

Body Mass Index Among The Dibongiya Deoris of Assam, India

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INTRODUCTION

In many developing countries one of the major health problem is the widespread prevalence of under nutrition and infectious diseases. Inadequacies in nutritional intake may be considered a major scourge of many adverse effects on growth and health of individuals. The basic causes of under-nutrition in developing countries are poverty, poor hygienic conditions and little or no access to preventive and health care facilities. Therefore, to understand the health and socio-economic status of the population, assessment of nutritional status of population is indeed need of the hour.

To determine the magnitude of under nutrition at both individual and population levels, anthropometry is used fruitfully by physical anthropologists and nutritionists since long. There have been many anthropometric indices utilized for the assessment of nutritional status among adult individuals and population. Of different methods, Body Mass Index of adult individual is widely accepted as one of the best anthropometric indicators of the nutritional status of adult individuals and populations. Despite the fact that a wide variations exists between human populations in weight and height, Body Mass Index is suggested to be more nutritionally than genetically related. However, literature on this index of adult North East Indian in general and Assam in particular is scarce and sporadic. North East

India with its diverse ethnic groups and having wide variation in weight and height offers opportunity to compute Body Mass Index as an indicator of nutritional status at population level. Therefore, in the present note an attempt has been made to assess the Body Mass Index of adult Dibongiya Deori population, a Scheduled Tribe of Assam with a view to understanding their nutritional status.

MATERIAL AND METHOD

Data on anthropometric measurements of 98 Dibongiya Deori males of present analysis were collected from Siripani and Gai Deori villages of North Lakhimpur, Assam. Anthropometric measurements were taken on adults aged 20 to 55 years following standard techniques (Martin and Saller, 1956). Only those who looked apparently healthy and active were only included in the sample. Efforts were made to avoid measurements of closely related individuals. In this presentation, we have taken into consideration only the height, sitting height, body weight and Body Mass Index (W/H^2). The results of the present study are also compared with the available data on other Mongoloid populations (Khongsdier, 2001) from North East India.

RESULTS AND DISCUSSION

Table 1 presents the mean and standard deviation of height, sitting height, body weight

Table 1: Means and standard deviations of anthropometric measurements and indices

Populations	Height (cm)	Sitting height (cm)	Weight (kg)	Body Mass Index
Dibongiya (N=98)	164.18 ± 6.36	87.13 ± 3.80	54.08 ± 7.20	20.00 ± 2.10
Ahom (N=100)	162.01 ± 5.57	84.57 ± 3.46	49.27 ± 5.53	18.74 ± 1.50
Koch (N=100)	162.56 ± 6.15	84.59 ± 3.43	50.69 ± 7.73	19.15 ± 2.52
Rajbanshi (N=50)	161.39 ± 5.93	85.49 ± 2.51	51.16 ± 7.66	19.62 ± 2.63
Boro Kachari (N=98)	162.20 ± 5.33	86.44 ± 3.60	52.13 ± 5.66	19.80 ± 1.86
Lalung (N=49)	162.12 ± 6.42	84.11 ± 3.92	49.29 ± 6.15	19.15 ± 1.39
Mech Kachari (N=50)	160.34 ± 4.43	85.42 ± 2.69	52.72 ± 4.25	20.49 ± 1.13
Mishing/Miri(N=50)	159.31 ± 5.79	84.59 ± 3.11	49.64 ± 5.06	19.59 ± 1.98
Pnar Khasi(N=49)	157.60 ± 5.69	82.19 ± 3.38	49.33 ± 4.56	19.85 ± 1.46

Source: Khongsdier, 2001

Table 2: Percentage distribution of Body Mass Index

Population	Body Mass Index					
	<16	16 – 16.9	17 – 18.4	18.5 – 19.9	20 – 21.9	≥22
Dibongiya	1.02	3.06	17.35	37.76	19.38	21.43
Ahom	1.00	11.00	40.00	28.00	19.00	1.00
Koch	5.00	14.00	31.00	18.00	23.00	9.00
Rajbanshi	8.00	2.00	32.00	18.00	30.00	10.00
Boro Kachari	–	4.08	7.14	45.93	34.69	8.16
Lalung	–	4.08	30.61	38.78	22.45	4.08
Mech Kachari	–	–	6.00	24.00	56.00	14.00
Miri/Mishing	2.00	4.00	28.00	30.00	24.00	12.00
Pnar Khasi	4.08	2.04	8.16	34.69	46.94	4.08

and Body Mass Index. The mean body height, sitting height and weight are relatively higher among the Dibongiya Deori than the other population groups of the region, while the Body Mass Index in them is only next to Mech Kachari. The average height varies from 157.60 ± 5.69 cm for the Pnar Khasi to 164.18 ± 6.36 cm for the Dibongiyas, while the average sitting height ranges from 82.12 ± 3.38 cm among the former to 87.13 ± 3.80 cm to the later. On the other hand, the mean body weight is highest among the Dibongiya (54.08 ± 7.20 Kg) and lowest among the Ahom (49.27 ± 5.53 Kg). Most of the adult males in these populations are lean, and the mean Body Mass Index varies between 18.74 ± 1.50 in the Ahom and 20.49 ± 1.13 in the Mech Kachari.

The percentage distribution of Body Mass Index according to different grades of chronic energy deficiency is given in table 2. Considering the cut-off point 18.5 for screening the individuals into normal and chronic energy deficient groups (James et al., 1988), the present analysis reveals the prevalence of chronic energy deficient cases as lower in tribal populations like Boro Kachari (11.22%), Mech Kachari (6.00%) and Pnar Khasi (14.28%) than the tribes like Lalung (34.69%) and Mishing/Miri (34.00%). The prevalence rate of chronic energy deficiency in the hinduised Mongoloid groups like Ahom (52.00%), Koch (50.00%) and Rajbanshi (42.00%) were found to be comparatively higher while such incidence is intermediate in Dibongiya (21.43%). However, at the present state of our knowledge it is difficult to explain why the nutritional status is better in the tribal than in the hinduised Mongoloid groups. It has been suggested that Body Mass Index is lower in the populations with higher sitting height

(Norgan, 1994). However, the present analysis do not corroborate with the findings made earlier.

The present study as it is based on small sample size and only Body Mass Index as a measure of chronic energy deficiency, does not permit us to make any definite statement. It warrants to the necessity of further studies in the populations of North East India involving some more variables on morbidity and health status, which are lacking in the present analysis. However, it merits to be mentioned here that the studies conducted by Roberts (1953), Newman and Munro (1955) recognized that a lean linear body build with low weight to surface area ratio is one of the general characteristics of the people living in tropical and sub-tropical climates. This may have certain implication for the high proportion of individuals with chronic energy deficiency in most of these populations, more particularly the hinduised Mongoloid populations in North East India.

KEY WORDS Body Mass Index. Chronic Energy. Deficiency. Nutritional Status. Deori Tribe. Population Variation..

ABSTRACT An attempt has been made in this note to assess the Body Mass Index among the Dibongiya Deoris of Assam with a view to understand their nutritional status. Body Mass Index in majority of the Deori adults, is relatively better compared to other North East Indian populations. The prevalence of chronic energy deficiency is also comparatively low in them

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