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NATIONAL NUTRITION MONITORING BUREAU

Report
for the year 1978

NATIONAL INSTITUTE OF NUTRITION
Indian Council of Medical Research
Hyderabad - 500 007.

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NATIONAL NUTRITION MONITORING BUREAU

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SECTION - I

DIETARY AND NUTRITIONAL STATUS OF POPULATION IN DIFFERENT STATES

C O N T E N T S

FOOD AND NUTRIENT CONSUMPTION PATTERN

In keeping with the alma and objectives of the National Nutrition Monitoring Bureau (Plan of operation, NNMB - 1972), the Central Reference Laboratory at National Institute of Nutrition, Hyderabad and Ten Regional Units of the bureau, one each in the states of Kerala, Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, orissa, West Bengal and Uttar Pradesh, continued to collect data on diet and nutritional status from representative segments of different population groups. Since inception in 1972 the bureau covered a total of 23,309 households under diet surveys and examined 1,37,253 individuals for clinical and anthropometric status till the end of December, 1978. Of the total sample of households covered, 16,081 were from rural areas, and the remaining 7,228 were from urban localities. The sampling procedure adopted in the selection of the households is presented under the section "sampling procedures" of this report.

COVERAGE IN 1978

During the period under report (January to December 1978) a total 3,619 households were covered under diet surveys and 19,107 subjects were examined for nutritional status. Urban-rural distribution of households covered in different states is shown in Table 1. The names of the districts and the period during which they were covered is set out in Table 2. Due to certain practical and administrative difficulties like, unapproachability, absence of the staffmember, breakdown of transport etc., some of the scheduled districts remained either uncovered or partially covered except in the states of Karnataka, Maharashtra and Orissa. The results presented here, pertain to 2,604 rural houses covered for diet and nutrition surveys in ten states. The data pertaining to urban sample is yet to be analysed.

Section I of the report deals with results of analyses of data according to states while in Section II district-wise food and nutrient intake information according to daily per capita income groups has been provided.

SAMPLING PROCEDURES

The main object of statistical sampling is to obtain, as representative a sample of the population as possible, from each State, so that the data collected regarding the dietary intake and nutritional status closely reflect the situation as it exists in the overall population. Due to practical and operational

considerations, it is proposed to cover a total of 400 rural households each year in each State. Out of 400 households. In 320 families food intake is assessed by one day weighment (of raw food) method which in the remaining 80 households, the Individual intake of food la assessed through oral questionnaire (24 hour recall) method of diet survey.

Selection of districts:

A state cannot be considered to be a homogenous group, and it has therefore been decided to cover all districts within each State. There will be marked variations even between districts and the districts will, therefore, be stratified into four categories, based upon the following information at the district level:

(a) Total foodgrains produced per year (making corrections for rural to urban ratio, within each district).

(b) Proportion of area under food crops to total irrigated area.

(c) Proportion of agriculturists to the total number engaged in agriculture (i.e. agriculturists and agricultural labourers).

In each of these three criteria it is assumed that higher the value, higher la the district in the developmental scale. Hence, for each of the criteria, the district with the highest value, is given rank one while the district with the lowest value la given the last rank. After assigning ranks for these three criteria, for each district, the following procedure will be adopted:

(a) The average rank for all three criteria put together for each district will be obtained;

(b) The districts will be grouped into 4 catagories: A, B, C and D based upon the average ranks.

The theoretically obtainable maximum average rank value will be divided into 4 equally spaced groups so that four quarters are obtained.

Example

If the maximum average value is 20, the following four quarters are obtained:

1st Quarter - 1 to 5

2nd Quarter - 6 to 10

3rd Qarter - 11 to 15

4th Quarter - 16 and above

Those districts with ranks between 1 and 5 will be compared as A between 6 and 10 in B, between 11 and 15

In each of these four categories, one third to one sixth the number of districts, depending upon the size of the State, will be selected for study, every year by random sampling procedure. By this procedure, it is expected that all the districts in a State will be covered within 3 to 6 years depending upon the total number of districts in the State. Once all the districts are covered, the second round of survey will start.

Number of households in each district

This is determined by using the following information:

(a) Per cent population in each selected district to the total rural population of the State.

(b) Contribution of each selected district to the total percentage of rural population as obtained in (a).

Example :

If district (A) has 100,000 rural population, and the state has 100,000 rural population, the district's contribution will be 10 %. If three districts are selected, whose combined contribution comes to 25 % of total rural population of the State, then in the district (A) l0/25 x 400 households will be covered i.e. 160 (since it has been decided that 400 households will be covered in the three districts).

Selection of villages:

These households will have to be selected from among the villages in the selected districts. For this purpose, all the villages in each district will be classified into the following three categories, using 1961 district census handbook.

Population below 1000
Population between 1000 - 3000
Population with 3000 and more

Having obtained this classification, the total population in each of the three categories of villages will be estimated. The total number of households to be covered in the district will be distributed among these categories of villages according to the proportion of their respective populatlon. The villages will be selected using systematic sampling procedure within each category. The number of households in each of the three categories of villages his been fixed as 5, 10 and 20 respectively.

Example:

Population in village	delow l000 (A)	1000-3000 (B)	3000 (C)
Number of villages	100	90	10
Average population per village	500	2000	5000
Town population in each category	50000	l80000	50000

The proportion of households to be covered in each category of village will, therefore, be 5 : 18 : 5. If in this particular district, calculations above that 420 households will have to be covered, than 75 households in A, 270 households in B and 75 households in C will have to be covered. Thus, the number of villages to be selected in categories A, B and C will work out to 15, 27 and 4 villages respectively, out of 100, 90 and 10 villlages in that district.

Having fixed 15 out of 100 villages in category A, the selection of villages will be done as follows:

(a) Prepare a list of all these 100 villages (frame)

(b) 15 out of 100 villages will be roughly 1 in 7.

(c) Select a random number between 1 and 7 eg: 4.

(d) village number 4 has been selected.

(e) Go on progressing adding 7 to 4 eg: 11, 18, 25 etc. Villages with these numbers will be selected.

The same procedure will be adopted for the other two categories of villages also.

selection of households within a village

In the selection of the households within each village proper representation must be given to the different segments of the population (Harijans, Low

Income Group, Middle Income Group and High Income Group) to that the pooled estimation based on all the households surveyed gives us reliable information regarding the dietary status of village as a whole. The selection of households will be done by the team on the spot by random sampling after consultation with the village head.

Income status:

About a third (33.4 %) of the households surveyed during the year had an income of less than a rupee per person per day. While nearly an equal number (31.7 %) belonged to the income category of to.1-2 per capita per person. The distribution of households in higher Income categories of Rs. 2-5 and more than 5 was 25.5 % and 9.4 % respectively. The coverage of households by Income categories over the years remained similar.

Pattern of Food & Nutrient consumption

Foodstuffs:

The average daily consumption of foodstuffs in grams per consumption unit (cu) are presented in Table 3.

cereals & Millets

In all the states cereals & millets formed the bulk of the dietaries and their average consumption ranged from 330 g to 700 g per cu per day. Inter state comparisons revealed that the maximum consumption (711 g)

was seen in Karnataka. This is followed by the States of West Bengal (656 g), Oriasa (623 g), Andhra Pradesh (625 g), Madhya Pradesh (542 g), Tamil Nadu (526 g), Maharashtra (467 g), Uttar Pradesh (451 g), Gujarat (413 g) and Kerala (331 g) In descending order.

other Foodstuffs

The consumption pattern of pulses, vegetables (leafy & other), roots and tubers, nuts & oil seeds. fruits and fresh foods, milk, fats and oils, and sugar, did not show any major change.

Nutrients:

Average nutrient intakes (per Cu per day) calculated from the family diet survey data in different states are provided in Table 4.

Proteins:

In all the states except Kerala, the average intake of protein was found to be above the recommended level of 55 g. The maximum average consumption (62 g) was found in Karnataka and minimum (43 g) in Kerala, while in the rest the states it ranged from 59 g to 67 g.

Calories (Kcal):

The average calorie consumption in different states varied from 3000 in Karnataka to 1800 in Kerala. The average intake was found to be above the recommended

level (2400) in the states of Karnataka (3000), West Bengal (2580), Andhra Pradesh (2520), Orissa (2500) and Tamil Nadu (2400) while in Kerala (1800), Maharashtra (2300), Gujarat (2l00), Madhya Pradesh (2200) and Uttar Pradesh (1900), it was found to be below the recommended level of 2400 per Cu per day.

Minerals and Vitamins:

Calcium:

The mean intakes of calcium ranged 274 mg in Madhya Pradesh to 1200 mg in Karnataka. The mean intakes met recommended allowances range (400-500 mg) in all the states except in Madhya Pradesh (270 mg) and
Uttar Pradesh (350).

Iron:

In almost all the states surveyed the mean intakes
of Iron was nearly equal or more than the recommended level of 20 mg per day.

Vitamin A:

In none of the states surveyed the dietaries contained adequate levels (750 /ug) of vitamin A. The lowest mean level of consumption was seen in Madhya Pradssh (84 /ug) and the highest level of about 600 /ug found in dietaries of Gujarat. In other states it ranged from 120 /ug to 500 /ug.

Thiamine:

The highest mean intake (2.6 mg) was seen in Karnataka and the lowest (0.5 mg) in Kerala. Mean intakes in Karnataka (2.6 mg), Maharashtra (2. mg), Gujarat (1.6 mg); Madhya Pradesh (2.0 mg) and uttar Pradesh (1.9 mg) were well above the daily recommended Intakes level of 1.2 mg, while in other states the levels fall below the recommended level.

Riboflavin:

The mean riboflavin intake was found to correspond with the recommended level of 1.3 mg only in the state of Karnataka, in all the other states, it was below the recommended level.

Nicotinic acid:

Mean intake levels of this Vitamin mat the recommended level (16.0 mg) in the states of Uttar Pradesh, West Bengal, Madhya Pradesh, Maharashtra, and Karnataka with Andhra Pradesh and Orissa coming close to the recommended allowance. In other states the mean intake levels were far below the recommended level.

Vitamin C:

Only in the states of West Bengal and Orissa the mean intake levels of vitamin C were well above the recommended figure of 50 mg. In the other states the levels were below 50 mg level with Kerala, Tamil Nadu and Gujarat coming close to the recommended level.

PROTEIN-CALORIE ADEQUACY

At Household level:

Expression of intake figures for protein and calories in terms of "consumption Units" represent the 'average' intake for that particular household. To determine the adequacy or otherwise of intakes of protein and calories the procedure used is as follows:

Households wherein the intakes of proteins and calories fell below the mean - 2 SE of the recommended allowances, were considered as inadequate. All households more thus, classified into different categories of protein-calorie adequacy and inadequacy.

The distribution of the households according to protein-calorie adequacy is presented In Table 5. The proportion of households consuming inadequate amounts of protein and calories showed marked variations between states. The highest proportion of such households was seen in Kerala (48.2%) with the lowest (4.8 %) in Karnataka. In all the states put together about 17 % of households consumed diets which provided inadequate amounts of these two nutrients. The proportion of households whose diets provided adequate calories, without providing adequate protein was quite small (0.5 %) and was seen only in the states of Kerala (1.8 %),

Karnataka (0.3 *%),* Andhra Pradesh (2.3 %) and West Bengal (0.9 *%*). Considering all the states together, 55 % of the total households toll into the category households consuming adequate amounts of protein and calories. The percent of households consuming inadequate amounts of protein was found to be lower (18 %) than those which consumed inadequate calories (44 %). The higher number of households with calorie inadequacy was seen in Kerala (75 %) followed by Utter Pradesh (67 %), Gujarat and Madhya Pradesh (53 %), Maharashtra (44 %), Tamil nadu (37 %*).* Orissa (36 *%),* West Bengal (31 %), Andhra Pradesh (27 %) and Karnataka (17 %).

At individual level:

Using data obtained through oral questionnaire method of diet survey, which provide information on the consumption of nutrients by individuals in a family, individuals were classified into four different categories of adequacy and inadequacy of proteins and calories. Mean -23D of the recommended levels were used as cut-off levels for adequacy or otherwise of consumption of protein/calories and the results are presented in Table 6.

The percent individuals consuming inadequate calories and proteins within the families surveyed ranged from 5 *%* in Karnataka to 39 % in Kerala. Taking all the states together, about 13 % of the individuals are found to consume both these nutrients in inadequate amounts. On the other hand, the per cent of those consuming adequate calories and proteins varied from 9 % in Kerala to 75 % in Karnataka with an average of about 53 % for all states put together. The overall parcent of individuals consuming inadequate
calories (46 *%) was* more than those consuming inadequate amount of proteins (14 %).

These data suggest that the problem of calorie inadequacy is relatively of greater magnitude than that of protein and protein inadequacy was invariably associated with calorie inadequacy.

Table -1

NNMB - Coverage during the year 1978

State	Number of households for diet survey				Individuals covered for nutritional assessment
	Rural		Urban	Total	
	Weighment	Oral			
Kerala	232	58	100	390	1829
Tamil Nadu	288	72	200	560	3095
Karnataka	316	79	200	595	2671
Andhra Pradesh	44	11	250	305	1454
Maharashtra	319	80	50	449	2290
Gujarat	228	57	200	485	2797
Madhya Pradesh	36	9	—	45	294
Orissa	255	64	—	319	1846
West Bengal	106	27	—	133	876
Uttar Pradesh	258	65	15	338	1955
	2,082	522	1,015	3,619	19,107

Table - 2

NNMB - Districts survey during the year 1978

State	Developmental Category			
	B	A	D	C
	January - March	April - June	July - September	October - December
Kerala	Trichur	Ernakulam+	Trivandrum	Malanpuram
Tamil Nadu	Salem	South Arpot	Nilgiris*	Ramnathapuram
Karnataka	Mandya	Bangalore	Bellary	Bijapur
Andhra Pradesh	Mahaboobnagar*	West Godavari+	Adilabad+	Karimnagar+
Maharashtra	Sangli	Pune	Akola	Dhulia
Gujarat	Bhavnagar	Kaira	Vadodara	Junagadh+
Madhya Pradesh	Shivpuri+	Mandla*	Khandwa+	Sehore+
Orissa	Dhenkanal	Koraput	Puri	Sambalpur
West Bengal	West Dinajpur	Bankura+	Hoogly+	Jalpalguri+
Uttar Pradesh	Hardoi*	Agra	Dehradun.	Faizabad

+ Not covered

* Partially covered.

Table-3

NNMB - Average intake of foodstuffs (Gramsper C.U.per day)

	Total cereals and Millets	Pulses	Leafy veg.	Other veg.	Roots and tubers	Nuts and oil seeds	Condi-ments and spices	Other Fruits foods	Fish flesh		Milk	Fats and oils	Sugar and Jaggery
Kerala	331	15	3	53	128	46	15	6	47	4	34	2	17
Tamil Nadu	526	41	6	65	39	7	23	41	6	6	110	12	25
Karnataka	711	51	15	27	25	6	30	11	-	1	109	7	31
Andhra Pradesh	615	24	3	24	33	1	17	26	5	9	26	10	7
Maharashtra	467	45	10	36	22	5	16	13	1	3	100	15	42
Gujarat	413	29	10	64	46	1	4	45	*	1	180	22	37
Madhya Pradesh	542	51	1	65	35	1	4	1	-	-	10	5	9
Orisaa	623	40	34	102	54	3	9	24	7	*	8	5	6
West Bengal	656	19	53	79	87	-	2	18	12		21	6	8
Uttar Pradesh	451	45	2	41	84	-	1	6	1	1	63	6	10

* Less than one gram

Table - 4

NNMB - Average intake of nutr[illegible] per consumption unit per day

State	Protein (g)	Calories	Calcium (mg)	Iron (mg)	Vitamin A (ug) Retinol	Thiamine (mg)	Riborlavin (mg)	Nicotinic acid (mg)	Vitamin - C (mg)
[illegible] Pr	43.3	1805	463	18.5	119	[illegible]	0.58	[illegible]	49
[illegible] Nadu	59.2	2411.	659	29.2	259	1.07	0.83	[illegible]	45
[illegible] taka	82.5	3008	1209	49.8	366	[illegible]	1.33	19.1	30
[illegible] Pradesh	59.6	2527	494	28.0	313	[illegible]	0.71	[illegible]	[illegible]
[illegible] shtra	67.2	2295	489	34.7	296	[illegible]	1.02	17.8	[illegible]
[illegible] arat	59.8	2131	551	26.0	594	[illegible]	1.17	[illegible]	[illegible]
Madhya Pradesh	67.4	2160	274	31.6	84	2.06	1.04	21.7	25
Orissa	61.4	2514	519	33.5	403	1.06	0.74	15.2	67
West Bengal	62.6	2584	413	33.8	517	1.05	0.85	18.0	76
Uttar Pradesh	63.1	1956	356	26.5	128	1.94	1.07	20.0	31
Recommended Intake (ICMR, 1968)	55.0	2400	400-500	20.0	750	1.20	1.30	16.0	50

Table -5

NNMB - Percent Distribution of Households According to Protein-Calorie Inadequacy

State	No. of households covered	PI CI	PI CA	PA CI	PA CA	PI	CI
Kerala	228	48.2	1.8	26.8	23.2	50.0	75.0
Tamil Nadu	288	21.9	—	15.3	62.8	21.9	37.2
Karnataka	313	4.8	0.3	13.1	81.8	5.1	17.9
Andhra Pradesh	44	9.1	2.3	18.2	70.4	11.4	27.3
Maharashtra	318	7.9	—	36.2	55.9	7.9	44.0
Gujarat	226	17.2	—	36.3	46.5	17.3	53.5
Madhya Pradesh	36	8.3	—	44.5	47.2	8.3	52.8
Orissa	253	23.3	—	12.7	64.0	23.3	36.0
West Bengal	106	18.9	0.9	12.3	67.9	19.8	31.1
Uttar Pradesh	257	13.6	—	53.7	32.7	.6	67.3
Average		17.4	0.5	26.9	55.2	17.9	44.2

PA - Protein Adequacy PI - Protein Inadequacy

CA - Calorie Adequacy CI - Calorie Inadequacy

Table - 6

NNMB - Percent distribution of individuals according to protein-calorie inadequacy

State	No. of Individuals surveyed	PI CI	PI CA	PA CI	PA CA	PI	CI
Kerala	250	39.2	1.6	50.0	9.2	40.8	89.2
Tamil Nadu	347	11.8	2.3	32.6	53.3	14.1	44.4
Karnataka	494	4.9	0.2	19.8	75.1	5.1	24.7
Andhra Pradesh	52	9.6	-	21.3	69.2	9.6	30.8
Maharashtra	446	8.5	0.2	30.5	60.8	8.7	39.0
Gujarat	249	5.6	0.4	32.1	61.9	6.0	37.7
Madhya Pradesh	61	6.6	—	42.6	50.8	6.6	49.2
Orissa	324	24.1	0.3	23.2	52.4	24.4	47.3
West Bengal	153	11.1	—	38.6	50.3	11.1	49.7
Uttar Pradesh	328	8.2	1.2	41.5	49.1	9.4	49.7
Average		13.0	0.6	33.2	53.2	13.6	46.2

Of the total 35,427 subjects examined during the years 1977 and 1978 for the presence of nutritional deficiency signs 1,110 were inf. i, (below 1 year) 4,713 pre-schooler children (1-9 years), 7,401 were children between the ages of 5 and 12 years and the rest belonged to 12 to 21 years and above 21 years (adults) age group. The state-wise prevalence figures of different nutritional deficiency signs by age groups are provided in Tables-7 to 13.

CLINICAL SIGNS

The pattern of nutritional deficiency signs, in general, was found to be essentially similar to that observed earlier. Most commonly observed deficiency signs were: Protein Energy Malnutrition (PEM), Vitamin A and B group deficiencies. The signs suggestive of PEM ware seen more frequently in children under 5 years of age while those of vitamin deficiencies, in elder children beyond the age of 5 years with peak prevalence seen in the age group 5 - 1 2 years.

PEM

Clinical cases of marasmus/emaciation and kwashiorkor were seen in all the states. In general, the prevalence of marasmus/emaciation was more than that of kwashiorkor, their percent prevalence ranged from 0.2 to [illegible].

Vitamin deficiency signs:

Prevalence of ocular signs of vitamin A deficiency like xerosis and Bitot spot and oral lesions of B-complex deficiency such as, stomatitis, angular stomatitis, glossitis etc., showed wide variations and ware seen in all the states. The highest prevalence of vitamin A deficiency (7.7%) was seen in the state of Madhya Pradesh where as the maximum prevalence of B-complex deficiency signs was observed in the state of Andhra Pradesh (26.2%).

Dental caries:

Dental caries, though cannot be considered as a nutritional deficiency sign, its 'epidemiological' relationship to the quality of habitually consumed diet by the population, is well common. It's prevalence was seen in all the states. Maximum prevalence was observed in 5-12 years age group. Gujarat had the highest prevalence of 22.7% and the lowest figure of 4.30 was seen in U.P. In all the other states it ranged between 7 to 14%.

Tables 14 to 23 provlae the means and standard deviations of four body measurements viz. weight, weight, arm circumference and fat fold at triceps by age and sex. In general, the values fo- various measurements were lower in females except fat fold values which tended to be higher during adolescents when compared to their male couaterpar'.

Pravalence of undernutrition in preschool of children by weight-for-age criterion:

Weight for age profile of preschool children has often been used to assess the quantum of mal-nutrition in a community. Using the criterion (Gomez's classification), the children (1-5 years) surveyed were classified into four different nutri-tional grades and their state-wise distribution is set out in Tables-24 to 26.

Table-27 provides the standard values of weight-for-age used in classifying the children according to their body weight status. on an average out *77%* of preschool age children were found to differ from 'mild' to 'moderate' degree of growth retardation while about 8% were found to fall in the category of "severe" degree of growth retardation.

remaining [illegible] were found to have 'normal' body weights for age (equal to or more than 90% of standard weight for age). However, in general, girls seemed to fare better than boys in their growth status.

Table-7

NNMB - Percentage prevalence of deficiency signs - Infants

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	37	116	200	62	180	176	43	33	134	129
NAD	100.0	93.1	91.5	93.6	84.4	92.6	86.1	97.0	100.0	80.6
Oedema	--	--	--	--	--	--	--	3.0	--	--
Emaciation	--	--	4.0	--	3.9	1.1	--	--	--	8.5
Marasmus	--	2.6	1.0	1.6	0.6	4.6	4.7	--	--	--
Two or more signs of PCM	--	--	1.0	1.6	7.2	1.1	--	--	--	--
Conj. Xerosis	--	--	--	--	--	--	--	--	--	--
Bitot's spots	--	--	--	--	--	--	--	--	--	--
Total vitamin 'A' deficiency	--	--	--	--	--	--	--	--	--	--
Angular stomatitis	--	0.9	1.0	--	0.6	--	--		--	--
Other B-complex deficiency	--	--	--	--	--	--	--	--	--	--
Total B-complex deficiency	--	0.9	1.0	--	0.6	--	--	--	--	--
Caries	--	--	--	--	--	--	--	--	--	--

Table-8

NNMB - Percentage prevalence of deficiency signs — Preschool children

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	300	531	748	392	615	627	188	235	518	559
NAD	95.7	85.1	72.6	74.2	82.8	85.8	94.7	78.3	87.5	78.7
Oedema	--	--	0.3	1.3	0.7	0.5	--	--	0.4	0.9
Emaciation	--	0.2	5.2	0.5	1.1	1.4	--	--	3.3	3.0
Marasmus	0.7	0.6	0.5	2.3	--	3.4	--	0.9	--	0.7
Two or more signs of PCM	--	0.6	3.2	1.0	5.0	0.8	0.5	--	--	0.4
Conj. Xerosis	0.7	1.3	0.3	0.8	--	0.5	1.6	4.3	0.6	2.9
Bitot's spots	--	3.4	2.0	4.1	0.8	1.1	--	1.3	1.5	2.7
Total vitamin 'A' deficiency	0.7	4.7	2.3	4.9	0.8	1.6	1.6	5.6	2.1	5.6
Angular stomatitis	0.7	6.6	10.2	13.0	0.8	2.4	0.5	7.2	6.2	2.5
Other B-complex deficiency	0.3	--	0.1	0.3	--	--	--	1.3	1.5	0.2
Total B-complex deficiency	1.0	6.6	10.3	13.3	0.8	2.4	0.5	8.5	7.7	2.7
Caries	0.7	1.3	1.7	--	--	1.1	--	1.3	0.6	1.3

Table-9

NNMB - Percentage prevalence of deficiency signs -- 5-12 years

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	497	763	1268	722	1031	893	248	380	847	772
NAD	73.6	67.0	61.3	62.6	79.2	64.4	77.8	50.0	73.0	72.7
Oedema	--	--	0.1	--	--	0.1	--	--	--	--
Emaciation	--	--	0.2	--	0.4	0.2	--	1.6	1.7	0.1
Marasmus	--	--	--	--	--	0.1	--	--	--	--
Two or more signs of PCM	--	--	--	--	--	0.1	3.6	--	--	--
Conj. Xerosis	3.4	3.0	1.3	1.3	0.2	2.1	--	5.5	1.4	7.8
Bitot's spots	1.4	5.6	4.1	5.1	3.3	4.2	7.7	1.6	2.0	4.3
Total Vitamin 'A' deficiency	4.8	8.6	5.4	6.4	3.5	6.3	7.7	7.1	3.4	12.1
Angular stomatitis	8.7	11.1	19.5	25.9	2.6	7.7	--	2[illegible].4	9.5	3.1
Other B-complex deficiency	0.4	1.8	--	0.3	--	0.1	--	1.8	4.1	3.1
Total B-complex deficiency	9.1	12.9	19.5	26.2	2.6	7.8	--	25.2	13.6	6.2
Caries	10.5	13.8	12.6	7.1	11.8	22.7	9.7	9.7	10.4	4.3

Table-10

NNMB - Percentage prevalence of deficiency -signs - 12-21 years Males

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	373	362	703	364	607	609	136	159	421	708
NAD	76.1	76.5	76.4	76.4	85.7	68.3	86.8	61.6	79.1	76.7
Conj. Xerosis	3.8	2.2	0.3	--	0.2	1.6	--	1.9	0.5	5.4
Bitot's spots	2.4	1.9	2.8	3.6	3.3	5.3	5.2	1.9	0.5	3.3
Total vitamin 'A' deficiency	6.2	4.1	3.1	3.6	3.5	6.9	5.2	3.8	1.0	8.7
Angular stomatitis	9.1	8.6	7.5	14.0	1.2	7.1	0.7	14.5	6.4	2.0
Other B-complex deficiency	2.1	4.1	0.1	0.8	--	--	--	3.1	6.2	2.4
Total B-complex deficiency	11.2	12.7	7.6	14.8	1.2	7.1	0.7	17.6	12.6	4.4
Caries	8.8	8.8	5.4	6.3	5.9	14.9	6.6	1.9	6.2	4.7

Table-11

NUMB - Percentage prevalence of deficiency signs — 12-21 years Females

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	Vest Bengal	Uttar Pradesh
Number	262	374	627	228	463	457	119	177	346	267
NAD	82.5	74.1	70.8	76.8	84.0	73.1	89.9	45.2	82.4	78.7
ConJ. Xerosis	1.1	0.3	0.3	0.9	0.4	0.7	0.8	2.8	—	3.0
Bitot's spots	—	3.2	1.9	1.8	1.9	3.3	1.7	0.6	0.6	1.1
Total vitamin 'A' deficiency	1.1	3.5	2.2	2.7	2.3	4.0	2.5	3.4	0.6	4.1
Anqular atomatitis	9.9	4.6	5.4	10.5	1.1	5.0	0.8	14.7	7.5	--
Other B-complex deficiency	1.1	4.3	—	1.3	0.2	··	--	3.4	5.2	4.9
Total B-complex deficiency	11.0	8.9	5.4	11.8	1.3	5.0	0.8	18.1	12.7	4.9
Caries	7.3	8.0	4.0	5.7	2.6	16.0	5.0	6.2	4.6	3.0

Table-12

NNMB - Percentage prevalence of deficiency sicns in adult (21 years and above)-males

State	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	342	807	1163	696	991	894	288	401	733	816
NAD	87.4	83.0	83.5	84.8	80.7	71.6	90.3	83.0	81.5	71.8
Con). Xerosis	0.6	0.3	-—	—	0.3	0.6	—	0.3	—	0.6
Bitot's spots	—	0.4	0.8	0.4	1.2	1.2	—	0.3	—	1.4
Total vitamin 'A' deficiency	0.6	0.7	0.8	0.4	1.5	1.8	—	0.6	—	2.0
Stomititis	3.8	1.1	1.9	11.0	0.2	2.3	1.0	4.2	2.7	0.3
Other B-Complex deficiency	—	2.7	0.1	2.4	0.1	0.4	-—	1.0	2.9	1.7
Tot ,1 B-Complex defiency	3.8	3.8	2.0	14.2	0.3	2.7	1.0	5.2	5.6	2.0
Caries	3.5	7.9	1.3	0.3	9.2	6.9	7.3	1.0	12.8	0.6

Table-13

NNMB - Percentage prevalence of deficiency signs in adult (21 years and above) females

state	Kerala	Tamil Nadu	Karnataka	Andhra Pradesh	Maharashtra	Gujarat	Madhya Pradesh	Orissa	West Bengal	Uttar Pradesh
Number	563	881	1157	633	997	963	277	408	667	764
NAD	84.4	60.4	41.1	77.4	54.2	47.3	84.5	42.9	69.1	51.8
conj.- xerosis	0.7	-—	—	0.2	0.1	0.2	—	0.3	—	2.9
Bitot's spots	—	0.6	0.6	0.3	l.0	0.7	0.4	0.3	—	0.9
Total vitamin 'A' deficiency	0-7	0.6	0.6	0.5	1.1	0-9	0.4	0.6	---	3.8
Angula stomatitis	5.0	1.9	3.1	10.7	—	3.2	—	5.6	5.4	—
othar B-complex deficiency	1.4	2.7	0.2	0.8	—	0.5	-—-	0.7	5.1	1.8
Total B-complex deficiency	6.4	4.6	3.3	11.5	—	3.7	——	6.3	10.5	1.8
Caries	3.9	7.9	1.2	1.1	6.0	19.0	12.3	1.3	20.7	0.7

Table - 14

NNMB - MEAN ANTHROPOMETRIC MEASURMENTS BY AGE - KERALA

MALES										FEMALES								
	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at tricepe (mm)		Age		Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at tricepe (mm)	
N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.		N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.
34	72.0	4.51	8.2	1.22	13.6	.66	10.4	3.07	01 +	29	69.1	5.67	7.7	1.11	12.9	1.30	9.4	3.51
33	80.8	3.90	10.0	1.20	13.7	1.72	8.9	1.77	02 +	36	77.6	4.60	9.4	1.02	12.8	1.67	8.7	3.50
33	84.5	7.45	10.8	1.83	13.6	1.62	9.4	2.83	03 +	33	86.0	3.79	10.9	1.00	13.7	0.93	10.1	3.73
48	94.1	6.06	12.7	1.76	14.4	1.30	8.8	1.91	04 +	44	92.9	5.49	12.4	1.45	13.9	1.16	10.0	3.08
38	97.8	6.83	13.5	1.99	14.0	1.07	7.5	3.00	05 +	36	100.3	6.97	13.9	2.37	14.1	1.14	8.1	3.05
38	104.4	9.20	15.7	2.74	14.8	1.13	6.4	2.26	06 +	38	102.7	7.79	14.5	2.39	14.0	1.45	6.7	2.05
39	107.3	5.82	16.5	2.77	14.4	1.23	6.8	3.05	07 +	29	111.0	9.00	16.9	3.40	14.7	1.34	6.6	2.56
49	115.0	7.26	18.3	2.97	15.0	1.33	6.6	2.88	08 +	25	115.3	9.30	18.1	2.52	15.0	1.36	7.3	2.88
30	119.0	6.20	19.9	2.46	15.6	1.05	6.6	3.00	09 +	24	119.3	5.09	19.6	2.61	15.3	1.55	6.6	3.10
57	124.3	7.48	21.9	3.31	15.9	2.04	5.9	2.17	10 +	35	124.9	6.41	22.7	3.63	15.8	1.50	6.9	2.56
49	130.4	7.05	23.8	3.31	16.0	1.24	6.2	2.72	11 +	23	126.6	4.56	22.8	2.66	16.8	2.50	8.0	3.05
110	131.8	7.95	24.8	4.04	16.9	1.00	6.3	2.92	12 +	56	133.3	7.30	25.8	5.34	17.1	1.95	6.5	2.30
51	135.7	4.87	27.1	3.57	17.6	1.77	6.8	2.73	13 +	19	136.3	5.65	28.7	5.69	18.8	1.82	7.8	2.44
62	143.2	8.00	31.8	4.76	18.3	1.82	6.8	3.00	14 +	21	142.0	6.66	32.5	6.74	18.9	2.43	8.0	3.77
34	150.0	7.73	35.6	8.23	19.5	2.41	7.1	3.56	15 +	24	141.5	11.13	32.4	6.98	19.6	2.20	9.1	3.30
47	154.5	7.80	39.1	6.22	20.5	1.93	6.1	2.33	16 +	33	146.1	8.15	39.1	7.18	21.1	2.17	8.4	3.58
29	157.8	8.87	44.0	7.89	22.2	2.61	6.1	1.97	17 +	12	149.2	4.25	43.1	4.12	22.4	2.26	11.4	3.18
24	160.2	6.33	45.5	6.14	22.8	1.98	7.4	3.68	18 +	32	149.5	6.13	42.6	4.94	22.3	2.90	10.6	4.32
5	163.4	8.17	46.9	6.20	22.8	1.18	7.4	2.97	19 +	28	150.2	5.55	43.9	7.23	22.6	2.82	10.0	4.46
69	162.4	6.13	49.3	5.83	23.9	1.68	7.0	3.47	20-25	129	149.1	5.93	41.8	5.45	21.9	2.02	8.7	3.63
58	163.6	6.31	49.8	5.80	24.0	1.95	6.2	2.50	25-30	105	149.7	5.38	42.6	5.22	22.3	2.16	9.2	3.65
38	160.9	7.21	49.6	7.37	24.9	2.16	6.9	2.83	30-35	77	149.5	4.29	43.8	5.55	22.9	2.67	9.7	4.07
35	161.0	5.84	48.2	9.58	23.4	2.54	6.9	4.06	35-40	86	149.4	5.49	43.1	6.54	23.1	2.71	8.7	3.76
45	162.7	6.55	49.2	8.42	23.7	2.25	5.9	3.00	40-45	53	148.7	6.42	40.7	5.55	21.8	2.16	9.2	3.46
29	160.6	7.08	48.2	6.43	23.5	1.65	6.8	3.69	45-50	54	148.1	6.10	42.0	7.70	23.1	2.19	9.4	4.68
26	163.7	3.93	49.8	6.29	23.7	2.73	7.3	2.98	50-55	30	148.9	5.20	43.6	8.30	22.1	2.57	10.7	4.85
16	161.8	6.43	49.9	7.20	23.1	2.49	6.4	3.34	55-60	11	150.3	3.46	43.7	7.61	23.1	2.99	10.4	6.28
40	160.1	6.98	45.8	7.15	22.0	2.26	7.1	3.03	>60	55	147.6	6.61	42.2	7.60	22.4	2.36	8.6	3.51

Table -15

NNMB - MEAN ANTHROPOMITRIC MEASURMENTS BY AGE - TAMIL NADU

MALES										FEMALES								
	Height (cm)		Weight (kg)		Arm circumfe-rence (cm)		Skin fold at triceps (mm)		Age		Height (cm)		Weight (kg)		Arm circumfe-rence (cm)		Skin fold at triceps (mm)	
N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.		N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.
67	73.9	5.71	8.4	1.35	12.1	1.08	7.6	1.91	01 +	49	72.6	4.62	7.7	1.15	11.7	0.97	7.8	1.69
69	81.0	5.36	9.6	1.58	12.3	1.34	7.7	1.76	02 +	69	79.9	5.56	9.3	1.47	12.4	0.96	8.2	2.05
77	86.9	5.62	11.3	1.62	13.0	1.19	8.3	2.27	03 +	68	85.9	6.45	10.3	1.46	12.6	1.12	8.3	2.02
67	96.8	9.75	13.4	5.15	13.3	1.56	7.4	1.94	04 +	63	94.6	5.17	12.5	1.32	13.5	1.03	8.5	2.26
47	100.4	8.41	14.1	1.71	13.3	0.92	6.7	1.42	05 +	56	100.1	4.97	13.4	1.49	13.3	0.96	7.5	1.94
60	105.9	5.91	14.9	1.81	13.8	1.03	6.3	1.61	06 +	49	103.9	5.65	14.3	1.84	13.6	0.94	7.4	2.02
64	109.8	6.06	16.2	1.86	13.6	0.82	6.2	1.53	07 +	52	109.1	5.20	15.8	1.74	13.7	0.85	6.5	1.59
45	116.8	6.04	18.6	2.46	14.1	1.18	5.7	1.58	08 +	54	115.3	5.37	18.0	2.28	14.4	0.95	6.8	2.05
56	120.0	6.28	19.7	2.46	14.6	1.00	5.9	1.31	09 +	49	121.4	7.94	20.2	2.52	15.1	1.04	6.7	1.77
72	124.7	5.87	21.4	2.99	14.9	1.19	5.8	1.46	10 +	50	122.7	5.93	20.6	2.63	15.2	1.12	6.5	1.82
51	129.0	6.34	22.9	3.78	15.5	1.46	6.2	1.65	11 +	58	128.2	7.86	23.1	3.47	15.8	1.11	7.2	1.98
68	133.2	5.75	25.3	3.29	15.9	1.14	5.9	1.70	12 +	50	132.8	7.69	26.3	3.95	16.8	1.57	7.2	2.50
67	137.8	5.36	27.2	2.95	16.4	1.07	6.2	2.12	13 +	51	139.4	7.41	29.5	5.57	17.4	1.83	7.3	2.07
30	144.2	7.79	30.7	4.88	17.3	1.50	6.2	1.70	14 +	41	145.5	7.70	33.8	6.01	18.3	1.79	8.1	3.00
33	147.6	7.25	32.1	4.56	17.2	1.59	5.7	1.11	15 +	46	148.0	6.54	37.7	5.61	19.6	2.03	9.1	2.88
39	151.9	10.28	38.9	7.04	19.3	1.90	5.6	1.39	16 +	42	148.8	6.03	39.5	6.27	20.1	2.48	10.3	3.50
34	161.3	6.14	44.0	5.07	20.3	1.84	6.4	1.63	17 +	31	149.7	5.34	41.4	4.44	21.1	1.28	10.8	2.63
19	158.4	7.45	43.7	6.42	20.6	1.78	5.7	0.93	18 +	31	150.0	4.96	40.6	4.57	20.9	1.73	10.1	2.63
32	162.1	7.00	47.7	5.70	21.6	1.61	6.6	1.86	19 +	35	150.2	4.89	41.8	4.11	21.0	1.65	10.8	3.67
148	161.3	5.92	46.9	5.69	21.8	1.68	6.0	2.20	20-25	168	151.0	5.88	43.1	5.48	21.0	1.73	9.4	3.70
127	162.8	6.08	48.9	7.16	22.1	2.16	6.2	3.07	25-30	192	151.6	5.07	43.4	6.57	21.3	3.18	9.6	4.47
97	161.5	5.73	49.0	6.51	22.4	1.90	6.5	2.50	30-35	129	151.0	5.26	42.6	4.84	21.3	2.57	9.5	4.42
127	162.9	6.25	50.5	7.40	22.9	2.21	6.6	2.59	35-40	123	151.8	5.74	45.5	8.10	21.9	3.44	10.7	5.44
89	162.7	6.24	52.4	9.74	23.2	2.48	7.8	4.67	40-45	70	150.3	5.02	45.4	9.98	21.7	3.74	12.3	7.30
76	163.6	6.03	53.4	10.13	23.3	2.66	7.7	4.81	45-50	87	150.7	4.90	43.8	8.04	21.7	2.85	10.8	5.78
54	163.6	6.58	53.2	9.48	23.8	2.04	7.8	3.58	50-55	36	150.5	5.08	42.4	7.10	21.0	2.18	9.9	5.25
40	161.6	5.59	49.8	9.61	21.9	2.71	7.5	3.39	55-60	50	149.3	5.24	41.2	8.53	20.9	2.46	10.0	5.97
87	161.1	6.77	49.0	9.67	22.1	3.96	7.1	3.08	>60	68	148.7	5.58	40.8	8.28	20.5	2.37	9.3	4.34

Table - 16

[illegible] - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE - KARNATAKA

MALES										FEMALES									
	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)		Age		Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.		N	X̄	S.D.	X̄	S.D.	X̄	S.D.	X̄	S.D.
60	72.9	6.45	8.1	0.97	13.2	1.1.	7.1	1.89	01 +	91	70.9	7.65	7.6	1.52	13.1	1.32	7.1	1.81
91	80.4	5.31	9.4	1.38	13.6	1.18	7.3	1.63	02 +	91	78.4	5.49	8.8	1.39	13.4	1.33	7.3	1.64
107	87.7	5.41	10.9	1.37	14.1	1.37	7.6	1.69	03 +	94	86.1	7.15	10.5	1.75	14.0	1.21	8.1	2.16
109	93.0	5.78	12.2	1.37	14.5	0.91	7.5	1.78	04 +	97	93.1	5.65	12.1	1.66	14.6	1.10	8.3	2.19
98	100.4	5.62	13.7	1.69	14.6	0.91	6.8	1.57	05 +	92	100.7	7.77	13.8	2.02	14.8	1.26	7.5	1.89
104	105.4	5.77	15.1	1.81	14.7	1.05	6.2	1.61	06 +	116	104.8	5.98	14.7	1.90	14.8	1.14	7.2	1.76
89	112.3	7.03	16.9	2.54	14.9	1.18	5.4	1.37	07 +	100	112.1	7.06	17.0	2.73	15.3	1.20	6.4	1.81
117	117.8	6.95	19.0	2.89	15.6	1.18	5.8	1.53	08 +	103	117.8	6.62	18.9	2.61	16.0	1.14	6.3	1.48
72	121.7	6.83	19.9	2.96	15.7	1.69	5.0	1.32	09 +	82	123.0	8.11	20.6	3.89	16.3	1.60	6.4	1.60
110	126.1	7.11	22.1	3.41	16.4	1.31	5.2	1.33	10 +	79	127.5	7.83	22.5	3.71	16.8	1.46	6.4	1.71
97	130.3	8.04	23.6	3.93	16.3	2.20	4.7	1.50	11 +	53	135.0	7.21	26.2	4.14	18.0	1.49	6.7	1.81
121	135.1	8.29	26.0	4.70	17.3	1.48	4.9	1.38	12 +	122	137.7	7.43	28.2	5.23	18.5	1.87	6.9	2.23
72	142.3	9.05	29.9	5.26	18.5	1.74	5.2	1.42	13 +	74	142.8	7.66	31.9	5.46	19.6	2.10	7.0	2.00
83	146.9	8.56	33.9	5.97	19.2	2.25	5.0	1.58	14 +	59	146.9	6.28	35.6	5.60	20.8	2.02	7.9	2.41
60	151.0	9.42	36.4	6.93	20.1	2.34	5.0	1.56	15 +	70	148.9	6.23	38.6	5.62	22.1	2.22	9.1	3.06
72	157.3	7.05	41.9	5.92	22.0	1.85	4.9	1.33	16 +	74	151.6	6.39	41.6	5.61	23.2	2.86	9.4	3.19
73	160.6	5.65	42.9	5.62	22.0	2.01	4.8	1.13	17 +	52	151.6	5.67	42.0	5.35	22.8	1.96	10.2	3.97
105	163.2	5.75	46.2	5.09	23.2	2.02	4.9	1.02	18 +	74	151.9	5.98	42.3	6.08	23.2	2.29	8.9	3.68
52	162.4	8.97	46.2	6.58	23.0	2.09	4.8	1.02	19 +	26	154.1	6.21	44.4	5.99	23.7	1.67	9.7	3.11
172	164.2	5.81	48.7	5.29	24.2	1.87	4.8	1.78	20-25	196	151.5	6.06	42.4	4.94	23.3	2.77	8.6	3.26
145	164.1	6.21	49.8	6.99	24.9	2.13	4.9	2.01	25-30	211	152.2	5.32	43.2	5.40	23.4	2.29	8.0	3.86
164	164.8	6.80	50.8	7.12	24.7	2.32	5.2	2.86	30-35	159	151.7	5.94	43.3	6.31	23.5	2.55	8.2	4.75
163	163.7	6.22	49.4	7.15	24.9	2.52	5.2	2.76	35-40	178	151.2	5.97	43.1	7.80	23.5	2.64	8.0	4.33
141	164.8	6.50	50.8	7.85	24.8	2.27	5.7	2.76	40-45	123	150.2	6.30	41.9	6.56	23.3	2.82	8.2	4.68
125	162.6	6.06	49.4	7.63	24.7	2.31	5.7	2.70	45-50	93	149.8	6.08	41.1	8.01	23.4	2.87	7.9	5.03
101	163.2	5.59	48.4	7.03	24.2	2.42	5.2	2.30	50-55	75	150.1	4.76	41.9	6.99	23.4	2.94	8.6	4.51
62	162.3	6.21	49.5	8.14	24.6	2.78	6.2	3.41	55-60	62	149.5	5.10	39.6	6.33	22.6	2.90	8.1	4.45
156	161.7	7.56	46.7	9.31	23.1	3.05	5.7	2.64	> 60	142	148.4	5.64	39.4	6.64	22.2	2.92	7.2	3.51

Table-17
NNMB - MEAN ANTHROPOMETRIC MEASURMENTS BY AGE - ANDHRA PRADESH

MALES									Age	FEMALES								
N	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)			N	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
	X	S.D.	X	S.D.	X	S.D.	X	S.D.			X	S.D.	X	S.D.	X	S.D.	X	S.D.
31	74.1	7.29	7.8	1.58	12.5	1.18	6.0	1.66	01+	46	72.0	5.60	7.1	1.50	12.6	2.23	5.8	1.89
48	78.0	9.88	9.6	1.67	13.1	1.75	6.8	1.90	02+	38	79.5	5.60	9.6	1.19	13.5	1.69	7.3	1.79
52	87.5	5.51	11.3	1.70	13.7	1.13	6.9	1.80	03+	55	85.0	6.48	10.4	1.73	13.3	1.91	7.5	1.84
65	94.8	6.16	13.0	2.10	13.8	1.87	6.5	1.94	04+	55	94.4	7.20	12.5	1.89	13.9	1.62	7.0	1.70
45	100.5	6.08	13.7	2.03	13.6	1.14	5.9	1.73	05+	42	99.8	6.66	14.0	1.57	13.7	1.48	6.3	1.92
47	108.4	6.34	16.3	2.51	14.1	1.24	5.1	1.36	06+	46	106.2	6.70	15.5	2.15	14.3	1.26	6.2	1.53
67	113.1	5.06	17.6	2.19	14.6	1.14	5.3	1.60	07+	54	112.6	6.09	17.3	2.54	14.2	1.08	5.8	1.72
79	117.1	7.08	18.6	2.36	14.5	1.02	4.9	1.64	08+	53	117.2	7.12	18.6	2.81	15.0	1.49	6.0	1.77
57	121.3	6.29	20.4	2.94	15.1	1.36	5.3	1.60	09+	37	123.0	7.20	21.2	3.61	15.9	1.87	6.1	1.96
61	125.6	7.47	21.8	3.08	15.5	1.18	5.0	1.66	10+	65	127.3	7.64	22.9	4.11	16.1	1.57	5.8	2.07
33	129.5	7.43	23.6	2.99	16.0	1.20	4.7	1.19	11+	36	133.5	6.66	26.2	2.97	16.9	1.76	6.0	1.74
96	135.0	7.84	26.2	3.79	16.8	2.08	5.1	1.53	12+	35	136.8	7.36	28.0	4.87	17.4	2.00	6.2	1.77
30	142.2	8.65	30.3	6.94	17.5	1.96	5.0	1.25	13+	23	142.9	7.12	32.3	4.50	19.1	1.32	7.3	2.17
48	148.2	7.66	34.3	5.99	18.8	1.92	5.0	1.37	14+	30	145.7	5.15	34.7	4.52	20.0	1.63	6.6	2.06
30	151.6	9.45	36.5	6.79	19.6	2.15	4.8	1.30	15+	22	149.9	6.00	38.5	5.33	21.1	2.16	8.0	3.05
33	158.5	5.87	40.6	4.69	20.6	1.67	4.8	1.27	16+	23	149.6	5.50	39.9	5.21	21.1	2.35	8.3	1.78
22	160.2	7.37	43.8	5.85	21.4	1.70	5.3	1.55	17+	19	150.6	6.77	39.7	6.90	21.6	2.40	7.9	2.10
47	161.1	5.58	45.7	5.32	22.3	1.73	5.1	1.81	18+	34	149.9	7.54	43.1	6.12	22.4	2.44	8.5	2.70
20	164.3	5.49	47.6	5.13	22.5	1.35	5.3	1.06	19+	10	149.8	4.74	39.0	4.29	21.3	1.29	7.4	2.29
100	162.1	5.82	47.8	5.74	23.0	2.30	5.0	1.58	20-25	104	150.9	5.90	42.9	5.96	22.3	3.12	8.0	3.25
96	153.4	6.19	49.5	6.49	23.4	2.20	5.1	1.57	25-30	104	151.3	5.96	43.0	6.65	21.9	2.10	7.5	2.82
99	163.1	6.88	50.5	8.89	23.7	2.54	5.1	1.80	30-35	122	150.8	5.77	42.1	7.51	22.1	2.84	7.0	3.02
122	163.1	6.17	49.4	7.90	23.5	1.95	5.2	3.60	35-40	115	150.9	5.39	43.3	7.45	22.4	3.13	7.5	3.34
103	162.9	5.59	50.0	10.21	23.5	2.44	5.4	2.31	40-45	68	150.8	4.75	44.2	9.65	23.2	3.28	8.4	3.82
79	162.1	8.40	49.1	7.96	23.3	3.14	5.6	2.13	45-50	53	151.3	7.35	44.2	9.23	22.5	3.26	8.1	3.78
52	162.1	6.96	52.0	10.81	23.9	2.70	6.0	3.07	50-55	37	150.7	4.41	44.0	7.54	22.7	2.63	8.1	3.31
32	161.1	6.32	50.2	10.65	23.1	3.26	5.9	2.27	55-60	24	152.1	6.28	41.4	5.86	21.9	2.34	6.9	2.20
51	162.4	7.82	48.6	8.12	22.4	2.56	6.2	2.20	≥ 60	38	148.2	6.07	40.7	8.44	21.3	3.07	6.7	2.84

Table - 18

NNMB - MEAN ANTHROPOMRIC MEASUREMENTS BY AGE - MAHARASHTRA

MALES								Age	FEMALES							
	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)			Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
N	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.		N	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
61	73.6	8.48	8.1	1.23	13.4	1.17	7.9	2.38	01 +	45	72.3	4.62	7.9	1.37	13.2	1.25	9.1	2.77
66	77.7	5.28	9.4	2.01	13.9	2.68	8.6	2.22	02 +	60	76.7	5.37	8.7	1.28	13.4	1.13	8.8	2.18
88	85.3	6.01	10.7	1.46	13.9	1.04	8.9	2.22	03 +	92	82.5	5.63	10.0	1.43	13.8	1.17	9.4	2.37
111	91.2	7.17	11.8	1.82	14.3	2.69	8.3	2.38	04 +	91	89.7	6.95	11.5	1.88	14.0	1.11	9.4	1.95
87	100.4	6.03	14.0	1.73	14.8	1.00	7.7	1.97	05 +	47	96.5	7.18	13.7	1.67	14.5	1.26	8.2	2.30
83	103.2	8.70	14.7	2.35	14.2	0.89	6.8	2.07	06 +	77	104.4	8.15	14.9	2.43	14.6	1.13	7.3	2.16
75	108.5	6.42	15.8	2.95	14.5	1.15	6.3	2.35	07 +	83	109.7	6.06	16.1	2.26	14.9	1.46	6.7	2.01
80	115.9	7.42	18.0	2.81	14.9	1.25	5.3	1.76	08 +	80	113.5	9.12	17.1	3.56	15.1	1.14	6.7	2.30
57	119.2	6.46	19.4	3.70	15.2	1.25	5.6	1.86	09 +	67	119.3	7.34	19.2	3.07	15.7	1.73	6.5	2.28
105	126.9	9.21	22.2	4.51	15.9	1.67	5.4	1.60	10 +	89	124.1	7.53	21.1	4.04	16.2	1.53	6.9	1.97
58	130.1	8.68	23.7	3.79	16.4	1.41	5.5	1.55	11 +	54	130.8	9.02	24.4	4.77	17.2	1.57	6.9	2.08
109	135.2	8.75	26.1	4.74	17.1	2.15	5.2	1.56	12 +	91	134.3	8.98	26.6	5.05	17.8	1.90	6.8	2.38
55	139.0	9.79	27.9	5.73	17.3	2.03	5.5	2.04	13 +	39	139.1	9.25	29.5	5.20	18.4	1.84	7.5	2.64
77	145.1	9.28	31.9	6.15	18.4	1.81	5.6	1.73	14 +	62	147.0	6.88	35.0	5.67	20.0	2.34	9.0	2.74
43	153.6	9.22	37.6	6.42	20.0	1.98	6.1	2.13	15 +	30	147.9	6.76	37.9	7.12	21.3	2.58	10.0	3.92
64	154.9	7.36	39.8	6.89	20.6	2.68	5.7	1.95	16 +	40	149.7	6.56	39.7	5.08	21.9	2.10	10.8	3.27
51	161.2	5.31	43.3	4.16	21.5	1.58	5.8	2.25	17 +	41	148.4	5.93	38.9	4.48	21.5	1.69	10.0	3.40
79	160.8	6.34	45.3	5.59	22.4	2.15	5.9	2.30	18 +	67	151.0	5.70	42.1	5.53	22.7	2.07	11.0	3.73
53	161.4	4.82	46.2	3.68	22.8	1.47	5.4	1.62	19 +	19	150.0	5.66	41.9	6.66	22.7	2.34	10.4	4.17
179	163.2	6.68	48.0	6.32	23.7	1.93	6.1	2.80	20–25	155	152.1	5.96	42.9	5.91	22.9	2.57	10.7	4.76
125	163.8	5.75	49.7	6.20	24.1	2.02	6.6	3.65	25–30	185	150.0	5.75	42.0	5.56	22.6	2.19	9.4	3.77
133	163.3	6.60	49.7	7.80	23.9	2.56	7.0	4.30	30–35	170	150.1	6.01	41.1	5.39	22.6	2.07	9.5	4.06
158	162.3	7.15	50.4	9.74	24.2	2.62	7.2	4.83	35–40	141	150.0	5.66	42.0	7.13	23.1	2.56	9.8	4.37
105	163.0	5.93	50.7	7.96	24.3	2.73	7.3	3.97	40–45	115	150.6	6.82	42.8	7.47	22.9	2.86	10.0	5.04
113	163.1	5.71	48.0	8.38	23.8	2.60	6.2	3.19	45–50	98	149.9	6.73	43.9	8.68	23.6	3.16	11.1	5.74
71	162.2	7.40	50.4	9.33	24.1	2.80	7.4	3.73	50–55	55	149.3	6.51	41.8	8.89	22.9	3.03	11.7	6.11
60	162.6	7.29	50.0	8.54	24.2	3.30	7.0	3.90	55–60	38	148.0	6.11	41.5	8.12	23.0	3.01	9.9	4.34
113	161.7	6.84	47.8	8.74	22.5	2.79	6.8	3.81	≥60	98	146.3	6.00	38.6	7.90	21.7	2.91	8.5	4.29

Table -19
NNMB - MEAN ANTHROPOMETRIC MEASURMENTS BY AGE - GUJARAT

MALES								Age	FEMALES							
N	Height (cm) X̄	Height (cm) S.D.	Weight (kg) X̄	Weight (kg) S.D.	Arm circumference (cm) X̄	Arm circumference (cm) S.D.	Skin fold at triceps (mm) X̄	Skin fold at triceps (mm) S.D.		N	Height (cm) X̄	Height (cm) S.D.	Weight (kg) X̄	Weight (kg) S.D.	Arm circumference (cm) X̄	Arm circumference (cm) S.D.	Skin fold at triceps (mm) X̄	Skin fold at triceps (mm) S.D.
77	72.7	4.68	7.8	1.42	12.5	1.36	[illegible]	1.97	01+	83	70.5	4.73	7.2	1.41	12.5	1.29	7.9	1.95
61	79.1	4.06	9.3	1.39	13.1	1.12	6.2	2.05	02+	67	77.2	5.06	8.6	1.61	12.9	1.28	8.1	1.81
78	85.6	5.59	10.9	1.69	13.7	1.06	8.4	2.24	03+	69	85.3	5.15	10.5	1.37	13.6	1.16	8.6	1.95
96	92.9	4.80	12.1	1.42	13.8	1.03	7.7	2.06	04+	96	92.3	5.16	12.1	1.92	14.0	1.12	8.2	1.89
47	98.7	6.06	13.4	1.55	13.9	1.11	7.3	1.54	05+	51	99.0	5.13	13.5	1.52	14.2	1.27	7.9	1.87
64	105.1	4.96	14.8	1.76	13.9	1.19	6.1	1.41	06+	73	103.7	5.14	14.4	1.72	14.5	1.16	7.4	2.11
82	110.2	5.21	16.3	1.82	14.3	0.91	6.1	1.31	07+	64	110.3	5.32	15.9	2.33	14.6	1.01	6.6	1.60
76	115.6	5.30	17.9	2.18	14.7	1.02	5.9	1.43	08+	67	115.8	5.54	17.6	2.11	14.8	1.05	6.3	1.48
57	121.3	5.66	19.9	2.43	15.2	0 90	5.5	1.11	09+	48	119.8	5.18	19.5	2.08	15.6	0.91	6.8	1.45
83	123.6	6.17	20.9	2.90	15.7	1.66	6.0	2.08	10+	56	124.9	5.61	20.9	2.81	15.9	1.05	7.1	1.83
56	128.8	7.96	22.8	3.58	15.8	1.21	5.9	1.82	11+	50	130.2	6.15	23.8	3.92	16.6	1.35	6.8	1.79
95	133.2	7.17	25.0	3.77	16.5	1.26	5.9	1.58	12+	56	134.7	5.13	25.8	2.94	17.2	1.27	7.0	1.72
69	137.5	6.74	26.5	4.10	17.0	2.04	6.0	1.88	13+	48	138.4	5.61	27.8	3.35	17.6	1.43	7.6	1.81
69	144.9	6.45	31.1	4.17	18.1	1.44	6.3	1.67	14+	56	144.0	5.77	32.0	4.63	18.9	1.52	7.9	2.44
66	151.3	7.55	35.8	6.08	19.1	1.82	5.8	1.90	15+	45	147.9	5.22	36.1	5.81	20.2	1.98	8.9	2.99
67	157.7	6.36	39.6	6.09	19.8	2.80	5.9	2.15	16+	72	148.4	5.35	38.0	4.08	21.1	1.99	10.2	3.37
47	160.3	5.46	42.9	6.51	21.1	2.23	5.9	3.33	17+	37	150.4	4.77	41.4	5.15	22.2	2.38	11.3	4.59
58	163.0	5.97	45.1	4.61	22.0	1.50	5.4	1.41	18+	60	152.8	4.87	42.6	4.48	22.3	1.92	11.8	3.75
44	162.8	5.34	45.8	6.15	22.2	1.80	6.1	3.56	19+	34	151.7	3.71	42.4	3.83	22.3	1.70	12.6	3.58
179	154.6	5.90	46.2	5.70	22.8	2.09	5.7	2.29	20-25	164	151.2	5.25	43.4	5.46	22.6	2.29	11.5	3.86
126	163.9	6.45	49.7	7.26	23.6	2.18	6.0	2.94	25-30	150	151.4	5.14	43.2	5.88	22.5	2.02	10.6	4.47
106	163.5	5.26	48.5	6.20	23.3	1.90	5.7	2.50	30-35	122	151.2	5.62	42.3	6.36	22.3	2.13	10.3	4.11
124	164.1	5.91	50.2	8.97	23.9	2.65	6.4	3.83	35-40	154	151.0	5.78	43.8	8.80	22.9	2.98	11.4	7.20
114	163.7	6.36	50.8	9.28	23.8	2.50	7.2	4.73	40-45	122	150.8	5.62	43.7	9.11	22.9	2.93	10.8	5.48
131	163.0	5.85	48.6	8.63	23.1	2.55	6.1	3.18	45-50	87	151.1	5.84	44.5	10.03	23.6	3.73	12.5	7.29
51	163.1	5.98	50.8	12.72	23.2	3.40	7.5	5.64	50-55	35	150.4	4.27	44.6	10.21	23.7	3.91	12.4	6.59
37	162.9	5.94	51.1	8.20	23.5	2.02	6.9	2.90	55-60	54	149.5	5.92	43.0	9.41	23.2	3.68	11.9	6.00
120	161.2	5.97	46.5	9.23	22.1	2.81	6.5	3.31	> 60	90	149.3	5.77	40.6	7.26	21.7	2.78	9.4	4.95

Table -20

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE MADHYA PRADESH

Male									Age	Female							
N	Height (Cm)		Weight (Kg)		Arm circumference (cm)		Skin fold at triceps (mm)			N	Height (Cm)		Weight (Kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
	X	S.D.	X	S.D.	X	S.D.	X	S.D.			X	S.D.	X	S.D.	X	S.D.	X	S.D.
20	71.0	6.20	7.9	1.59	12.4	1.39	6.5	1.15	01+	26	69.1	5.99	6.9	1.52	11.7	1.09	7.0	2.06
14	79.6	5.83	9.7	1.33	13.3	1.12	6.7	1.98	02+	14	76.9	6.96	8.7	1.93	12.2	1.24	8.1	1.83
28	84.9	6.08	10.7	1.61	12.8	1.11	6.7	1.82	03+	31	84.1	7.61	9.9	2.30	12.6	1.08	7.4	2.16
27	91.8	8.77	12.3	2.21	13.2	1.37	6.1	1.66	04+	26	92.2	7.81	12.1	2.26	13.4	1.18	7.2	2.21
17	101.6	6.43	14.9	2.08	14.3	1.46	5.5	1.42	05+	15	99.6	7.77	13.2	1.67	13.1	0.77	6.3	1.68
24	106.3	9.35	15.6	3.12	13.8	1.20	5.6	1.73	06+	17	104.2	9.61	14.9	3.38	13.8	2.04	5.9	1.98
25	112.0	8.50	18.6	9.20	15.0	6.17	4.9	1.02	07+	20	112.9	6.60	17.3	2.26	14.7	1.02	5.8	1.16
19	118.0	10.05	20.4	4.92	15.1	1.47	5.4	1.30	08+	15	120.3	8.26	19.3	3.40	15.5	1.37	5.3	1.29
13	127.6	7.58	21.8	2.95	15.3	1.40	5.0	1.13	09+	20	124.1	8.10	21.7	4.55	15.6	1.43	5.5	1.10
27	127.9	8.91	22.6	3.47	15.5	1.18	5.0	1.09	10+	14	124.8	7.39	22.1	3.30	15.5	1.44	5.9	1.27
13	132.3	7.84	25.1	3.45	16.1	2.25	5.3	1.44	11+	9	130.4	6.16	23.0	2.62	16.0	1.87	5.7	0.71
22	135.2	7.58	25.8	4.42	16.6	1.62	5.1	1.19	12+	14	135.4	7.31	29.1	5.84	17.0	1.42	6.1	1.82
17	140.9	9.41	28.5	5.94	17.2	1.92	5.8	1.99	13+	14	141.7	4.43	33.4	4.71	18.2	1.16	5.6	1.22
13	147.3	9.98	31.9	6.95	18.1	1.83	5.5	1.98	14+	16	148.0	4.34	36.5	5.75	20.3	2.16	8.7	3.57
14	157.6	7.82	40.4	7.21	20.0	1.87	5.6	2.06	15+	8	150.0	8.29	40.2	2.61	20.8	2.18	8.1	2.53
10	160.0	4.21	42.8	4.02	20.9	1.47	5.6	1.51	16+	9	151.5	8.24	42.7	8.72	22.0	2.87	9.1	3.66
12	160.9	2.89	44.7	4.18	22.3	1.85	6.3	1.37	17+	13	151.2	5.29	44.9	5.93	21.6	1.48	8.1	1.44
17	161.8	5.70	47.1	6.70	22.5	2.84	5.9	1.73	18+	13	151.0	6.69	45.9	6.57	23.1	2.66	8.2	3.31
6	161.7	3.15	44.7	2.19	23.0	1.97	5.3	1.16	19+	7	148.2	5.81	40.6	4.91	21.5	2.24	7.6	2.37
56	163.0	6.62	49.4	6.47	23.1	2.37	6.0	1.97	20-25	56	150.1	6.01	42.8	6.17	22.0	2.58	7.8	3.41
37	162.6	7.79	49.2	8.03	23.0	2.52	5.5	2.38	25-30	46	150.6	6.81	43.1	5.32	22.0	1.89	7.8	3.18
36	161.2	7.71	47.1	5.74	22.9	1.84	5.9	1.81	30-35	48	151.0	4.89	43.1	4.48	22.4	1.96	8.1	2.91
34	161.1	6.55	47.8	6.23	23.6	2.25	5.3	1.43	35-40	35	151.0	5.43	45.1	6.56	23.0	2.16	7.9	3.79
29	161.4	7.04	49.4	8.94	23.7	2.51	6.4	3.26	40-45	30	151.4	7.00	42.5	6.81	22.2	2.44	8.5	4.12
29	160.0	6.32	48.9	6.53	23.5	2.37	6.1	2.55	45-50	36	152.5	5.06	44.5	8.58	23.5	3.30	9.9	4.11
31	161.5	6.69	47.9	6.68	22.9	2.97	6.2	2.02	50-55	12	148.1	4.47	39.7	4.81	21.8	1.93	8.0	3.91
10	162.4	6.74	43.4	4.22	21.7	1.22	5.1	1.45	55-60	10	149.6	6.12	41.7	5.14	21.9	1.24	8.4	2.92
29	160.6	6.94	45.1	7.09	21.7	2.56	5.6	1.35	⩾ 60	29	148.0	5.75	40.3	4.75	21.1	2.67	7.1	2.03

Table - 21

NNMB - MEAN ANTHROPOMETRIC MEASURMENTS BY AGE - ORISSA

MALES									Age	FEMALES							
	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)				Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
N	X	S.D.	X	S.D.	X	S.D.	X	S.D.		N	X	S.D.	X	S.D.	X	S.D.	X	S.D.
31	70.1	5.08	7.9	1.43	12.9	1.40	7.7	2.31	01 +	17	70.8	7.52	7.7	1.28	13.2	1.03	7.7	1.57
87	79.2	6.32	9.6	1.82	13.6	1.09	8.4	2.06	02 +	27	76.4	5.27	9.1	1.46	13.3	1.26	8.1	2.20
38	86.8	6.30	11.4	1.22	14.0	1.10	8.1	1.89	03 +	28	85.1	5.73	10.9	1.29	14.0	0.84	7.7	2.07
37	94.5	6.86	12.9	2.17	14.3	1.01	7.8	1.47	04 +	25	90.7	8.65	11.9	1.74	13.9	0.92	8.2	2.01
29	99.0	7.77	14.7	2.32	14.7	1.09	7.8	1.61	05 +	34	99.2	5.42	13.7	1.79	14.4	1.10	7.9	1.42
34	106.1	6.72	16.4	2.65	14.2	1.08	6.5	1.94	06 +	29	105.4	9.78	15.4	2.66	14.5	0.89	7.1	1.30
38	112.9	5.31	17.8	2.10	14.7	1.01	6.6	1.97	07 +	23	111.1	6.42	17.3	2.30	15.0	1.15	6.7	1.60
30	116.7	6.90	19.6	3.04	15.5	1.29	7.3	2.54	08 +	39	115.7	7.28	19.3	3.11	15.7	1.47	7.6	2.06
19	118.3	7.10	19.5	3.36	15.5	1.46	6.7	2.33	09 +	20	122.4	6.36	21.7	3.04	16.4	1.60	7.8	2.14
31	127.7	9.12	24.0	5.55	16.6	1.88	7.4	2.28	10 +	31	127.1	10.63	24.0	5.99	16.9	1.96	7.5	2.41
16	130.5	5.41	25.7	3.30	17.2	1.00	8.6	2.42	11 +	16	128.4	6.59	25.1	4.34	17.4	1.39	8.4	3.24
31	133.6	11.21	27.5	4.64	17.6	1.29	7.7	2.65	12 +	25	138.2	7.67	27.8	5.51	17.8	2.16	8.1	2.68
19	138.1	6.65	29.6	4.88	18.0	1.71	7.9	2.50	13 +	13	137.2	10.59	31.2	9.62	18.6	2.85	8.7	3.01
15	147.4	8.78	35.3	6.69	19.3	2.22	7.4	3.38	14 +	24	144.7	6.21	36.7	6.39	20.6	2.28	9.3	2.84
19	145.4	8.72	34.6	6.44	19.6	2.07	8.9	3.25	15 +	22	147.9	5.52	39.5	5.53	21.9	2.01	11.8	3.26
17	155.8	10.29	43.3	7.08	21.9	2.24	10.1	3.71	16 +	19	148.4	4.30	43.1	3.74	23.0	1.64	12.1	3.59
16	160.0	6.64	46.3	5.30	22.0	1.59	9.4	3.46	17 +	13	150.9	5.09	41.9	5.56	22.0	1.84	11.9	1.51
12	156.6	8.36	44.3	5.07	22.4	1.48	11.3	2.67	18 +	19	149.2	5.42	43.3	5.53	22.6	1.86	12.3	4.56
5	160.0	11.09	45.9	7.13	23.4	1.09	6.8	4.32	19 +	11	145.9	7.51	42.9	5.85	23.3	2.36	11.4	3.07
61	158.8	8.89	47.8	7.06	23.9	3.06	9.6	3.82	20-25	74	148.5	5.91	43.3	5.20	22.3	1.89	10.9	3.55
54	160.8	5.64	49.8	5.70	24.1	1.88	9.5	4.78	25-30	65	147.4	5.38	40.9	4.85	22.4	2.15	11.4	3.07
49	161.3	6.43	50.8	6.17	24.7	1.83	10.2	4.65	30-35	58	147.5	5.80	43.1	6.35	22.9	3.27	11.5	4.13
57	159.2	6.79	49.6	5.60	24.6	1.62	9.1	4.32	35-40	44	145.8	4.21	40.8	5.12	22.4	1.91	10.9	2.84
32	157.7	4.99	48.7	6.42	24.4	2.04	10.1	4.17	40-45	54	147.5	5.03	42.2	7.88	23.3	2.81	12.5	5.91
52	159.8	6.54	48.7	5.93	24.3	2.03	8.9	4.10	45-50	40	148.8	5.12	42.4	6.43	23.0	2.11	11.3	4.49
32	159.3	8.10	50.5	7.70	24.7	1.79	10.5	4.73	50-55	25	147.2	4.90	41.7	8.04	23.3	3.09	11.9	3.40
31	157.7	7.56	48.6	10.32	24.0	3.16	9.2	4.45	55-60	30	146.5	5.55	38.6	5.67	21.6	2.13	9.4	2.98
38	159.3	6.99	47.9	7.46	23.5	2.27	8.7	4.11	≥ 60	49	143.3	9.36	37.9	7.32	21.1	2.94	9.4	3.63

Table.22
NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE - WEST BENGAL

MALES									Age	FEMALES								
N	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)			N	Height (cm)		Weight (kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.			$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
64	72.9	3.57	8.0	0.99	12.5	0.94	5.6	1.05	01+	66	70.6	5.20	7.2	1.32	11.9	1.11	5.5	1.13
57	81.9	5.06	9.8	1.50	13.1	1.14	5.3	1.45	02+	50	80.5	6.05	9.1	1.37	12.6	1.02	6.3	1.53
63	89.2	4.79	11.4	1.42	13.4	0.91	6.0	1.17	03+	91	87.4	5.17	11.0	1.42	13.3	0.93	6.3	1.29
66	94.4	5.39	12.4	1.61	13.4	0.99	5.6	1.13	04+	61	93.4	4.76	12.1	1.60	13.5	1.02	5.6	1.11
66	102.4	5.29	14.4	1.90	13.7	0.93	4.8	0.80	05+	61	99.5	4.91	13.4	1.39	13.8	0.86	5.3	1.00
68	105.3	6.66	15.0	2.01	13.9	0.97	4.4	0.87	06+	74	105.3	5.97	14.6	1.81	13.8	0.87	4.7	0.68
49	110.6	5.46	16.3	2.04	14.1	0.92	4.3	0.95	07+	60	110.2	6.72	15.9	2.34	14.2	1.05	4.6	0.85
61	117.2	5.40	18.4	2.11	14.5	0.89	4.0	0.61	08+	79	115.5	4.03	17.8	1.96	14.7	1.03	4.4	0.84
57	120.1	5.57	19.5	1.88	15.0	0.81	4.1	0.66	09+	40	119.3	5.13	18.8	2.39	15.0	0.96	4.4	0.83
55	124.8	7.21	21.4	2.89	15.4	1.02	3.9	0.60	10+	65	124.8	5.23	21.4	2.67	15.7	1.33	4.4	0.93
56	128.8	6.93	22.9	3.10	16.0	1.28	4.1	0.86	11+	57	128.9	7.29	22.9	3.01	16.2	1.18	4.6	0.76
48	132.2	6.98	24.7	3.64	16.3	1.39	4.1	0.71	12+	54	133.4	8.23	26.6	5.01	17.1	1.66	5.0	1.27
51	139.2	8.89	28.2	5.29	17.2	1.61	4.3	0.94	13+	52	139.1	5.98	29.2	4.73	17.9	1.61	5.2	1.43
39	143.0	8.42	30.3	5.34	17.7	1.73	4.4	0.85	14+	50	144.1	7.79	33.0	5.71	18.8	1.90	5.7	2.13
56	150.2	9.55	35.2	6.84	18.8	2.21	4.4	0.79	15+	32	146.2	7.00	35.7	5.45	20.0	1.89	7.0	2.02
54	155.7	7.14	38.7	5.01	20.0	1.67	4.5	0.90	16+	34	148.8	5.51	39.3	5.65	21.1	1.96	6.9	2.14
51	158.1	8.09	42.0	6.36	21.0	1.79	4.7	1.19	17+	38	149.9	7.20	39.3	5.66	21.0	1.75	6.9	1.39
49	160.0	5.57	44.5	5.67	21.9	2.09	4.7	0.85	18+	29	147.1	5.97	40.3	5.20	21.8	2.28	8.0	2.74
40	161.4	7.07	45.7	6.50	22.6	1.83	4.8	0.72	19+	23	151.0	4.65	42.8	5.12	22.0	1.74	7.7	2.37
123	161.6	5.73	47.5	5.97	23.1	2.00	4.8	1.28	20-25	112	149.3	5.60	41.3	5.19	21.3	1.76	6.6	2.33
80	161.2	7.88	48.0	6.41	23.4	2.09	4.9	2.24	25-30	127	148.9	5.36	40.2	5.61	21.2	1.78	6.2	1.93
87	162.2	5.79	48.5	6.55	23.6	1.87	4.7	1.55	30-35	134	149.3	4.46	40.6	5.00	21.3	1.81	6.4	2.13
117	162.0	6.39	48.7	7.15	23.7	1.93	5.1	2.02	35-40	114	148.6	5.37	39.9	6.09	21.3	2.06	6.3	2.49
110	161.1	6.40	46.6	5.77	23.0	1.89	4.6	1.29	40-45	88	147.1	5.76	38.4	6.60	21.0	2.02	5.9	2.44
107	161.5	5.58	47.6	6.84	23.4	2.07	4.9	1.77	45-50	43	147.9	5.64	39.2	5.92	21.2	2.10	6.3	2.13
69	161.2	4.07	46.1	4.79	22.8	1.64	4.6	1.02	50-55	32	146.6	4.50	37.2	5.87	20.8	1.92	5.7	1.86
35	161.9	6.14	48.6	7.13	23.2	2.08	5.1	1.73	55-60	27	146.4	5.03	36.5	5.23	20.7	2.09	5.9	2.49
38	159.8	5.53	43.6	5.89	22.2	2.18	4.7	1.33	>60	22	146.4	3.73	36.1	6.70	19.9	2.59	5.4	2.19

Table #13

NSNH - MEAN ANTHROPOMETRIC MEASUREMENTS OF AGE - UTTAR PRADESH

N	MALES Height (cm)		Weight (Kg)		Arm circumference (cm)		Skin fold at triceps (mm)		Age	FEMALES Height (cm)		Weight (Kg)		Arm circumference (cm)		Skin fold at triceps (mm)	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.		$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
59	73.8	3.68	8.1	1.24	12.5	0.80	6.8	1.56	01+	57	73.3	3.82	8.0	1.20	12.5	0.99	7.1	1.87
89	80.6	3.98	9.9	1.57	13.0	1.15	7.4	2.10	02+	56	80.6	4.32	9.8	1.39	13.0	0.89	7.3	1.90
71	88.6	3.77	11.8	1.28	13.7	0.74	7.3	1.60	03+	69	88.1	4.00	11.3	1.51	13.5	0.83	7.0	1.48
92	95.9	3.30	13.3	1.25	14.1	0.97	6.9	1.35	04+	65	95.2	3.15	12.7	1.37	13.9	0.98	6.9	1.73
73	102.8	3.28	14.7	1.28	14.3	0.95	6.2	1.60	05+	51	102.5	2.73	14.3	1.07	14.5	0.85	6.8	1.50
60	108.2	3.20	16.0	1.25	14.7	0.97	5.9	1.30	06+	59	106.9	3.51	15.8	1.45	14.7	1.38	6.4	1.41
79	114.2	2.89	17.8	1.53	15.4	1.01	5.8	1.35	07+	59	113.5	3.01	17.3	1.44	15.4	1.08	6.0	1.47
83	118.2	3.61	19.6	1.78	15.7	0.94	5.7	1.35	08+	50	117.8	4.59	19.3	2.93	15.7	1.01	5.7	1.39
43	123.8	4.03	21.4	1.88	16.0	0.83	5.3	1.17	09+	43	123.6	3.83	21.1	1.88	16.3	1.13	6.1	1.60
72	127.6	4.23	23.2	2.32	16.3	0.99	5.6	1.08	10+	40	127.6	3.65	23.1	1.79	16.7	0.92	6.3	1.39
30	133.1	4.03	25.4	3.55	16.8	1.47	5.7	1.69	11+	30	133.0	7.21	26.5	3.86	17.2	1.33	6.5	1.50
106	137.7	4.19	27.5	2.54	17.1	0.85	5.3	0.93	12+	45	138.8	4.33	30.1	3.12	18.0	1.23	6.5	1.72
68	143.5	4.13	31.6	2.58	17.5	1.17	5.6	1.10	13+	31	141.8	3.97	32.2	3.39	18.0	1.40	6.8	1.68
86	148.9	5.51	35.6	3.15	18.2	1.37	5.7	0.97	14+	30	147.1	5.80	37.2	5.96	19.9	2.32	8.3	3.80
77	153.3	5.11	39.2	3.21	18.9	1.70	5.3	1.01	15+	25	148.6	5.40	38.9	5.95	20.4	1.98	8.2	2.70
62	157.1	6.14	42.8	4.58	20.3	2.11	5.5	1.26	16+	32	149.0	5.84	39.7	5.38	20.9	2.64	8.5	3.60
64	158.7	4.66	44.4	3.43	21.0	1.68	5.2	0.86	17+	20	148.0	4.25	39.8	3.68	21.1	1.31	7.5	2.89
79	161.9	6.70	46.8	4.74	22.1	1.90	5.2	0.93	18+	24	149.1	6.05	42.0	5.33	22.2	1.88	7.8	2.65
65	162.7	4.80	48.1	3.88	22.6	1.48	5.2	1.38	19+	15	151.2	6.02	47.1	7.26	23.5	2.14	7.9	3.36
175	164.6	5.13	49.6	5.27	23.1	1.91	4.8	1.01	20-25	109	148.7	5.68	42.7	4.57	22.5	1.53	7.9	2.88
94	165.1	6.83	50.9	6.47	23.7	1.90	4.6	0.93	25-30	128	149.1	4.83	43.4	4.61	22.7	1.85	7.5	2.72
111	165.2	5.18	51.2	6.31	23.8	1.92	5.0	1.52	30-35	134	148.8	4.57	43.0	5.86	22.6	2.24	7.1	2.57
116	164.9	6.32	50.9	7.32	23.7	1.88	5.0	1.59	35-40	130	148.2	5.00	41.8	5.13	22.2	1.74	6.6	2.23
113	163.0	6.57	50.0	7.11	23.8	1.82	4.9	1.28	40-45	72	147.8	4.44	42.7	5.96	22.8	2.11	7.5	2.72
77	165.4	5.33	52.7	7.28	24.0	2.26	5.3	1.96	45-50	68	148.7	5.22	43.8	9.44	22.5	2.85	7.7	4.07
61	163.4	5.54	49.3	7.24	23.1	2.18	5.0	1.71	50-55	58	146.6	8.19	39.6	6.25	21.9	2.24	6.9	3.25
55	162.5	7.61	49.4	8.34	23.2	2.45	4.7	1.10	55-60	43	147.6	5.06	40.0	5.13	21.4	1.94	5.8	2.25
113	162.7	5.43	46.6	6.87	21.9	2.34	4.3	1.27	⩾60	64	145.2	6.18	36.7	6.09	20.4	2.69	5.2	2.47

Table-24

NNMB - Percentage distribution of preschool children (l-5 years) according to gomez classification in different states — Boys

State	No. of children	Weight as percentage of standard			
		⩾ 90 Normal	75 - 90 Mild	60 - 75 Moderate	⩽60 Severe
Kerala	152	11.8	42.1	39.5	6.6
Tamil Nadu	281	13.5	38.8	42.4	5.3
Karnataka	375	3.7	42.9	45.9	7.5
[illegible] Pradesh	197	12.2	36.0	38.6	13.2
Maharashtra	327	6.4	35.2	45.3	13.2
Gujarat	312	6.1	33.3	51.3	9.3
Madhya Pradesh	91	8.8	33.0	47.3	11.0
Orissa	133	9.8	45.9	37.6	6.8
West Bengal	250	4.4	31.6	44.0	20.0
Uttar Pradesh	311	10.6	56.9	28.3	4.2
Pooled		8.7	39.6	42.0	9.7

Table-25

NUMB - Percentage distribution of preschool children (1-5 years) according to gomez classification in different states — Girls

State	No, of children	Weight as percentage of standard			
[illegible]rala	148	44.6	[illegible]	13.5	[illegible]
Tamil Nadu	250	16.4	[illegible]	27.2	[illegible]
Karnataka	373	16.1	45.0	32.7	[illegible]
Andhra Pradesh	195	18.5	43.6	31.3	6.7
Maharashtra	288	11.8	39.9	40.6	7.6
Gujarat	315	14.0	41.3	35.6	9.2
Madhya Pradesh	97	14.4	41.2	23.7	20.6
Orissa	102	20.6	51.0	22.6	5.9
West Bengal	268	17.2	47.4	29.5	6.0
Uttar Pradesh	248	29.0	50.4	18.2	2.4
Pooled		20.3	45.3	27.5	7.0

Table-26

NNMB - Percentage distribution of preschool children (1-5 years) according to gamez classification in different states – Pooled

State	No. of children	Weight as percentage of standard			
		≥ 90 Normal	75 - 90 Mild	60 - 75 Moderate	∠60 Severe
Kerala	300	28.0	41.0	26.7	4.3
Tamil Nadu	531	14.9	45.4	35.2	4.5
Karnataka	748	9.9	44.0	39.3	6.8
Andhra Pradesh	392	15.3	39.8	35.0	10.0
Maharashtra	615	8.9	37.4	43.1	10.6
Gujarat	627	10.1	37.3	43.4	9.3
Madhya Pradeah	188	11.7	37.2	35.1	16,0
Orissa	235	14.5	48.1	31.1	6.4
West Bengal	518	11.0	40.0	36.5	12.7
Utter Pradesh	559	18.8	54.0	23.8	3.4
Pooled		14.3	42.4	34.9	8.4

Teble-27

standards for body weights(kg) of preschooleres

Age (Years)	Boys	Girls
1+	10.50	9.80
2+	12.50	11.30
3+	14.75	13.30
4+	17.25	15.65

* Source: NIH study on well-to-do children