.1	1.4
Corneal Scar (XS)	.0	.0	.0	.0	.2	.0	.0	.0	.0	*
Angular Stomatitis	.0	3.5	.4	2.0	1.3	.6	.5	2.5	5.4	1.9
Glossitis	.0	.0	.0	.3	.0	.0	.0	.2	2.5	.3
Phrynoderma	1.2	1.7	1.3	.0	.0	2.1	.0	.6	.4	.8
Gums-Spongy bleeding	.0	.0	.0	.0	.0	.2	.0	.0	.0	*
Dental - Caries	27.7	26.2	22.4	9.5	18.1	3.9	.8	11.7	9.2	13.7
Dental - Fluorosis	.0	7.2	1.1	5.0	1.7	2.5	1.6	.0	1.6	2.3
Thyroid Gland Palpable	1.2	.7	1.3	.0	2.9	.0	.0	.2	8.7	1.7
Thyroid Gland Visible	.4	.0	.4	.0	.2	.0	.0	.2	.7	.2
Others	.0	.2	.4	2.0	.4	.0	.0	.0	2.0	.6

Table 9.9: Prevalence (%) of Nutritional Deficiency Signs: 5-12 year Children – Boys and Girls Pooled

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	514	830	838	767	1036	1063	794	976	879	7697
NAD	71.8	62.0	71.2	78.5	74.9	87.2	92.2	84.2	72.0	77.6
Night Blindness (XN)	.0	.0	.1	.0	1.2	.0	.5	.1	.1	.2
Conjuctival Xerosis (XIA)	.0	1.1	2.0	1.2	1.4	2.3	3.9	1.4	3.0	1.9
Bitot Spots (XIB)	.0	3.1	1.9	1.4	2.5	.8	1.6	1.5	.9	1.6
Corneal Scar (XS)	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Photophobia	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Angular Stomatitis	.0	3.7	1.2	2.1	1.0	.5	.5	2.5	5.7	1.9
Glossitis	.0	.0	.0	.1	.1	.0	.1	.3	2.4	.4
Phrynoderma	1.2	1.2	1.1	.3	.2	2.9	.0	.9	.5	.9
Gums-Spongy bleeding	.0	.0	.0	.0	.0	.1	.0	.0	.0	*
Knock - Kness/ Bow legs	.0	.0	.0	.0	.1	.1	.0	.0	.0	*
Dental - Caries	27.0	25.3	21.7	11.0	17.0	4.4	.5	11.2	9.2	13.4
Dental - Fluorosis	.0	7.2	1.1	6.0	1.1	3.1	1.4	.0	1.1	2.3
Thyroid Gland Palpable	.6	.5	1.1	.0	2.5	.0	.0	.1	6.6	1.3
Thyroid Gland Visible	.2	.0	.2	.0	.3	.0	.0	.1	.3	.1
Others	.0	.5	.5	1.4	1.1	.0	.0	.0	1.7	.6

Table 9.10: Prevalence (%) of Nutritional Deficiency Signs : 12-17 year children - Boys

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	214	255	311	273	399	382	243	237	278	2592
NAD	80.8	69.0	82.6	84.6	90.5	92.4	95.5	90.7	77.0	85.3
Night Blindness (XN)	.0	.0	.0	.0	.3	.3	.4	.0	.7	.2
Conjuctival Xerosis (XIA)	.0	.4	2.9	1.1	.0	.5	.8	.8	2.2	1.0
Bitot Spots (XIB)	.0	6.3	1.6	2.6	.8	.0	.4	1.3	1.1	1.5
Corneal Scar (XS)	.0	.0	.0	.0	.3	.0	.0	.0	.0	*
Angular Stomatitis	.0	2.7	1.3	1.8	.8	.0	.4	1.7	5.0	1.5
Glossitis	.0	.0	.0	1.8	.0	.0	.0	.4	5.0	.8
Phrynoderma	.5	.4	.6	.0	.3	.3	.0	.8	1.1	.4
Gums-Spongy bleeding	.0	.4	.0	.0	.0	.0	.0	.0	.0	*
Dental - Caries	18.2	15.3	10.9	4.0	4.0	3.9	.4	5.1	3.6	6.8
Dental - Fluorosis	.0	9.4	1.3	4.8	.5	2.9	1.2	.0	.0	2.2
Thyroid Gland Palpable	.5	.0	1.9	.7	2.5	.0	.4	.0	6.8	1.5
Thyroid Gland Visible	.0	.4	.0	.0	.0	.0	.0	.0	.0	*
Others	.0	.4	.0	.0	1.3	.0	.8	.0	2.5	.6

Table 9.11: Prevalence (%) of Nutritional Deficiency Signs : 12-17 year children - Girls

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	225	277	385	309	445	441	235	351	269	2937
NAD	76.0	69.3	80.0	81.9	86.3	94.6	97.0	90.0	69.5	83.6
Night Blindness (XN)	.0	.0	.0	.0	.9	.0	.0	.3	.0	.2
Conjuctival Xerosis (XIA)	.0	.0	1.0	.3	.9	1.1	.9	.6	1.1	.7
Bitot Spots (XIB)	.0	6.1	.3	.3	1.6	.7	.4	.9	.0	1.1
Angular Stomatitis	.4	2.2	.5	.6	.7	.0	.9	2.3	.7	.9
Cheilosis	.0	.0	.0	.3	.0	.0	.0	.0	.0	*
Glossitis	.0	.0	.0	.3	.4	.0	.0	.6	2.6	.4
Phrynoderma	.9	1.4	1.3	.0	.2	.2	.0	.9	1.9	.7
Koilonychia	.0	.0	.0	.0	.0	.0	.0	.0	.4	*
Gums-Spongy bleeding	.0	.0	.3	.0	.2	.0	.0	.0	.0	.1
Dental - Caries	13.3	16.6	11.4	5.2	3.4	2.0	.0	3.7	1.9	6.1
Dental - Fluorosis	.0	6.1	.8	6.1	.7	2.3	.0	.0	.0	1.8
Thyroid Gland Palpable	8.4	2.2	3.4	1.6	4.9	.0	1.3	1.1	18.6	4.2
Thyroid Gland Visible	1.8	.4	1.0	.0	.9	.0	.0	.6	2.2	.7
Others	.0	1.1	1.3	4.5	1.1	.0	.0	.6	3.3	1.3

Table 9.12: Prevalence (%) of Nutritional Deficiency Signs : 12-17 year children – Boys and Girls Pooled

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	439	532	696	582	844	823	478	588	547	5529
NAD	78.4	69.2	81.2	83.2	88.3	93.6	96.2	90.3	73.3	84.4
Night Blindness (XN)	.0	.0	.0	.0	.6	.1	.2	.2	.4	.2
Conjuctival Xerosis (XIA)	.0	.2	1.9	.7	.5	.9	.8	.7	1.6	.8
Bitot Spots (XIB)	.0	6.2	.9	1.4	1.2	.4	.4	1.0	.5	1.3
Corneal Scar (XS)	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Angular Stomatitis	.2	2.4	.9	1.2	.7	.0	.6	2.0	2.9	1.2
Cheilosis	.0	.0	.0	.2	.0	.0	.0	.0	.0	*
Glossitis	.0	.0	.0	1.0	.2	.0	.0	.5	3.8	.6
Phrynoderma	.7	.9	1.0	.0	.2	.2	.0	.9	1.5	.6
Koilonychia	.0	.0	.0	.0	.0	.0	.0	.0	.2	*
Gums-Spongy bleeding	.0	.2	.1	.0	.1	.0	.0	.0	.0	.1
Dental - Caries	15.7	16.0	11.2	4.6	3.7	2.9	.2	4.3	2.7	6.4
Dental - Fluorosis	.0	7.7	1.0	5.5	.6	2.6	.6	.0	.0	2.0
Thyroid Gland Palpable	4.6	1.1	2.7	1.2	3.8	.0	.8	.7	12.6	2.9
Thyroid Gland Visible	.9	.4	.6	.0	.5	.0	.0	.3	1.1	.4
Others	.0	.8	.7	2.4	1.2	.0	.4	.3	2.9	1.0

Table 9.13: Prevalence (%) of Nutritional Deficiency Signs: Adult Men

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	1006	1443	1521	1845	1851	1710	1719	1432	1512	14039
NAD	80.9	78.1	85.9	86.6	98.0	91.5	93.0	95.7	91.5	89.6
Night Blindness (XN)	.0	.1	.0	.0	.0	.8	.1	.0	.0	.1
Conjuctival Xerosis (XIA)	.0	.1	.3	.1	.0	.6	.0	.0	.0	.1
Bitot Spots (XIB)	.0	2.6	.4	.0	.3	.4	.0	.0	.0	.4
Corneal Scar (XS)	.0	.0	.0	.0	.1	.1	.0	.0	.1	*
Angular Stomatitis	.0	.7	.3	.3	.0	.1	.9	1.0	1.1	.5
Cheilosis	.0	.0	.0	.0	.0	.0	.0	.0	.1	*
Glossitis	.0	.1	.0	6.1	.1	.0	2.6	.1	3.2	1.5
Phrynoderma	.1	.0	.1	.0	.1	.0	.0	.0	.5	.1
Gums-Spongy bleeding	.0	.0	.1	.0	.0	.1	.0	.0	.0	*
Knock - Kness/ Bow legs	.0	.0	.0	.1	.0	.0	.0	.0	.0	*
Dental - Caries	18.6	18.8	12.0	4.1	.2	4.7	3.4	2.3	1.5	6.5
Dental - Fluorosis	.0	.8	.2	.5	.0	2.3	.1	.0	.0	.5
Thyroid Gland Palpable	.2	.0	.1	.2	.1	.1	.0	.0	.6	.1
Thyroid Gland Visible	.3	.0	.1	.0	.0	.0	.1	.0	.1	*
Others	.1	.5	.6	2.3	1.2	.1	1.1	.9	1.9	1.0

Table 9.14: Prevalence (%) of Nutritional Deficiency Signs: Adult Women

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	2136	2113	2161	2168	2249	2216	1789	2018	1753	18603
NAD	62.3	65.5	77.2	74.4	95.9	90.7	86.5	85.7	75.0	79.3
Night Blindness (XN)	.0	.0	.0	.0	.1	1.0	.2	.0	.0	.2
Conjuctival Xerosis (XIA)	.0	.0	.1	.0	.0	.4	.0	.1	.1	.1
Bitot Spots (XIB)	.0	1.4	.3	.0	.0	.4	.0	.1	.1	.3
Corneal Scar (XS)	.0	.0	.0	.0	.1	.0	.1	.0	.0	*
Angular Stomatitis	.0	1.3	.4	.6	.1	.0	3.1	1.1	1.3	.8
Cheilosis	.0	.0	.0	.0	.0	.0	.0	.0	.1	*
Glossitis	.0	.1	.2	1.1	.2	.0	6.4	.1	1.9	1.0
Phrynoderma	2.9	.1	1.1	.0	.0	.1	.0	.8	7.2	1.3
Koilonychia	.0	.1	.2	.0	.1	.0	.0	.0	.1	.1
Gums-Spongy bleeding	.0	.0	.1	.0	.1	.2	.0	.0	.0	*
Dental - Caries	31.9	31.1	16.5	7.2	.3	5.1	3.6	5.6	1.9	11.7
Dental - Fluorosis	.0	.9	.2	1.1	.1	2.4	.7	.0	.0	.6
Thyroid Gland Palpable	3.0	.9	.5	.3	1.4	.0	.7	1.1	6.2	1.5
Thyroid Gland Visible	2.7	.6	.6	.4	.7	.0	.7	.4	1.6	.8
Others	.0	.6	3.3	16.2	1.2	.0	1.9	6.5	8.1	4.1

Table 9.15: Prevalence (%) of Nutritional Deficiency Signs: Adults– Men and Women Pooled

Nutritional Deficiency Signs	STATE									
	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pooled
n	3142	3556	3682	4013	4100	3926	3508	3450	3265	32642
NAD	68.3	70.6	80.8	80.0	96.8	91.1	89.7	89.9	82.7	83.7
Night Blindness (XN)	.0	.0	.0	.0	.0	.9	.2	.0	.0	.1
Conjuctival Xerosis (XIA)	.0	.1	.2	.0	.0	.5	.0	.1	.0	.1
Bitot Spots (XIB)	.0	1.9	.3	.0	.1	.4	.0	.1	.1	.3
Corneal Scar (XS)	.0	.0	.0	.0	.1	.0	.0	.0	.0	*
Angular Stomatitis	.0	1.1	.3	.4	.1	.0	2.0	1.0	1.2	.7
Cheilosis	.0	.0	.0	.0	.0	.0	.0	.0	.1	*
Glossitis	.0	.1	.1	3.4	.1	.0	4.5	.1	2.5	1.2
Phrynoderma	2.0	.1	.7	.0	.0	.1	.0	.5	4.1	.8
Koilonychia	.0	.1	.1	.0	.0	.0	.0	.0	.1	*
Gums-Spongy bleeding	.0	.0	.1	.0	.0	.2	.0	.0	.0	*
Dental - Caries	27.7	26.1	14.7	5.8	.2	4.9	3.5	4.2	1.7	9.5
Dental - Fluorosis	.0	.8	.2	.8	.0	2.4	.4	.0	.0	.6
Thyroid Gland Palpable	2.1	.6	.3	.2	.8	.0	.3	.7	3.6	.9
Thyroid Gland Visible	1.9	.3	.4	.2	.4	.0	.4	.3	.9	.5
Others	.1	.5	2.2	9.8	1.2	.0	1.5	4.2	5.2	2.8

Table 10.1: Distribution (%) of 1-5 years Children according to Nutritional Status (Weight for Age) by Gender - Gomez Classification

STATE	Gender	n	Nutrition Grades*			
			Normal	Mild	Moderate	Severe
Kerala	Boys	200	26.5	57.0	16.0	.5
	Girls	196	20.9	51.5	26.0	1.5
	Pooled	**396**	**23.7**	**54.3**	**21.0**	**1.0**
Tamil Nadu	Boys	344	12.5	51.2	33.4	2.9
	Girls	331	11.8	52.9	33.2	2.1
	Pooled	**675**	**12.1**	**52.0**	**33.3**	**2.5**
Karnataka	Boys	258	11.2	48.1	36.4	4.3
	Girls	256	14.5	45.3	35.5	4.7
	Pooled	**514**	**12.8**	**46.7**	**36.0**	**4.5**
Andhra Pradesh	Boys	228	12.7	46.5	38.6	2.2
	Girls	203	9.4	43.3	44.8	2.5
	Pooled	**431**	**11.1**	**45.0**	**41.5**	**2.3**
Maharashtra	Boys	373	11.5	43.2	42.9	2.4
	Girls	329	10.6	47.4	37.7	4.3
	Pooled	**702**	**11.1**	**45.2**	**40.5**	**3.3**
Gujarat	Boys	291	15.1	32.3	43.0	9.6
	Girls	274	21.2	34.7	35.4	8.8
	Pooled	**565**	**18.1**	**33.5**	**39.3**	**9.2**
Madhya Pradesh	Boys	253	9.9	33.2	49.4	7.5
	Girls	252	13.9	34.1	42.1	9.9
	Pooled	**505**	**11.9**	**33.7**	**45.7**	**8.7**
Orissa	Boys	294	11.9	42.2	40.1	5.8
	Girls	331	7.6	43.8	43.8	4.8
	Pooled	**625**	**9.6**	**43.0**	**42.1**	**5.3**
West Bengal	Boys	217	11.5	45.2	37.8	5.5
	Girls	229	8.3	46.7	44.1	.9
	Pooled	**446**	**9.9**	**46.0**	**41.0**	**3.1**
Pooled	**Boys**	**2458**	**13.3**	**44.0**	**38.2**	**4.6**
	Girls	**2401**	**12.8**	**44.5**	**38.2**	**4.5**
	Pooled	**4859**	**13.0**	**44.2**	**38.2**	**4.5**

* : NCHS Standards

Table 10.2: Distribution (%) of 1-5 years Children according to Nutritional Status (Weight for Age) by age group - Gomez Classification

STATE	Age (Years)	n	Nutrition Grades*			
			Normal	Mild	Moderate	Severe
Kerala	1-3	219	23.7	55.3	19.6	1.4
	3-5	177	23.7	53.1	22.6	.6
	Pooled	**396**	**23.7**	**54.3**	**21.0**	**1.0**
Tamil Nadu	1-3	343	15.7	51.9	30.3	2.0
	3-5	332	8.4	52.1	36.4	3.0
	Pooled	**675**	**12.1**	**52.0**	**33.3**	**2.5**
Karnataka	1-3	256	15.2	48.8	30.5	5.5
	3-5	258	10.5	44.6	41.5	3.5
	Pooled	**514**	**12.8**	**46.7**	**36.0**	**4.5**
Andhra Pradesh	1-3	229	14.8	46.7	36.2	2.2
	3-5	202	6.9	43.1	47.5	2.5
	Pooled	**431**	**11.1**	**45.0**	**41.5**	**2.3**
Maharashtra	1-3	352	11.1	44.0	40.9	4.0
	3-5	350	11.1	46.3	40.0	2.6
	Pooled	**702**	**11.1**	**45.2**	**40.5**	**3.3**
Gujarat	1-3	264	15.9	33.7	37.9	12.5
	3-5	301	19.9	33.2	40.5	6.3
	Pooled	**565**	**18.1**	**33.5**	**39.3**	**9.2**
Madhya Pradesh	1-3	265	14.0	32.1	43.4	10.6
	3-5	240	9.6	35.4	48.3	6.7
	Pooled	**505**	**11.9**	**33.7**	**45.7**	**8.7**
Orissa	1-3	286	12.2	37.1	44.4	6.3
	3-5	339	7.4	48.1	40.1	4.4
	Pooled	**625**	**9.6**	**43.0**	**42.1**	**5.3**
West Bengal	1-3	216	13.0	42.6	40.7	3.7
	3-5	230	7.0	49.1	41.3	2.6
	Pooled	**446**	**9.9**	**46.0**	**41.0**	**3.1**
Pooled	**1-3**	**2430**	**14.8**	**43.5**	**36.3**	**5.3**
	3-5	**2429**	**11.3**	**45.0**	**40.1**	**3.7**
	Pooled	**4859**	**13.0**	**44.2**	**38.2**	**4.6**

* : NCHS Standards

Table 11a : Distribution (%) of 6-60 Months Children according to Nutritional Status (Weight for Age) by age group - IAP Classification*

STATE	Age (Months)	n	Nutrition Grades				
			Normal	Grade I	Grade II	Grade III	Grade IV
Kerala	6-12	56	73.2	23.2	1.8	1.8	0.0
	12-24	106	57.5	33.0	9.4	0.0	0.0
	24-36	113	59.3	30.1	8.8	0.9	0.9
	36-48	99	63.6	29.3	7.1	0.0	0.0
	48-60	78	53.8	30.8	11.5	3.8	0.0
	Pooled	**452**	**60.6**	**29.9**	**8.2**	**1.1**	**0.2**
Tamil Nadu	6-12	102	70.6	22.5	3.9	2.9	0.0
	12-24	176	48.3	38.1	11.9	1.7	0.0
	24-36	167	43.1	41.3	13.2	1.8	0.6
	36-48	159	39.0	44.0	13.8	3.1	0.0
	48-60	173	39.9	39.3	15.6	5.2	0.0
	Pooled	**777**	**46.3**	**38.2**	**12.4**	**3.0**	**0.1**
Karnataka	6-12	61	70.5	19.7	3.3	6.6	0.0
	12-24	146	43.8	37.0	13.0	5.5	0.7
	24-36	110	49.1	32.7	13.6	4.5	0.0
	36-48	130	44.6	36.9	16.2	1.5	0.8
	48-60	128	37.5	39.1	20.3	3.1	0.0
	Pooled	**575**	**46.4**	**34.8**	**14.4**	**4.0**	**0.3**
Andhra Pradesh	6-12	67	58.2	28.4	11.9	1.5	0.0
	12-24	104	43.3	36.5	19.2	1.0	0.0
	24-36	125	40.8	40.8	16.8	1.6	0.0
	36-48	117	38.5	38.5	22.2	0.9	0.0
	48-60	85	25.9	47.1	21.2	5.9	0.0
	Pooled	**498**	**40.6**	**38.8**	**18.7**	**2.0**	**0.0**
Maharashtra	6-12	95	56.8	29.5	9.5	3.2	1.1
	12-24	174	33.9	42.0	20.1	3.4	0.6
	24-36	178	34.3	42.1	23.0	0.6	0.0
	36-48	162	44.4	34.6	18.5	2.5	0.0
	48-60	188	30.3	43.6	24.5	1.6	0.0
	Pooled	**797**	**38.0**	**39.4**	**20.2**	**2.1**	**0.3**

*: By Using Harvard Standards

Table 11b : Distribution (%) of 6-60 Months Children according to Nutritional Status (Weight for Age) by age group - IAP Classification*

STATE	Age (Months)	n	Nutrition Grades				
			Normal	Grade I	Grade II	Grade III	Grade IV
Gujarat	6-12	82	40.2	22.0	23.2	7.3	7.3
	12-24	119	39.5	23.5	22.7	10.9	3.4
	24-36	145	51.0	26.2	15.9	5.5	1.4
	36-48	164	45.7	26.2	24.4	1.8	1.8
	48-60	137	51.8	24.8	19.0	3.6	0.7
	Pooled	**647**	**46.4**	**24.9**	**20.9**	**5.4**	**2.5**
Madhya Pradesh	6-12	43	67.4	30.2	2.3	0.0	0.0
	12-24	155	35.5	29.0	29.0	5.2	1.3
	24-36	110	37.3	33.6	23.6	5.5	0.0
	36-48	141	36.2	42.6	16.3	4.3	0.7
	48-60	99	33.3	28.3	34.3	4.0	0.0
	Pooled	**548**	**38.1**	**33.4**	**23.5**	**4.4**	**0.5**
Orissa	6-12	68	48.5	29.4	19.1	2.9	0.0
	12-24	155	33.5	35.5	27.7	2.6	0.6
	24-36	131	32.1	38.9	22.1	6.9	0.0
	36-48	186	44.6	37.6	15.1	2.2	0.5
	48-60	153	39.2	35.9	22.9	2.0	0.0
	Pooled	**693**	**39.0**	**36.2**	**21.4**	**3.2**	**0.3**
West Bengal	6-12	23	65.2	30.4	0.0	4.3	0.0
	12-24	101	41.6	33.7	19.8	4.0	1.0
	24-36	115	40.9	34.8	19.1	5.2	0.0
	36-48	114	35.1	47.4	16.7	0.9	0.0
	48-60	116	42.2	32.8	23.3	1.7	0.0
	Pooled	**469**	**41.2**	**36.9**	**18.8**	**3.0**	**0.2**
Pooled	**6-12**	**597**	**60.1**	**25.6**	**9.5**	**3.5**	**1.2**
	12-24	**1236**	**41.3**	**34.7**	**19.4**	**3.8**	**0.8**
	24-36	**1194**	**42.6**	**36.1**	**17.5**	**3.4**	**0.3**
	36-48	**1272**	**43.2**	**37.3**	**17.0**	**2.0**	**0.5**
	48-60	**1157**	**39.0**	**36.2**	**21.4**	**3.3**	**0.1**
	Pooled	**5456**	**43.6**	**35.0**	**17.8**	**3.2**	**0.5**

*: By using Harvard Standards

Table 12.1: Distribution (%) of Undernutrition among infants (< 1 year) according to SD classification by Age (months)

Age (in completed months)	n	Weight for Age			Height for Age			Weight for Height		
		< -3SD	-3SD to – 2SD	≥ – 2SD	< -3SD	-3SD to – 2SD	≥ – 2SD	< -3SD	-3SD to – 2SD	≥ – 2SD
1	64	4.7	10.9	84.4	3.2	3.2	93.6	13.1	14.8	72.1
2	60	.0	5.0	95.0	3.3	5.0	91.7	3.4	13.6	83.0
3	83	1.2	2.4	96.4	1.2	3.6	95.2	4.8	6.0	89.2
4	83	1.2	10.8	88.0	2.4	8.5	89.1	8.5	6.1	85.4
5	91	2.2	11.0	86.8	5.5	12.1	82.4	1.1	12.1	86.8
6	110	2.7	10.0	87.3	4.5	6.4	89.1	3.6	4.6	91.8
7	95	7.4	7.4	85.2	4.2	8.4	87.4	5.3	8.4	86.3
8	107	9.3	26.2	64.5	7.5	24.5	68.0	2.8	9.4	87.8
9	100	6.0	24.0	70.0	6.0	13.0	81.0	2.0	10.0	88.0
10	109	8.3	30.3	61.4	8.3	22.0	69.7	3.7	7.3	89.0
11	76	23.7	31.6	44.7	15.8	27.6	56.6	3.9	6.6	89.5
Pooled	**978**	**6.1**	**16.2**	**77.7**	**5.7**	**12.8**	**81.5**	**4.4**	**8.7**	**86.9**

Table 12.2: Prevalence (%) of undernutrition among 1-5 year children According to SD Classification* by Age groups

STATE	Age (Yrs)	n	Underweight (Wt/Age <Med. – 2SD)	Stunting (Ht/Age <Med. – 2SD)	Wasting (Wt/Ht <Med. – 2SD)
Kerala	<1	106	9.4	12.3	7.5
	1-3	219	37.0	35.2	10.5
	3-5	177	32.2	29.9	10.7
	1-5	**396**	**34.8**	**32.8**	**10.6**
Tamil Nadu	<1	199	8.5	5.0	5.0
	1-3	343	47.2	39.9	8.7
	3-5	332	51.2	42.5	15.1
	1-5	**675**	**49.2**	**41.2**	**11.9**
Karnataka	<1	86	24.4	17.4	7.0
	1-3	256	50.0	48.8	12.5
	3-5	258	55.8	51.6	12.4
	1-5	**514**	**52.9**	**50.2**	**12.5**
Andhra Pradesh	<1	103	23.3	20.4	2.9
	1-3	229	54.1	43.7	16.2
	3-5	202	57.9	53.5	15.8
	1-5	**431**	**55.9**	**48.3**	**16.0**
Maharashtra	<1	112	30.4	34.8	4.5
	1-3	352	58.0	53.4	10.5
	3-5	350	57.4	46.3	17.1
	1-5	**702**	**57.7**	**49.9**	**13.8**
Gujarat	<1	135	40.7	27.3	40.9
	1-3	264	62.9	52.7	22.9
	3-5	301	52.8	45.3	24.7
	1-5	**565**	**57.5**	**48.8**	**23.8**
Madhya Pradesh	<1	79	12.7	10.1	26.6
	1-3	265	63.4	75.1	18.9
	3-5	240	64.6	70.4	14.6
	1-5	**505**	**64.0**	**72.9**	**16.8**
Orissa	<1	129	31.8	19.4	15.0
	1-3	286	62.6	57.3	18.9
	3-5	339	58.4	64.3	13.0
	1-5	**625**	**60.3**	**61.1**	**15.7**
West Bengal	<1	29	20.7	48.3	3.4
	1-3	216	59.7	54.6	13.0
	3-5	230	55.7	58.7	13.0
	1-5	**446**	**57.6**	**56.7**	**13.0**
Pooled	**<1**	**978**	**22.3**	**18.6**	**13.1**
	1-3	**2430**	**54.8**	**51.3**	**14.5**
	3-5	**2429**	**55.1**	**51.7**	**15.5**
	1-5	**4859**	**54.9**	**51.5**	**15.0**

* : NCHS Standards

Table 12.3 Prevalence (%) of undernutrition among 1-5 year children According to SD Classification* by Gender

STATE	Gender	n	Underweight (Wt/Age <Med. – 2SD)	Stunting (Ht/Age <Med. – 2SD)	Wasting (Wt/Ht <Med. – 2SD)
Kerala	Boys	200	29.5	30.0	9.5
	Girls	196	40.3	35.7	11.7
	Pooled	**396**	**34.8**	**32.8**	**10.6**
Tamil Nadu	Boys	344	48.0	41.3	12.2
	Girls	331	50.5	41.1	11.5
	Pooled	**675**	**49.2**	**41.2**	**11.9**
Karnataka	Boys	258	54.3	47.3	14.3
	Girls	256	51.6	53.1	10.5
	Pooled	**514**	**52.9**	**50.2**	**12.5**
Andhra Pradesh	Boys	228	53.9	43.4	17.5
	Girls	203	58.1	53.7	14.3
	Pooled	**431**	**55.9**	**48.3**	**16.0**
Maharashtra	Boys	373	57.4	49.3	14.7
	Girls	329	58.1	50.5	12.8
	Pooled	**702**	**57.7**	**49.9**	**13.8**
Gujarat	Boys	291	62.5	52.4	26.9
	Girls	274	52.2	44.9	20.6
	Pooled	**565**	**57.5**	**48.8**	**23.8**
Madhya Pradesh	Boys	253	67.2	71.9	17.0
	Girls	252	60.7	73.8	16.7
	Pooled	**505**	**64.0**	**72.9**	**16.8**
Orissa	Boys	294	58.8	58.8	15.6
	Girls	331	61.6	63.1	15.7
	Pooled	**625**	**60.3**	**61.1**	**15.7**
West Bengal	Boys	217	55.3	54.4	13.4
	Girls	229	59.8	59.0	12.7
	Pooled	**446**	**57.6**	**56.7**	**13.0**
Pooled	**Boys**	**2458**	**54.8**	**50.1**	**15.8**
	Girls	**2401**	**55.1**	**52.9**	**14.1**
	Pooled	**4859**	**54.9**	**51.5**	**15.0**

* : NCHS Standards

Table13.1: Distribution (%) of 1-5 years Children according to Weight for Age - Standard Deviation (SD) Classification: by Age groups

STATE	Age (Yrs)	n	Weight for Age*				
			< Median -3SD	Median -3SD to Median-2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	<1	106	2.8	6.6	19.8	24.5	46.2
	1-3	219	6.4	30.6	38.8	17.4	6.8
	3-5	177	6.2	26.0	40.1	20.9	6.8
	1-5	**396**	**6.3**	**28.5**	**39.4**	**18.9**	**6.8**
Tamil Nadu	<1	199	2.5	6.0	29.1	32.2	30.2
	1-3	343	9.9	37.3	35.0	12.8	5.0
	3-5	332	10.8	40.4	35.8	11.7	1.2
	1-5	**675**	**10.4**	**38.8**	**35.4**	**12.3**	**3.1**
Karnataka	<1	86	5.8	18.6	31.4	24.4	19.8
	1-3	256	18.0	32.0	33.2	12.5	4.3
	3-5	258	12.8	43.0	31.4	9.3	3.5
	1-5	**514**	**15.4**	**37.5**	**32.3**	**10.9**	**3.9**
Andhra Pradesh	<1	103	3.9	19.4	35.9	24.3	16.5
	1-3	229	16.2	38.0	30.6	11.4	3.9
	3-5	202	15.3	42.6	32.7	8.4	1.0
	1-5	**431**	**15.8**	**40.1**	**31.6**	**10.0**	**2.6**
Maharashtra	<1	112	6.3	24.1	23.2	29.5	17.0
	1-3	352	21.3	36.6	30.4	9.1	2.6
	3-5	350	11.7	45.7	30.0	11.1	1.4
	1-5	**702**	**16.5**	**41.2**	**30.2**	**10.1**	**2.0**
Gujarat	<1	135	20.7	20.0	23.7	16.3	19.3
	1-3	264	32.6	30.3	18.9	12.5	5.7
	3-5	301	19.9	32.9	25.6	16.6	5.0
	1-5	**565**	**25.8**	**31.7**	**22.5**	**14.7**	**5.3**
Madhya Pradesh	<1	79	0.0	12.7	32.9	27.8	26.6
	1-3	265	32.5	30.9	22.3	7.9	6.4
	3-5	240	21.3	43.3	24.6	7.5	3.3
	1-5	**505**	**27.1**	**36.8**	**23.4**	**7.7**	**5.0**
Orissa	<1	129	5.4	26.4	27.1	30.2	10.9
	1-3	286	23.8	38.8	23.8	10.1	3.5
	3-5	339	18.6	39.8	32.4	8.3	0.9
	1-5	**625**	**21.0**	**39.4**	**28.5**	**9.1**	**2.1**
West Bengal	<1	29	3.4	17.2	37.9	31.0	10.3
	1-3	216	20.8	38.9	25.9	11.1	3.2
	3-5	230	15.2	40.4	36.1	5.2	3.0
	1-5	**446**	**17.9**	**39.7**	**31.2**	**8.1**	**3.1**
Pooled	**<1**	**978**	**6.1**	**16.2**	**27.9**	**26.7**	**23.1**
	1-3	**2430**	**20.2**	**35.0**	**28.8**	**11.5**	**4.5**
	3-5	**2429**	**14.9**	**39.9**	**31.7**	**10.9**	**2.7**
	1-5	**4859**	**17.5**	**37.4**	**30.3**	**11.2**	**3.6**

* : NCHS Standards

Table 13.2: Distribution (%) of 1-5 years Children according to Weight for Age - Standard Deviation (SD) Classification: by Gender

STATE	Gender	n	Weight for Age*				
			< Median -3SD	Median -3SD to Median-2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	Boys	200	4.0	25.5	43.5	20.5	6.5
	Girls	196	8.7	31.6	35.2	17.3	7.1
	Pooled	**396**	**6.3**	**28.5**	**39.4**	**18.9**	**6.8**
Tamil Nadu	Boys	344	9.6	38.4	36.0	13.4	2.6
	Girls	331	11.2	39.3	34.7	11.2	3.6
	Pooled	**675**	**10.4**	**38.8**	**35.4**	**12.3**	**3.1**
Karnataka	Boys	258	15.5	38.8	31.4	10.5	3.9
	Girls	256	15.2	36.3	33.2	11.3	3.9
	Pooled	**514**	**15.4**	**37.5**	**32.3**	**10.9**	**3.9**
Andhra Pradesh	Boys	228	12.3	41.7	31.6	11.0	3.5
	Girls	203	19.7	38.4	31.5	8.9	1.5
	Pooled	**431**	**15.8**	**40.1**	**31.6**	**10.0**	**2.6**
Maharashtra	Boys	373	16.1	41.3	30.6	10.5	1.6
	Girls	329	17.0	41.0	29.8	9.7	2.4
	Pooled	**702**	**16.5**	**41.2**	**30.2**	**10.1**	**2.0**
Madhya Pradesh	Boys	291	27.1	35.4	19.9	13.7	3.8
	Girls	274	24.5	27.7	25.2	15.7	6.9
	Pooled	**565**	**25.8**	**31.7**	**22.5**	**14.7**	**5.3**
Gujarat	Boys	253	26.1	41.1	22.1	6.7	4.0
	Girls	252	28.2	32.5	24.6	8.7	6.0
	Pooled	**505**	**27.1**	**36.8**	**23.4**	**7.7**	**5.0**
Orissa	Boys	294	20.7	38.1	27.9	10.9	2.4
	Girls	331	21.1	40.5	29.0	7.6	1.8
	Pooled	**625**	**21.0**	**39.4**	**28.5**	**9.1**	**2.1**
West Bengal	Boys	217	20.7	34.6	31.3	9.7	3.7
	Girls	229	15.3	44.5	31.0	6.6	2.6
	Pooled	**446**	**17.9**	**39.7**	**31.2**	**8.1**	**3.1**
Pooled	**Boys**	**2458**	**17.1**	**37.7**	**30.2**	**11.7**	**3.3**
	Girls	**2401**	**18.0**	**37.2**	**30.4**	**10.6**	**3.9**
	Pooled	**4859**	**17.5**	**37.4**	**30.3**	**11.2**	**3.6**

* : NCHS Standards

Table 14.1: Distribution (%) of 1-5 years Children according to Height for Age - Standard Deviation (SD) Classification : by Age groups

STATE	Age group (yrs)	n	Height for Age*				
			< Median -3SD	Median -3SD to Median-2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	<1	106	6.6	5.7	21.7	24.5	41.5
	1-3	219	11.0	24.2	24.2	21.9	18.7
	3-5	177	11.3	18.6	30.5	25.4	14.1
	1-5	**396**	**11.1**	**21.7**	**27.0**	**23.5**	**16.7**
Tamil Nadu	<1	199	2.0	3.0	24.1	31.2	39.7
	1-3	343	13.4	26.5	30.3	19.8	9.9
	3-5	332	14.5	28.0	36.4	18.1	3.0
	1-5	**675**	**13.9**	**27.3**	**33.3**	**19.0**	**6.5**
Karnataka	<1	86	2.3	15.1	20.9	40.7	20.9
	1-3	256	21.1	27.7	25.0	15.6	10.5
	3-5	258	24.4	27.1	28.3	11.2	8.9
	1-5	**514**	**22.8**	**27.4**	**26.7**	**13.4**	**9.7**
Andhra Pradesh	<1	103	3.9	16.5	36.9	32.0	10.7
	1-3	229	18.3	25.3	24.5	22.7	9.2
	3-5	202	20.3	33.2	31.7	10.9	4.0
	1-5	**431**	**19.3**	**29.0**	**27.8**	**17.2**	**6.7**
Maharashtra	<1	112	11.6	23.2	36.6	21.4	7.1
	1-3	352	26.1	27.3	26.1	13.1	7.4
	3-5	350	19.1	27.1	32.3	16.3	5.1
	1-5	**702**	**22.6**	**27.2**	**29.2**	**14.7**	**6.3**
Madhya Pradesh	<1	79	5.1	5.1	16.5	27.8	45.6
	1-3	262	34.0	18.7	13.7	21.4	12.2
	3-5	300	24.7	20.7	28.0	16.0	10.7
	1-5	**562**	**29.0**	**19.8**	**21.4**	**18.5**	**11.4**
Gujarat	<1	135	12.1	15.2	14.4	19.7	38.6
	1-3	265	48.3	26.8	13.6	7.2	4.2
	3-5	240	44.2	26.3	17.1	9.2	3.3
	1-5	**505**	**46.3**	**26.5**	**15.2**	**8.1**	**3.8**
Orissa	<1	129	3.9	15.5	32.6	26.4	21.7
	1-3	286	31.8	25.5	21.0	14.3	7.3
	3-5	339	26.0	38.3	22.7	9.4	3.5
	1-5	**625**	**28.6**	**32.5**	**21.9**	**11.7**	**5.3**
West Bengal	<1	29	3.4	44.8	24.1	24.1	3.4
	1-3	216	36.1	18.5	26.9	11.6	6.9
	3-5	230	27.4	31.3	24.8	10.4	6.1
	1-5	**446**	**31.6**	**25.1**	**25.8**	**11.0**	**6.5**
Pooled	**<1**	**978**	**5.7**	**12.8**	**25.5**	**27.6**	**28.3**
	1-3	**2428**	**26.5**	**24.8**	**23.0**	**16.3**	**9.4**
	3-5	**2428**	**23.5**	**28.2**	**28.2**	**14.0**	**6.2**
	1-5	**4856**	**25.0**	**26.5**	**25.6**	**15.1**	**7.8**

* : NCHS Standards

Table 14.2: Distribution (%) of 1-5 years Children according to Height for Age - Standard Deviation (SD) Classification : by Gender

STATE	Gender		Height for Age*				
		n	< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	Boys	200	10.0	20.0	28.5	23.0	18.5
	Girls	196	12.2	23.5	25.5	24.0	14.8
	Pooled	**396**	**11.1**	**21.7**	**27.0**	**23.5**	**16.7**
Tamil Nadu	Boys	344	13.7	27.6	33.1	19.2	6.4
	Girls	331	14.2	26.9	33.5	18.7	6.6
	Pooled	**675**	**13.9**	**27.3**	**33.3**	**19.0**	**6.5**
Karnataka	Boys	258	22.1	25.2	27.5	15.1	10.1
	Girls	256	23.4	29.7	25.8	11.7	9.4
	Pooled	**514**	**22.8**	**27.4**	**26.7**	**13.4**	**9.7**
Andhra Pradesh	Boys	228	15.8	27.6	27.2	21.1	8.3
	Girls	203	23.2	30.5	28.6	12.8	4.9
	Pooled	**431**	**19.3**	**29.0**	**27.8**	**17.2**	**6.7**
Maharashtra	Boys	373	21.7	27.6	27.6	16.6	6.4
	Girls	329	23.7	26.7	31.0	12.5	6.1
	Pooled	**702**	**22.6**	**27.2**	**29.2**	**14.7**	**6.3**
Madhya Pradesh	Boys	290	31.0	21.4	20.3	17.9	9.3
	Girls	272	26.8	18.0	22.4	19.1	13.6
	Pooled	**562**	**29.0**	**19.8**	**21.4**	**18.5**	**11.4**
Gujarat	Boys	253	43.9	28.1	16.6	7.5	4.0
	Girls	252	48.8	25.0	13.9	8.7	3.6
	Pooled	**505**	**46.3**	**26.5**	**15.2**	**8.1**	**3.8**
Orissa	Boys	294	28.2	30.6	22.8	12.9	5.4
	Girls	331	29.0	34.1	21.1	10.6	5.1
	Pooled	**625**	**28.6**	**32.5**	**21.9**	**11.7**	**5.3**
West Bengal	Boys	217	31.3	23.0	29.0	9.7	6.9
	Girls	229	31.9	27.1	22.7	12.2	6.1
	Pooled	**446**	**31.6**	**25.1**	**25.8**	**11.0**	**6.5**
Pooled	**Boys**	**2457**	**24.1**	**26.0**	**26.0**	**15.9**	**8.0**
	Girls	**2399**	**25.9**	**27.0**	**25.2**	**14.3**	**7.6**
	Pooled	**4856**	**25.0**	**26.5**	**25.6**	**15.1**	**7.8**

* : NCHS Standards

Table 15.1: Distribution (%) of 1-5 years Children according to Weight for Height - Standard Deviation (SD) Classification: by Age groups

STATE	Age group (yrs)	n	Weight for Height*				
			< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	<1	106	0.0	7.5	28.3	32.1	
	1-3	219	1.8	8.7	43.4	33.3	12.8
	3-5	177	1.1	9.6	37.9	35.6	15.8
	1-5	**396**	**1.5**	**9.1**	**40.9**	**34.3**	**14.1**
Tamil Nadu	<1	199	1.5	3.5	22.1	51.8	21.1
	1-3	343	.9	7.9	50.7	32.1	8.5
	3-5	332	.9	14.2	42.5	34.6	7.8
	1-5	**675**	**.9**	**11.0**	**46.7**	**33.3**	**8.1**
Karnataka	<1	86	3.5	3.5	31.4	43.0	18.6
	1-3	256	1.6	10.9	41.4	33.6	12.5
	3-5	258	1.9	10.5	50.4	24.0	13.2
	1-5	**514**	**1.8**	**10.7**	**45.9**	**28.8**	**12.8**
Andhra Pradesh	<1	103	0.0	2.9	29.4	39.2	28.4
	1-3	229	3.1	13.1	48.5	28.4	7.0
	3-5	202	1.5	14.4	49.0	29.7	5.4
	1-5	**431**	**2.3**	**13.7**	**48.7**	**29.0**	**6.3**
Maharashtra	<1	112	0.0	4.5	17.0	42.9	35.7
	1-3	352	.9	9.7	50.6	32.4	6.5
	3-5	350	.0	17.1	44.6	34.0	4.3
	1-5	**702**	**.4**	**13.4**	**47.6**	**33.2**	**5.4**
Madhya Pradesh	<1	79	6.3	20.3	24.1	31.6	17.7
	1-3	262	10.3	12.6	34.4	22.9	19.8
	3-5	300	7.3	17.3	29.0	27.3	19.0
	1-5	**562**	**8.7**	**15.1**	**31.5**	**25.3**	**19.4**
Gujarat	<1	135	22.0	18.9	19.7	23.5	15.9
	1-3	265	1.5	17.4	35.8	26.4	18.9
	3-5	240	2.9	11.7	32.1	32.5	20.8
	1-5	**505**	**2.2**	**14.7**	**34.1**	**29.3**	**19.8**
Orissa	<1	129	2.4	12.6	27.6	42.5	15.0
	1-3	286	1.4	17.5	42.7	29.7	8.7
	3-5	339	1.5	11.5	36.9	38.1	12.1
	1-5	**625**	**1.4**	**14.2**	**39.5**	**34.2**	**10.6**
West Bengal	<1	29	0.0	3.4	13.8	37.9	44.8
	1-3	216	3.7	9.3	40.3	32.9	13.9
	3-5	230	2.6	10.4	37.4	34.3	15.2
	1-5	**446**	**3.1**	**9.9**	**38.8**	**33.6**	**14.6**
Pooled	**<1**	**978**	**4.4**	**8.6**	**24.1**	**39.4**	**23.5**
	1-3	**2428**	**2.6**	**11.8**	**43.6**	**30.2**	**11.7**
	3-5	**2428**	**2.2**	**13.3**	**39.9**	**32.4**	**12.2**
	1-5	**4856**	**2.4**	**12.6**	**41.7**	**31.3**	**12.0**

Table 15.2: Distribution (%) of 1-5 years Children according to Weight for Height - Standard Deviation (SD) Classification : by Gender

STATE	Gender	n	Weight for Height*				
			< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
Kerala	Boys	200	1.0	8.5	38.0	39.0	13.5
	Girls	196	2.0	9.7	43.9	29.6	14.8
	Pooled	**396**	**1.5**	**9.1**	**40.9**	**34.3**	**14.1**
Tamil Nadu	Boys	344	.6	11.6	46.5	33.1	8.1
	Girls	331	1.2	10.3	46.8	33.5	8.2
	Pooled	**675**	**.9**	**11.0**	**46.7**	**33.3**	**8.1**
Karnataka	Boys	258	1.6	12.8	48.1	27.5	10.1
	Girls	256	2.0	8.6	43.8	30.1	15.6
	Pooled	**514**	**1.8**	**10.7**	**45.9**	**28.8**	**12.8**
Andhra Pradesh	Boys	228	3.1	14.5	46.1	30.3	6.1
	Girls	203	1.5	12.8	51.7	27.6	6.4
	Pooled	**431**	**2.3**	**13.7**	**48.7**	**29.0**	**6.3**
Maharashtra	Boys	373	.5	14.2	48.5	31.6	5.1
	Girls	329	.3	12.5	46.5	35.0	5.8
	Pooled	**702**	**.4**	**13.4**	**47.6**	**33.2**	**5.4**
Madhya Pradesh	Boys	290	8.3	18.6	32.4	23.8	16.9
	Girls	272	9.2	11.4	30.5	26.8	22.1
	Pooled	**562**	**8.7**	**15.1**	**31.5**	**25.3**	**19.4**
Gujarat	Boys	253	2.8	14.2	37.9	26.5	18.6
	Girls	252	1.6	15.1	30.2	32.1	21.0
	Pooled	**505**	**2.2**	**14.7**	**34.1**	**29.3**	**19.8**
Orissa	Boys	294	1.7	13.9	37.8	38.1	8.5
	Girls	331	1.2	14.5	41.1	30.8	12.4
	Pooled	**625**	**1.4**	**14.2**	**39.5**	**34.2**	**10.6**
West Bengal	Boys	217	3.7	9.7	37.3	35.0	14.3
	Girls	229	2.6	10.0	40.2	32.3	14.8
	Pooled	**446**	**3.1**	**9.9**	**38.8**	**33.6**	**14.6**
Pooled	**Boys**	**2457**	**2.5**	**13.3**	**41.8**	**31.5**	**10.8**
	Girls	**2399**	**2.3**	**11.8**	**41.6**	**31.1**	**13.2**
	Pooled	**4856**	**2.4**	**12.6**	**41.7**	**31.3**	**12.0**

* : NCHS Standards

Table 16: Prevalence (%) of Undernutrition among 0-60 months children according to SD classification using WHO Child Growth standards*

Age (Months)	n	Weight for Age			Height for Age			Weight for Height			BMI for Age			
		<Median -3SD	Median -3SD to Median -2SD	≥Median -2SD	<Median -3SD	Median -3SD to Median -2SD	≥Median -2SD	<Median -3SD	Median -3SD to Median -2SD	≥Median -2SD	<Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median+2 SD	≥Median +2SD
<6	381	10.8	15.7	73.5	6.3	11.1	82.6	19.3	10.1	70.6	16.1	15.0	66.2	2.7
6-12	597	11.6	18.8	69.6	10.7	17.3	72.0	10.2	10.6	79.2	11.4	10.4	75.0	3.2
12-18	662	13.4	20.7	65.9	20.7	22.7	56.6	7.4	14.2	78.4	11.3	9.7	79.5	3.5
18-24	574	18.6	25.8	55.6	28.5	27.4	44.1	8.0	12.6	79.4	5.8	8.9	83.3	2.0
24-30	649	11.7	28.2	60.1	19.3	29.9	50.8	4.8	12.6	82.6	4.8	8.9	83.4	2.9
30-36	545	19.8	26.6	53.6	23.3	28.1	48.6	5.9	12.8	81.3	5.1	8.1	84.6	2.2
36-42	819	12.2	27.2	60.6	20.9	22.9	56.2	5.4	12.5	82.1	4.9	10.4	81.7	3.0
42-48	453	13.0	33.6	53.4	20.1	32.5	47.4	3.1	14.8	82.1	2.4	9.3	86.3	2.0
48-54	770	13.2	30.8	56.0	20.5	26.7	52.8	4.3	13.8	81.9	3.3	11.3	83.3	2.1
54-60	387	18.6	34.1	47.3	20.0	32.2	47.8	4.9	16.1	79.0	2.6	11.9	84.7	0.8
0-60	**5837**	**14.1**	**26.2**	**59.7**	**19.5**	**25.1**	**55.4**	**6.9**	**13.0**	**80.1**	**6.1**	**10.2**	**81.2**	**2.5**

* : Geneva: WHO, April 2006

Table 17.1: Distribution (%) of 6-17 years Children according to Weight for Age – Standard Deviation (SD) Classification by age group

Age Group (yrs)	STATE	n	Weight for Age*				
			< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
6 - 9	Kerala	290	2.8	21.0	36.6	22.8	16.9
	Tamil Nadu	518	6.9	40.5	40.7	9.5	2.3
	Karnataka	491	5.9	36.7	42.4	11.6	3.5
	Andhra Pradesh	461	5.4	35.6	38.0	15.6	5.4
	Maharashtra	597	5.4	37.9	38.9	14.2	3.7
	Gujarat	632	9.0	29.1	32.0	20.7	9.2
	Madhya Pradesh	452	7.3	35.2	36.1	13.7	7.7
	Orissa	563	7.5	35.0	40.0	13.0	4.6
	West Bengal	503	5.6	38.0	37.0	14.1	5.4
	Pooled	**4507**	**6.4**	**34.9**	**37.9**	**14.8**	**6.0**
10-13	Kerala	306	1.3	25.2	41.5	19.6	12.4
	Tamil Nadu	395	2.5	48.1	39.2	7.8	2.3
	Karnataka	490	2.9	37.8	42.4	13.3	3.7
	Andhra Pradesh	436	.7	32.6	44.5	17.0	5.3
	Maharashtra	578	2.2	41.7	43.6	10.2	2.2
	Gujarat	533	4.3	35.8	29.1	17.6	13.1
	Madhya Pradesh	372	3.8	37.9	39.8	15.3	3.2
	Orissa	506	2.0	29.8	48.4	15.6	4.2
	West Bengal	450	2.2	32.0	42.9	18.7	4.2
	Pooled	**4066**	**2.5**	**36.0**	**41.2**	**14.8**	**5.5**
14-17	Kerala	271	1.1	26.2	46.5	21.8	4.4
	Tamil Nadu	354	9.0	39.0	38.1	11.0	2.8
	Karnataka	421	4.0	39.0	39.9	14.7	2.4
	Andhra Pradesh	334	4.8	29.6	47.9	14.7	3.0
	Maharashtra	536	6.5	39.2	41.2	11.4	1.7
	Gujarat	561	7.8	29.8	36.2	23.4	2.9
	Madhya Pradesh	295	4.7	24.7	48.1	21.0	1.4
	Orissa	343	3.8	25.1	52.5	16.3	2.3
	West Bengal	329	3.3	33.1	44.7	16.4	2.4
	Pooled	**3444**	**5.4**	**32.4**	**43.0**	**16.6**	**2.5**

Table 17.2: Distribution (%) of 6-17 years Children according to Weight for Age – Standard Deviation (SD) Classification : By Gender (States Pooled)

Age Group (yrs)	Gender	Weight for Age*					
		n	< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
6-9	Boys	2267	8.5	38.2	35.0	13.0	5.3
	Girls	2240	4.3	31.5	40.8	16.6	6.7
	Pooled	**4507**	**6.4**	**34.9**	**37.9**	**14.8**	**6.0**
10-13	Boys	2013	3.1	38.6	40.0	12.7	5.7
	Girls	2053	1.9	33.4	42.5	17.0	5.3
	Pooled	**4066**	**2.5**	**36.0**	**41.2**	**14.8**	**5.5**
14-17	Boys	1554	8.6	36.4	36.7	15.8	2.4
	Girls	1890	2.7	29.2	48.3	17.3	2.6
	Pooled	**3444**	**5.4**	**32.4**	**43.0**	**16.6**	**2.5**

* : NCHS Standards

Table 18.1 : Distribution (%) of 6-17 years Children according to Height for Age – Standard Deviation (SD) Classification by age group

Age Group (yrs)	STATE	n	Height for Age*				
			< Median -3SD	Median -3SD to Median -2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
6 - 9	Kerala	290	1.0	7.6	34.5	34.1	22.8
	Tamil Nadu	518	8.9	26.8	39.0	19.1	6.2
	Karnataka	491	5.5	19.8	38.5	25.5	10.8
	Andhra Pradesh	461	5.6	20.6	30.8	26.9	16.1
	Maharashtra	597	4.9	18.6	38.2	28.0	10.4
	Gujarat	631	11.7	20.4	27.9	28.4	11.6
	Madhya Pradesh	452	13.7	30.8	26.5	19.2	9.7
	Orissa	563	9.4	23.3	33.2	22.2	11.9
	West Bengal	502	10.0	24.7	32.1	20.1	13.1
	Pooled	**4505**	**8.2**	**21.9**	**33.4**	**24.6**	**11.9**
10-13	Kerala	306	2.9	16.7	36.6	30.7	13.1
	Tamil Nadu	395	7.8	34.7	37.0	16.7	3.8
	Karnataka	490	7.3	25.1	37.3	21.6	8.6
	Andhra Pradesh	436	4.4	18.1	37.8	30.5	9.2
	Maharashtra	578	6.4	24.2	40.5	23.2	5.7
	Gujarat	533	13.3	25.0	25.9	21.0	14.8
	Madhya Pradesh	372	17.5	36.0	28.5	14.5	3.5
	Orissa	506	8.5	23.7	36.8	23.1	7.9
	West Bengal	450	11.8	24.0	35.1	19.6	9.6
	Pooled	**4066**	**9.0**	**25.2**	**35.1**	**22.2**	**8.5**
14-17	Kerala	271	3.3	20.3	40.6	29.2	6.6
	Tamil Nadu	354	9.6	33.3	35.9	20.1	1.1
	Karnataka	421	5.5	29.2	34.9	24.2	6.2
	Andhra Pradesh	334	3.0	21.0	43.4	25.4	7.2
	Maharashtra	536	6.9	27.2	39.7	21.1	5.0
	Gujarat	561	20.5	23.0	28.3	24.4	3.7
	Madhya Pradesh	295	13.9	33.2	36.9	13.9	2.0
	Orissa	343	8.5	29.7	38.5	20.1	3.2
	West Bengal	329	8.5	30.4	40.1	17.3	3.6
	Pooled	**3444**	**9.5**	**27.3**	**37.0**	**21.9**	**4.3**

Table 18.2: Distribution (%) of 6-17 years Children according to Height for Age - Standard Deviation (SD) Classification : By Gender (States Pooled)

Age Group (yrs)	Gender	n	Height for Age*				
			< Median -3SD	Median -3SD to Median-2SD	Median -2SD to Median -1SD	Median -1SD to Median	≥ Median
6-9	Boys	2266	9.8	22.8	32.4	23.3	11.7
	Girls	2239	6.6	21.0	34.4	25.8	12.2
	Pooled	**4505**	**8.2**	**21.9**	**33.4**	**24.6**	**11.9**
10-13	Boys	2013	7.1	26.1	34.7	22.7	9.4
	Girls	2053	10.8	24.3	35.5	21.8	7.5
	Pooled	**4066**	**9.0**	**25.2**	**35.1**	**22.2**	**8.5**
14-17	Boys	1554	10.9	27.2	33.0	22.7	6.2
	Girls	1890	8.3	27.4	40.3	21.2	2.8
	Pooled	**3444**	**9.5**	**27.3**	**37.0**	**21.9**	**4.3**

* : NCHS Standards

Table 19.1: Distribution (%) of 10-17 years Children according to BMI age and Gender specific centiles* - by age group

Age Group (yrs)	STATE	n	Nutritional Grades			
			Undernutrition (<5th Centile)	Normal (5th-85th Cent.)	Overweight (85th-95th Cent.)	Obese (≥ 95th Centile)
10-13	Kerala	306	47.7	50.7	1.6	.0
	Tamil Nadu	395	67.3	31.6	.8	.3
	Karnataka	490	62.7	36.3	.6	.4
	Andhra Pradesh	436	60.8	39.2	.0	.0
	Maharashtra	578	69.4	30.1	.3	.2
	Gujarat	533	49.3	48.0	2.3	.4
	Madhya Pradesh	372	49.7	47.6	1.9	.8
	Orissa	506	51.6	48.4	.0	.0
	West Bengal	450	50.4	47.8	.9	.9
	Pooled	**4066**	**57.1**	**41.7**	**.9**	**.3**
14-17	Kerala	271	25.8	72.7	1.5	.0
	Tamil Nadu	354	38.7	60.7	.3	.3
	Karnataka	421	35.9	63.4	.7	.0
	Andhra Pradesh	334	36.8	62.3	.9	.0
	Maharashtra	536	42.9	56.5	.4	.2
	Gujarat	561	22.8	75.4	1.4	.4
	Madhya Pradesh	295	17.3	81.7	1.0	.0
	Orissa	343	20.1	79.0	.6	.3
	West Bengal	329	23.1	75.4	1.5	.0
	Pooled	**3444**	**30.1**	**68.9**	**.9**	**.1**

Table 19.2: Distribution (%) of 10-17 years Children according to BMI age and Gender specific centiles* - by Gender (States Pooled)

Age Group (yrs)	Gender	n	Nutritional Grades			
			Undernutrition (<5th Centile)	Normal (5th -85th Cent.)	Overweight (85th -95th Cent.)	Obese (≥ 95th Cent.)
10-13	Boys	2013	65.3	33.4	1.0	.3
	Girls	2053	49.0	49.9	.8	.3
	Pooled	**4066**	**57.1**	**41.7**	**.9**	**.3**
14-17	Boys	1554	44.8	54.4	.5	.3
	Girls	1890	17.9	80.8	1.2	.0
	Pooled	**3444**	**30.1**	**68.9**	**.9**	**.1**

* : NHANES References

Table20: Distribution (%) of Adult Men (≥ 18 years) according to BMI*

STATE	n	BMI Grades*										
		< 16 (CED III)	16-17 (CED II)	17-18.5 (CED I)	18.5-20 (Low Wt. Normal)	20-25 (Normal)	25-30 (Obese I)	≥ 30 (Obese II)	Chronic Energy Deficiency (<18.5)	Normal (18.5-25)	Over Weight/ Obesity	
											(≥25)	(≥23)
Kerala	1006	5.7	6.6	15.4	18.9	39.0	13.1	1.4	27.7	57.8	14.5	26.7
Tamil Nadu	1443	5.7	7.1	17.0	18.9	40.1	10.6	.6	29.8	59.0	11.2	22.5
Karnataka	1521	8.5	10.5	23.4	20.9	29.5	6.8	.5	42.4	50.3	7.3	14.9
Andhra Pradesh	1845	5.9	7.6	18.8	20.9	36.9	8.3	1.7	32.3	57.7	10.0	20.5
Maharashtra	1851	5.6	9.5	23.1	21.1	33.1	6.8	1.0	38.2	54.0	7.8	17.1
Gujarat	1710	6.3	6.8	13.7	15.8	48.0	8.7	.8	26.8	63.7	9.5	23.6
Madhya Pradesh	1719	3.9	6.0	18.7	27.2	41.4	2.5	.3	28.6	68.6	2.8	9.4
Orissa	1432	5.7	9.8	22.9	26.9	30.4	3.6	.6	38.4	57.4	4.2	10.3
West Bengal	1512	4.5	7.1	22.4	24.0	37.2	4.8	.1	34.0	61.1	4.9	12.6
Pooled	**14039**	**5.7**	**7.9**	**19.6**	**21.7**	**37.3**	**7.0**	**.8**	**33.2**	**59.0**	**7.8**	**17.2**

*BMI : Body Mass Index, using James et al classification

Table 21: Distribution (%) of Adult Women (≥ 18 years) according to BMI*

STATE	n	BMI Grades*										
		< 16 (CED III)	16-17 (CED II)	17-18.5 (CED I)	18.5-20 (Low Wt. Normal)	20-25 (Normal)	25-30 (Obese I)	≥ 30 (Obese II)	Chronic Energy Deficiency (<18.5)	Normal (18.5-25)	Over Weight/ Obesity	
											(≥25)	(≥23)
Kerala	2136	4.6	5.5	11.0	13.5	41.3	20.4	3.6	21.1	54.9	24.0	39.3
Tamil Nadu	2113	6.5	8.7	17.3	18.5	33.7	12.2	3.1	32.5	52.2	15.3	25.1
Karnataka	2161	10.8	11.1	20.5	18.1	30.8	7.5	1.3	42.4	48.8	8.8	17.0
Andhra Pradesh	2168	10.2	10.1	20.1	16.9	30.9	9.6	2.2	40.4	47.8	11.8	20.7
Maharashtra	2249	9.9	10.6	20.7	19.8	30.1	7.3	1.5	41.2	50.0	8.8	16.4
Gujarat	2216	6.5	7.6	16.1	17.6	40.4	9.7	2.0	30.2	58.1	11.7	22.4
Madhya Pradesh	1789	4.6	6.4	19.8	22.5	41.9	3.9	.8	30.8	64.5	4.7	10.7
Orissa	2018	10.6	12.0	25.0	21.7	26.1	3.9	.7	47.6	47.8	4.6	10.1
West Bengal	1753	7.5	8.6	21.3	20.2	35.7	6.0	.7	37.4	55.9	6.7	14.7
Pooled	**18603**	**8.0**	**9.0**	**19.0**	**18.7**	**34.4**	**9.1**	**1.8**	**36.0**	**53.1**	**10.9**	**19.9**

*BMI : Body Mass Index, using James et al classification

Table 22 a: Distribution (%) of 1-5 year children according to Nutritional Status (Standard Deviation Classification) by Socio-Economic and Demographic characteristics

Particulars	n	Wt. For Age			Ht. For Age			Wt. For Ht.		
		Under weight	Normal	χ^2	Stunting	Normal	χ^2	Wasting	Normal	χ^2
Religion										
Hindu	4214	55.6	44.4	17.3; p<.001	51.7	48.3	5.604; NS	15.7	84.3	15.64; p<.001
Muslim	430	47.2	52.8		48.8	51.2		8.6	91.4	
Christian	89	47.2	52.8		43.8	56.2		13.5	86.5	
Others	122	63.9	36.1		58.2	41.8		13.9	86.1	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Community										
Scheduled Tribe	642	62.7	37.3	25.7; p<0.001	57.6	42.4	25.5; p<0.001	17.9	82.1	6.06; NS
Scheduled Caste	1181	57.1	42.9		55.0	45.0		15.4	84.6	
Backward Caste	1756	52.0	48.0		48.0	52.0		14.3	85.7	
Others	1276	53.1	46.9		49.9	50.1		14.0	86.0	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Type of Family										
Nuclear	2593	56.4	43.6	5.44; NS	52.7	47.3	3.2; NS	16.0	84.0	7.08; p<0.05
Extended Nuclear	961	54.5	45.5		50.5	49.5		12.4	87.6	
Joint	1301	52.5	47.5		49.9	50.1		14.9	85.1	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Type of House										
Kutcha	1180	60.0	40.0	32.9; p<0.001	55.1	44.9	34.2; p<0.001	16.4	83.6	5.3; NS
Semi Pucca	3038	54.8	45.2		52.3	47.7		14.9	85.1	
Pucca	637	46.0	54.0		41.1	58.9		12.4	87.6	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Land Holding										
No land	2517	55.4	44.6	2.4; NS	52.6	47.4	5.74; NS	15.7	84.3	2.59; NS
Marginal Farmers	1415	54.7	45.3		49.1	50.9		14.5	85.5	
Small Farmers	417	56.4	43.6		54.2	45.8		14.4	85.6	
Large Farmers	506	52.0	48.0		50.6	49.4		13.2	86.8	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Per Capita Income (Rs./Month)										
<300	1829	59.8	40.2	51.6; p<0.001	56.9	43.1	64.6; p<0.001	14.2	85.8	25.5; NS
300-600	1738	55.8	44.2		52.0	48.0		15.9	84.1	
600-900	618	47.3	52.7		46.8	53.2		15.4	84.6	
≥900	670	46.5	53.5		39.7	60.3		14.3	85.7	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	

Table 22b : Distribution (%) of 1-5 year children according to Nutritional Status (Standard Deviation Classification) by Socio-Economic and Demographic characteristics

Particulars	n	Wt. For Age			Ht. For Age			Wt. For Ht.		
		Under weight	Normal	χ^2	Stunting	Normal	χ^2	Wasting	Normal	χ^2
Occupation of HH										
Landless Agri. Labourer	779	60.0	40.0		52.8	47.2		19.9	80.1	
Other Labourer	1505	57.5	42.5		55.6	44.4		16.9	83.1	
Owner Cultivator	1032	54.8	45.2		52.6	47.4		13.4	86.6	
Landlord	40	50.0	50.0	31.03;	45.0	55.0	31.62;	10.0	90.0	42.3;
Tenant Cultivator	50	48.0	52.0	p<0.001	40.0	60.0	p<0.001	8.0	92.0	p<0.001
Artisans	397	51.4	48.6		48.6	51.4		11.3	88.7	
Service	427	51.4	48.6		44.5	55.5		13.3	86.7	
Business	425	46.2	53.8		45.9	54.1		8.7	91.3	
Others	200	52.5	47.5		46.5	53.5		16.5	83.5	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Literacy Status of Father										
Illiterate	1456	59.9	40.1		58.2	41.8		15.9	84.1	
Read & Write	92	60.2	39.8		52.2	47.8		19.6	80.4	
1-4 std.	621	55.5	44.5		54.6	45.4		17.2	82.8	
5-8 std.	1249	54.4	45.6	32.6;	48.6	51.4	50.86;	15.3	84.7	12.84;
9-12 std.	1186	50.4	49.6	p<0.001	45.9	54.1	p<0.001	12.1	87.9	p<0.05
College	251	46.6	53.4		45.8	54.2		13.9	86.1	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Literacy Status of Mother										
Illiterate	2229	60.1	39.9		57.2	42.8		16.9	83.1	
Read & Write	86	48.8	51.2		49.4	50.6		17.6	82.4	
1-4 std.	542	54.2	45.8		50.9	49.1		13.7	86.3	
5-8 std.	1059	53.3	46.7	62.62;	50.0	50.0	79.35;	14.8	85.2	20.39;
9-12 std.	850	46.5	53.5	p<0.001	41.1	58.9	p<0.001	11.4	88.6	p<0.001
College	93	37.6	62.4		33.3	66.7		7.5	92.5	
Pooled	4859	54.9	45.1		51.5	48.5		15.0	85.0	
Family Size										
1-4	1403	53.1	46.9		50.1	49.9		15.5	84.5	
5-7	2613	56.0	44.0	3.08;	51.9	48.1	1.56;	14.8	85.2	.387;
≥8	839	54.8	45.2	p<0.05	52.4	47.6	NS	14.7	85.3	NS
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	

Table 22c: Distribution (%) of 1-5 year children according to Nutritional Status (Standard Deviation Classification) by Socio-Economic and Demographic characteristics

Particulars	n	Wt. For Age			Ht. For Age			Wt. For Ht.		
		Under weight	Normal	χ^2	Stunting	Normal	χ^2	Wasting	Normal	χ^2
Source of Drinking Water										
Open well	1081	51.3	48.7	14.3; p<0.01	51.1	48.9	40.37; p<0.001	13.6	86.4	2.76; NS
Tube well	1716	58.3	41.7		56.9	43.1		15.6	84.4	
Tap	1984	54.0	46.0		46.7	53.3		15.3	84.7	
Others	74	56.8	43.2		59.5	40.5		12.2	87.8	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Electrification										
Present	3381	52.4	47.6	29.9; p<0.001	48.1	51.9	51.5; p<0.001	14.7	85.3	0.65; NS
Absent	1474	60.9	39.1		59.3	40.7		15.6	84.4	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Sanitary Latrine										
Present	1059	45.2	54.8	52.08; p<0.001	40.6	59.4	64.2; p<0.001	13.3	86.7	2.93; NS
Absent	3796	57.7	42.3		54.5	45.5		15.4	84.6	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Cooking Fuel Type										
Fire wood	4417	56.3	43.7	39.09; p<0.001	52.9	47.1	41.0; p<0.001	15.3	84.7	6.42; NS
Kerosene	59	45.8	54.2		40.7	59.3		15.3	84.7	
Bio-gas	23	56.5	43.5		39.1	60.9		13.0	87.0	
LPG	356	39.6	60.4		36.2	63.8		10.4	89.6	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	
Morbidity										
Absent	4113	53.9	46.1	11.5; p<0.001	50.6	49.4	8.7; p<0.01	14.5	85.5	4.9; p<0.05
Present	742	60.6	39.4		56.5	43.5		17.7	82.3	
Pooled	4855	54.9	45.1		51.5	48.5		15.0	85.0	

Table 23a: Distribution (%) of Adults (≥18 years) according to BMI Grades by Socio-Economic and Demographic characteristics

Particulars	n	BMI* Grades			
		Chronic Energy Deficiency (<18.5)	Normal (18.5 – 25)	Overweight (≥ 25)	χ^2
Religion					
Hindu	28831	35.6	55.6	8.8	350.4 P<0.001
Muslim	2438	27.6	55.8	16.6	
Christian	740	21.2	57.2	21.6	
Others	633	39.8	54.0	6.2	
Pooled	32642	34.8	55.6	9.6	
Community					
Scheduled Tribe	3275	41.9	54.6	3.5	424.3 P<0.001
Scheduled Caste	7033	38.4	55.3	6.3	
Backward Caste	11972	34.2	54.5	11.3	
Others	10362	30.8	57.4	11.8	
Pooled	32642	34.8	55.6	9.6	
Type of House					
Kutcha	7134	38.3	55.3	6.3	604.8 P<0.001
Semi Pucca	20222	35.8	55.6	8.6	
Pucca	5286	26.2	56.1	17.7	
Pooled	32642	34.8	55.6	9.6	
Type of Family					
Nuclear	17418	34.0	56.1	9.9	33.4 P<0.001
Extended Nuclear	6588	37.6	53.1	9.3	
Joint	8636	34.2	56.7	9.1	
Pooled	32642	34.8	55.6	9.6	
Occupation of Head of Household					
Landless Agri. Labourer	4853	42.1	52.3	5.5	1034.2 P<0.001
Other Labourer	8258	38.5	55.4	6.1	
Owner Cultivator	8326	34.8	57.8	7.4	
Landlord	482	27.4	54.1	18.5	
Tenant Cultivator	363	36.4	57.9	5.8	
Artisans	2198	33.1	54.6	12.3	
Service	2823	27.3	56.9	15.8	
Business	2961	25.3	55.3	19.4	
Others	2378	30.3	55.2	14.6	
Pooled	32642	34.8	55.6	9.6	

Table 23b: Distribution (%) of Adults (≥18 years) according to BMI Grades by Socio-Economic and Demographic characteristics

Particulars	n	BMI* Grades			
		Chronic Energy Deficiency (<18.5)	Normal (18.5 – 25)	Overweight (≥ 25)	χ^2
Literacy status of Males					
Illiterate	4356	40.1	56.5	3.4	385.4 P<0.001
Read & Write	401	31.4	60.3	8.2	
1-4 Standard	2088	33.9	59.4	6.8	
5-8 Standard	3421	31.9	59.8	8.3	
9-12 Standard	2940	28.5	59.0	12.5	
College	833	19.0	67.0	14.0	
Pooled	14039	33.2	59.0	7.8	
Literacy status of Females					
Illiterate	8730	41.9	51.6	6.5	575.8; p<0.001
Read & Write	452	31.0	58.4	10.6	
1-4 Standard	2194	32.8	55.0	12.2	
5-8 Standard	3812	32.4	54.0	13.6	
9-12 Standard	2992	28.6	53.2	18.2	
College	423	19.6	58.4	22.0	
Pooled	18603	36.0	53.1	10.9	
Per Capita Income (Rs./Month)					
< 300	8999	43.2	51.7	5.1	1239.9 P<0.001
300-600	11218	36.9	55.4	7.7	
600-900	5229	31.6	58.0	10.4	
≥900	7196	23.4	59.1	17.6	
Pooled	32642	34.8	55.6	9.6	
Land Holding (Acres)					
No Land	14917	34.3	55.7	10.0	62.2 P<0.001
Marginal farmers	10273	36.8	54.2	9.0	
Small farmers	3281	36.1	55.4	8.5	
Large farmers	4171	30.6	59.0	10.5	
Pooled	32642	34.8	55.6	9.6	
Family Size					
1-4	12569	33.7	55.7	10.7	34.7 P<0.001
5-7	15928	35.5	55.8	8.7	
≥8	4145	35.5	55.0	9.6	
Pooled	32642	34.8	55.6	9.6	

Table 23c: Distribution (%) of Adults (≥18 years) according to BMI Grades by Socio-Economic and Demographic characteristics

Particulars	n	BMI* Grades			
		Chronic Energy Deficiency (<18.5)	Normal (18.5 – 25)	Overweight (≥ 25)	χ^2
Electrification					
Present	24332	32.1	56.4	11.6	605.2 P<0.001
Absent	8310	42.7	53.5	3.8	
Pooled	32642	34.8	55.6	9.6	
Source of Drinking Water					
Open well	7445	31.1	57.4	11.5	157.4 P<0.001
Tube well	11496	36.7	56.0	7.3	
Tap	13108	35.2	54.2	10.6	
Others	594	35.5	57.2	7.2	
Pooled	32642	34.8	55.6	9.6	
Sanitary Latrine					
Present	9234	24.4	57.4	18.3	1420.8 P<0.001
Absent	23408	38.9	54.9	6.2	
Pooled	32642	34.8	55.6	9.6	
Type of Cooking Fuel					
Fire wood	28548	36.8	55.5	7.6	1255.4 P<0.001
Kerosene	304	33.9	53.3	12.8	
Bio-gas	237	24.5	59.5	16.0	
LPG	3553	19.1	56.3	24.6	
Pooled	32642	34.8	55.6	9.6	

Table 24: Distribution (%) of adult men according to prevalence of Anaemia

STATE	n	Normal (≥ 13 g/dL)	Anaemia			Mean (Hb g/dL)	SD
			Mild (10 –13 g/dL)	Moderate (7 – 10 g/dL)	Severe (≤ 7 g/dL)		
Kerala	339	32.2	61.0	6.5	0.3	12.1	1.56
Tamil Nadu	397	70.8	23.4	5.3	0.5	13.7	2.12
Karnataka	358	56.4	34.9	5.9	2.8	13.3	2.71
Andhra Pradesh	395	64.8	31.6	2.8	0.8	13.5	2.06
Maharashtra	406	47.8	44.6	7.6	0.0	12.8	1.86
Gujarat	422	34.6	49.6	15.6	0.2	11.9	2.08
Madhya Pradesh	329	31.6	60.8	7.6	0.0	12.2	1.45
Orissa	388	47.4	50.0	2.6	0.0	12.6	1.45
West Bengal	363	16.3	61.1	22.0	0.6	11.1	1.79
Pooled	3397	45.2	45.8	8.4	0.6	12.6	2.09

Table 25: Prevalence (%) of Aneamia among adult NPNL women – By State

STATE	n	Normal (≥ 12 g/dL)	Anaemia			Mean (Hb g/dL)	SD
			Mild (10 –12 g/dL)	Moderate (7 – 10 g/dL)	Severe (≤ 7 g/dL)		
Kerala	344	10.8	50.6	36.6	2.0	10.2	1.45
Tamil Nadu	395	51.4	33.6	14.2	0.8	11.9	1.94
Karnataka	370	39.2	36.5	20.5	3.8	11.6	2.68
Andhra Pradesh	370	32.2	44.6	20.8	2.4	11.1	1.82
Maharashtra	413	30.5	39.5	26.9	3.1	10.8	1.93
Gujarat	379	5.3	24.8	60.7	9.2	9.1	1.68
Madhya Pradesh	325	12.6	47.1	39.7	0.6	10.3	1.58
Orissa	381	27.8	60.7	11.5	0.0	11.1	1.27
West Bengal	352	8.5	40.7	47.7	3.1	9.9	1.61
Pooled	3329	24.8	41.9	30.5	2.8	10.7	1.99

Table 26: Prevalence (%) of Anaemia among Adult Men by Age group

Category	Age group (Years)							
	20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n	789	1036	859	400	223	83	7	3397
Haemoglobin Level (g/dL) Mean ± (SD)	12.9 (1.97)	12.8 (1.99)	12.6 (2.03)	12.2 (2.32)	11.9 (2.24)	11.3 (2.49)	11.1 (1.30)	12.6 (2.09)
Normal (≥ 13 g/dL)	52.4	49.6	43.0	40.2	26.9	20.5	14.3	45.2
Mild Anaemia (10 –13 g/dL)	42.3	43.1	48.8	45.0	58.8	49.4	71.4	45.8
Moderate Anaemia (7 – 10 g/dL)	4.9	7.0	7.9	13.5	13.0	27.7	14.3	8.4
Severe Anaemia (≤ 7g/dL)	.4	.3	.3	1.3	1.3	2.4	0.0	0.6

Table 27: Prevalence (%) of Anaemia among Adult NPNL Women by Age group

Category	Age group (Years)							
	20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n	1054	1209	784	203	69	9	1	3329
Haemoglobin Level (g/dL) Mean ± (SD)	10.7 (2.01)	10.7 (2.08)	10.6 (1.92)	10.5 (1.74)	10.6 (1.86)	10.5 (1.53)	11.0	10.7 (1.99)
Normal (≥ 12 g/dL)	27.4	25.2	21.7	21.2	24.6	33.3	.0	24.8
Mild Anaemia (10 –12 g/dL)	39.9	41.2	45.0	41.8	46.4	22.2	100.0	41.9
Moderate Anaemia (7- 10 g/dL)	30.2	30.4	30.2	35.5	26.1	44.5	.0	30.5
Severe Anaemia (≤ 7g/dL)	2.5	3.2	3.1	1.5	2.9	.0	.0	2.8

Table 28: Prevalence (%) of Anaemia among adult men and women (NPNL) by Socio-Economic and Demographic characteristics

Particulars	Prevalence (%) of Anaemia					
	Adult Men			Adult Women (NPNL)		
	n	%	χ^2	n	%	χ^2
Religion						
Hindu	2999	54.0	29.12; p<0.001	2962	74.6	13.46; p<0.05
Muslim	257	69.6		229	83.4	
Christian	76	42.1		72	65.3	
Others	65	50.8		66	80.3	
Pooled	3397	54.8		3329	75.2	
Community						
Scheduled Tribe	364	60.2	17.81; p<0.001	351	78.6	8.77; p<0.05
Scheduled Caste	756	53.4		724	74.7	
Backward Caste	1234	51.0		1226	72.7	
Others	1043	58.5		1028	77.2	
Pooled	3397	54.8		3329	75.2	
Type of Family						
Nuclear	2214	55.5	2.35; NS	2201	75.0	1.22; NS
Extended Nuclear	568	55.3		626	76.7	
Joint	615	52.0		502	73.9	
Pooled	3397	54.8		3329	75.2	
Type of House						
Kutcha	747	56.2	13.08; p<0.001	725	77.1	4.44; NS
Semi Pucca	2117	56.1		2073	75.3	
Pucca	533	47.7		531	71.9	
Pooled	3397	54.8		3329	75.2	
Land Holdings (Acres)						
No land	1617	54.8	3.11; NS	1669	75.9	2.20; NS
Marginal Farmers	1100	56.1		1042	75.0	
Small Farmers	312	55.1		291	75.3	
Large Farmers	368	50.8		327	72.2	
Pooled	3397	54.8		3329	75.2	
Per Capita Income (Rs./Month)						
<300	942	53.4	2.4; NS	938	72.3	8.1; P<0.05
300-600	1151	55.5		1174	75.0	
600-900	561	57.0		524	78.4	
≥900	743	53.8		693	76.8	
Pooled	3397	54.8		3329	75.2	

Contd…

Table 29 : Prevalence (%) of Anaemia among adult men and women (NPNL) by Socio-Economic Parameters (Contd..)

Particulars	Prevalence (%) of Anaemia					
	Adult Men			Adult Women (NPNL)		
	n	%	χ^2	n	%	χ^2
Occupational Category						
Landless Agri. Labourer	542	58.3	25.38; p<0.001	540	78.0	13.1; NS
Other Labourer	915	55.0		934	72.4	
Owner Cultivator	821	53.7		767	75.0	
Landlord	39	64.1		33	75.8	
Tenant Cultivator	44	54.5		35	74.3	
Artisans	248	44.4		216	71.3	
Service	270	49.3		335	76.7	
Business	300	62.0		290	80.7	
Others	218	56.9		179	74.9	
Pooled	3397	54.8		3329	75.2	
Literacy Status						
Illiterate	1001	56.4	16.45; p<0.05	1522	74.6	12.49; p<0.05
Read & Write	95	61.1		73	89.0	
1-4 std.	511	59.7		368	78.0	
5-8 std.	849	50.8		754	72.7	
9-12 std.	754	54.8		547	76.1	
College	187	48.1		65	78.5	
Pooled	3397	54.8		3329	75.2	
Family Size						
1-4	1609	56.7	4.60; NS	1637	75.3	1.1; NS
5-7	1535	53.1		1500	74.7	
≥8	253	53.0		192	78.1	
Pooled	3397	54.8		3329	75.2	

Contd…

Table 30: Prevalence (%) of Anaemia among adult men and women (NPNL) by Socio-Economic Parameters (Contd..)

Particulars	Prevalence (%) of Anaemia					
	Adult Men			Adult Women (NPNL)		
	n	%	χ^2	n	%	χ^2
Electrification						
Present	2485	51.3	44.86; p<0.001	2428	74.1	5.43; p<0.05
Absent	912	64.3		901	78.0	
Pooled	3397	54.8		3329	75.2	
Source of Drinking Water						
Open well	777	61.3	75.0; p<0.001	756	82.3	82.67; p<0.001
Tube well	1182	60.9		1191	79.8	
Tap	1373	45.9		1331	66.9	
Others	65	55.4		51	74.5	
Pooled	3397	54.8		3329	75.2	
Sanitary Latrine						
Present	922	55.4	0.190; NS	917	78.8	9.21; p<0.05
Absent	2475	54.6		2412	73.8	
Pooled	3397	54.8		3329	75.2	
Cooking Fuel Type						
Fire wood	2971	56.4	25.95; p<0.001	2927	75.8	7.48; NS
Kerosene	33	33.3		39	61.5	
Bio-gas	24	54.2		23	78.3	
LPG	369	44.2		340	71.2	
Pooled	3397	54.8		3329	75.2	

Table 30.1: Prevalence (%) of Morbidity according to Physiological Groups – Males

Morbidity	Age Group				
	Infants (<1 Yr.)	Pre School children (1-5 Yr.)	School age children (5-12 Yr.)	Adolescents (12-17 Yr.)	Adults (≥ 18 Yr.)
n	502	2458	3883	2592	14039
NAD	88.2	84.3	90.0	93.8	93.7
Fever	7.6	10.2	7.4	4.4	4.6
Diarrhoea	3.0	2.3	.8	.5	.5
Dysentery	.4	.4	.1	.0	.1
Acute Resp.Infection	4.4	5.3	2.7	1.7	1.5

Table 30.2: Prevalence (%) of Morbidity according to Physiological Groups – Females

Morbidity	Age Group				
	Infants (<1 Yr.)	Pre School children (1-5 Yr.)	School age children (5-12 Yr.)	Adolescents (12-17 Yr.)	Adults (≥ 18 Yr.)
n	476	2401	3814	2937	18603
NAD	90.3	85.0	90.8	94.5	93.0
Fever	5.9	10.4	6.2	4.2	5.6
Diarrhoea	1.9	1.9	.8	.3	.6
Dysentery	.2	.3	.1	.2	.1
Acute Resp.Infection	3.6	4.8	2.8	1.4	1.3

Table 30.3: Prevalence (%) of Morbidity according to Physiological Groups – Males & Females Pooled

Morbidity	Age Group				
	Infants (<1 Yr.)	Pre School children (1-5 Yr.)	School age children (5-12 Yr.)	Adolescents (12-17 Yr.)	Adults (≥ 18 Yr.)
n	978	4859	7697	5529	32642
NAD	89.3	84.7	90.4	94.1	93.3
Fever	6.7	10.3	6.8	4.3	5.2
Diarrhoea	2.5	2.1	.8	.4	.5
Dysentery	.3	.4	.1	.1	.1
Acute Resp.Infection	4.0	5.1	2.8	1.5	1.4

Table 31: Mean Anthropometric measurements of Adult Men and Women (≥20 Years) by age group

Anthropometry		Age groups (Years)							
		20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
Men									
n		2778	3144	2490	1673	1094	446	97	11722
Weight (kg)	Mean	53.8	55.5	55.3	54.1	51.5	49.8	48.5	54.2
	SD	8.72	9.77	10.26	10.70	10.35	10.36	9.72	9.98
Height (cm)	Mean	164.6	164.0	163.4	162.4	161.2	160.4	159.5	163.4
	SD	6.34	6.31	6.31	6.57	6.60	6.12	6.45	6.49
BMI (kg/m^2)	Mean	19.8	20.6	20.7	20.5	19.7	19.3	19.0	20.3
	SD	2.76	3.14	3.33	3.51	3.46	3.56	3.27	3.23
Waist Circumference (cm)	Mean	71.7	75.2	76.8	77.1	75.8	76.0	75.3	75.1
	SD	8.02	9.59	10.26	10.81	11.30	11.75	10.89	10.06
Hip Circumference (cm)	Mean	81.9	83.0	83.3	83.0	81.9	81.5	81.8	82.6
	SD	6.93	7.42	7.62	7.47	7.53	7.25	7.14	7.38
Women									
n		3565	3896	2913	1732	1008	335	71	13520
Weight (kg)	Mean	45.3	47.3	48.6	47.9	45.6	43.7	39.5	46.9
	SD	8.13	9.41	10.21	10.59	10.37	10.40	7.96	9.64
Height (cm)	Mean	152.0	151.7	151.2	150.1	148.6	147.5	145.0	151.1
	SD	5.78	5.92	6.00	5.78	6.12	6.50	6.14	6.04
BMI (kg/m^2)	Mean	19.6	20.5	21.2	21.2	20.6	20.0	18.7	20.5
	SD	3.16	3.72	4.46	4.38	4.23	4.14	3.41	3.95
Waist Circumference (cm)	Mean	66.6	69.5	72.2	72.9	71.7	71.2	68.3	69.9
	SD	8.95	10.36	11.15	11.99	11.84	12.66	10.95	10.85
Hip Circumference (cm)	Mean	80.9	83.1	84.6	84.7	83.0	81.2	79.1	83.0
	SD	7.60	8.53	9.08	9.67	9.33	9.57	6.73	8.78

Table 32: Prevalence (%) of Abdominal Obesity among adults

Anthropometric Indicators	Age groups (Years)							
	20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
Men								
n	2823	3191	2533	1696	1123	453	101	11921
Waist circumference (> 102 cm)	.2	.8	1.3	2.2	2.0	2.9	.0	1.1
Waist Hip Ratio (WHR ≥ 0.95)	8.7	22.2	30.6	35.4	34.6	39.3	32.7	24.6
Women								
n	3606	3937	2948	1760	1027	352	77	13707
Waist circumference (> 88 cm)	2.4	5.4	8.8	11.5	10.2	13.9	6.5	6.7
Waist Hip Ratio (WHR ≥ 0.80)	60.5	66.8	74.6	76.1	76.3	77.6	76.6	69.1

Table 33: Mean Blood Pressure (mm Hg) among adult men and women by States

			Kerala	Tamil Nadu	Karna-taka	Andhra Pradesh	Maha-rashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Pool-ed
Men	n		880	1306	1412	1810	1542	1536	1200	1136	1101	11923
	Syst-olic	**Mean**	**135.1**	**122.1**	**125.0**	**124.9**	**130.1**	**123.8**	**119.6**	**126.9**	**126.0**	**125.7**
		SD	22.04	16.61	16.64	17.02	18.10	10.43	12.91	18.63	16.85	17.03
	Dias-tolic	**Mean**	**85.3**	**76.1**	**75.6**	**77.9**	**79.1**	**76.2**	**78.6**	**85.2**	**81.7**	**79.0**
		SD	12.96	11.46	12.20	9.91	12.53	7.06	9.05	11.58	9.38	11.22
Women	n		1710	1681	1881	1898	1401	1796	1138	1120	1077	13702
	Syst-olic	**Mean**	**135.6**	**122.6**	**125.6**	**125.1**	**121.4**	**122.2**	**118.2**	**128.2**	**122.5**	**124.9**
		SD	22.50	17.69	19.58	17.98	15.94	11.17	16.06	19.80	17.95	18.50
	Dias-tolic	**Mean**	**83.2**	**77.4**	**77.0**	**77.3**	**72.8**	**75.7**	**77.4**	**85.1**	**79.8**	**78.2**
		SD	12.62	10.53	11.50	9.68	11.00	6.95	10.23	11.76	10.18	11.08

Table 34: Mean Blood Pressure (mm Hg) levels among adult men and women by age group

Blood Pressure	Age group (Years)							
	20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
Men								
n	2823	3194	2533	1696	1123	453	101	11923
Systolic Blood Pressure	121.4 (11.6)	121.9 (12.6)	125.0 (15.7)	129.2 (19.8)	136.2 (22.8)	138.7 (24.9)	143.3 (25.3)	125.7 (17.0)
Diastolic Blood Pressure	75.8 (10.4)	78.6 (10.4)	80.5 (11.3)	81.4 (12.1)	81.1 (11.8)	79.3 (11.9)	81.3 (12.3)	79.0 (11.2)
Women								
n	3604	3934	2947	1761	1028	351	77	13702
Systolic Blood Pressure	117.4 (11.5)	120.5 (13.9)	126.3 (17.7)	133.8 (21.2)	139.9 (24.7)	145.3 (24.9)	149.0 (22.8)	124.9 (18.5)
Diastolic Blood Pressure	74.0 (9.4)	77.3 (10.3)	80.3 (11.1)	82.2 (11.9)	81.9 (12.0)	81.5 (12.9)	81.9 (11.7)	78.2 (11.1)

(Figures in parenthesis show SD)

Table 35: Distribution (%) of Adult Male (≥ 20 Yrs) according to Type of Hypertension (WHO Criteria)

STATES	n	Normal	Hypertension			
			Diastolic Hyper-tension	Systolic Hyper-tension	Diastolic and Systolic Hypertension	Any Type of HTN
Kerala	880	49.1	15.0	12.5	23.4	50.9
Tamil Nadu	1306	82.2	4.7	5.4	7.7	17.8
Karnataka	1412	79.9	4.7	8.3	7.1	20.1
Andhra Pradesh	1810	78.9	6.8	6.1	8.2	21.1
Maharashtra	1542	68.6	6.5	12.7	12.2	31.4
Gujarat	1536	85.8	5.0	7.3	1.9	14.2
Madhya Pradesh	1200	82.3	9.2	1.1	7.4	17.7
Orissa	1136	59.1	21.3	3.5	16.1	40.9
West Bengal	1101	76.7	6.6	6.0	10.7	23.3
Pooled	11923	75.0	8.3	7.0	9.7	25.0

Table 36: Distribution (%) of Adult Female (≥ 20 Yrs) according to Type of Hypertension (WHO Criteria)

STATES	n	Normal	Hypertension			
			Diastolic Hyper-tension	Systolic Hyper-tension	Diastolic and Systolic Hypertension	Any Type of HTN
Kerala	1710	53.2	7.9	13.9	25.0	46.8
Tamil Nadu	1681	81.6	3.5	5.9	9.0	18.4
Karnataka	1881	78.2	4.0	8.3	9.5	21.8
Andhra Pradesh	1898	76.9	5.1	8.7	9.2	23
Maharashtra	1401	86.3	1.9	6.7	5.1	13.7
Gujarat	1796	89.6	2.8	5.4	2.2	10.4
Madhya Pradesh	1138	81.4	8.3	.9	9.5	18.7
Orissa	1120	57.6	18.8	4.8	18.8	42.4
West Bengal	1077	79.9	4.7	4.7	10.7	20.1
Pooled	13702	76.4	5.8	7.1	10.8	23.7

Table 37: Distribution (%) of Adult Men (≥ 20 Yrs) according to Type of Hypertension (JNC VII Classification)

STATE	n	Normal	Hypertension			n	% of known HTN
			Pre HTN	Stage I	Stage II		
Kerala	880	14.9	34.2	33.2	17.7	77	8.8
Tamil Nadu	1306	42.5	39.7	13.2	4.7	30	2.3
Karnataka	1412	35.6	44.3	13.8	6.3	29	2.1
Andhra Pradesh	1810	32.0	46.9	14.9	6.2	80	4.4
Maharashtra	1542	23.7	44.9	20.8	10.6	47	3.0
Gujarat	1536	30.5	55.3	13.4	.8	18	1.2
Madhya Pradesh	1200	40.3	42.1	16.3	1.4	8	0.7
Orissa	1136	18.1	40.9	29.1	11.8	41	3.6
West Bengal	1101	25.1	51.7	16.4	6.8	112	10.2
Pooled	11923	29.9	45.1	18.1	6.9	442	3.7

Table 38: Distribution (%) of Adult Women (≥ 20 Yrs) according to Type of Hypertension (JNC VII Classification)

STATE	n	Normal	Hypertension			n	% of known HTN
			Pre HTN	Stage I	Stage II		
Kerala	1710	20.1	33.0	28.3	18.5	178	10.4
Tamil Nadu	1681	43.0	38.6	12.4	5.9	55	3.3
Karnataka	1881	37.7	40.5	13.3	8.5	65	3.5
Andhra Pradesh	1898	36.4	40.5	16.4	6.7	91	4.8
Maharashtra	1401	51.1	35.2	9.6	4.1	36	2.6
Gujarat	1796	37.0	52.6	9.4	.9	26	1.4
Madhya Pradesh	1138	50.4	30.9	16.4	2.2	8	0.7
Orissa	1120	20.0	37.6	28.2	14.2	64	5.7
West Bengal	1077	38.3	41.6	13.8	6.3	76	7.1
Pooled	13702	36.9	39.4	16.1	7.5	599	4.4

Normal	SBP <120 mm Hg and/or DBP <80 mm Hg
Pre Hypertension	SBP : 120 –139 mm Hg and/or DBP : 80-90 mm Hg
Stage I HTN	SBP : 140 – 159 mm Hg and/or DBP: 90 – 99 mm Hg
Stage II HTN	SBP : ≥ 160 mm Hg and/or DBP : ≥ 100 mm Hg

Table 39: Distribution (%) of Adult Men by Type of Hypertension (WHO Criteria) by Age group

Category	BP Cut Off levels (mmHg)	Age group (Years)							
		20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n		2823	3194	2533	1696	1123	453	101	11923
Normal	SBP < 140 & DBP < 90	86.4	80.5	73.9	67.5	55.9	54.1	43.6	75.0
Diastolic Hypertension	SBP <140 & DBP >90	6.3	10.8	9.9	8.0	5.4	2.9	2.0	8.3
Systolic Hypertension	SBP >140 & DBP <90	3.5	3.1	4.4	8.1	20.1	28.4	32.6	7.0
Diastolic & Systolic Hypertension	SBP >140 & DBP >90	3.8	5.6	11.8	16.4	18.6	14.8	21.8	9.7
Any HTN		13.6	19.5	26.1	32.5	44.1	46.9	56.4	25.0

Table 40: Distribution (%) of Adult Women by Type of Hypertension (WHO Criteria) by Age group

Category	BP Cut Off levels (mmHg)	Age group (Years)							
		20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n		3604	3934	2947	1761	1028	351	77	13702
Normal	SBP < 140 & DBP < 90	91.0	83.6	72.0	60.3	52.8	40.2	33.8	76.4
Diastolic Hypertension	SBP <140 & DBP >90	4.4	7.1	7.9	4.9	2.8	3.4	2.6	5.8
Systolic Hypertension	SBP >140 & DBP <90	2.4	2.8	5.8	12.8	22.1	32.8	37.8	7.1
Diastolic & Systolic Hypertension	SBP >140 & DBP >90	2.2	6.5	14.3	22.0	22.3	23.6	26.0	10.7
Any HTN		9.0	16.4	28.0	39.7	47.2	59.8	66.2	23.6

Table 41: Distribution (%) of Adult Men according to Type of Hypertension (JNC VII Criteria) by Age group

Category	BP Cut-off levels (mmHg)	Age group (Years)							
		<30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n		2823	3194	2533	1696	1123	453	101	11923
Normal	SBP < 120 and/or DBP < 80	36.0	32.8	30.4	25.0	18.7	19.2	11.9	29.9
Pre Hypertension	SBP :120-139 and/or DBP 80-89	50.3	47.7	43.5	42.5	37.2	34.9	31.7	45.1
Stage I Hypertension	SBP :140-159 and/or DBP 90-99	12.0	16.3	19.1	22.0	27.2	24.7	24.8	18.1
Stage II Hypertension	SBP ≥ 160 and/or DBP ≥ 100	1.6	3.2	7.0	10.6	16.8	21.2	31.7	6.9
Stage I + II Hypertension	SBP ≥ 140 and/or DBP ≥ 90	13.6	19.5	26.1	32.6	44.0	45.9	56.5	25.0

Table 42: Distribution (%) of Adult Women according to Type of Hypertension (JNC VII Criteria) by Age group

Category	BP Cut-off levels (mmHg)	Age group (Years)							
		<30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n		3604	3934	2947	1761	1028	351	77	13702
Normal	SBP < 120 and/or DBP < 80	52.2	42.2	31.3	21.1	17.0	12.3	6.5	36.9
Pre Hypertension	SBP :120-139 and/or DBP 80-89	38.8	41.4	40.7	39.1	35.8	27.9	27.3	39.4
Stage I Hypertension	SBP :140-159 and/or DBP 90-99	7.7	12.9	20.3	24.9	24.7	31.1	33.8	16.1
Stage II Hypertension	SBP ≥ 160 and/or DBP ≥ 100	1.2	3.6	7.7	14.8	22.5	28.8	32.5	7.5
Stage I + II Hypertension	SBP ≥ 140 and/or DBP ≥ 90	8.9	16.5	28	39.7	47.2	59.9	66.3	23.6

Table 43: Distribution (%) of Adult Men (≥20 Years) according to HTN and Risk factors

STATE	n	Hypertension	Overweight/ Obesity (BMI)	Abdominal Adiposity	
				Waist Circ.	Waist hip ratio
Kerala	872	50.9	15.3	0.9	40.4
Tamil Nadu	1292	17.9	11.8	1.6	39.0
Karnataka	1382	20.0	7.5	1.3	24.8
Andhra Pradesh	1767	21.2	10.1	2.0	20.4
Maharashtra	1517	31.5	8.7	1.2	22.0
Gujarat	1501	14.3	10.1	.9	22.2
Madhya Pradesh	1186	17.6	3.1	.7	10.1
Orissa	1109	40.8	4.2	.5	28.0
West Bengal	1096	23.3	5.0	.4	20.4
Pooled	11722	25.0	8.5	1.1	24.6

Table 44: Distribution (%) of Adult Women (≥20 Years) according to HTN and Risk factors

STATE	n	Hypertension	Overweight/ Obesity (BMI)	Abdominal Adiposity	
				Waist Circ.	Waist hip ratio
Kerala	1690	46.6	26.0	20.0	91.8
Tamil Nadu	1671	18.4	16.9	7.5	76.3
Karnataka	1848	21.7	9.6	4.7	55.9
Andhra Pradesh	1883	23.0	13.0	6.0	74.7
Maharashtra	1383	13.5	10.4	3.7	36.7
Gujarat	1757	10.1	13.3	5.7	80.9
Madhya Pradesh	1123	18.4	5.3	5.7	82.8
Orissa	1093	42.3	5.1	.6	44.1
West Bengal	1072	20.1	7.4	2.1	68.5
Pooled	13520	23.5	12.7	6.7	69.1

Table 45: Distribution (%) of Adult Men according to Fasting Blood glucose levels– Andhra Pradesh

Category	Fasting Blood Glucose	Age group (Years)							
		20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
Mean Age		24.4	33.9	43.6	53.4	62.7	72.2	82.9	40.7
n		478	447	326	279	203	53	17	1803
Normoglycemia	< 110	99.2	97.8	91.4	88.2	87.7	86.8	94.1	94.0
Impaired Fasting Glucose	110 - 126	.4	1.1	1.8	2.9	4.4	3.8	.0	1.8
Diabetes Mellitus	≥ 126	.4	1.1	6.7	9.0	7.9	9.4	5.9	4.2

Table 46: Distribution (%) of Adult Women according to Fasting Blood glucose levels– Andhra Pradesh

Category	Fasting Blood Glucose	Age group (Years)							
		20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
Mean Age		24.4	34.3	43.9	53.3	62.6	71.7	81.2	39.4
N		544	474	403	250	146	52	14	1883
Normoglycemia	< 110	98.5	97.7	95.3	89.6	82.9	84.6	85.7	94.7
Impaired Fasting Glucose	110 - 126	1.1	1.5	3.0	4.0	4.8	5.8	7.1	2.4
Diabetes Mellitus	≥ 126	.4	.8	1.7	6.4	12.3	9.6	7.1	2.8

* ICMR-WHO Guide lines for Management of Type II Diabetes 2003.

Table 47: **Distribution (%) of Adult Men According to their Knowledge and Practices about Hypertension, Diabetes and consumption of Tobacco, Alcoholic Beverages**

Variables	Age group (Years)							
	20-30	**30-40**	**40-50**	**50-60**	**60-70**	**70-80**	**≥ 80**	**Pooled**
n	2826	3195	2534	1698	1123	453	101	11930
Aware of hypertension (%)	65.8	66.9	66.8	68.8	65.5	63.8	51.5	66.5
Previous history of hypertension (%)	.9	1.5	3.1	6.8	9.8	11.7	12.9	3.7
On treatment for hypertension (%)	.2	.4	1.7	4.6	6.7	8.6	10.9	2.2
Aware of Diabetes Mellitus (%)	57.6	56.1	55.8	57.7	55.7	51.4	40.6	56.3
Previous history of diabetes (%)	.1	.3	2.0	3.8	5.9	6.4	2.0	1.9
On treatment for Diabetes (%)	0	.2	1.6	3.4	5.2	5.7	2.0	1.6
Smoke Tobacco (%)	38.7	55.6	62.5	63.3	61.6	56.7	44.6	54.7
Smoking 10 Cigarettes/ Cigars, beedies */day (%)*	40.8	53.6	56.4	52.7	48.6	46.8	38.1	51.7
Duration of Smoking ≥ 10 years (%)	32.4	64.5	81.4	91.7	93.0	95.2	90.5	74.6
Use Tobacco snuff (%)	0.8	1.1	2.3	3.5	2.5	4.6	3.0	1.9
Duration of Tobacco Snuffing ≥ 10 years (%)	33.3	50.0	70.7	69.0	85.7	68.2	100.0	65.1
Tobacco chewing (%)	25.1	30.1	29.4	25.6	28.7	29.6	25.7	27.9
Duration of Tobacco chewing ≥ 10 years (%)	19.2	42.5	70.8	78.0	84.1	89.6	84.6	54.7
Consume Alcoholic Beverages (%)	24.2	36.7	36.7	31.3	25.9	19.4	9.9	31.1
Consume Alcoholic Beverages (daily) (%)	1.3	3.8	5.1	5.2	4.4	3.1	3.0	3.7

Table 48: Distribution of Adult Women By their Knowledge and Practices about Hypertension, Diabetes and consumption of Tobacco, Alcoholic Beverages

Variables	Age group (Years)							
	20-30	30-40	40-50	50-60	60-70	70-80	≥ 80	Pooled
n	3606	3937	2949	1761	1028	353	77	13711
Aware of hypertension (%)	62.9	61.6	58.2	63.5	55.0	49.0	41.6	60.5
Previous history of hypertension (%)	.7	1.5	4.0	10.6	13.4	17.0	16.9	4.4
On treatment for hypertension (%)	.1	.8	2.5	6.9	10.4	15.3	15.6	3.0
Aware of Diabetes Mellitus (%)	51.6	50.6	45.8	49.6	42.8	38.8	26.0	48.7
Previous history of diabetes (%)	.1	.2	.8	3.6	4.5	5.9	5.2	1.2
On treatment for Diabetes (%)	.1	.2	.8	3.1	3.6	5.7	5.2	1.1
Smoke Tobacco (%)	6.8	14.4	21.5	30.2	31.7	35.7	35.1	17.9
Smoking 10 Cigarettes/ Cigars, beedies */day (%)*	36.4	15.2	28.6	32.1	31.8	14.3	33.3	26.0
Duration of Smoking ≥ 10 years (%)	75.0	61.3	78.1	84.6	95.2	92.9	100.0	80.0
Use Tobacco snuff (%)	0.6	2.2	3.4	3.7	3.4	4.2	2.6	2.4
Duration of Tobacco Snuffing ≥ 10 years (%)	14.3	54.7	62.0	76.9	62.9	73.3	50.0	60.5
Tobacco chewing (%)	6.0	11.9	18.3	26.3	26.8	29.2	28.6	15.3
Duration of Tobacco chewing ≥ 10 years (%)	37.3	55.1	65.1	78.9	83.9	89.3	100.0	67.1
Consume Alcoholic Beverages (%)	1.4	2.1	2.5	2.7	1.8	3.1	.0	2.0
Consume Alcoholic Beverages (daily) (%)	.1	.1	.1	.1	.4	.3	.0	.1

Table 49: Distribution (%) of Adults (≥ 20 years) according to their knowledge about symptoms of Hypertension

Variable	Men	Women
n	**7935**	**8300**
Do not Know	41.4	43.4
Head ache	17.0	14.3
Nausea/vomiting	5.0	5.3
Giddiness	41.1	42.5
Palpitation	16.1	14.4
Others	16.8	10.7

* Multiple responses

Table 50: Distribution (%) of Adults (≥ 20 years) according to their Knowledge about symptoms of Diabetes

Variable	Men	Women
n	**6715**	**6675**
Do not Know	54.0	56.1
Polydypsia	3.9	2.8
Polyphagia	4.0	2.9
Polyurea	11.7	7.4
Loss of weight	9.0	5.2
Tiredness	19.8	18.7
Delay in wound healing	26.4	22.0
Others	6.7	6.5

* Multiple responses

Table 51: Prevalence (%) of Hypertension, Diabetes, Overweight/ Obesity and WHR among Men by Household Socio-Economic Variables and Exercise, use of Tobacco/ Alcohol

Socio Economic Particulars		Hypertension			Diabetes			Overweight/ Obesity (BMI≥23)		Waist Hip Ratio	
		n	%	χ^2	n	%	χ^2	%	χ^2		
Religion	Hindu	10654	24.4	104.3 p<0.001	1751	6.1	2.4 NS	18.1	39.6 p<0.001	24.2	54.8 p<0.001
	Muslim	777	27.4		37	0		21.8		26.3	
	Christian	243	39.1		15	6.7		32.2		43.2	
	Others	249	28.1		0	0		14.6		17.3	
Community	ST	1197	23.3	42.3 p<0.001	51	3.9	4.9 NS	11.3	141.9 p<0.001	15.9	85.6 p<0.001
	SC	2611	23.4		399	4.5		13.3		21.5	
	OBC	4317	25.8		867	5.8		19.7		27.3	
	Others	3798	25.8		486	7.8		23.1		26.4	
Occupation	Labourers	4812	21.9	105.4 p<0.001	565	3.2	13.0 p<0.01	11.4	405.2 p<0.001	18.8	252.1 p<0.001
	Cultivators +Artisans	4279	23.8		745	6.7		18.9		24.1	
	Service + Business + Others	2831	32.1		497	8.2		30.1		35.0	
PCI (Rs./ Month)	<300	3189	26.7	12.0 p<0.01	385	3.4	19.5 p<0.01	10.1	544.2 p<0.001	19.6	192.7 p<0.001
	300-600	4125	24.0		693	4.9		14.6		21.5	
	600-900	1973	23.1		309	6.1		21.4		26.4	
	≥ 900	2635	25.9		420	19.5		32.7		34.0	
Family Size	≤ 4	4860	24.6	13.7 p<0.001	823	6.8	1.8 NS	18.9	0.7 NS	25.1	5.6 NS
	5 - 7	5701	25.3		826	5.3		18.2		23.7	
	≥ 8	1362	25.2		154	5.2		18.6		26.4	
Type of House	Kutcha	2656	22.7	35.3 p<0.001	391	3.8	8.5 p<0.05	14.3	175.7 p<0.001	22.1	161.8 p<0.001
	Semi Pucca	7358	24.9		852	5.5		17.2		22.5	
	Pucca	1909	28.6		560	8.2		29.1		36.1	
Literacy Status	Literate	8224	26.6	37.5 p<0.001	957	7.2	5.4 p<0.05	22.3	241.4 p<0.001	27.6	72.0 p<0.001
	Illiterate	3698	21.4		846	4.6		10.2		17.8	
Physical Exercise	Yes	382	35.6	23.6 p<0.001	34	29.4	33.8 p<0.001	41.6	136.5 p<0.001	38.5	41.3 p<0.001
	No	11540	24.7		1769	5.5		17.8		24.1	
Consume Tobacco	Yes	6521	25.8	5.1 p<0.05	775	7.9	8.5 p<0.01	13.9	206.5 p<0.001	23.6	7.0 p<0.01
	No	5401	24.0		1028	4.6		24.2		25.7	
Consume Alcohol	Yes	3707	25.7	1.3 NS	829	5.7	0.3 NS	16.2	19.6 p<0.001	23.9	1.4 NS
	No	8215	24.7		974	6.3		19.6		24.9	

Table 52 : Prevalence (%) of Hypertension, Diabetes, Overweight/ Obesity and WHR among Women by Household Socio-Economic Variables and Exercise, use of Tobacco/ Alcohol

Socio Economic Particulars		Hypertension			Diabetes			Overweight/ Obesity (BMI≥23)		Waist Hip Ratio	
		n	%	χ^2	n	%	χ^2	%	χ^2	%	χ^2
Religion	Hindu	12055	22.6	31.2 p<0.001	1826	5.1	3.4 NS	20.9	201.2 p<0.001	68.1	229.0 p<0.001
	Muslim	1071	30.9		45	11.1		34.7		81.4	
	Christian	340	41.8		12	8.3		44.3		86.8	
	Others	236	18.2		0	0		18.3		39.4	
Community	ST	1291	19.6	8.3 p<0.05	47	0	13.3 p<0.01	11.8	213.1 p<0.001	67.3	58.9 p<0.001
	SC	2808	20.3		395	2.8		16.0		67.2	
	OBC	5225	25.4		915	5.2		25.3		72.9	
	Others	4378	24.9		526	7.6		26.6		66.2	
Occupation	Labourers	5598	20.6	105.7 p<0.001	599	3.2	11.6 p<0.01	16.4	365.0 p<0.001	67.1	76.4 p<0.001
	Cultivators +Artisans	4413	22.5		739	5.3		21.4		66.8	
	Service + Business + Others	3691	29.6		546	7.7		33.3		74.7	
PCI (Rs./ Month)	<300	3669	25.3	20.9 p<0.001	437	4.6	7.6 NS	13.9	518.4 p<0.001	58.6	364.4 p<0.001
	300-600	4694	21.5		728	4.3		19.0		68.2	
	600-900	2227	23.5		316	5.4		25.3		73.9	
	≥ 900	3112	25.0		403	7.9		36.1		79.2	
Family Size	≤ 4	5697	25.1	0.6 NS	826	5.3	0.6 NS	23.9	16.8 p<0.001	71.1	18.7 p<0.001
	5 - 7	6589	22.3		902	5.0		21.0		67.5	
	≥ 8	1416	23.9		155	6.5		24.1		68.4	
Type of House	Kutcha	2940	22.0	20.7 p<0.001	417	4.1	4.2 NS	17.1	293.4 p<0.001	67.8	44.8 p<0.001
	Semi Pucca	8418	22.9		908	4.8		20.8		67.9	
	Pucca	2344	28.2		558	6.8		35.7		74.9	
Literacy Status	Literate	7407	25.6	34.5 p<0.001	677	5.6	0.3 NS	28.8	355.9 p<0.001	71.3	36.3 p<0.001
	Illiterate	6295	21.3		1206	5.1		15.2		66.5	
Physical Exercise	Yes	39	53.8	19.8 p<0.001	4	0.0	0.2 NS	62.2	33.4 p<0.001	84.6	4.4 p<0.05
	No	13663	23.6		1879	5.3		22.4		69.0	
Consume Tobacco	Yes	2456	32.2	122.6 p<0.001	173	4.0	0.6 NS	14.4	111.4 p<0.001	57.9	174.2 p<0.001
	No	11246	21.8		1710	5.4		24.3		71.5	
Consume Alcohol	Yes	281	33.8	16.4 p<0.001	48	6.3	0.1 NS	9.5	27.5 p<0.001	69.4	0.0 NS
	No	13421	23.4		1835	5.2		22.8		69.1	

Table 53: Prevalence (%) of Hypertension among men by Waist Circumference

Category	Cut-off level (Cm)	n	Normal	Hyper-tension
Normal	< 102	11781	75.3	24.7
Abdominal adiposity	≥ 102	134	44.8	55.2
Total		11915	75.0	25.0

χ^2 =65.91: p < 0.001 OR=3.8 (CI: 2.7- 5.3)

Table 54: Prevalence (%) of by hypertension among adult men By Waist Hip Ratio

Category	Cut-off level (WHR)	n	Normal	Hyper-tension
Normal	< 0.95	8987	79.7	20.3
Abdominal adiposity	≥ 0.95	2928	60.4	39.6
Total		11915	75.0	25.0

χ^2 =441.0: p < 0.001 OR=2.6 (CI: 2.4- 2.8)

Table 55: Prevalence (%) of hypertension among Adult men by BMI nutritional Grades

Category	Cut-off level	n	Normal	Hyper-tension
CED	< 18.5	3795	82.0	18.0
Normal	18.5 – 25.0	6937	74.4	25.6
Overweight & Obesity	≥ 25	990	52.0	48.0
Total		11722	75.0	25.0

χ^2 =378.3: p < 0.001 OR=3.1 (CI: 2.7- 3.5)

Table 56: Prevalence (%) of hypertension among Adult women by abdominal adiposity

Category	Cut-off level (Cm)	n	Normal	Hypertension
Normal	< 88	12778	78.6	21.4
Abdominal adiposity	≥ 88	921	44.6	55.4
Total		13699	76.4	23.6

χ^2 =550.7: p < 0.001 OR=4.6 (CI: 4.0- 5.2)

Table 57: Prevalence (%) of hypertension among Adult Women by Abdominal Obesity (WHR)

Category	Cut-off level (WHR)	n	Normal	Hypertension
Normal	< 0.80	4240	85.1	14.9
Abdominal Obesity	≥ 0.80	9459	72.4	27.6
Total		13699	76.4	23.6

χ^2 =258.3: p < 0.001 OR=2.2 (CI: 2.0 - 2.4)

Table 58: Prevalence (%) of hypertension Among Adult Women by BMI nutritional grades

Category	Cut-off level	n	Normal	Hypertension
Chronic energy deficiency	< 18.5	4663	84.3	15.7
Normal	18.5 – 25.0	7135	76.5	23.5
Overweight & Obesity	≥ 25	1717	55.2	44.8
Total		13515	76.5	23.5

χ^2 =588.8: p < 0.001 OR=3.2 (CI: 2.8 – 3.5)

Table 59: Prevalence (%) of Hyperglycemia among Men by abdominal adiposity (WC) : Andhra Pradesh

Category	Cut-off level (Cm)	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
Normal	< 102	1768	94.4	1.6	4.0
Abdominal adiposity	≥ 102	36	72.2	8.3	19.4
Total		1804	94.0	1.8	4.3

χ^2 =30.6: p < 0.001 OR=6.5 (CI: 3.1 – 13.9)

Table 60: Prevalence (%) of Hyperglycemia among Men by abdominal obesity (WHR) : Andhra Pradesh

Category	Cut-off level (WHR)	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
Normal	< 0.95	1433	96.2	1.5	2.4
Abdominal Obesity	≥ 0.95	371	85.4	3.0	11.6
Total		1804	94.0	1.8	4.3

χ^2 =66.0: p < 0.001 OR=4.4 (CI: 2.9 – 6.5)

Table 61: Prevalence (%) of Hyperglycemia among Men by BMI nutritional grades : Andhra Pradesh

Category	Cut-off level	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
CED	< 18.5	559	95.7	1.4	2.9
Normal	18.5 – 25.0	1024	94.1	1.7	4.2
Over Weight	≥ 25	179	87.7	2.8	9.5
Total		1762	94.0	1.7	4.3

χ^2 =16.3 : p < 0.01 OR=2.5 (CI: 1.5 – 4.2)

Table 62: Prevalence (%) of Hyperglycemia among Women by Abdominal adiposity (WC) : Andhra Pradesh

Category	Cut-off level (Cm)	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
Normal	< 88	1772	95.8	2.1	2.1
Abdominal adiposity	≥ 88	112	76.8	8.9	14.3
Total		1884	94.7	2.5	2.8

χ^2 =79.5: p < 0.001 OR=7.0 (CI: 4.3 – 11.6)

Table 63: Prevalence (%) of Hyperglycemia among Women by abdominal Obesity (WHR) : Andhra Pradesh

Category	Cut-off level (WHR)	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
Normal	< 0.80	476	96.2	2.1	1.7
Abdominal adiposity	≥ 0.80	1408	94.2	2.6	3.2
Total		1884	94.7	2.5	2.8

χ^2 =3.5 : p > 0.05 OR=1.7 (CI: 0.9- 2.8)

Table 64: Prevalence (%) of Hyperglycemia among Women by BMI nutritional grades : Andhra Pradesh

Category	Cut-off level	n	Normal	Hyperglycemia	
				Impaired FBG	Diabetes mellitus
CED	< 18.5	731	96.9	1.5	1.6
Normal	18.5 – 25.0	894	95.3	2.5	2.2
Over Weight	≥ 25	243	86.4	4.9	8.6
Total		1868	94.8	2.4	2.8

χ^2 =44.8: p < 0.001 OR=3.8 (CI: 2.5- 6.0)