Nutritional Status of Three Ethnic Communities in Hilly Area: anthropometry is the key

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Abstract:

   Background: *Anthropometry is of substantial interest to the public health professionals, dieticians, scientists and policy makers. It has long been well established that the use of anthropometry is an efficient indicator of nutritional status.* ***Objective:*** *To assess nutritional status of three ethnic communities in hilly area was our ultimate goal.* ***Methodology:*** *This was a cross sectional observational study. Non probability convenient sampling technique was used to collect data. Pretested structured questionnaire was used to take*

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interview. Nutritional status was determined by body mass index (BMI) recommended by World Health Organization (WHO) for Asian people. **Result:** *Most of the respondents came from 20-39 years age group. Half of the participants completed primary level education. Most of the respondents were housewife and farmer. About 66.7% respondents earned >10000 BDT per month. Underweight, normal and overweight was 4.70%, 78% and 17.30% respectively. About 30%, 36.7% and 11.3% respondents had normal nutritional status that completed no education, primary and SSC level education.* **Conclusion***: This study concluded that malnutrition among tribal people in Bangladesh is on a decreasing trend. Further large scale study is recommended to get more precise result.*

Key words: Nutritional status, Ethnic Community, Hilly area

Introduction

In Bangladesh there are about 45 different tribal groups spread across the country. The proportion of the tribal population in the 64 districts varies from less than 1% in majority of the districts to 56% in Rangamati, 48.9% in Kagrachari and 48% in Bandarban in the Chittagong Hill Tracts (CHT) [1]. The tribal groups belong to different ethno-lingual communities, profess diverse faith, have unique cultures which is different to mainstream culture and are at varied/different levels of development (economically and educationally). Most of them inhabit in hard to reach areas such as hilly terrains or the forest areas where access is generally difficult. Moreover, many of these tribal groups are also characterized by slow/low growth rate compared to the mainstream population[2]. Food habit of people in CHT is almost similar to that of the plain land. However they do eat a few items which are not commonly eaten in the plain land such a nappi (fish) bamboo shoots dried vegetables etc. In general food poverty is wide spread in CHT with majority of the Tribal/Ethnic people not secured with

respect to food. The problem of food security is common in all
the ethnic groups. It has also been observed that 62% of all the
household irrespective of ethnic backgrounds according to the
direct calorie intake are living below the absolute poverty line[2].
Nutrition is the notion of 'diet' as different from single food
intake – it is an integrated concept of ecological, economic,
social, cultural and nutritional requirements. It is therefore, an
indicator of economic and social equality and as such extends
the common definition of nutrition to a wider context of poverty
alleviation, employment generation and elimination of gender
inequalities. Nutritional assessment by anthropometric
measurement is an important technique for identifying
individuals, groups or communities whose growth is not
keeping up with the expected pattern[3]. Nutritional status is a
sensitive indicator of community health[4]. Therefore, the
assessment of the nutritional status of a community is one of
the first steps for the formulation of any public health strategy
to combat malnutrition.

Methodology

It was an observational cross sectional study. This study was
conducted on Sajek Union of Baghaisori Upazilla in Rangamati
district among 150 tribal people including both men and women
among different ethnic communities from October to December
2014. This area was purposively selected to get adequate
sample. Non probability purposive sampling method was used
for data collection. Nutritional status was determined by body
mass index (BMI) recommended by World Health Organization
(WHO) for Asian people[5]. For anthropometric measurements,
height was measured with a standiometer and body weight was
measured using a platform beam scale. Three measurements
were taken three times and if the difference among reading was
less than 1 cm, the mean measurement was taken and recorded

to the nearest 0.1 cm. If the reading fell between two values, the lower reading was recorded. Weight was recorded to the nearest 0.1 kg. Before data collection, verbal permission had taken from the Head of each ethnic community. All the tribal people were informed about the study and different local language interpreter from different ethnic communities were taken to translate questionnaire. Data were collected using pre tested semi structured questionnaire by face to face interview. Information about nutritional status along with socio-demographic characteristics was also obtained. The respondents were selected consecutively who meet the inclusion and exclusion criteria. After data collection, data were sent to the researcher, which was sorted, scrutinized by the researcher herself by the selection criteria and then data were analyzed by calculator and personal computer by SPSS version 12.0 program. Data were analyzed by descriptive statistics.

Result

Table 1 show that most of the respondents came from 20-39 years age group. Male were more than female. Half of the participants completed primary level education. Most of the respondents were housewife and farmer. About 66.7% respondents earned >10000 BDT per month. Figure 1 show that underweight, normal and overweight was 4.70%, 78% and 17.30% respectively. According to ethnicity distribution, normal nutritional status of Chakma, Tripura and Lusai was 42, 35 and 40 in number (Table 2). About 30%, 36.7% and 11.3% respondents had normal nutritional status that completed no education, primary and SSC level education (Table 3).

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Table1. Distribution of the respondents by their socio-demographic characteristics (n=150)

Variables	Number	Percentage
Age (in years)		
20-29	50	33.3
30-39	50	33.3
40-49	30	20
50-59	20	13.3
Sex		
Male	95	63.3
Female	55	36.7
Education		
No schooling/illiterate	55	36.7
Primary	75	50
SSC	20	13.3
Occupation		
Housewife	40	26.7
Agriculture	70	46.7
Day labor	10	6.7
Service	20	13.3
Business	10	6.7
Ethnicity		
Chakma	50	33.3
Tripura	50	33.3
Lusai	50	33.3
Monthly income(BDT)		
<5000	5	3.3
5000-10000	45	30
>10000	100	66.7

Figure1. Nutritional status of respondents (n=150)
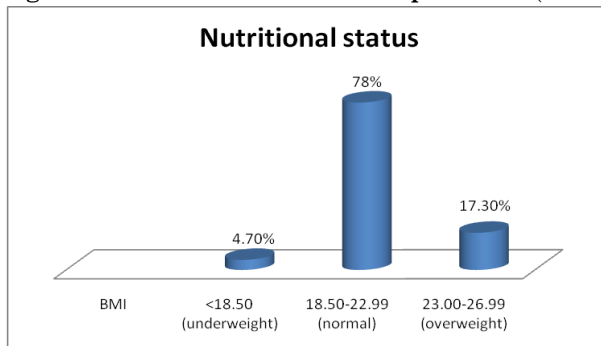
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Table2. Distribution of respondents according to ethnicity and nutritional status (n=150)

Ethnicity	Nutritional status			Total
	<18.50 (underweight)	18.50-22.99 (normal)	23.00-26.99 (overweight)	
Chakma	0	42	8	50
Tripura	4	35	11	50
Lusai	3	40	7	50

Table3. Distribution of respondents according to education and nutritional status (n=150) (n=150)

Education	Nutritional status			Total
	<18.50 (underweight)	18.50-22.99 (normal)	23.00-26.99 (overweight)	
Illiterate	3(2%)	45(30%)	7(4.7%)	55(36.7%)
Primary	4(2.7%)	55(36.7%)	16(10.7%)	75(50%)
SSC	0(0%)	17(11.3%)	3(2.0%)	20(13.3%)

Discussion

The present study found that underweight, normal and overweight among ethnic communities was 4.70%, 78% and 17.30% respectively. The possible reason behind that they took natural food and their level of physical activity was high. A study was done in eastern India and they showed that the situation of the Oraons was worse (53.10%) followed by the Saraks (27.85%) and the Dhimals (27.04%) with respect to low Body Mass Index (BMI) and high degree of undernutrition (BMI< 18.49 kg/mt2)[6]. According to ethnicity distribution, normal nutritional status of Chakma, Tripura and Lusai was 42, 35 and 40 in number. Recent investigations[7,8] have reported the anthropometric characteristics and states of nutrition in some other endogamous populations of eastern India. These studies have dealt with Bathudis[9] and Savars[10] of Keonjhar in Orissa, and Kora Mudis[11], Santals[12] and Telagas[8] of Paschim Medinipur district in West Bengal. All the communities were found to have very remarkable rates of under nutrition which was contradictory to our study findings.

Conclusion

Variations in body proportions and dimensions have been established within and between races; amongst individuals of different sex and age; and between people living under different conditions. Most of these measurable variations have been largely attributed to skeletal variations. This study demonstrates that malnutrition among tribal people in Bangladesh is on a decreasing trend, although both the prevalence of severe and moderate underweight is still very high in Bangladesh and a severe public health problem in this developing society.

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