

Reprint :

BMRC. Bulletin 2 : 35-41, 1976

FOOD INTAKE OF THE CHITTAGONG HILL TRIBES OF BANGLADESH*

M. Mujibur Rahaman † and Subrata Chakma ‡
 Cholera Research Laboratory and
 Malaria Eradication Programme, Dacca.

A small but significant number of the population of Bangladesh consists of tribals whose mode of life is different from those of rest of the population. A large majority of these tribals live in the hill areas of Khagrachari, Rangamati and Bandarban subdivisions of the district of Chittagong Hill Tracts. There are approximately 12 tribes and subtribes. Through close contact with the population from the plainlands some section of the tribal groups have adopted a way of life not much different from the rest of Bangladeshis. However, the majority of the hill people still maintain their tribal identity, particularly those living in the deep and relatively inaccessible forests. Very little is known to the outside world about their social life, food habits, nutritional and health status. As a step in this direction, an effort was made to collect the dietary and demographic information of some of these tribal groups. The present report is a preliminary one and will mainly present the dietary aspect of the investigation.

MATERIALS AND METHODS**Geographic Location**

The study was carried out in three widely different locations in the present Khagrachari and Rangamati subdivisions of Chittagong Hill Tracts and the Cox's Bazar subdivision of Chittagong district. They are :

Guimara and Patachara : under Mong tribal circle of Khagrachari subdivision. Tribes studied were Chakma, Marma or Mong and Tipperas. The area studied is accessible only during the dry months of the year. The tribes are still leading their traditional ways of life.

Ghara : under Rangamati subdivision. The tribe studied was Chakma only. The area is 10 miles south of Rangamati, situated about 3 miles from the main road to Chittagong. The population frequently visit urban areas and has undergone changes from their traditional way of living.

Lambaguna near Whykong in Cox's Bazar : The tribe studied was Tanchaynga - said to be a subgroup of the Chakma tribe. They live in the

* Supported in part by a grant from the Bangladesh Medical Research Council.

† Cholera Research Laboratory.

‡ Malaria Eradication Programme.

Reserve Forests of the Reju Teknaf Range and still maintaining their traditional way of living.

Two educated tribals, one belonging to Chakma and the other to Mong tribes were hired to help in the study. They were trained in Dacca on methods of collecting dietary and other information from the families. Both of them could speak the dialects of the tribes studied so far.

The areas were selected by the authors by actual visit and the study was carried out partly under their supervision. One or both the authors went to the area selected and introduced themselves to the community heads. The purpose of the study was explained to them. The population concerned were cooperative although it was made clear to them that there would be no direct benefit to the tribe under investigation.

A full census of the community was carried out with the recording of age, sex, marital status, sources of income, age at marriage, number of children born as well as those who died. Other sociological and health information were also collected.

Dietary information was collected by actual weighing of the food items, both before cooking as well as before they were actually eaten for three consecutive days. Local names of food items were used for recording when English equivalents were not known. Unknown or strange items of food were also recorded along with the physical description of such food and whenever possible a specimen was brought to Dacca. Three items of vegetables could not be identified by preliminary investigation.

Scale

The scales used were dietary balances measuring in one g with a capacity to weigh up to 500 g (Hanson Dietetic Scale, Model 1440, Northbruke, Illinois, U.S.A.). Calibration carried out before and after the survey showed negligible difference.

Seasons

Study was carried out in Guimara immediately after rice harvest of 1973. In Patachara and Ghagra area, it was carried out during the monsoon or rainy season. In Lambaguna the study was completed during the post-monsoon period.

Food Tables

Agricultural Handbook No. 34 (U.S. Department of Agriculture) was used for collecting information on nutrient contents of food. A few items of diet, mostly wild plants could not be identified but were thought to contribute only a small

amount of nutrients like calories, fat and protein and could not be included in the tables.

RESULTS

The subjects were divided into several age groups. The number studied in the three tribal areas and their mean daily intake of calories, protein, fat, carbohydrate, vitamin A as well as iron are shown in Tables I-III. Table IV shows the mean values of all the tribals and compare these with the intake of rural Bangladeshis studied in 1964 survey.

It is clear from the tables that the intake of calories and fat were comparatively low in Khagrachari area but that of vitamin A was high. On the otherhand, the intake of calories and fat were highest in the tribals living in the Teknaf Reserve Forests with a very low intake of vitamin A. The intake of these items in the tribals living in the Ghagra area were in between these two extremes. The intake of protein, on the otherhand was satisfactory in all the groups studied.

On comparison with the national values obtained in 1964 survey (Table-IV) it was obvious that tribals fared significantly better although there were groups who were poorer than their counterparts living in the plains.

DISCUSSION

The population under study were all Buddhists by religion. They, however, lead a way of life which seem to differ from each other. The study showed clearly that there is an appreciable degree of variation from one area to another. It is well known that the intake of nutrients not only depend on the available foods but also on the eating habits and the economic conditions of the consumers. Almost all of these tribals were poor and had small plots of lands for cultivation. Few could afford to purchase food with money. They worked hard in the fields. Usually the whole family, men, women and children from 8 years and above did manual labour.

The dietary habits, however, were more or less uniform. Very few eat a breakfast. They go to the field early in the morning and have one meal at about noon on their return from the place of work. They have another meal in the evening just before or after sunset. Some items of food are picked up from the jungles and hills. Dry fish is a popular item and is taken frequently when available. Pork is eaten with relish and was responsible for the relatively high intake of fat in some of the subjects.

Calories

The mean intake of calories in adults was high compared to the value of 2254 reported for rural Bangladeshis in 1964 Nutrition Survey. The intake was highest

TABLE-I

Mean daily intake of calories, protein, fat and carbohydrate of Chakmas, Mongs and Tipperas of Guimara and Pathachara of Khagrachari in Chittagong Hill Tracts

Age (Yrs)	Number	Calories	Protein (g)	Fat (g)	Carbohydrate (g)	Vit.A (I.U)	Iron (mg)
4-9	29	913 (281-1437)	29.5 (9.1-49.1)	5.6 (1.0-14.2)	191 (51-336)	2727 (52-13835)	5.7 (1.5-11.7)
10-15	14	1599 (774-3089)	48.8 (35.8-72.3)	7.5 (3.4-12.4)	328 (158-550)	3737 (250-16408)	10.0 (4.1-17.4)
16-29	14	2253 (1035-3988)	63.0 (39.4-99.8)	9.9 (5.7-16.3)	450 (278-847)	5852 (186-34754)	12.2 (6.4-27.1)
30+	39	2464 (1248-3933)	72.7 (47.1-108.3)	10.8 (3.5-16.8)	522 (261-838)	6436 (155-35056)	13.3 (4.3-28.6)

TABLE-II

Mean daily intake of calories, protein, fat and carbohydrate of Chakmas living in Ghagra in Chittagong Hill Tracts

Age (yrs)	Number	Calories	Protein (g)	Fat (g)	Carbohydrate (g)	Vit.A (I.U.)	Iron (mg)
4-9	19	1176 (434-2281)	34.6 (15.2-64.5)	20.4 (3.1-61.9)	222 (84-380)	555 (180-979)	5.4 (2.7-9.0)
10-15	4	2091 (1811-2533)	62.0 (54.6-62.3)	26.9 (7.3-82.5)	396 (370-444)	844 (640-1093)	9.0 (7.9-9.9)
16-29	11	2887 (2369-3658)	86.3 (77.1-117.3)	38.9 (9.4-98.9)	564 (492-825)	1489 (579-2257)	13.4 (11.5-15.4)
30+	6	3063 (2382-4236)	98.7 (82.1-114.4)	48.9 (9.8-155.5)	564 (496-625)	1823 (1357-2279)	14.3 (12.1-16.1)

TABLE-III

Mean daily intake of calories, protein, fat and carbohydrate of Tanchaynga tribals living in the Teknaf Reserve Forests

Age (yrs)	Number	Calories	Protein (g)	Fat (g)	Carbohydrate (g)	Vit. A (I.U)	Iron (mg)
4- 9	22	1353 (281-2934)	46.0 (10.3-81.5)	25.9 (2.4-116.5)	226 (51-405)	68 (30-620)	5.4 (2.6-9.8)
10-15	5	2901 (1215-3357)	85.6 (35.8-100.4)	78.7 (5.0-135)	499 (250-632)	169 (54-750)	10.6 (6.1-11.9)
16-29	6	2891 (1301-3357)	106.0 (44.2-121.8)	41.7 (5.6-135.2)	520 (278-632)	391 (54-972)	12.0 (7.1-13.5)
30+	13	3457 (1406-4404)	106.3 (10.8-122.9)	88.2 (6.5-174)	565 (317-667)	195 (60-2073)	12.8 (7.8-14.7)

TABLE - IV

Mean daily intake of calories, protein, fat and carbohydrate of tribal population of Eastern Bangladesh compared with the intake of rural Bangladeshis of 1964

Age (yrs)	Number	Calories	Protein (g)	Fat (g)	Carbohydrate (g)	Vit. A (I.U)	Iron (mg)
4- 9	70	1173	36.3	17.9	218	1123	5.6
10-15	23	2190	63.6	38.3	391	1589	9.6
16-29	31	2704	83.9	33.7	513	2569	12.4
30+	58	2983	91.2	48.9	554	2823	13.3
All ages	182	2139	65.3	33.0	397	1970	9.8
Rural Bangladeshi		2254	57.5	17.7	476	1590	9.7

in the group of Tanchaynga tribals living in the Teknaf Reserve Forest area. The lowest was in the group living in Guimara and Patachara areas of Khagrachari. The average intake of calories was close to that found in another study involving adolescent children of Rangpur (Rahaman and Durnin, 1965).

Contributions of Calories by Various Food Items

Calories were principally obtained from carbohydrates which contributed approximately 70% of the total intake in both the adults and children. This is not much different from the national figures. Fats, on the other hand, contributed nearly 15% of the total supply of energy, a substantially higher amount than that of 7% found in rural Bangladeshis in the 1964 survey. One of the reasons was the habit of eating pork which is rich in fat. The main bulk of Bangladesh population on the other hand are Muslims and do not eat pork. The contribution of protein to the total calories was also high compared to those living in the rural plains of Bangladesh. Protein contributed approximately the same amount of calories as by fat, i.e., 15%. This is also higher than the 10% contributed by protein in the food of rural Bangladeshis.

Protein, Fat and Carbohydrate

The intake of protein of more than 80 g. for the adults was higher than the rest of Bangladesh which was 57.5 g. The principal source of protein for the tribals was rice which is also true for the rest of the country. A large amount of protein was derived from wild animals like deer and rabbits. Fat intake was surprisingly high except in those tribals living near Khagrachari (Table-I). Their intake of fat was considerably lower than the rest of tribals.

Vitamin A and Iron

Vitamin A is responsible for preventing nutritional blindness which is an important problem in Bangladesh. Its intake was quite adequate in Khagrachari area but was extremely low in the Teknaf Reserve Forest area. In Ghagra the intake was also low. Intake of iron was uniform in all areas.

SUMMARY AND CONCLUSION

The study showed that there were regional and intertribal differences in the intake of various nutrients in the Chittagong Hill Tracts and the neighbouring areas. In this respect the average intake of calories was higher than that found in the 1964 survey of the former East Pakistan. Tribals living in Khagrachari area had a low intake of calories and fat but high intake of vitamin A compared to those living in Teknaf Reserve Forest area whose intake of calories were the highest

but was associated with an extremely low intake of vitamin A rich food. The tribals living in the Ghagra were in between these two groups.

ACKNOWLEDGEMENTS

The authors are grateful to Mr. Steve Minkin, Nutrition Section UNICEF, Dacca, lending a jeep for use in the study.

REFERENCES

Nutrition Survey of East Pakistan, 1962-1964, U.S. Department of Health Education and Welfare, 1966.

Rahaman, M.M. and Durnin, J.V.G.A., The Food Intake of a Group of 15- Year-Old Boys Living In a Rural Area In East Pakistan. *Pakistan. J. Med. Res.* 4 : 241, 1965.

Leung, W. Wu. ; Pecot, R. K. and Watt, B.K., Agric. Handbook No. 34, Composition of Foods used in Far Eastern Countries, U.S. Department of Agriculture, Washington, D.C., U.S.A., 1952.