NATIONAL NUTRITION MONITORING BUREAU

(Technical Report No. 7)

REPORT FOR THE YEAR 1980

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

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SECTION - I

DIETARY AND NUTRITIONAL STATUS OF POPULATION IN DIFFERENT STATES

NATIONAL NUTRITION MONITORING BUREAU

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C O N T E N T S

The National Nutrition Monitoring Bureau with its Central Reference Laboratory at National Institute of Nutrition, Hyderabad and 10 regional units, 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 information on dietary and nutritional status of representative segment of the population. Since its inception in 1972, till the end of December, 1980, the Bureau covered a total of 31,802 house-holds for dietary surveys and 1,92,362 individuals under clinical and anthropometric study. Statewise coverage of the sample house-holds by location (rural and urban) is presented in Table 1. Table 2 provides the names of the districts covered in different states during the year. Sampling procedure adopted in the selection of the areas is described under the head 'Sampling Procedure' in the appendix 1.

It may be mentioned here that due to certain practical and administrative reasons such as, unapproachability, absence of staff and breakdown of vehicle, the coverage fell short of the target of 500 rural and 250 urban households, as envisaged in plan of operation of NNMB in the states of Kerala, Gujarat, Orissa and U.P. For similar reasons, the surveys could not be conducted in the states of Maharashtra and Madhya Pradesh. These problems were discussed at the Review Meeting of the NNMB held on 27th January, 1981 at New Delhi. In the financial year (1980-81), the Council

provide funds for purchase of four new vehicles, one each for the states of Uttar Pradesh, Madhya Pradesh, Kerala and Karnataka.

Two newly recruited Research Assistants (one from West Bengal and one from Orissa unit) and one A.R.O. (from Gujarat unit) have been trained by CRL during the year.

An Advisory Committee of NNMB was constituted by the Indian. Council of Medical Research (appendix 2). The committee met on 28th January, 1981 at the ICMR office, New Delhi, to examine in detail the sampling procedure and methodology presently followed by the Bureau. A subcommittee was formed to explore the possibility of linking NNMB with National Sample Survey.

In keeping with the suggestions of the Advisory Committee, evaluation of the ongoing Nutrition Programmes, an additional objective of the Bureau was considered important and during the years 1981, evaluation of WFP assisted Supplementary Feeding Programmes (SNP), in the states of Madhya Pradesh, Gujarat, Orissa, West Bengal, Kerala, Rajasthan, Maharashtra, Uttar Pradesh and Bihar has been planned with the help of Dept. of Social Welfare, Govt. of India and respective state governments.

Coverage during 1980: During the year under report, a total of 4664 households (Rural 3098, Urban 1566) have been covered under diet surveys and 33048 individuals examined for their nutritional

status, from eight states (Table 3). Results of the survey data collected in respect of rural households have been analysed and presented in two sections. Section-I provides information at state level, while section-II sets out information on food and nutrient intake at district level.

RESULTS

Income Status: The percentage of households covered according to different income groups is provided in tables 4 and 5. Table 4 gives the coverage according to the income category over the years, while table 5 gives the same across different states for the year 1980. About 33% of the households surveyed in the year 1980 had a daily per capita income of less than Re.1/- while *36%* belonged to the income category of Rs.1 to 2. The coverage of households in higher income categories of Rs. 2 to 5 and more than 5 was 24% and *7%* respectively. The proportion of households covered in different income groups over the years remained more or less similar.

Food and Nutrient Consumption Pattern:

Foodstuffs consumed by the population surveyed are grouped into conventional food groups and their average amounts of consumption per consumption unit per day are presented in table 6.

For the definition of Consumption Unit (CU), please refer Appendix 3.

Cereals and Millets:

Cereals and Millets formed the bulk of the dietaries in all the states. The average consumption of this food group ranged from 375 g in Kerala to 675 g, in Karnataka. In the states of Orissa and West Bengal the consumption was around 600 g, while in Tamil Nadu and Gujarat it was of the order of 475 g. In general, the consumption levels of Cereals and Millets were either comparable or higher than the suggested level of 460 g in the Balanced diet (ICMR 1981);

Pulses:

The highest average level of pulse consumption (62 g) was seen in the state of Karnataka. Its consumption in the states of Kerala and West Bengal was as low as 16 g. In other states, the average consumption of pulses was as follows: Tamil Nadu 28 g, Andhra Pradesh 30 g, Orissa 33 g, Gujarat 37 g and Uttar Pradesh 45 g. In general, these figures fell short of the suggested level of 40 g. (Balanced Diet, ICMR, 1981);

Legfy Vegetables:

Gross inadequate intake of leafy vegetables was observed in all the states. Excepting in the states of Orissa and West Bengal, where the intake levels were 33 and 46 g respectively, in all the other states the average consumption of green leafy vegetables was

found to be less than 10 g.

Other vegetables - Roots and Tubers:

The consumption of other vegetables ranged from 33 g in Karnataka to 140 g in Kerala. The intake of roots and tubers, which were consumed mostly as vegetables (except in some parts of Kerala where they formed part of the staple food), ranged from 21 g in Andhra Pradesh to 150 g in West Bengal.

Nuts and Oil seeds:

Average consumption of Nuts and Oil seeds was found to be maximum in the state of Kerala (73 g) followed by Karnataka (22 g) and Tamil Nadu (10 g). In the remaining states, the mean consumption levels were found to be less than 10 g. In Kerala, coconut (raw and dry) formed the main ingredient of this food group.

Fruits:

Consumption of fruits was found to be relatively better in the states of Kerala, Andhra Pradesh and Orissa (more than 40 g) as compared *to* the other states. Very poor levels of fruit consumption (less than 5 g) was seen in the states of Karnataka and West Bengal.

Flesh Foods::

Average consumption levels of flesh foods like meat, poultry

and fish was of the order of 37 g in Kerala, followed by Tamil Nadu, 25 g; West Bengal, 21 g; A.P.,13 g; Orissa, 12 g; U.P. and Karnataka, 9 grams each. In none of the households surveyed in Gujarat, flesh food formed part of the diet.

Milk:

Average consumption of milk was found to be highest in Gujarat (195 ml) followed by the states of Andhra Pradesh (113 ml), Karnataka (95 ml), Uttar Pradesh (89 ml), Tamil Nadu (75 ml), Kerala (70 ml), West Bengal (53 ml) and Orissa (17 ml), as against the suggested level of 150 g in the Balanced diet (ICMR, 198l).

fats and Oils :

The highest consumption of visible fat and oil was seen in the state of Gujarat (19 g) followed by Andhra Pradesh (17 g) and Tamil Nadu (10 g). In the remaining states, the mean consumption level was less than 10 g.

Sugar and Jaggery :

The mean intake of Sugar and Jaggery ranged from 5 g in Orissa to 35 g in Karnataka.

These observations suggest that the rural dietaries in general, were mainly cereal and millet based with small of protective foods like pulses, milk, fruits, nuts and oil seeds

and varying amounts of vegetables.

Nutrients:

Table 7 gives the average intake of nutrients per CU per day in different states, calculated from the family diet survey data, collected by weighment method.

The appropriate calorie coefficients, suggested by the ICMR Nutrition Expert Committee (Appx-3) for different age, sex, activity and Physiological status groups were used for the analysis, It may be mentioned here that these coefficients are considered valid only for calories. However, in the absence of such information for other nutrients, the same weightages have been used for the other nutrients as well.

Proteins:

The mean protein intake was below the recommended level of 55 g in the states of Kerala and Tamil Nadu, while in the other states, it was above the recommended level. The intake of protein in the adequate group ranged from 57 g in Andhra Pradesh to 79 g in Karnataka.

Calories (Kcal):

The average calorie consumption was found to be more than the recommended level of 2400 in the states of Karnataka (2992),

Orissa (2468) and West Bengal (2580), while in the states of Kerala, Tamil Nadu and Uttar Pradesh, it was below the recommended level - the gap per Cu being of the order of 300 calories. In the states of A.P. and Gujarat, the intake levels were found to be marginally inadequate.

Minerals and Vitamins:

Calcium :

The highest consumption of 1067 mg was seen in the state of Karnataka while lowest of 426 mg in Uttar Pradesh. In all the states, the mean intake corresponded to the recommended allowance of 400-500 mg (ICMR, 1981).

Iron:

In all the states, the mean intake of dietary iron was found to be more than the recommended level of 20.0 mg per day. The maximum intake of 43.9 mg iron was found in the state of Karnataka while the minimum intake of 23.7 mg was seen in Kerala.

Vitamin A :

In none of the states the intake levels corresponded to the recommended level of 750 mcg, The lowest consumption levels were observed in the states of Tamil Nadu, Karnataka and Uttar Pradesh (about 210 mcg), while the maximum consumption was

observed in the state of West Bengal (450 mcg).

Thiamine:

The highest mean intake of 2.2 mg was observed in Karnataka followed by Uttar Pradesh (2.1 rag), Gujarat (1.9 mg), West Bengal (1•1 mg), Tamil Nadu (0.9 mg), Andhra Pradesh (0.9 mg), Orissa (O.8 mg) and Kerala (0.7 mg). Lower than the recommended levels of 1.1 mg were seen in the states of Kerala, Tamil Nadu, Andhra Pradesh, Orissa and West Bengal.

Riboflavin. Nicotinic acid and Vitamin C:

Varying levels of intakes of these vitamins were observed in different states. In none of the states the average intake of riboflavin corresponded to the recommended level of 1.30 mg. In case of Nicotinic acid consumption fell short of the recommendation in the states of Kerala, Tamil Nadu, Andhra Pradesh, Gujarat and Orissa. Similarly, in states of Tamil Nadu, Karnataka. Andhra Pradesh, Gujarat and Uttar Pradesh, the average consumption level of vitamin C fell short of the recommended level of 50 mg. The extent of likely losses of the vitamins due to cooking practices should be taken into account while interpreting these intake levels.

Protein Calorie Adequacy:

To determine the adequacy or otherwise of intake of protein

and calories, the following procedure was used:

Households wherein the intakes of protein and calories fell below the Mean-2 SE of the recommended levels were considered as inadequate. All the households were, thus, classified into different categories of protein-calorie adequacy and inadequacy and the results presented in Table 8,

Marked variation in the proportions of households with inadequate consumption of these nutrients are seen in different states. On an average about 19 percent of the households were found to consume inadequate amounts of proteins, while 39% of households consumed inadequate calories. In all the states, the proportion of households on inadequate calorie intake was found to be consistently more than those consuming inadequate amounts of protein, confirming the earlier observations that the problem of calorie inadequacy is of a larger magnitude than that of protein.

When both the nutrients (calorie and proteins) are considered together, it was seen that about 60% of households were meeting the requirements of both protein and calories, while 19% were not meeting the requirements. Only a negligible (0.8%) proportion of households were found consuming diets that had adequate amounts of calories but inadequate levels of protein.

Protein Calorie adequacy of individuals according to their income status;

Using data obtained through the oral questionnaire method of diet survey which provides information on the consumption of nutrients by individuals in a family, the subjects belonging to different age groups were classified into four categories of adequacy and inadequacy with respect to proteins and calories. Mean-2SD of the recommended levels for the corresponding age, sex and physiological activity status were used as cut-off levels for adequacy of proteins and calories. The results are presented in Table 9.

The extent of protein inadequacy ranged from 3.6% in Uttar Pradesh to 23.7% in Kerala, while calorie inadequacy ranged from 21. 3% in Karnataka to 77. 9% in Kerala. As observed at household level, the extent of inadequacy of calories amongst individuals was found to be more than that of protein.

The percentage distribution of individuals of different age and sex, according to their protein-calorie adequacy status are presented in Tables 10 (a) to 10 (i).

Nutritional Status:

A total of 33048 (Table 3) subjects were examined for the

presence of nutritional deficiency signs and on whom anthropometric measurements were also taken. Of these, 2.8% were infants, 16.2% preschool children (1-5 years), 24.1% school aged children (5-12 years), 24.0% adolescents (12-21 years), and the rest were adults (above 21 years).

Deficiency signs:

The prevalence of nutritional deficiency signs in different states by age groups are presented in tables 11 (a) to 11 (k) In general, the pattern of prevalence of nutritional deficiency signs was found to be similar to that reported in earlier NNMB reports. Most commonly observed nutritional deficiency signs were those of Protein Energy Malnutrition (PEM), Vitamin A and B-complex deficiency and deficiency of essential fatty acids.. The signs of PEM were observed more frequently in children under 5 years of age, while those of Vitamin deficiency in older children of school age, adolescents and adults.

Protein Energy Malnutrition:

Infants:

Of the two major clinical types of PEM, namely, kwashiorkor and marasmus, a few cases of nutritional marasmus/emaciation were seen in the states of Tamil Nadu, Andhra Pradesh, Gujarat and West Bengal, but in none of the states surveyed, cases of kwashiorkor (oedema) were seen.

Pre-school children (1-5 years):

In this age group. unlike in infants, not only both the types of PEM were seen but they were also more widespread. The cases of kwashiorkor were encountered only in the states of Andhra Pradesh (0.*5%)* and Uttar Pradesh (1.3%) while those of emaciation and marasmus were seen in all the states.

Vitamin Deficiencies:

In general, clinical manifestations of vitamin A and B-complex deficiencies were seen more frequently in the older children than in the younger. The prevalence tended to be more in preschool children than in infants and more in school age group than in preschoolers. Adults and adolescents showed wide variations in the prevalence of deficiency signs attributable to these vitamins (Tables ll(f)to 11 (k)).

Eye signs of vitamin A deficiency in infants were seen only in the states of Tamil Nadu, Karnataka and Andhra Pradesh, while in preschool children they were seen in all the states except Kerala. With regards to signs of vitamin B—complex deficiency, infants tended to be free but preschool children, in all the states, showed a varying degree of prevalence. The prevalence of oral lesions attributable to vitamin B complex deficiency ranged from 0.6% in Kerala to 10.4% in Karnataka.

In general, males seemed to suffer more from the signs of vitamin deficiencies than females - an observation similar to that reported earlier.

Dental Carles:

Dental caries, though cannot be considered strictly a nutritional deficiency sign, its epidemiological relationship to the quality of diet consumed by the population is well established. As such, its prevalence was recorded during clinical assessment. A wide variation in the prevalence by age was seen in all the states.

Anthropometry.;

The Mean and Standard Deviation of the body measurements namely, height, weight, arm circumference, fat fold at triceps according to age and sex are presented in tables 12(a)to 12 (p). The values for all the measurements at all ages, were lower as compared to their counterparts in well-to-do segments of population. The growth pattern of the children surveyed during the year was similar to that reported earlier.

Prevalence of under-nutrition in pre-school children:

Underweight for age has been considered as one of the early and objective signs of PEM. In the present survey, the weights of

all the preschool children in different states were expressed as percentage of Standard weights (Indian well-to-do) and grouped into different nutritional grades viz. normal, mild, moderate and severe (Gomez's classification). Results of the analyses are set out in tables 13(a) to 13 (c)

About 15% of children had normal body weights for age and about *5%* showed severe degree of malnutrition. The proportion of children suffering from mild to moderate degrees of malnutrition was found to be 48% and 32% respectively.

Comparison of body weight status for age between boys and girls showed that in general, girls fared better than boys in all the states.

For Standard Weights. (Indian well—to—do), please refer Appendix 3.

Table - 1

NNMB COVERAGE OF DIET AND NUTRITION SURVEY TILL THE END OF DECEMBER, 1980

State	Diet Survey (House holds) Cumulative Coverage			Nutritional Assessment
	Oral	Weighment	Total	
Kerala	1233	2388	3621	20405
Tamilnadu	1244	2227	3471	21415
Karnataka	1463	3008	4471	25967
Andhra Pradesh	1328	2654	3982	26796
Maharashtra	1110	2139	3249	18621
Gujarat	1464	2904	4368	26911
Madhya Pradesh	695	1475	2170	12572
Orissa	323	806	1129	6176
West Bengal	760	1860	2620	16575
Utter Pradesh	784	1937	2721	16924
Total	10404	21398	31802	192362

Table-2

NNMB - RURAL-DISTRICTS SURVEYED DURING THE YEAR 1980

State	Developmental Category			
	January-March	April-June	July-September	October-December
Kerala	Idikki*	Quilon	Cannanore+	Ernakulam+
Tamil Nadu	Kanyakumari	Coimbatore	North Arcot	Chingleput
Karnataka	Hassan	Gulberga	North Kanara	Mysore
Andhra Pradesh	Chittoor	Visakhapatnam	Guntur	Nizamabad
Maharashtra	Buldana+	Bhir+	Ratnagiri+	Sholapur+
Gujarat	Valsad+	Junagadh+	Ahmedabad	Panchmahal
Madhya Pradesh	Dhar+	Narasimhapur+	Guna+	Bastar+
Orissa	Phulbani	Balasore	Kalahandi+	Keonjhar
West Bengal	Hoogly	Jalpaiguri	Burdwan	24 Parganas
Utter Pradesh	Shahranpur+	Fatehpur	Barabanki	Allahabad

+ Not covered - * Partially covered

Table-3

NNMB - COVERAGE DURING THE YEAR 1980

State	NUMBER OF HOUSEHOLDS FOR DIET SURVEY					Individuals Covered For Nutrition Survey
	RURAL		URBAN		Total	
	Weighment	Oral	Weighment	Oral		
Kerala	164	41	43	73	321	1761
Tamil Nadu	400	100	80	120	700	4660
Karnataka	408	102	80	120	710	5019
Andhra Pradesh	396	99	80	120	695	6761
Maharashtra+	-	-	80	120	200	1462
Gujarat	191	47	80	120	438	3239
Madhya Pradesh+	-	-	-	-	-	-
Orissa	280	70	60	90	500	2701
West Bengal	392	98	60	90	640	4643
Utter Pradesh	248	62	60	90	460	2802
Total	2479	619	623	943	4664	33048

+ No survey was carried out.

Table - 4

NNMB- YEARWISE - COVERAGE (%) OF HOUSEHOLDS ACCORDING TO DAILY PER CAPITA INCOME (1975-80)

Year	Income Category			
	Less than Re.1	Rs.1-2	Rs.2-5	Rs. 5 and more
1975	41.6	32.2	20.9	5.3
1976	33.4	34.3	25.2	7.1
1977	32.3	34.5	26.2	7.0
1978	33.2	31.7	25.5	9.6
1979	35.0	35.5	23.3	6.2
1980	32.8	36.5	24.0	6.7

Table - 5

NNMB - STATEWISE - COVERAGE (%) OF HOUSEHOLDS ACCORDING TO DAILY PER CAPITA INCOME GROUP - 1980

State	Sample size	INCOME GROUP			
		< 1	1-2	2-5	>5
Kerala	164	17.7	48.2	31.7	2.4
Tamil Nadu	400	29.8	33.8	29.2	7.2
Karnataka	408	58.3	19.4	15.7	6.6
Andhra Pradesh	396	16.7	38.4	28.8	16.1
Gujarat	188	35.1	29.3	28.7	6.9
Orissa	280	48.6	36.8	12.1	2.5
West Bengal	392	28.6	48.7	19.9	2.8
Uttar Pradesh	247	18.2	44.5	32.4	4.9
Total	2475	32.8	36.5	24.0	6.7

No Survey was carried out in the States of Maharashtra & Madhya Pradesh

Table-6

NNMB - RURAL - AVERAGE INTAKE OF FOODSTUFF (g/CU/DAY) - 1980

State	Cereals and Millets	Pulses	Leafy vege-tables	Other Vege-tables	Roots & Tubers	Nuts & Oil-seeds	Condi-ments & spices	Fruits	Flesh Foods	Other Flesh Foods	Milk	Fats & oils	Sugar Jaggery
Kerala	374	16	5	140	107	73	21	42	35	2	70	3	19
Tamil Nadu	478	28	6	44	71	10	21	16	21	4	75	10	18
Karnataka	675	62	3	33	30	22	21	3	8	*	95	9	34
Andhra Pradesh	544	30	9	47	21	2	18	40	6	7	113	17	10
Maharashtra+	-	-	-	-	-	-	-	-	-	-	-	-	-
Gujarat	481	37	4	58	445	*	5	27	0	0	194	19	29
Madhya Pradesh+	-	-	-	-	-	-	-	-	-	-	-	-	-
Orissa	606	33	33	92	57	0	9	47	10	2	17	6	5
West Bengal	605	16	46	118	151	1	4	5	17	4	53	8	19
Uttar Pradesh	497	45	7	69	74	1	3	16	2	7	89	4	6

* Consumption less than one gram.

+ No survey was carried out.

Table-7

NNMB - RURAL-AVERAGE INTAKE OF NUTRIENTS (CU/DAY) - 1980

State	Proteins (g)	Calories (KCal)	Calcium (mg)	Iron (mg)	Vitamin-A (ug) (Retinol)	Thiamine (mg)	Riboflavin (mg)	Nicotinic Acid (mg)	Vitamin-C (mg)
Kerala	50.3	2158	582	23.7	350	0.67	0.76	11.8	83
Tamil Nadu	53.6	2196	609	25.6	211	0.90	0.75	12.1	39
Karnataka	79.0	2992	1067	43.9	209	2.23	1.16	17.2	21
Andhra Pradesh	56.7	2391	529	25.7	296	0.90	0.77	13.2	35
Gujarat	67.4	2333	546	25.3	264	1.86	1.15	14.1	36
Orissa	58.9	2468	445	30.2	472	0.82	0.69	15.1	71
West Bengal	62.9	2580	493	33.3	495	1.08	0.84	17.9	91
Uttar Pradesh	69.6	2115	426	29.1	207	2.06	1.18	21.6	41
Average	52.3	2404	587	29.6	313	1.32	0.91	15.4	52
Recommended Intake (ICMR-1968)	55.0	2400	400-500	20.0	750	1.20	1.30	16.0	50

No survey was carried out in the states of Maharashtra and Madhya Pradesh.

Table-8

NNMB - RURAL - PERCENT DISTRIBUTION OF HOUSEHOLDS ACCORDING TO PROTEIN-CALORIE ADEQUACY - 1980

State	Sample Size	PC --	PC -+	PC +-	PC ++	P -	C -
Kerala	164	31.6	4.3	17.1	47.0	35.9	48.7
Tamil Nadu	400	29.7	0.8	18.3	51.2	30.5	48.0
Karnataka	408	5.6	0.0	7.1	87.3	5.6	12.7
Andhra Pradesh	396	22.2	0.0	15.4	62.4	22.2	37.6
Gujarat	188	12.8	0.0	31.4	55.8	12.8	44.2
Orissa	280	28.6	0.4	12.5	58.5	29.0	41.1
West Bengal	392	14.3	0.8	14.3	70.6	15.1	28.6
Uttar Pradesh	247	3.2	0.0	49.0	47.8	3.2	52.2
Average		18.5	0.8	20.6	60.1	19.3	39.1

Table-9

NNMB - PROTEIN CALORIE ADEQUACY - INDIVIDUALS -1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	190	22.1	1.6	55.8	20.5
Tamil Nadu	612	13.7	-	36.3	50.0
Karnataka	675	5.2	-	16.1	78.7
Andhra Pradesh	467	9.6	-	34.5	55.9
Gujarat	210	3.8	-	31.4	64.8
Orissa	329	12.8	-	32.8	54.4
West Bengal	614	12.5	-	35.5	52.0
Uttar Pradesh	332	3.6	-	52.1	44.3

Table -10 (a)

NNMB -PROTEIN CALORIE ADEQUACY IN CHILDREN (1-4 years) - 1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	13	7.7	-	76.9	15.4
Tamil Nadu	91	17.6	-	37.4	45.0
Karnataka	87	5.8	-	28.7	65.8
Andhra Pradesh	75	13.3	-	45.3	41.4
Gujarat	7	-	-	14.3	85.7
Orissa	29	24.2	-	58.6	17.2
West Bengal	79	21.5	-	46.8	31.7
Utter Pradesh	47	12.8	-	72.3	14.9

Table -10(b)

NNMB - PROTEIN CALORIE ADEQUACY IN CHILDREN (4-7 Years) 1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	20	5.0	-	80.0	15.0
Tamil Nadu	80	5.0	-	46.2	48.8
Karnataka	88	2.3	-	28.4	69.3
Andhra Pradesh	68	-	-	54.4	45.6
Gujarat	24	-	-	29.2	70.8
Orissa	33	6.1	-	69.7	24.2
West Bengal	81	2.5	-	39.5	58.0
Uttar Pradesh	41	2.4	-	68.3	29.3

Table - 10 (c)

NNMB - PROTEIN CALORIE ADEQUACY IN CHILDREN (7-10 Years) -1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	16	31.2	--	50.0	18.8
Tamil Nadu	42	9.5	--	50.0	40.5
Karnataka	76	9.2	--	23.7	67.1
Andhra Pradesh	37	5.4	--	46.0	48.6
Gujarat	20	--	--	35.0	65.0
Orissa	33	9.1	--	30.3	60.6
West Bengal	71	11.3	--	40.8	47.9
Uttar Pradesh	32	3.1	--	75.0	21.9

Table -10 (d)

NNMB - PROTEIN CALORIE ADEQUACY IN CHILDREN (10-13 Years) 1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	14	21.4	-	71.4	7.2
Tamil Nadu	31	6.4	-	48.4	45.2
Karnataka	55	7.3	-	16.4	76.3
Andhra Pradesh	24	4.2	-	62.5	33.3
Gujarat	24	-	-	50.0	50.0
Orissa	29	20.7	-	31.0	48.3
West Bengal	67	11.9	-	40.3	47.8
Utter Pradesh	31	-	-	71.0	29.0

Table - 10 (e)

NNMB - PROTEIN CALORIE ADEQUACY FOR CHILDREN (13-16 Yrs) 1980

STATE	BOYS					GIRLS				
	N	PC --	PC -+	PC +-	PC ++	N	PC --	PC -+	PC +-	PC ++
Kerala	10	70.0	-	30.0	-	8	25.0	12.5	50.0	12.5
Tamil Nadu	8	25.0	-	37.5	37.5	13	15.4	-	30.8	53.8
Karnataka	15	6.7	-	33.3	60.0	20	15.0	-	10.0	75.0
Andhra Pradesh	3	-	-	66.7	33.3	3	33.3	-	-	66.7
Gujarat	5	-	-	60.0	40.0	10	-	-	50.0	50.0
Orissa	14	35.7	-	38.6	35.7	3	33.3	-	-	66.7
West Bengal	22	18.2	-	40.9	40.9	20	15.0	-	40.0	45.0
Uttar Pradesh	5	-	-	80.0	20.0	8	-	-	37.5	62.5

Table - 10 (f)

NNMB- PROTEIN CALORIE ADEQUACY FOR CHILDREN (16-18 Yrs) - 1980

STATE	BOYS					GIRLS				
	N	PC --	PC -+	PC +-	PC ++	N	PC --	PC -+	PC +-	PC ++
Kerala	4	50.0	-	50.0	-	2	50.0	-	50.0	-
Tamil Nadu	1	-	-	100.0	-	4	25.0	-	50.0	25.0
Karnataka	8	-	-	12.5	87.5	3	-	-	-	100.0
Andhra Pradesh	1	-	-	-	100.0	1	-	-	-	100.0
Gujarat	3	-	-	66.7	33.3	2	-	-	50.0	50.0
Orissa	9	33.3	-	44.4	22.3	3	-	-	33.3	66.7
West Bengal	12	8.3	-	50.0	41.7	13	-	-	46.1	53.9
Uttar Pradesh	7	-	-	71.4	28.6	1	-	-	-	100.0

Table -10 (g)

NNMB - PROTEIN CALORIE ADEQUACY - ADULT MALES - 1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	44	15.0	-	65.9	18.2
Tamil Nadu	116	9.5	-	31.9	68.6
Karnataka	164	3.1	-	7.9	89.0
Andhra Pradesh	114	11.4	-	23.7	64.9
Gujarat	58	8.6	-	20.7	70.7
Orissa	89	6.7	-	32.6	60.7
West Bengal	122	6.6	-	28.7	64.7
Uttar Pradesh	77	1.3	-	37.1	61.0

Table .10 (h)

NNMB - PROTEIN CALORIE ADEQUACY - ADULT FEMALES(NPNL) - 1980

State	N	PC --	PC — +	PC +-	PC ++
Kerala	53	17.0	3.8	41.6	37.7
Tamil Nadu	86	10.5	-	25.6	63.9
Karnataka	117	1.7	-	8.6	89.7
Andhra Pradesh	83	8.4	-	15.7	75.9
Gujarat	43	2.3	-	18.6	79.1
Orissa	79	8.9	-	11.4	79.7
West Bengal	79	11.4	-	19.0	69.6
Uttar Pradesh	70	2.9	-	22.9	74.2

Table -10 (i)

NNMB-PROTEIN CALORIE ADEQUACY IN ADULT FEMALES (LACTATING) - 1980

State	N	PC --	PC -+	PC +-	PC ++
Kerala	6	66.7	-	16.7	16.6
Tamil Nadu	37	46.0	-	27.0	27.0
Karnataka	40	15.0	-	2.5	82.5
Andhra Pradesh	51	19.6	-	25.5	54.9
Gujarat	14	14.3	-	57.1	28.6
Orissa	8	25.0	-	25.0	50.0
West Bengal	41	34.2	-	26.8	39.0
Uttar Pradesh	12	8.3	-	66.7	25.0

Table - 11 (a)

NNMB-PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS- INFANTS

STATE	KERALA	TAMIL NADU	KARNA-TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	20	121	137	136	61	37	130	66
NAD	100.0	93.4	97.8	34.1	84.3	100.0	98.6	92.3
Emaciation	--	--	--	--	5.9	--	0.8	--
Marasmus	--	2.5	--	5.2	3.9	--	0.8	--
Conj.Xerosis	--	0.8	0.7	0.7	--	--	--	--
Bitot's spot	--	0.8	0.7	0.7	--	--	--	--
Total Vitamin 'A' deficiency	--	1.6	1.4	1.4	--	--	--	--

Table - 11 (b)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - PRESCHOOL CHILDREN

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	173	568	753	833	283	211	725	479
NAD	97.7	89.3	77.3	84.3	64.3	75.8	90.6	83.7
Oedema	--	--	--	0.5	--	--	--	1.3
Emaciation	1.7	0.7	2.9	1.2	1.8	1.4	1.9	2.1
Marasmus	--	0.4	0.3	1.7	1.1	--	0.3	0.8
Two or more signs of PC.	--	0.2	0.4	0.5	0.7	--	--	--
Conj.Xerosis	--	--	3.9	4.2	0.7	5.2	2.5	2.3
Bitot's spot	--	1.6	3.3	4.4	1.4	2.0	0.4	0.4
Total Vitamin 'A' Deficiency	--	1.6	7.2	8.6	2.1	7.2	2.9	2.7
Angular Stomatitis	0.6	3.4	10.4	3.7	0.7	7.1	4.7	2.7
Other B-complex Deficiency	--	--	--	--	--	2.8	0.4	0.4
Total B-Complex Deficiency	0.6	3.4	10.4	3.7	0.7	9.9	5.1	3.1
Caries	--	0.2	1.3	1.1	1.1	4.7	0.1	1.5

Table - 11 (c)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - 5-12 YEARS- BOYS

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	141	442	487	902	253	165	499	342
NAD	86.6	79.0	59.1	71.6	55.7	38.2	67.3	82.7
Emaciation	--	--	--	--	--	1.2	2.0	0.6
Conj. Xerosis	2.1	--	9.4	8.9	7.5	14.5	6.8	2.9
Bitot's spot	0.7	4.3	8.0	8.5	13.0	0.6	2.8	2.6
Total Vitamin 'A' Deficiency	2.8	4.3	17.4	17.4	20.6	15.1	9.6	5.5
Angular Stomatitis	7.1	11.1	16.4	11.8	6.7	22.4	11.0	5.3
Other B-complex Deficiency	--	--	0.4	0.1	--	11.5	2.0	1.7
Total B-complex Deficiency	7.1	11.1	16.8	11.9	6.7	33.9	13.0	7.0
Caries	3.6	3.6	10.9	6.0	4.7	17.6	11.2	5.8

Table . 11 (d)

NNMB- PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - 5-12 YEARS - GIRLS

STATE	KERALA	TAMIL NADU	KARNATAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	124	349	509	699	160	238	467	213
NAD	74.2	86.8	69.0	74.1	65.0	40.3	73.4	78.9
Oedema	--	--	--	0.1	--	--	--	--
Emaciation	--	--	0.2	0.4	--	0.4	1.1	--
Conj. Xerosis	0.8	--	6.3	5.9	6.3	10.5	7.3	3.3
Bitot's spot	--	1.7	4.9	5.6	9.4	0.4	3.9	0.9
Total Vitamin 'A' Deficiency	0.8	1.7	11.2	11.5	15.7	10.9	11.2	4.2
Angular stomatitis	4.0	8.0	10.8	9.0	3.8	21.0	7.5	4.7
Other B-complex Deficiency	0.8	--	0.2	--	--	4.6	3.6	2.3
Total B-Complex Deficiency	4.8	8.0	11.0	9.0	3.8	25.6	11.1	7.0
Caries	1.6	3.4	9.0	6.0	5.0	16.4	9.2	3.3

Table - 11 (e)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIONS - 5-12 YEARS (POOLED)

STATE	KERALA	TAMIL NADU	KARNATAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	265	791	994	1601	413	403	966	555
NAD	80.8	82.4	64.3	72.6	59.3	39.5	70.3	81.3
Oedema	--	--	--	0.1	--	--	--	--
Emaciation	--	--	0.1	0.2	--	0.7	1.6	0.4
Conj. Xerosis	1.5	--	7.8	7.6	7.0	12.2	7.0	3.1
Bitot's spot	0.4	3.2	6.4	7.2	11.6	0.5	2.9	2.0
Total Vitamin 'A' Deficiency	1.9	3.2	14.2	14.8	18.6	12.7	9.9	5.1
Angular Stomatitis	5.7	9.7	13.6	10.6	5.6	21.6	9.3	5.1
Other B-complex Deficiency	0.4	--	0.1	0.1	--	7.4	2.8	2.0
Total B-complex Deficiency	6.1	9.7	13.7	10.7	5.6	29.0	12.1	7.1
Caries	2.6	3.5	10.0	6.0	5.1	17.1	10.2	4.9

Table -11 (f)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - 12-21 YEARS -BOYS

STATE	KERALA	TAMIL NADU	KARNATAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	123	432	576	784	225	215	435	801
NAD	92.7	86.8	73.4	80.9	60.0	65.6	84.4	47.3
Conj.Xerosis	0.8	--	3.5	4.6	11.6	3.3	0.9	0.4
Bitot's spot	1.6	2.3	3.5	4.9	27.1	0.9	0.2	0.6
Total Vitamin 'A' Deficiency	2.4	2.3	7.0	9.5	38.7	4.2	1.1	0.9
Angular Stomatitis	0.8	7.4	7.1	7.9	2.2	13.6	6.7	1.3
Other B-complex Deficiency	0.8	--	0.4	1.5	--	9.3	4.6	1.0
Total B-Complex Deficiency	1.6	7.4	7.5	9.4	2.2	22.8	11.3	2.3
Caries	3.3	1.9	5.4	1.3	1.3	7.9	4.1	1.9

Table - 11 (g)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - 12-21 - GIRLS

24a

STATE	KERALA	TAMIL NADU	KARNATAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	121	341	455	563	160	188	381	165
NAD	97.5	86.6	76.5	77.4	50.6	86.6	84.3	87.7
Conj.Xerosis	--	--	1.1	2.8	10.0	1.1	0.5	--
Bitot's spot	--	0.6	0.4	3.2	19.4	--	--	--
Total Vitamin 'A' Deficiency	--	0.6	1.5	6.0	29.4	1.1	0.5	--
Angular Stomatitis	0.8	3.5	2.6	6.0	3.8	12.2	6.0	2.4
Other B-complex Deficiency	--	--	--	0.9	1.3	3.2	2.6	2.4
Total b-complex Deficiency	0.8	3.5	2.6	6.9	5.1	15.4	8.6	4.8
Caries	1.6	4.4	3.7	3.7	0.6	7.4	5.0	1.2

Table--11 (h)

NNMB _ PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS - 12-21 YEARS - POOLED

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	244	773	1031	1347	385	403	816	966
NAD	95.1	86.3	74.8	79.4	56.1	74.9	84.4	84.2
Conj.Xerosis	0.4	--	2.4	3.9	10.9	2.3	0.7	0.3
Bitot's spot	0.8	1.6	2.1	4.2	23.9	0.5	0.1	0.4
Total Vitamin 'A' Deficiency	1.2	1.6	4.6	8.0	34.8	2.8	0.8	0.7
Angular Stomatitis	0.8	5.7	5.1	7.1	2.9	12.9	6.4	1.5
Other B-complex Deficiency	0.4	--	0.2	1.2	0.5	6.5	3.7	1.2
Total B-complex Deficiency	1.2	5.7	5.3	8.4	3.4	19.3	10.0	2.7
Caries	2.5	3.0	4.6	2.3	1.0	7.7	4.5	1.8

Table - 11 (i)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS IN ADULT (21 YEARS AND ABOVE) MALES

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	154	404	796	841	279	401	657	391
NAD	97.4	95.0	82.8	82.2	47.3	79.8	81.1	84.7
Conj.Xerosis	--	--	--	1.3	13.3	2.0	--	0.3
Bitot's spot	--	0.2	0.1	1.6	31.2	0.2	--	0.8
Total Vitamin 'A' Deficiency	--	0.2	0.1	2.9	44.5	2.2	--	1.1
Angular Stomatitis	--	0.4	1.6	4.2	7.9	4.2	2.1	0.8
Other B-complex Deficiency	--	--	0.1	1.0	1.1	1.5	2.7	1.3
Total B-complex Deficiency	--	0.4	1.9	5.2	9.0	5.7	4.8	1.8
Caries	2.6	2.7	1.1	1.0	--	5.7	13.7	0.8

Table - 11 (i)

NNMB - PERCENTAGE PREVALENCEOF DEFICIENCY SIGNS IN ADULT (21 YEARS AND ABOVE)-FEMALES

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	295	661	761	830	312	438	612	366
NAD	97.0	76.6	73.3	59.0	14.7	50.9	70.4	68.8
Conj.Xerosis	--	--	--	1.9	3.9	--	--	--
Bitot's spot	--	0.2	0.5	2.1	30.1	--	--	0.3
Total Vitamin 'A' Deficiency	--	0.2	0.5	4.0	40.0	--	--	0.3
Angular Stomatitis	0.3	1.5	2.9	2.8	4.8	5.3	3.9	0.6
Other B-complex Deficiency	--	--	0.3	0.2	--	1.6	2.9	3.3
Total Bcomplex Deficiency	0.3	1.5	3.2	3.0	4.8	6.9	6.8	3.9

Table -11 (a)

NNMB - PERCENTAGE PREVALENCE OF DEFICIENCY SIGNS (21 YEARS AND ABOVE)-POOLED

STATE	KERALA	TAMIL NADU	KARNA TAKA	ANDHRA PRADESH	GUJARAT	ORISSA	WEST BENGAL	UTTAR PRADESH
Number	449	1065	1557	1671	91	839	1269	757
NAD	97.1	83.6	78.2	70.7	30.1	64.7	75.9	77.0
Conj. Xerosis	--	--	--	1.6	8.3	1.0	--	0.2
Bitot's spot	--	0.2	0.3	1.8	30.6	0.1	--	0.6
Total Vitamin 'A' Deficiency	--	0.2	0.3	3.4	42.1	1.1	--	0.7
Angular Stomatitis	0.2	1.1	2.3	3.5	6.3	4.8	3.0	0.6
Other B-complex Deficiency	--	--	0.2	0.6	0.5	1.6	2.8	2.3
Total B-complex Deficiency	0.2	1.1	2.5	4.1	6.8	6.3	5.8	2.8
Caries	2.2	2.8	1.2	2.6	0.2	10.6	17.9	2.3

MEAN ANTHROPOMETRIC MEASUREMENTS

BY AGE

Table - 12 (a)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) -1980 - KERALA

25

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	11	63.3	5.48	8.7	6.5	1.23	19.1	12.8	0.89	7.0	10.5	2.46	23.4
01+	25	74.0	5.39	7.3	8.7	1.88	14.7	12.4	1.29	10.4	8.9	1.78	20.1
02+	25	81.8	4.29	5.2	10.1	1.13	11.2	13.0	0.77	6.0	9.8	1.63	15.7
03+	21	88.9	4.47	5.0	11.6	1.68	14.5	13.1	1.33	10.2	9.0	2.29	25.3
04+	20	94.6	7.23	7.7	12.2	2.04	16.8	13.4	1.03	7.8	9.5	1.84	19.5
05+	11	100.8	5.91	5.9	13.9	2.07	14.9	13.4	1.08	8.1	8.2	1.53	18.8
06+	10	112.7	5.63	5.0	17.1	2.26	13.3	13.8	0.92	6.7	6.9	1.52	22.0
07+	19	113.2	6.12	5.4	17.4	2.28	13.2	14.7	0.94	6.4	7.3	1.66	22.8
08+	18	117.5	7.22	6.1	19.8	4.14	21.0	15.0	1.67	11.1	7.4	2.32	31.4
09+	22	121.8	5.30	4.4	20.2	2.41	11.9	14.6	0.93	6.4	6.9	1.92	27.9
10+	32	125.1	5.58	4.5	21.9	2.69	12.4	15.4	1.10	7.2	6.9	1.71	24.8
11+	29	130.4	7.22	5.5	24.7	3.41	13.8	16.0	1.08	6.8	7.4	1.76	23.8
12+	35	131.6	6.66	5.1	25.2	3.36	13.3	16.2	1.13	7.0	7.7	1.94	25.3
13+	23	138.7	6.77	4.9	27.9	3.23	11.6	17.1	1.21	7.1	7.9	1.96	24.9
14+	13	141.3	9.08	6.4	29.9	5.07	17.0	17.5	1.48	8.5	6.8	1.77	25.9
15+	10	141.8	7.68	5.4	30.5	4.52	14.8	17.6	1.17	6.7	7.2	2.25	31.3
16+	8	148.8	7.61	5.1	35.4	5.24	14.8	19.4	1.80	9.3	8.1	1.55	19.1
17+	13	159.7	7.51	4.7	43.2	5.90	13.7	21.4	2.25	10.6	7.4	1.60	21.8
18+	5	160.1	7.24	4.5	44.5	8.18	18.4	21.3	2.46	11.5	7.6	1.81	23.9
19+	9	164.9	5.20	3.2	48.3	3.15	6.5	22.5	1.38	6.2	6.8	1.71	25.3
20-25	29	164.2	5.85	3.6	49.2	5.40	11.0	22.7	1.79	7.9	7.0	2.02	29.1
25-30	20	163.7	5.10	3.1	50.8	6.26	12.3	23.5	2.19	9.3	7.6	3.87	50.9
30-35	19	164.9	4.73	2.9	54.7	7.67	14.0	24.7	2.01	8.1	9.6	6.00	62.7
35-40	14	161.6	8.85	5.5	50.1	7.30	14.6	24.0	2.37	9.9	6.5	2.10	32.4
40-45	13	161.8	5.17	3.2	57.4	12.40	21.6	25.4	3.47	13.7	11.3	7.93	70.1
45-50	13	163.6	4.25	2.6	52.3	9.14	17.5	23.4	2.86	12.2	7.8	2.99	38.2
50-55	10	156.5	4.26	2.7	47.1	9.19	19.5	23.3	2.47	10.6	6.9	2.23	32.4
55-60	9	161.7	6.82	4.2	48.5	9.25	19.1	22.7	3.83	16.9	6.4	2.92	45.3
≥60	34	159.1	5.10	3.2	45.4	6.68	14.7	22.2	2.29	10.3	7.1	2.70	37.9

Table - 12 (b)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) -1980 - KERALA

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (m		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	9	63.0	3.21	5.1	5.8	1.18	20.5	12.4	1.64	13.3	10.4	2.50	24.0
01+	19	71.3	4.74	6.7	7.9	1.47	18.8	12.6	1.29	10.3	8.5	2.03	23.9
02+	14	82.3	5.17	6.3	9.9	1.12	11.4	12.4	0.86	7.0	9.0	1.35	15.1
03+	21	89.1	6.50	7.3	11.6	1.02	8.8	13.4	0.60	4.6	9.7	1.98	20.5
04+	27	96.6	5.62	5.8	13.2	1.61	12.2	13.9	0.80	5.8	9.4	1.80	19.1
05+	23	101.3	6.87	6.8	14.9	2.33	15.7	14.2	1.02	7.2	9.1	1.91	21.0
06+	16	108.1	6.73	6.2	15.6	1.77	11.3	13.7	1.04	7.6	7.9	1.12	14.2
07+	15	109.6	6.48	5.9	16.7	2.52	15.1	14.2	1.07	7.6	8.1	1.75	21.7
08+	19	116.8	5.82	5.0	18.6	2.61	14.0	15.1	0.82	5.4	8.4	2.24	26.8
09+	6	116.6	4.68	4.0	19.5	1.75	9.0	15.6	1.36	8.8	8.2	1.94	23.8
10+	25	123.6	6.80	5.5	21.4	2.89	13.6	15.2	0.93	6.1	7.9	1.91	24.2
11+	20	128.8	6.52	5.1	23.7	3.54	15.0	16.1	1.43	8.9	8.4	2.20	26.4
12+	19	133.3	6.94	5.2	26.1	3.84	14.7	16.4	1.20	7.3	7.9	1.93	24.5
13+	20	138.2	6.06	4.4	29.8	3.41	11.5	17.8	1.09	6.2	8.2	1.96	23.4
14+	14	144.9	7.20	5.0	34.7	4.28	12.3	18.6	2.18	11.8	9.6	2.23	23.2
15+	10	147.9	5.02	3.4	36.6	5.08	13.9	18.7	0.91	4.9	8.9	1.84	20.7
16+	11	153.5	6.00	3.9	43.3	5.36	12.4	20.7	1.06	5.2	11.2	2.82	25.2
17+	15	151.1	6.29	4.2	40.8	4.97	12.2	20.1	1.27	6.3	9.1	1.84	20.2
18+	19	153.4	5.50	3.6	43.8	3.94	9.0	21.1	1.58	7.5	10.3	3.34	32.6
19+	10	149.8	3.59	2.4	42.3	5.19	12.3	20.5	1.48	7.2	10.2	3.64	35.7
20-25	55	150.8	6.48	4.3	44.4	6.07	13.7	21.4	1.86	8.7	9.5	2.84	30.0
25-30	57	151.6	4.84	3.2	44.6	5.19	11.6	21.9	1.92	8.8	9.6	3.24	33.9
30-35	35	149.7	5.60	3.7	42.7	6.05	14.2	21.2	1.78	8.4	9.7	3.09	31.9
35-40	39	149.4	4.96	3.3	45.6	7.37	16.2	22.5	2.67	11.9	12.0	5.59	46.6
40-45	29	150.5	5.19	3.5	45.5	9.39	20.6	22.9	3.06	13.4	12.7	7.04	55.5
45-50	26	148.7	8.56	5.8	42.8	7.09	16.6	21.9	2.80	12.8	10.1	4.32	42.7
50-55	19	146.9	5.84	4.0	40.8	6.27	15.4	21.3	2.15	10.1	9.6	3.59	37.2
55-60	18	145.9	6.46	4.4	39.9	6.14	15.4	21.4	1.75	8.2	9.9	3.70	37.2
≥60	46	146.9	6.01	4.1	39.3	7.13	18.1	20.8	2.99	14.4	8.4	4.52	54.0

Table- 12 (c)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) -1980 - TAMIL NADU

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	53	61.6	6.48	10.6	6.1	1.36	22.3	11.4	1.13	9.9	8.7	2.34	26.9
01+	58	73.4	5.68	7.7	8.3	1.45	17.6	12.0	0.95	8.0	8.3	1.89	22.8
02+	52	81.3	6.68	8.2	9.8	1.57	16.1	12.4	1.30	10.5	8.9	2.19	24.6
03+	70	86.8	5.46	6.3	11.6	1.76	15.4	13.1	1.14	8.7	9.5	2.49	26.3
04+	89	94.5	7.09	7.5	13.0	2.13	16.4	13.1	1.11	8.5	8.8	2.47	28.3
05+	79	100.4	5.46	5.4	14.4	1.60	11.1	13.2	0.89	6.8	7.7	2.02	26.4
06+	48	105.2	4.86	4.6	15.3	1.73	11.3	13.1	0.96	7.4	6.8	1.71	25.2
07+	58	110.0	5.44	4.9	16.7	1.80	10.8	13.5	1.01	7.5	6.6	1.79	27.4
08+	83	115.1	5.64	4.9	18.3	2.29	12.5	13.9	1.16	8.4	6.4	1.80	28.1
09+	52	118.7	7.73	6.5	19.2	3.59	18.7	14.2	1.25	8.8	6.7	1.92	28.6
10+	69	124.2	5.86	4.7	21.3	2.36	11.1	14.6	0.94	6.5	6.1	1.48	24.2
11+	53	126.9	7.45	5.9	22.7	3.50	15.4	14.9	1.12	7.5	6.4	1.87	29.1
12+	78	131.1	7.42	5.7	25.3	4.65	18.4	15.5	1.19	7.7	6.3	1.83	29.2
13+	61	135.1	7.52	5.6	26.3	3.78	14.4	15.7	1.34	8.6	6.5	1.69	25.9
14+	62	141.6	7.71	5.4	30.7	5.62	18.3	17.1	1.56	9.2	6.9	1.80	26.0
15+	58	147.5	8.88	6.0	34.1	5.61	16.5	17.8	1.71	9.7	6.5	2.05	31.4
16+	62	154.9	8.40	5.4	39.2	6.47	16.5	18.8	1.92	10.3	6.9	2.47	36.1
17+	32	157.7	5.67	3.6	41.6	5.05	12.2	19.8	1.67	8.5	6.6	1.66	25.2
18+	30	156.4	7.19	4.6	42.8	6.24	14.6	20.0	1.80	9.0	6.8	2.43	35.9
19+	24	160.4	6.77	4.2	46.9	5.96	12.7	20.9	1.62	7.8	6.7	2.23	33.6
20-25	101	160.5	6.52	4.1	47.9	5.91	12.3	21.7	2.14	9.9	6.5	2.28	35.2
25-30	81	161.7	6.84	4.2	49.5	6.03	12.2	22.1	1.46	6.6	6.5	2.61	40.2
30-35	55	162.4	6.19	3.8	53.0	8.70	16.4	23.4	4.58	19.6	7.7	3.30	43.1
35-40	65	161.1	5.88	3.6	50.4	8.07	16.0	22.5	2.12	9.5	6.6	2.96	45.0
40-45	54	161.6	7.26	4.5	50.8	9.68	19.0	22.4	2.15	9.7	7.1	3.41	48.3
45-50	55	161.6	6.05	3.7	50.8	8.85	17.4	22.5	2.35	10.5	6.9	3.27	47.4
50-55	33	161.6	5.72	3.5	49.1	6.29	12.8	22.4	3.01	13.5	7.2	2.83	39.5
55-60	37	160.7	6.47	4.0	49.1	8.96	18.3	21.9	2.12	9.7	7.2	2.48	34.8
⩾ 60	47	161.8	6.53	4.0	49.8	8.66	17.4	21.6	2.51	11.6	7.5	4.99	66.9

Table- 12 (d)

NNMB - MEAN ANTHROPOMETHIC MEASUREMENTS BY AGE (FEMALES) - 1980-TAMIL NADU

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	57	62.1	6.44	8.8	6.2	1.27	20.7	11.6	1.37	11.9	8.6	2.23	25.9
01+	48	71.6	4.18	5.8	8.0	1.30	16.2	11.9	1.01	8.6	8.1	1.82	22.7
02+	64	78.3	4.53	5.8	9.4	1.26	13.5	12.4	0.86	7.0	9.4	2.53	26.8
03+	101	87.4	5.43	6.2	11.1	1.36	12.3	12.9	1.12	8.7	9.6	2.53	26.3
04+	86	93.7	5.27	5.6	12.7	1.67	13.1	13.3	0.98	7.4	9.6	2.21	23.1
05+	63	99.6	6.39	6.4	14.1	1.92	13.7	13.6	1.09	8.1	8.8	2.32	26.5
06+	46	103.7	5.80	5.6	14.8	1.73	11.7	13.3	0.87	6.6	7.5	1.86	24.9
07+	57	109.6	4.76	4.4	16.5	2.04	12.4	13.6	0.97	7.1	7.7	2.25	29.2
08+	58	114.5	5.61	4.9	18.2	2.16	11.9	14.1	0.93	6.6	7.7	2.06	26.8
09+	49	119.6	7.23	6.0	19.5	2.86	14.7	14.4	1.07	7.5	6.9	1.69	24.5
10+	47	123.5	7.02	5.7	21.5	3.17	14.8	15.0	1.11	7.4	7.5	2.02	27.0
11+	29	125.7	5.43	4.3	22.4	2.63	11.8	15.2	0.81	5.4	7.7	2.22	29.1
12+	41	134.4	8.90	6.6	26.6	4.01	15.1	16.3	1.13	7.0	7.8	2.15	27.5
13+	59	137.9	7.21	5.2	30.0	5.35	17.8	16.7	1.62	9.7	8.4	1.89	22.5
14+	40	143.6	6.33	4.4	33.9	6.05	17.9	18.2	1.85	10.2	11.0	4.35	39.8
15+	31	147.0	6.78	4.6	38.1	6.31	16.6	19.2	1.67	8.7	10.9	3.27	30.0
16+	34	149.7	6.63	4.4	40.0	5.18	13.0	19.8	1.38	7.0	10.4	2.68	25.8
17+	29	149.4	7.16	4.8	39.7	6.66	16.8	19.8	1.98	10.0	12.5	4.13	33.1
18+	42	149.4	4.23	2.8	42.6	3.80	8.9	20.9	1.77	8.5	12.3	3.72	30.2
19+	22	148.0	4.02	2.7	41.2	4.56	11.1	20.1	1.67	8.3	11.1	3.51	31.7
20-25	151	150.5	6.35	4.2	44.0	7.37	16.8	20.8	2.08	10.0	11.5	4.48	38.9
25-30	136	150.7	6.31	4.2	43.5	7.03	16.2	20.8	2.01	9.7	11.4	4.50	39.6
30-35	110	150.0	6.44	4.3	44.3	8.80	19.9	20.9	2.55	12.2	11.7	6.08	51.9
35-40	93	149.2	6.84	4.6	42.4	8.94	21.1	20.5	2.81	13.8	10.2	5.82	56.9
40-45	46	150.3	5.92	3.9	44.3	7.53	17.0	21.5	3.05	14.2	13.5	6.14	45.5
45-50	47	150.0	5.83	3.9	43.2	8.37	19.4	21.2	2.90	13.7	12.3	5.92	48.3
50-55	39	150.5	5.40	3.6	48.1	10.55	21.9	22.2	3.08	13.9	13.9	6.86	49.5
55-60	33	148.5	4.76	3.2	43.5	7.58	17.4	21.0	2.37	11.3	11.7	5.77	49.3
⩾ 60	49	148.7	6.07	4.1	42.4	7.81	18.4	20.6	2.52	12.2	10.7	5.19	48.6

Table - 12 (e)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) - 1980 - KARNATAKA

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	72	64.4	5.23	8.1	6.6	1.37	20.9	12.9	1.04	8.1	8.3	1.61	19.5
01+	88	72.5	5.50	7.6	8.0	1.07	13.6	12.9	1.34	10.5	7.8	1.58	20.3
02+	103	79.8	5.19	6.5	9.4	1.64	17.5	13.4	1.32	9.9	7.6	1.93	25.4
03+	89	87.1	5.95	6.8	11.1	1.42	12.9	14.1	1.02	7.2	8.6	1.91	22.3
04+	110	94.5	5.25	5.6	12.7	1.57	12.4	14.3	0.95	6.7	7.6	1.83	24.0
05+	64	99.8	5.30	5.3	13.6	1.58	11.6	14.2	1.11	7.9	6.9	1.60	23.4
06+	83	105.6	5.36	5.1	15.2	1.76	11.6	14.5	0.91	6.3	6.7	1.67	25.2
07+	54	110.0	5.93	5.4	16.1	1.96	12.1	14.4	0.95	6.6	5.0	1.25	24.8
08+	81	116.0	6.54	5.6	18.0	2.17	12.1	15.1	1.00	6.6	5.4	1.46	26.8
09+	66	120.1	6.63	5.5	19.5	2.68	13.7	15.4	1.20	7.8	5.2	1.06	20.4
10+	76	126.9	6.68	5.3	22.6	3.49	15.5	16.2	1.40	8.7	5.4	1.45	26.8
11+	63	132.1	8.04	6.1	24.8	4.05	16.4	17.0	1.53	9.0	5.8	1.88	32.7
12+	115	133.9	7.65	5.7	25.6	3.55	13.9	17.3	1.39	8.1	5.5	1.64	29.8
13+	67	140.9	7.32	5.2	28.6	4.01	14.0	17.9	1.47	8.2	5.4	1.49	27.6
14+	65	147.1	8,33	5.7	32.7	5.84	17.8	19.2	2.13	11.1	6.1	1.58	31.2
15+	40	152.6	7.67	5.0	36.2	4.83	13.4	20.1	1.60	8.0	6.5	1.85	34.0
16+	75	158.2	6.78	4.3	40.9	5.62	13.7	21.1	2.18	10.3	5.4	1.62	29.9
17+	23	161.3	6.29	3.9	43.9	5.31	12.1	21.9	1.93	8.9	5.8	2.16	37.2
18+	86	161.2	6.81	4.2	44.8	5.94	13.3	22.8	2.16	9.6	5.6	1.98	35.6
19+	23	162.4	6.45	4.0	45.8	5.00	10.9	23.1	2.01	8.7	5.7	1.74	30.9
20-25	183	163.6	6.66	4.1	47.8	5.88	12.3	23.9	1.76	7.4	5.1	1.44	28.2
25-30	102	164.8	6.06	3.7	50.4	6.37	12.7	25.1	3.42	13.7	5.2	2.21	42.3
30-35	96	162.1	6.77	4.2	48.3	7.08	14.7	24.4	2.18	9.0	5.3	2.80	52.6
35-40	102	164.2	6.04	3.7	49.7	6.70	13.5	24.7	2.17	8.8	5.4	2.21	41.1
40-45	95	164.2	6.40	3.9	49.4	7.69	15.6	24.3	2.51	10.4	5.7	2.66	46.4
45-50	74	162.8	6.66	4.1	48.3	7.95	16.5	23.9	2.54	10.6	5.8	3.26	56.4
50-55	54	164.4	6.15	3.7	50.5	6.9	13.6	24.2	2.46	10.2	6.2	2.33	37.8
55-60	60	161.8	6.74	4.2	48.3	8.5	17.6	23.7	2.64	11.2	6.0	2.83	47.5
⩾ 60	103	160.7	7.14	4.4	46.0	7.8	17.0	22.8	2.60	11.5	5.9	2.89	49.3

Table - 12 (f)

ANMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) - 1980 - KARNATAKA

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	65	60.9	5.55	9.1	5.6	1.43	25.4	12.1	1.25	10.3	8.5	2.00	23.7
01+	66	72.0	4.47	6.2	7.8	1.36	17.5	12.8	1.25	9.8	7.8	1.99	25.4
02+	93	79.2	4.69	5.9	9.2	1.49	16.2	13.2	1.29	9.8	8.0	2.05	25.7
03+	107	86.4	4.99	5.8	10.7	1.31	12.2	13.8	1.14	8.3	8.6	1.86	21.5
04+	96	93.6	5.24	5.6	12.4	1.44	11.7	14.3	1.05	7.4	8.5	1.94	22.8
05+	66	100.8	5.05	5.0	13.8	1.72	12.5	14.5	0.95	6.6	7.8	1.56	20.0
06+	79	104-1	5.88	5.6	14.7	1.87	12.8	14.7	1.22	8.3	7.0	2.04	29.2
07+	82	112.0	6.51	5.8	17.0	2.19	12.9	15.2	1.10	7.3	6.7	1.58	23.5
08+	88	118.3	5.87	5.0	19.0	2.55	13.5	15.8	1.33	8.4	6.9	2.22	32.3
09+	76	122.1	7.08	5.8	20.5	3.39	16.5	16.1	1.52	9.4	6.7	2.00	30.1
10+	71	127.0	5.38	4.2	22.1	2.78	12.6	16.4	1.16	7.1	6.3	1.61	25.7
11+	49	133.3	6.26	4.7	25.5	4.42	17.3	17.5	1.78	10.2	6.9	2.14	30.9
12+	95	137.9	6.71	4.9	28.2	3.91	13.9	18.4	1.57	8.6	7.2	1.89	26.4
13+	51	142.7	7.83	5.5	31.9	5.36	16.8	19.7	1.90	9.7	7.8	2.40	30.9
14+	50	146.8	6.16	4.2	35.6	4.21	11.8	20.8	1.59	7.7	8.6	2.08	24.1
15+	37	149.0	6.76	4.5	39.6	5.36	13.5	21.9	1.99	9.1	9.4	3.23	34.4
16+	57	150.2	5.57	3.7	40.5	5.44	13.5	22.6	1.82	8.1	9.5	2.88	30.5
17+	21	150.4	6.99	4.6	40.6	5.14	12.7	22.5	1.75	7.8	9.6	2.67	27.8
18+	74	152.0	6.40	4.2	43.1	5.14	11.9	23.2	1.86	8.1	10.1	2.95	29.4
19+	16	151.5	3.79	2.5	42.2	4.06	9.6	23.1	1.96	8.5	9.0	3.76	41.8
20-25	132	150.9	5.44	3.6	42.5	5.33	12.6	22.9	1.90	8.3	9.0	2.97	33.0
25-30	163	151.4	5.35	3.5	42.3	6.02	14.2	22.7	2.24	9.9	8.5	3.55	42.0
30-35	122	151.0	5.08	3.4	42.9	5.74	13.5	23.1	2.12	9.2	8.5	3.18	37.4
35-40	96	151.3	5.07	3.4	41.1	5.34	13.0	22.5	2.00	8.9	8.1	2.75	34.2
40-45	63	151.1	5.55	3.7	43.4	7.59	17.5	23.8	2.69	11.3	9.9	4.72	47.8
45-50	77	150.0	5.24	3.5	40.8	6.88	16.9	23.0	3.71	16.1	8.1	3.95	48.5
50-55	51	150.3	4.74	3.2	44.1	9.04	20.5	24.0	3.55	14.8	9.9	4.05	41.0
55-60	40	147.4	6.95	4.7	38.9	7.00	18.0	22.1	2.85	12.9	8.5	4.14	48.9
≥60	83	148.3	6.46	4.[illegible]	40.4	8.15	20.2	22.4	2.95	13.1	8.3	3.57	43.1

Table - 12 (f)

NNMB- MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) - 1980 - ANDHRA PRADESH

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	68	66.2	6.92	10.8	6.4	1.49	23.4	12.1	1.41	11.6	7.8	2.09	26.9
01+	84	73.7	3.96	5.4	8.1	1.50	18.6	12.7	1.12	8.9	7.1	1.70	24.1
02+	88	81.1	4.55	5.6	9.9	1.49	15.2	13.2	1.08	8.3	7.9	1.80	22.7
03+	98	88.0	4.86	5.5	11.4	1.73	15.2	13.7	0.91	6.7	8.0	1.80	22.7
04+	162	95.2	4.60	4.8	12.8	1.60	12.5	13.9	0.91	6.5	7.7	2.00	26.1
05+	73	101.7	4.56	4.5	14.5	1.55	10.7	14.2	0.88	6.3	7.0	2.09	30.0
06+	97	107.2	6.91	6.4	15.6	1.74	11.2	14.2	0.90	6.4	6.3	1.58	24.9
07+	123	111.6	5.38	4.8	17.0	2.04	12.0	14.5	0.92	6.4	5.7	1.50	26.6
08+	160	118.2	4.96	4.2	19.0	2.23	11.8	14.9	0.93	6.3	5.4	1.38	25.8
09+	160	123.3	5.56	4.5	20.8	2.43	11.7	15.4	1.01	6.6	5.2	1.35	26.3
10+	163	128.0	5.29	4.1	22.8	2.66	11.7	16.0	1.02	6.5	5.3	1.50	28.6
11+	126	131.0	5.84	4.5	23.9	2.89	12.1	16.1	1.21	7.5	5.6	1.96	35.2
12+	141	136.1	5.25	3.9	26.3	3.28	12.5	16.7	1.09	6.6	5.5	1.88	34.1
13+	101	140.5	6.16	4.4	29.0	3.71	12.8	17.4	1.26	7.3	5.8	2.06	35.4
14+	113	145.9	6.20	4.3	31.8	4.11	12.9	18.2	1.45	8.0	5.4	1.77	32.7
15+	70	152.0	7.82	5.1	32.7	5.27	14.8	19.1	1.50	7.9	5.4	1.40	26.1
16+	87	157.4	5.66	3.6	40.0	4.54	11.4	20.4	1.65	8.1	5.3	1.48	27.8
17+	40	159.2	6.24	3.9	41.7	5.30	12.7	20.9	1.68	8.1	5.5	1.32	24.2
18+	106	161.2	5.91	3.7	43.9	4.82	11.0	21.8	1.72	7.9	5.8	1.65	28.4
19+	41	163.1	6.30	3.9	48.0	6.35	13.2	23.0	1.86	8.1	6.5	2.59	40.1
20-25	206	162.6	6.52	4.0	47.7	6.06	12.7	23.3	2.02	8.7	5.7	2.10	37.2
25-30	120	164.7	6.89	4.2	50.9	7.59	14.9	24.3	1.97	8.1	6.0	2.46	41.0
30-35	91	163.4	6.17	3.8	50.1	7.19	14.4	24.3	2.07	8.5	6.4	3.13	48.9
35-40	143	162.9	6.04	3.7	50.1	7.47	14.9	24.0	2.18	9.1	6.5	3.27	50.2
40-45	105	164.2	5.74	3.5	50.7	8.29	16.4	24.0	2.28	9.5	6.7	3.47	51.7
45-50	84	163.5	6.02	3.7	50.1	8.53	17.0	24.0	2.80	11.7	6.7	3.46	51.7
50-55	66	163.8	6.95	4.2	50.6	8.61	17.0	23.1	2.25	9.8	6.9	2.98	43.5
55-60	48	163.7	5.65	3.5	49.6	6.73	13.6	23.7	2.08	8.8	6.9	2.51	36.4
⩾60	73	162.6	6.41	3.9	47.9	7.80	16.3	22.4	2.45	11.0	6.7	2.91	43.6

Table - 12 (b)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) -1980 - ANDHRA PRADESH

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	68	62.0	6.46	10.4	5.5	1.49	27.2	11.8	1.55	13.2	7.5	2.10	28.2
01+	90	72.5	3.97	5.5	7.9	1.28	16.3	12.5	1.11	8.9	7.8	2.03	26.2
02+	92	80.1	4.46	5.6	9.2	1.31	14.3	12.8	0.99	7.8	7.6	1.86	24.6
03+	95	87.4	4.76	5.4	11.0	1.23	11.2	13.7	0.88	6.4	8.5	1.86	21.9
04+	124	94.7	4.29	4.5	12.6	1.49	11.9	14.0	0.88	6.3	8.1	1.95	24.2
05+	64	100.3	4.57	4.6	14.0	1.45	10.4	14.1	0.91	6.5	7.8	2.31	29.8
06+	82	105.0	4.50	4.3	14.7	1.55	10.6	14.1	0.99	7.0	6.9	2.00	29.2
07+	119	112.1	5.37	4.8	16.9	2.04	12.1	14.6	1.10	7.5	6.5	1.71	26.6
08+	126	117.7	5.20	4.4	18.6	2.11	11.4	15.1	1.10	7.3	6.4	2.11	32.8
09+	105	122.7	4.86	4.0	20.7	2.48	12.0	15.8	1.17	7.5	6.6	1.44	23.4
10+	99	126.5	5.99	4.7	21.9	2.81	12.8	16.1	1.19	7.4	6.5	2.00	30.9
11+	104	132.2	5.09	3.9	24.7	3.35	13.6	16.9	1.39	8.2	7.3	1.98	27.2
12+	91	136.8	5.98	4.4	27.3	3.57	13.1	17.6	1.28	7.3	7.4	2.01	27.2
13+	59	142.7	6.76	4.7	31.3	4.75	15.2	18.7	1.54	8.2	8.1	2.58	31.7
14+	71	144.6	5.81	4.0	33.9	4.60	13.6	19.4	1.70	8.8	8.5	2.74	32.2
15+	64	149.0	6.25	4.2	36.9	4.50	12.2	20.2	1.57	7.8	9.5	2.87	30.4
16+	65	150.8	4.98	3.3	40.2	4.80	11.9	21.2	1.81	8.6	10.8	3.53	32.6
17+	29	150.2	5.63	3.8	40.6	5.36	13.3	21.6	1.98	9.2	10.7	3.46	32.1
18+	76	151.0	4.85	3.2	42.2	5.12	12.1	21.8	1.71	7.9	11.4	3.59	31.6
19+	25	152.7	5.39	3.5	43.9	5.38	12.3	22.3	1.98	8.9	11.3	3.93	35.0
20-25	237	151.8	5.86	3.9	31.6	4.81	11.6	21.8	1.83	8.4	10.2	3.70	36.3
26-30	125	151.2	4.88	3.2	42.0	5.68	13.3	21.9	1.95	8.9	9.8	3.97	40.4
30-35	148	152.2	5.49	3.6	43.7	5.98	13.7	22.4	2.34	10.5	10.4	5.15	39.4
35-40	94	150.6	5.54	3.7	42.0	5.52	13.2	22.0	1.70	7.8	9.5	3.70	39.0
40-45	69	150.3	5.01	3.3	42.9	9.40	21.9	22.7	3.37	14.8	11.4	6.36	55.7
45-50	73	150.2	5.69	3.8	42.1	7.37	17.5	22.5	2.57	11.5	10.8	5.27	48.7
50-55	53	152.1	4.73	3.1	42.3	8.29	19.6	22.4	2.68	12.0	10.8	5.45	50.3
55-60	42	150.3	4.61	3.1	42.7	8.51	20.0	22.4	2.88	12.9	11.2	5.18	46.4
7/60	72	149.0	5.89	4.0	40.6	8.37	20.6	21.6	2.72	12.6	9.8	4.20	42.9

TABLE- 12 (1)

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V
00	33	61.6	6.14	10.0	5.6	1.67	29.8	11.8	1.76	15.0	10.1	3.04	30.2
01+	31	70.4	3.72	5.3	7.3	1.01	13.9	12.5	1.18	9.5	10.0	2.78	27.8
02+	35	78.9	4.52	5.7	9.2	1.20	13.1	13.1	0.99	7.6	9.7	2.21	22.8
03+	35	86.5	6.64	7.6	10.8	1.54	14.2	13.6	1.31	9.6	9.5	2.06	21.6
04+	41	92.7	6.46	7.0	12.3	1.50	12.2	13.7	0.82	6.0	8.8	2.03	23.1
05+	25	101.5	6.59	6.5	14.2	1.70	12.0	14.2	0.85	6.0	8.6	1.95	22.8
06+	30	106.1	6.34	6.0	15.0	1.96	13.1	13.9	0.82	5.9	7.2	2.03	28.4
07+	38	112.6	5.68	5.0	16.5	1.83	11.1	14.5	1.15	7.9	6.8	1.63	24.0
08+	30	116.2	7.03	6.1	18.2	2.27	12.5	14.9	0.88	5.9	7.1	1.60	22.6
09+	22	118.2	6.59	5.6	18.8	2.61	13.9	14.9	1.12	7.6	6.2	1.70	27.6
10+	42	124.4	5.89	4.7	21.2	2.68	12.6	15.6	1.41	9.1	7.0	1.51	21.5
11+	26	128.5	7.97	6.2	23.1	4.15	18.0	16.2	1.51	9.4	7.0	1.21	17.5
12+	42	136.2	7.45	5.5	25.0	3.73	14.3	16.9	1.20	7.1	7.2	1.86	25.7
13+	38	139.4	5.95	4.3	27.5	3.04	11.1	17.2	1.11	6.5	6.8	1.57	23.3
14+	24	147.1	7.74	5.3	32.0	4.89	15.3	18.1	1.48	8.2	7.6	2.02	26.6
15+	16	148.1	7.54	5.1	33.8	4.78	14.1	18.8	1.43	7.6	6.6	1.89	28.6
16+	24	156.5	8.30	5.3	39.6	4.65	11.7	20.3	1.58	7.8	7.2	2.03	28.4
17+	21	158.8	5.73	3.6	41.5	4.36	10.5	20.6	1.47	7.1	6.5	2.11	32.3
18+	18	161.4	4.66	2.9	44.8	4.63	10.3	21.8	1.65	7.6	6.4	1.75	27.3
19+	22	162.6	5.22	3.2	42.0	4.69	11.2	20.9	1.66	8.0	6.0	2.38	39.4
20-25	66	164.7	5.56	3.4	47.0	5.70	12.1	22.7	1.72	7.6	6.1	2.03	33.3
25-30	35	163.7	5.82	3.6	49.7	7.94	16.0	23.3	2.16	9.3	7.0	3.09	44.0
30-35	40	163.5	6.83	4.2	48.0	6.92	14.4	23.1	1.88	8.2	6.3	2.96	47.0
35-40	29	164.5	8.03	4.9	47.7	7.63	16.0	23.1	2.12	9.2	6.1	3.07	50.2
40-45	31	162.7	7.37	4.5	50.2	10.02	19.9	23.8	2.40	10.1	7.2	3.82	53.0
45-50	27	161.6	4.79	3.0	47.8	9.55	20.0	23.4	2.53	10.8	6.9	3.73	54.2
50-55	29	158.5	7.46	4.7	45.0	6.37	14.2	22.4	2.08	9.3	6.1	2.32	37.8
55-60	25	161.9	6.62	4.1	44.1	8.76	19.0	22.4	2.36	10.5	6.0	2.28	37.8
⩾60	26	161.3	3.84	2.4	45.9	6.93	15.1	22.4	2.29	10.2	6.9	2.58	37.4

Table - 12 (1)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) - 1980 - GUJARAT

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	17	57.0	8.06	14.1	4.7	1.30	27.5	11.4	1.66	14.6	9.3	2.84	30.5
01+	27	70.8	6.44	9.1	7.3	1.18	16.2	12.2	1.21	9.9	8.8	2.88	32.5
02+	23	78.5	4.64	5.9	8.7	1.11	12.8	13.0	1.15	8.9	10.0	2.93	29.4
03+	36	85.1	6.81	8.0	10.3	1.60	15.5	13.2	1.16	8.8	9.6	2.42	25.2
04+	43	93.4	5.92	6.3	12.1	1.52	12.6	13.9	0.87	6.3	9.5	2.57	27.2
05+	27	98.5	6.08	6.2	13.2	1.47	11.2	13.9	0.85	6.1	8.5	2.08	24.3
06+	26	105.8	7.35	6.9	14.6	2.00	13.7	14.2	0.81	5.7	8.1	1.73	21.5
07+	17	109.8	5.24	4.8	16.1	2.34	14.5	14.5	0.98	6.7	7.8	1.62	20.7
08+	36	118.8	7.47	6.3	18.5	2.81	15.2	15.4	1.36	8.9	7.9	2.33	29.3
09+	23	118.0	6.79	5.6	18.7	2.52	13.5	15.3	1.15	7.5	8.3	2.73	33.1
10+	27	128.1	6.54	5.1	22.0	2.62	11.9	13.9	1.14	7.2	7.2	1.79	25.0
11+	18	129.4	4.89	3.4	22.9	2.53	11.0	16.5	1.19	7.2	8.3	2.19	26.3
12+	14	130.1	7.78	6.0	24.3	4.06	16.7	17.0	1.72	10.1	7.7	1.93	25.1
13+	24	141.8	6.90	4.9	30.0	5.12	18.1	18.1	1.96	10.9	8.7	2.47	28.3
14+	18	143.8	7.67	5.3	32.4	5.73	17.7	19.0	1.91	10.1	9.8	2.57	26.1
15+	19	148.0	3.07	2.1	36.9	4.46	12.1	20.7	1.84	8.9	10.4	2.67	25.7
16+	16	149.4	6.67	4.5	39.5	5.95	15.1	21.2	1.55	7.3	11.4	1.82	16.0
17+	12	147.0	4.46	3.0	40.6	5.70	14.1	22.7	1.82	8.0	13.4	3.44	25.7
18+	12	150.2	5.17	3.4	37.5	3.12	8.3	21.1	1.70	8.1	10.9	3.28	30.1
19+	14	151.2	5.03	3.3	43.8	5.40	12.3	22.6	1.37	6.1	13.4	3.47	25.9
20-25	72	151.4	5.51	3.6	42.5	4.99	11.7	22.1	2.15	9.8	11.3	3.32	29.5
25-30	58	151.4	5.86	3.9	41.8	4.73	11.3	22.0	1.76	8.0	10.6	4.07	38.5
30-35	51	150.8	5.29	3.5	41.6	6.98	16.8	22.1	2.43	11.0	10.2	4.37	43.1
35-40	35	150.1	6.07	4.0	44.1	8.46	19.2	22.8	2.73	12.0	12.0	4.66	39.0
40-45	31	149.8	4.08	2.7	40.9	7.37	18.0	21.7	2.63	12.2	10.1	4.87	38.3
45-50	35	150.3	4.63	3.1	40.9	6.66	16.3	22.0	2.59	11.7	9.8	4.93	50.5
50-55	20	149.8	3.23	2.2	40.7	7.52	18.5	21.8	2.38	10.9	10.5	5.60	53.4
55-60	11	149.2	4.85	3.2	41.7	4.16	9.9	22.3	1.89	8.4	10.5	3.53	33.5
⩾60	29	148.0	5.71	3.9	48.8	6.00	15.5	21.3	2.22	10.4	8.9	3.84	43.1

Table -12 (g)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) - 1980 - ORISSA

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	19	61.2	6.14	10.0	6.1	1.28	21.0	12.7	1.07	8.5	5.8	0.63	10.9
01+	21	69.4	4.97	7.2	8.4	1.17	14.0	13.6	1.05	7.8	6.2	0.87	14.1
02+	36	79.9	6.43	8.1	9.4	1.83	19.5	13.4	1.42	10.6	6.1	1.09	18.1
03+	24	87.7	5.65	6.5	11.3	1.45	12.9	13.9	1.04	7.6	5.9	0.99	16.9
04+	35	93.0	6.06	6.5	12.3	1.49	12.1	14.0	0.74	5.3	6.1	1.03	17.1
05+	17	101.6	5.65	5.6	14.4	1.53	10.7	14.5	0.65	4.5	5.9	0.74	12.6
06+	40	104.7	6.56	6.3	15.2	1.94	12.8	14.2	1.31	9.2	5.3	1.08	20.6
07+	22	109.1	5.02	4.6	16.3	1.68	10.3	14.6	0.98	6.8	5.1	0.75	14.7
08+	32	117.6	6.33	5.4	19.3	2.14	11.1	15.3	1.06	7.0	4.8	0.88	18.2
09+	13	124.4	8.18	6.6	21.6	3.52	16.3	16.0	1.15	7.2	4.8	0.89	18.5
10+	30	126.0	7.61	6.0	22.1	3.43	15.5	15.7	1.07	6.8	4.8	0.86	18.0
11+	22	130.8	9.16	7.0	25.1	5.26	21.0	16.9	1.24	7.4	5.1	0.93	18.1
12+	40	137.8	10.25	7.4	27.3	4.87	17.8	17.6	1.85	10.5	4.9	1.10	22.8
13+	22	137.0	9.24	6.7	28.1	4.82	17.2	17.5	1.64	9.4	5.3	1.69	32.2
14+	38	143.4	7.40	5.2	32.2	5.81	18.0	16.7	2.12	11.4	4.7	0.82	17.5
15+	23	151.5	8.71	5.8	38.2	6.99	18.3	19.9	2.04	10.3	5.4	1.11	20.7
16+	22	158.2	7.05	4.5	42.8	6.76	15.8	21.9	2.06	9.4	5.4	1.00	18.7
17+	20	155.4	8.59	5.5	42.4	5.45	12.9	21.6	1.92	8.9	5.2	1.03	20.2
18+	17	158.6	7.18	4.5	43.6	6.84	15.7	21.7	2.08	9.6	5.2	1.14	21.9
19+	18	161.4	6.11	3.8	47.8	6.76	14.1	23.7	1.87	7.9	5.6	0.78	14.1
20–25	67	160.4	5.65	3.5	48.5	5.18	10.7	23.6	1.66	7.0	5.5	0.99	18.1
25–30	60	160.7	6.32	3.9	50.6	7.55	15.1	24.7	2.01	8.1	5.6	2.53	45.3
30–35	51	160.7	6.24	3.9	48.1	5.00	10.4	23.9	1.51	6.3	5.1	1.04	20.5
35–40	45	159.7	7.45	4.7	47.0	5.63	12.0	23.6	1.91	8.1	5.5	1.47	26.8
40–45	41	160.1	4.36	2.7	49.1	6.24	12.7	24.7	2.14	8.7	5.9	2.04	34.5
45–50	46	160.7	4.99	3.1	49.0	6.66	13.6	24.1	2.55	10.6	6.0	2.75	46.3
50–55	35	159.9	7.51	4.7	46.5	5.91	12.7	23.4	1.81	7.8	5.3	1.02	19.2
55–60	28	160.8	5.56	3.5	48.5	7.76	16.0	23.4	2.39	10.2	5.5	1.62	29.7
⩾ 60	43	158.7	5.00	3.2	46.4	7.66	16.5	23.0	2.27	9.9	5.7	1.69	29.6

Table -12(l)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) - 1980- ORISSA

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	18	61.8	7.23	11.7	6.4	1.51	23.7	12.6	1.38	11.0	6.1	0.83	13.6
01+	22	67.8	6.41	9.5	7.7	0.97	12.7	13.0	1.03	8.0	6.3	1.07	17.2
02+	15	77.2	4.40	5.7	8.8	1.09	12.4	13.3	1.03	7.8	6.3	1.39	22.1
03+	29	85.2	7.33	8.6	10.1	1.64	16.3	13.4	1.13	8.4	6.1	0.78	12.7
04+	29	95.0	6.30	6.6	12.7	1.71	13.5	14.0	0.92	6.6	6.0	0.96	16.1
05+	35	94.7	7.64	8.1	12.6	1.46	11.6	13.9	1.04	7.6	5.8	0.87	15.0
06+	32	104.0	6.75	6.5	14.4	2.00	13.8	14.2	0.95	6.7	5.5	0.87	15.7
07+	33	111.2	7.76	7.0	16.5	2.66	16.1	14.4	1.14	8.0	5.2	1.01	19.6
08+	45	115.0	7.97	6.9	17.8	2.82	15.8	14.8	1.22	8.3	5.1	0.88	7.5
09+	33	124.0	7.09	5.7	21.4	3.37	15.8	16.1	1.36	8.5	5.2	1.07	20.6
10+	26	127.0	6.94	5.4	22.3	2.67	12.0	16.6	0.99	6.0	5.0	0.89	17.9
11+	23	129.6	6.49	5.0	23.8	4.22	17.8	16.8	1.22	7.3	5.4	1.23	22.8
12+	32	137.0	6.35	4.6	29.0	5.45	18.8	18.4	2.15	11.7	6.0	2.02	33.4
13+	22	140.6	5.85	4.2	31.7	6.59	20.8	18.8	1.97	10.5	6.1	1.78	29.0
14+	26	146.4	6.69	4.6	37.5	6.45	17.2	20.7	2.16	10.5	7.1	2.59	36.6
15+	22	146.5	4.49	3.1	35.9	4.00	11.2	20.7	1.19	5.8	6.3	1.39	22.1
16+	22	147.2	5.06	3.4	40.1	4.46	11.1	21.9	1.67	7.6	8.0	2.43	30.3
17+	14	148.6	6.51	4.4	41.8	5.62	13.5	22.3	1.61	7.3	7.4	1.98	26.8
18+	22	148.1	5.87	4.0	42.4	5.77	13.6	22.5	2.30	10.2	8.3	2.80	33.7
19+	12	146.8	7.01	4.8	42.3	4.63	11.0	22.5	1.95	8.7	8.0	2.95	36.9
20-25	81	150.1	5.23	3.5	42.8	5.10	11.9	22.2	1.56	7.0	7.2	2.04	28.3
25-30	79	149.2	4.59	3.1	41.1	3.85	9.4	21.9	1.55	7.1	6.6	2.00	30.4
30-35	42	149.1	5.43	3.6	41.1	4.89	11.9	22.3	1.94	8.7	6.5	2.09	31.9
35-40	54	150.3	5.14	3.4	40.9	6.01	14.7	21.9	1.78	8.2	6.3	2.31	36.3
40-45	54	146.7	5.96	4.1	40.2	5.85	14.5	22.2	2.03	9.1	6.8	2.46	36.3
45-50	42	146.7	5.80	4.0	37.6	4.18	11.1	21.4	1.72	8.0	5.8	1.14	19.6
50-55	31	149.4	6.94	4.7	41.9	6.87	16.4	22.5	2.43	10.8	7.3	2.94	40.4
55-60	20	149.2	6.13	4.1	40.4	6.80	16.8	22.2	2.20	9.9	7.2	3.08	42.9
⩾ 60	61	146.1	5.24	3.6	36.4	4.80	13.2	21.0	2.12	10.1	6.3	2.04	32.2

Table - 12 (a)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) -1980 - WEST BENGAL

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	65	62.4	5.01	8.0	5.9	1.17	20.1	11.5	1.09	9.5	4.9	1.10	22.5
01+	86	74.8	4.73	6.3	8.3	1.20	14.6	12.4	0.83	6.7	4.8	0.84	17.5
02+	85	81.6	4.39	5.4	9.7	1.19	12.4	12.7	0.92	7.3	4.9	0.88	18.1
03+	89	89.8	4.48	5.0	11.6	1.21	10.5	13.3	0.81	6.1	5.1	1.13	22.2
04+	89	94.6	4.87	5.2	12.5	1.37	11.0	13.3	0.78	5.9	4.8	0.85	17.9
05+	73	100.0	5.61	5.6	14.0	1.62	11.6	13.7	0.89	6.5	4.4	0.86	19.3
06+	75	106.6	4.46	4.2	15.5	1.61	10.4	13.8	0.92	6.6	3.9	0.68	17.3
07+	81	110.6	5.24	4.7	16.5	1.92	11.7	13.9	0.87	6.3	3.7	0.58	16.0
08+	63	115.6	6.10	5.3	18.4	2.50	10.2	14.5	1.10	7.6	3.7	0.87	15.7
09+	73	120.3	4.96	4.1	19.8	1.94	9.8	14.8	0.90	6.1	3.5	0.46	13.4
10+	66	124.2	6.02	4.8	21.3	2.76	12.9	15.2	1.04	6.9	3.7	0.66	18.0
11+	68	129.8	6.72	5.2	23.7	3.23	13.7	15.9	1.13	7.1	3.6	0.53	14.8
12+	77	132.2	7.10	5.4	24.8	3.25	13.1	16.2	1.16	7.1	3.6	0.53	14.8
13+	52	138.5	7.74	5.6	28.4	5.29	18.6	17.1	1.21	7.1	3.6	0.47	13.1
14+	45	141.9	8.61	6.1	30.1	5.75	19.1	17.4	1.59	9.1	3.7	0.67	18.0
15+	54	151.5	9.30	6.1	36.7	7.25	19.8	19.1	2.02	10.6	3.9	0.73	19.0
16+	55	157.1	6.50	4.1	40.6	6.53	16.1	20.3	2.04	10.1	4.0	1.06	26.8
17+	43	157.1	7.11	4.5	41.6	5.36	12.9	20.7	1.75	8.4	3.8	0.55	14.4
18+	38	160.6	7.92	4.9	44.5	5.49	12.3	21.5	1.71	7.9	4.0	0.60	15.0
19+	32	161.3	4.91	3.0	45.2	4.14	9.2	22.1	1.31	6.0	4.3	0.91	21.3
20-25	109	162.3	6.09	3.8	47.7	6.12	12.8	22.9	1.76	7.7	4.1	0.90	22.1
25-30	79	162.9	5.26	3.2	48.1	5.77	12.0	23.1	1.71	7.4	4.3	1.63	32.2
30-35	88	163.1	5.99	3.7	49.1	6.71	13.7	23.4	1.88	8.0	4.3	1.57	36.7
36-40	136	161.7	5.57	3.4	47.0	5.75	12.2	23.1	1.68	7.3	4.0	1.23	30.8
40-45	101	161.9	6.11	3.8	47.4	6.37	13.4	23.0	1.77	7.7	4.1	1.17	28.4
45-50	102	161.3	5.62	3.5	47.4	6.09	12.8	23.0	1.80	7.9	4.1	1.03	25.1
50-55	43	160.1	4.92	3.1	45.2	5.13	11.3	22.5	1.77	7.9	4.0	0.99	24.8
55-60	24	162.7	6.24	3.8	46.5	5.23	11.3	22.2	1.50	6.8	3.9	0.86	22.2
⩾ 60	23	158.7	5.10	3.2	45.1	7.28	16.2	22.1	2.07	9.4	4.7	1.66	35.6

Table - 12 (n)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) - 1980 - WEST BENGAL

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference(cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	65	60.9	5.39	8.9	5.5	1.26	23.2	11.1	1.15	10.4	4.9	0.90	18.6
01+	86	71.9	3.56	5.0	7.4	0.91	12.5	11.8	0.90	7.7	4.8	1.00	20.9
02+	98	79.9	5.14	6.4	9.2	1.23	13.4	12.6	0.91	7.2	5.2	1.12	21.6
03+	118	86.9	4.85	5.6	10.7	1.44	13.4	13.1	1.00	7.7	5.4	1.33	24.4
04+	72	93.7	4.64	5.0	12.1	1.36	11.3	13.3	0.77	5.9	5.0	1.11	22.1
05+	70	99.7	5.10	5.1	13.5	1.41	10.4	13.6	0.93	6.9	4.4	0.86	19.4
06+	74	104.8	4.83	4.6	14.5	1.36	9.4	13.4	0.87	6.5	4.0	0.67	17.5
07+	65	110.9	4.63	4.2	16.3	1.66	10.2	14.1	0.66	4.7	4.0	0.69	17.5
08+	78	113.6	6.25	5.5	17.3	2.28	13.2	14.4	1.07	7.5	3.9	0.67	17.8
09+	60	118.7	5.32	4.5	19.2	2.89	11.6	14.9	0.90	6.0	3.8	0.60	16.0
10+	52	124.7	6.22	5.0	21.0	2.83	13.5	15.3	1.02	6.7	4.0	0.79	20.1
11+	71	129.1	8.33	6.4	24.0	4.24	17.7	16.3	1.22	7.5	4.0	0.84	20.9
12+	54	133.6	7.12	5.3	25.3	4.20	16.6	16.5	1.20	7.3	4.1	0.83	20.6
13+	52	139.3	7.66	5.5	30.2	5.17	17.0	18.1	1.59	8.8	4.6	0.96	20.8
14+	55	143.4	5.94	4.1	33.8	5.10	15.1	19.0	1.67	8.8	5.1	1.43	28.0
15+	32	148.1	7.28	4.9	38.6	5.69	14.7	20.6	1.88	9.2	6.0	1.90	31.4
16+	39	149.4	6.02	4.0	39.4	5.45	13.8	20.4	2.22	10.9	6.5	2.14	33.1
17+	51	149.7	5.06	3.4	40.4	5.04	12.5	21.1	1.70	8.1	6.2	1.77	28.5
18+	35	149.4	4.30	2.9	41.4	5.02	12.1	21.2	1.58	7.5	6.4	2.40	37.5
19+	38	149.5	5.19	3.5	40.4	5.15	12.8	20.9	1.67	8.0	6.1	1.95	32.0
20-25	96	149.2	6.39	4.3	40.7	5.06	12.4	21.0	1.75	8.4	5.4	1.68	31.3
25-30	132	149.1	5.72	3.8	40.7	5.85	14.4	21.1	2.01	9.5	5.1	2.70	52.6
30-35	144	149.4	5.28	3.5	40.2	5.65	14.1	21.1	1.76	8.4	5.0	1.86	37.5
35-40	123	149.3	5.47	3.7	40.7	5.54	13.6	21.3	1.91	9.0	5.0	2.06	41.0
40-45	60	148.2	4.71	3.2	38.5	4.98	13.0	21.0	2.14	10.2	4.8	2.23	46.5
45-50	22	146.4	3.89	2.7	41.0	7.03	17.2	22.1	2.44	11.0	6.0	2.47	41.3
50-55	28	148.0	5.78	3.9	39.8	6.05	15.2	21.7	2.05	9.5	6.0	2.53	42.5
55-60	19	147.2	5.60	3.7	38.0	6.65	17.5	20.9	2.15	10.3	4.7	1.67	35.5
≥60	13	146.4	5.42	3.7	36.1	5.58	15.5	20.2	2.21	11.0	4.4	1.26	28.8

Table - 12 (c)

NNMB - MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (MALES) - 1980 - UTTAR PRADESH

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	27	63.3	4.66	7.3	6.3	1.35	21.6	12.0	0.94	7.8	6.4	1.89	29.4
01+	48	72.2	3.78	5.2	7.9	1.30	16.6	12.1	0.85	7.0	6.1	1.63	26.9
02+	58	80.0	3.45	4.3	9.7	1.27	13.1	12.6	0.78	6.2	6.1	1.29	21.3
03+	67	87.3	4.59	5.3	11.3	2.01	17.7	13.3	1.29	9.7	6.7	2.38	35.6
04+	79	94.8	2.54	2.7	13.1	1.08	8.3	13.6	0.80	5.9	6.0	1.43	23.9
05+	39	101.0	2.46	2.4	14.2	1.20	8.5	13.7	0.98	7.2	5.7	1.23	21.8
06+	46	107.2	3.15	2.9	15.8	1.39	8.8	14.4	0.66	4.6	5.5	0.87	15.7
07+	54	113.3	2.40	2.1	17.5	1.44	8.2	14.9	0.98	6.1	5.1	0.86	17.1
08+	51	118.5	2.46	2.1	19.3	1.69	8.8	15.9	1.04	6.8	5.4	1.19	22.3
09+	43	123.2	3.55	2.9	21.5	1.77	8.3	15.9	0.86	5.5	5.3	1.30	24.5
10+	61	128.1	2.73	2.1	22.9	1.55	6.8	16.3	0.81	5.0	5.4	1.09	20.4
11+	48	132.8	2.46	1.9	24.9	1.78	7.2	16.9	1.06	6.4	5.1	1.05	20.4
12+	82	137.8	2.41	1.7	27.7	1.90	6.9	17.6	0.92	5.3	5.5	1.19	21.8
13+	46	142.9	5.83	4.1	31.3	2.69	8.6	18.3	1.19	6.6	5.4	1.18	21.7
14+	41	149.5	3.46	2.3	35.3	2.93	8.3	19.3	1.58	8.2	5.3	0.85	16.0
15+	33	154.9	3.75	2.4	39.1	3.40	8.7	20.2	1.50	7.5	5.6	0.90	16.2
16+	31	158.5	3.14	1.9	43.1	3.39	7.9	21.3	1.72	8.1	5.2	0.99	18.9
17+	33	160.6	3.99	2.5	43.6	3.34	7.7	21.5	1.46	6.8	5.2	0.72	14.0
18+	54	161.4	3.97	2.5	46.0	3.72	8.1	22.7	1.46	6.5	4.9	0.97	19.8
19+	30	163.7	3.72	2.3	47.3	3.86	8.1	23.3	1.52	6.6	4.9	0.84	17.2
20-25	115	163.2	4.89	3.0	48.4	4.87	10.1	23.6	1.49	6.3	5.0	0.97	20.0
25-30	55	162.1	5.10	3.1	48.4	4.95	10.2	23.8	1.50	6.3	4.9	1.58	32.0
30-35	58	161.0	6.17	3.8	46.9	4.97	10.6	23.6	1.62	6.9	4.5	1.15	25.7
35-40	54	162.3	5.83	3.6	48.2	5.70	11.9	23.5	1.58	6.7	4.6	1.13	24.4
40-45	58	162.9	5.58	3.4	50.4	7.09	14.1	24.2	1.90	7.9	5.1	1.50	29.5
45-50	34	162.5	5.39	3.3	51.1	7.00	13.7	24.2	1.95	8.1	5.2	1.14	41.0
50-55	29	164.2	4.79	2.9	49.8	8.61	17.3	23.7	2.45	10.3	5.6	3.51	63.2
55-60	31	160.5	4.67	2.9	45.9	7.77	16.9	22.3	2.28	10.2	4.5	1.71	37.6
≥ 60	41	160.6	5.64	3.5	45.4	6.71	14.8	22.0	2.22	10.1	4.5	1.39	31.2

Table - 12 (B)

NNMB- MEAN ANTHROPOMETRIC MEASUREMENTS BY AGE (FEMALES) - 1980- UTTAR PRADESH

Age (Yrs.)	N	Height (cm)			Weight (kg)			Arm Circumference (cm)			Skinfold at triceps (mm)		
		Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.	Mean	S.D.	C.V.
00	37	61.3	4.49	7.3	5.4	1.21	22.3	11.2	0.96	8.6	5.6	1.38	24.6
01+	55	72.8	3.88	5.3	8.0	1.47	18.3	12.2	0.96	7.9	6.4	1.77	27.9
02+	53	79.8	4.31	5.4	9.6	1.56	16.3	12.6	1.05	8.3	6.8	2.21	32.6
03+	58	86.7	4.55	5.2	11.3	1.67	14.8	13.1	1.12	8.6	6.6	2.05	31.0
04+	59	95.3	2.90	3.0	13.1	1.20	9.1	13.6	0.77	5.7	6.6	1.66	25.4
05+	32	101.0	3.05	3.0	14.2	1.16	8.2	13.9	0.75	5.4	6.0	1.34	22.4
06+	48	106.8	3.07	2.9	15.6	1.26	8.1	14.6	0.84	5.8	6.0	1.55	25.8
07+	31	113.1	3.98	3.5	17.6	1.68	9.6	15.1	1.05	6.9	6.0	1.51	25.4
08+	48	118.9	2.85	2.4	19.6	1.85	9.5	15.8	0.82	5.2	5.7	1.48	25.9
09+	17	122.7	2.40	2.0	20.2	1.95	9.7	15.8	0.97	6.1	5.2	1.09	20.8
10+	18	127.6	2.30	1.8	23.5	2.03	8.7	16.8	1.04	6.2	6.0	1.24	20.5
11+	19	131.7	2.27	1.7	24.3	2.07	8.5	17.2	1.31	7.7	5.4	0.98	18.2
12+	28	136.3	3.44	2.5	28.5	2.21	7.8	18.3	1.49	8.2	6.4	1.10	17.2
13+	24	141.8	3.87	2.7	33.1	4.61	14.0	19.5	2.13	10.9	6.3	1.12	17.8
14+	18	146.9	6.21	4.2	35.5	3.87	10.9	20.1	1.55	7.7	6.8	2.25	33.0
15+	21	148.9	4.53	3.0	37.8	6.41	17.0	20.8	1.95	9.4	6.5	1.34	20.6
16+	18	146.3	3.54	2.4	39.6	3.18	8.1	21.8	1.17	5.4	6.8	1.46	21.4
17+	11	148.9	6.38	4.3	42.6	4.15	9.8	21.8	1.79	8.2	7.5	1.96	26.4
18+	13	149.6	4.86	3.3	42.8	4.03	9.4	22.4	1.81	8.0	6.6	1.38	21.0
19+	6	150.6	2.98	2.0	41.2	3.08	7.5	21.8	1.76	8.1	5.8	0.40	7.0
20-25	58	147.4	6.11	4.1	41.3	6.29	15.2	22.3	2.06	9.3	6.7	2.11	31.8
25-30	63	147.7	4.93	3.3	41.3	4.37	10.6	22.6	1.69	7.5	6.4	2.10	32.8
30-35	61	149.0	5.35	3.6	41.2	5.15	12.5	22.2	2.01	9.0	6.1	1.59	26.2
35-40	65	147.9	5.37	3.6	40.8	4.96	12.2	22.3	1.65	7.4	5.9	2.21	37.3
40-45	31	148.3	3.83	2.6	43.5	5.90	13.6	22.9	1.87	8.2	6.5	2.17	33.7
45-50	27	146.5	4.33	3.0	39.6	5.64	14.2	22.2	1.81	8.2	6.4	2.18	34.0
50-55	27	145.6	6.12	4.2	39.6	7.50	18.9	21.6	2.66	12.4	5.6	1.92	34.5
55-60	27	146.7	7.00	4.8	40.1	8.63	21.3	21.6	3.27	15.3	5.9	3.43	57.9
⩾ 60	36	145.7	4.70	3.2	37.5	4.24	11.3	21.2	2.36	11.2	5.5	2.38	43.6

Table - 13 (a)

NNMB - PERCENTAGE DISTRIBUTION OF 1-5 YEARS CHILDREN ACCORDING TO GOMEZ CLASSIFICATION-1980-BOYS

State	Number Surveyed	Normal	Mild	Moderate	Severe
Kerala	91	16.5	50.5	25.3	7.7
Tamil Nadu	269	13.4	45.0	33.1	8.5
Karnataka	390	8.0	41.5	43.3	7.2
Andhra Pradesh	432	10.2	44.0	40.7	5.1
Gujarat	142	3.5	33.8	50.0	12.7
Orissa	116	9.5	44.0	37.0	9.5
West Bengal	348	10.1	48.0	39.0	2.9
Uttar Pradesh	252	7.1	49.6	37.7	5.6
Pooled	2040	9.6	44.6	39.3	6.5

Talble - 13(b)

NNMB - PERCENTAGE DISTRIBUTION OF 1-5 YEARS CHILDREN ACCORDING TO GOHEZ CLASSIFICATI0N-1980-GIRLS

State	Number Surveyed	Normal	Mild	Moderate	Severe
Kerala	81	28.4	59.3	11.1	1.2
Tamil Nadu	299	24.1	52.6	20.7	2.4
Karnataka	362	19.0	51.4	27.1	2.5
Andhra Pradesh	401	19.5	54.9	22.9	2.7
Gujarat	129	7.0	49.6	36.4	7.0
Orissa	95	15.8	37.9	43.2	3.1
West Bengal	374	13.4	53.2	31.3	2.1
Uttar Pradesh	227	35.2	43.2	16.3	5.3
Pooled	1968	20.1	51.3	25.6	3.0

Table - 13 (c)

NUMB- PERCENTAGE DISTRIBUTION OF 1-5 YEARS CHILDREN
ACCORDIING TO GOMEZ CLASSIFICATION-POOLED- 1980

State	Number Surveyed	Normal	Mild	Moderate	Severe
Kerala	172	22.1	54.6	18.6	4.7
Tamil Nadu	568	19.0	49.1	26.6	5.3
Karnataka	752	13.3	46.3	35.5	4.9
Andhra Pradesh	833	14.7	49.4	32.1	3.9
Gujarat	271	5.2	41.3	43.6	9.9
Orissa	211	12.3	41.3	39.8	6.6
west Bengal	722	11.8	50.7	35.0	2.5
Uttar Pradesh	479	20.4	46.6	27.5	5.5
Pooled	4008	14.8	47.9	32.6	4.7

APPENDIX - 1

SAMPLING PROCEDURES

The main object of statistical sampling is to obtain a representative sample of the population from each state, so that the data collected on the diet and nutritional status closely reflects the situation as it exists in the population. A total of 500 rural households, each year in each of the states are covered. Out of the 500 households, in 400 households, family food intake is assessed by one day weighment (of raw food) method, while in the remaining 100 households, dietary intakes of all the individuals are assessed through oral questionnaire (24 hour recall) method of diet survey.

Selection of districts :

Since a State cannot be considered to be a homogenous group. it was decided to cover all districts within each state over a period of time. As there will be marked variations even between districts, they are stratified into four developmental categories, based on the following district level information.

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 + agricultural labourers).

In each of these three criteria it is assumed that higher the value, higher would be 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 is given the last rank. After assigning ranks from these three criteria, for each district, the following procedure has been adopted.

a) The average rank for all three criteria put together for each district is obtained;

b) The districts are grouped into 4 categoriess A, B, C and D based upon the average ranks.

The theoretically obtainable maximum average rank value has been divided into 4 equally spaced groups so that four quartiles are obtained.

sample.

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

1st Quartile	-	1 to 5
2nd Quartile	-	6 to 10
3rd Quartile	-	11 to 15
4th Quartile	-	16 and above

Those districts with ranks between 1 and 5 are grouped as A; between 6 and 10 as B; between 11 and 15 as C and 16 and above as D.

In each of these four categories, one district is 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 be taken up.

Number of households in each district :

This is determined by using the following information:

a) Per cent rural 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 1000,000 rural population, the district's contribution will be 10% If four districts are selected, whose combined contribution comes to 25% of total rural population of the state, then in the district (•) 10/25 x 500 households will be covered i.e. 200 (since it has been decide that 500 households will be covered in the state).

As the above mentioned procedure of determination of number of households to be surveyed in each district was found to result in a few instances in inadequate number of households, it was decided in 1980 that uniformly 125 households should be surveyed by the teams in each selected district. In the report, no corrections were carried out in the pooling of these data collected from different districts.

Selection of villages:

For this purpose, all the villages in each of the district were classified into the following three categories, using 196l district census handbook.

Population below 1000
Population between 1000 - 3000
Population with 3000 and above.

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

Population in villages	Below 1000	1000-3000 (B)	Above 3000
Number of villages	100	90	10
Average population per village	500	2,000	5,000
Total population in each category	50,000	180,000	50,000

The proportion of households to be covered in each category of village will, therefore be 5:18:5. If in this particular district, calculations show that 140 households will have to be covered, then 25 households in A, 90 households in B and 25 households in C would be surveyed. Thus, the number of villages to be selected in categories A, B

and C will work out to 5, 9 and 2 villages respectively, out of 100, 90 and 10 villages in that district.

Having fixed 5 out of lOO villages in category A, the selection of villages will be done as follows :

(a) Prepare a list of all these 100 villages (frame).
(b) 5 out of 100 villages will be 1 in 20.
(c) Select a random number between 1 and 20 eg: 4.
(d) Village number 4 has been selected.
(e) Go on progressing adding 20 to 4 eg: 24, 44, 64 and 84 etc.

Villages with these numbers will be selected.

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

Selection of households within a village:

In the selection of the households within each village, it is ensured that the proper representation is given to the different segments of the population e.g. Harijans, artisans, landless, labourers, small or medium land owners and well-to-do group. The selection of the households from these categories is done by the team on the spot by random sampling after consultation with the village head.

APPENDIX - 2

The National Nutrition Monitoring Bureau Advisory Committee Meeting held on 28th January, 1981.

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List of Participants

1.	Indian Council of Medical Research, Ansari Nagar, New Delhi,	Prof. V. Ramalingaswami, Director–General. Dr. B.N. Saxena, Deputy Director-General. Dr. Usha Malhotra, Assistant Director.
2.	National Sample Survey Organization, (Field Operation), West Block No.8, Wing No. 6, R.K.Puram, New Delhi.	Mr. V.N. Amble, Ex. Director.
3.	Department of Food, Tamil Nadu Nutrition project, Madras.	Mr. S. Rajagopalan, Officer on Special Duty.
4.	Christian Medical College, Vellore.	Dr. P.S.S- Sundara Rao, Prof. of Bio-Statistics.
5.	Central Statistical Organization, Ministry of Planning, Sardar Patel Bhawan, Parliament Street, New Delhi.	Dr. K.C. Seal, Director–Genera1.
6.	Maharashtra Association for Cultivation of Sciences, Law College Road, Poona.	Dr. P.V. Sukhatme, Director.
7.	National Institute of Nutrition, Hyderabad.	Dr. P.G. Tulpule, Director. Dr. M.C. Swaminathan, Deputy Director. Dr. K. Vi jayaraghavan. Senior Research Officer. Mr. J. Gowrinath Sastry, Senior Research Officer.
8.	Institute for Research in Medical Statistics, Indian Council of Medical Research, New Delhi.	Dr. A.D. Taskar, Director.
9.	All India Institute of Medical Sciences, New Delhi.	Dr. K. Ramachandran, Prof, of Bio-Statistics

APPENDIX - 3

CONSUMPTION UNIT (C.U.)

Practical nutrition work often involves the assessment of the calorie needs of groups of persons. In such cases, it is usual to assess the needs of women and children in terms of those of the average man by applying various coefficients to the different age and sex groups The following scale is suggested for practical nutrition work in India, the calorie consumption of an average adult male doing sedentary work is taken as one consumption unit and the other coefficients are worked out on the basis of the calorie requirements. (Ref. Nutritive Value of Indian Foods - NIN, ICMR, Hyd. India, 1980).

Adult male (Sedentary worker)	1.0
Adult male (Moderate worker)	1.2
Adult male (Heavy worker)	1.6
Adult female (Sedentary worker)	0.8
Adult female (Moderate worker)	0.9
Adult female (Heavy worker)	1.2
Adolescents - 12 to 21 years	1.0
Children - 9 to 12 years	0.8
Children - 7 to 9 years	0.7
Children - 5 to 7 years	0.6
Children - 3 to 5 years	0.5
Children - 1 to 3 years	0.4

It must be emphasized that this scale of co-efficients is a somewhat arbitrary one, and concerns only calories. It is not meant to be applied in assessing the needs for other nutrients.

2. PROTEIN-CALORIE ADEQUACY:

In tables 8, 9 and 10 (a-i), the following abbrevations are used:

P C - -	Protein and Calorie inadequate.
P C + -	Protein adequate and calorie inadequate.
P C - +	Protein inadequate and calorie adequate.
P C + +	Protein and calorie adequate.

3. Standards* for body weight (kg) used for classification of children into nutritional grades (Gomez classification)

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

Source: Hanumantha Rao, D.Satyanarayana, K. and Gowrinath Sastry, J. (1976). Growth pattern of well-to-do Hyderabad pre-school children. Ind. J. Med. Res. 64, 629-638.

4. CLASSIFICATION OF ACTIVITIES BASED ON OCCUPATIONS:

SEDENTARY:

Male: Teacher, Tailor, Barber, Executives, Shoe-maker priest, Retired Personnel, Land-Lord, Peon, Post-man etc.

Female: Teacher, Tailor, Executives, House-wife, Nur etc.

MODERATE:

Male: Fisherman, Basket-maker, Potter, Gold-smith, Agriculture-labour. Carpenter, Mason, Rickshaw-puller, Electrician. Fitter, Turner, Welder, Industrial labour, Cooil Weaver, Driver etc.

Female: Servant-Maid, Cooli, Basket-maker, Weaver, Agriculture-labour, Beedi-maker etc.

HEAVY:

Male: Stone-cutter, Black-smith, Mine-worker, Wood-cuver, Gang-man etc.

Female : Stone-cutter.

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