RESEARCH ARTICLE

Hemoglobin Percentage and body mass indices observed in tribes of Chikhaldara Dist. Amravati.

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ABSTRACT

The Present cross – sectional study was undertaken among the tribes of Chikhaldara Dist Amravati. This study used to investigate the hemoglobin percentage and body mass index (BMI) among male and female tribes of Chikhaldara region. Total 275 males and 319 females were taken for examination. Hemoglobin percentage were analyzed by sahli's method and commonly used indicator is weight (wt) and height (ht) were measured to calculate body mass indices to evaluate nutritional status. The test of statistical significant (t test) was used to compare population groups. The normal values of hemoglobin percentage and BMI were not observed in any age groups of total served tribal people of chikhaldara region.

Key words- Haemoglobin %, BMI, Tribes, Chikhaldhara, India.

INTRODUCTION

Hemoglobin is an iron bearing protein molecule within red blood cells It performs major function and essential to life that is tissue oxygen buffer that means hemoglobin in the blood is mainly responsible for stabilizing the oxygen pressure in the tissues Although hemoglobin function primary as an oxygen carrier, it is also important in the transport of Carbon dioxide and in maintenance of the acid – base balance of the body tissues. Decrease in hemoglobin levels or Iron deficiency anemia caused by insufficient dietary intake and absorption of iron, or iron loss from bleeding. Iron deficiency causes approximately half of all anemia cases worldwide, and affects women more often than men. (Dickenson and Haves, 2007; Dong *et al*, 2008). Low hemoglobin or anemia is a common condition among older adults with prevalence increasing with age (Buzzle.Com, 2010).

Anemia is associated with increase mortality and poorer physical performance (Pennix *et al.,* 2004) High hemoglobin level is seen in smokers and people living in high altitude area (Right health.com, 2001) Anemia even when mild to moderate affects the sense of well-being resulting in fatigue, stress and reduced work productivity (Haas and Brownie, 2001).

It is established fact that body mass index (BMI) is a useful anthropometric indicator of measuring nutritional status of population (FAO, 1996) and specifically suitable for large scale surveys (Ulijaszek and Kern, 1999) spread over space (Adak *et al.,* 2006) and time (Gorstein and Akre, 1988) The prevalence of Chronic energy deficiency measured through BMI (James *et al.,* 1988) can be used in the standards of living between population group (Nube *et al.,* 1998) the appropriateness of using BMI less than 18.5 kg/m^2 as under nutrition are validated by many authors to predict poor demographic economic, social and environmental conditions of the population (Prayer and Rogers, 2006) In India the most underprivileged group is the tribal communities both in terms of socioeconomic condition as well nutritional status (Basu, 2004) several studies shows these reflection as high under nutrition among tribal across India (Adak *et al.,* 2006).

MATERIALS AND METHODS

The Present cross sectional study was undertaken among the tribal people of chikhaldara Dist. Amravati To evaluate hemoglobin status and body mass index under the guidance of Doctor and medical technician Blood simples were collected from tribal people during the year 2011 to 2013 Hemoglobin level was measured using hameoglobinmeter (sahili's method) weight and height was measured and BMI calculated as wt (Kg)/ht (m)^2. The people were distributed as age group wise the difference between the different age group of tribal male and female of chikhaldara were stauastically analyzed using analysis of variance.

RESULTS AND DISCUSSION

Comparative Haemoglobin observed in tribal females and males

During the study the comparative Haemoglobin % level in different age group of tribal females and males from Chikhaldara, Dist. Amravati (M.S.) was analyzed. The observed results of study are represented in table 1. While, Anthropometric studies, the comparative Body Mass Index in different age group of tribal females and males from Chikhaldara, Dist. Amravati (M.S.) were analyzed. The observed results of study are represented in table 2.

Table 1: Comparative Haemoglobin observed in tribal females and males

Age Group Years	Female			Male		
	N	m	SD	N	m	SD
0 - 5	18	6.97	2.449	12	6.13	2.262
5 - 10	17	6.22	0.634	16	6.64	1.945
10 - 15	39	7.16	1.558	19	8.02	1.523
15 - 20	35	7.83	1.626	30	9.83	2.611
20 - 25	63	6.62	1.937	57	9.44	3.144
25 - 30	49	5.95	1.745	17	8.39	2.009
30 - 35	21	6.86	2.493	15	8.87	2.255
35 - 40	7	5.64	1.395	18	7.58	1.809
40 - 45	19	6.95	1.357	14	9.10	1.803
45 - 50	12	7.33	1.758	19	9.72	2.445
50 - 55	15	6.08	0.541	10	8.25	3.188
55 <	24	6.98	2.294	48	8.23	2.825

Tables 2: Comparative BMI observed in tribal females and males

Age Group Years	Female			Male		
	N	m	SD	N	m	SD
0 - 5	18	26.47	6.760	12	21.51	7.224
5 - 10	17	16.50	5.902	16	17.40	6.425
10 - 15	39	16.58	3.040	19	16.12	4.429
15 - 20	35	16.70	2.496	30	16.99	3.592
20 - 25	63	18.27	2.467	57	17.43	2.244
25 - 30	49	18.97	3.747	17	18.24	2.448
30 - 35	21	18.90	2.246	15	19.18	2.213
35 - 40	7	17.73	2.040	18	18.05	3.003
40 - 45	19	15.79	6.105	14	21.09	3.090
45 - 50	12	19.02	5.162	19	20.42	4.314
50 - 55	15	20.47	2.200	10	21.22	2.596
55 <	24	19.99	3.841	48	19.76	4.757

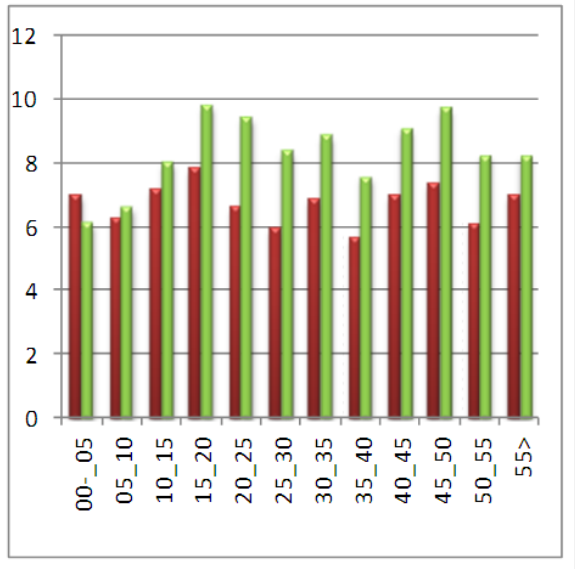

Figure 1: Comparative Haemoglobin observed in tribal females and males

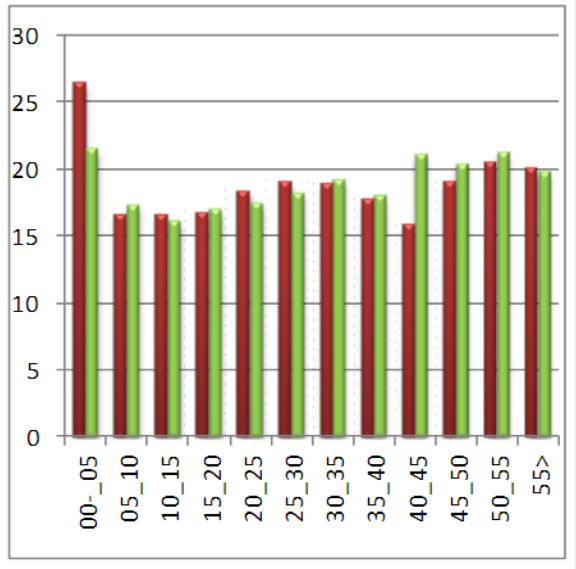

Figure 2: Comparative BMI observed in tribal females and males

Results indicate that Haemoglibin percentage in tribal male and female from Chikhaldara Dist Amravati showed the alternation, in all age group it was observed to be significantly different at 0.05 but in tribal females it was observed to be clearly. It suggest the anemic condition which is at pinnacle level females of middle age groups Landi *et al*., (2007) suggest that the haemoglobin concentration in human blood. is directly related to erythropoesis malnutrition decreases a level of RBC count which result in decrease of blood haemoglobin.

Iron deficiency is the main reason of lower haemoglobin in women, About balanced diet unconsciousness among women is another reason similar investigation by Kis and Carnes,(1998). The tribal people of Chikhaldara region are shorter in hight and lighter in weight BMI in tribal females in age group 5-10, 45-50, 50-55, 55 was not observed to be significantly different while in males of age group 5-10,35-40 was observed to be significantly different at o.o5 which is cause for their poor physical growth Body mass index was recommended as basis anthropometric indicators' of thincess and underweight during adolescent (Rao and Rao, 1994) BMI was useful for assessment of the current or short duration malnutrition among adults BMI categaries of under weight are related to increased mortality (Crawely, 2009).

At the time of this entry, we were not able to identify and specific nutrition literacy studies in study area However health literacy increase with education and people living below the level of poverty have lower health literacy than those above it Among these people there are lack of information about food choices, limited or difficult access to healthful food and range of cultural influences and socioeconomic constraints such as low level of education and high level of poverty gender discrimination that decrease opportunities for healthful eating and living (Balducci, 2009; Zoellner *et al.,* 2009)

From the above result we focus in future research is needed to solve nutritional problems of these poor tribes by providing term supplementary nutrients and healthy food, necessary medicines for maintaining their hemoglobin level and body mass index.

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