



A Study on Socio Economic Status on Nutritional Status among College Students

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Abstract: *The present study was undertaken to assess the effect of socio economic status on nutritional status of college girls (18-21 years) of East Khasi hills district of Meghalaya. A total number of 150 college girls from different college were selected. The study was undertaken with following objective in order to assess the nutritional status and to find out the eating pattern of the selected respondent. The present study the would also help to assess the impact of socio economic status on the nutritional status of the selected areas by recording anthropometric measurements and by determining the food and nutrient intake . The interview schedule was including which leads to the fulfilment of the objectives of the study. The interview schedule was enclosed with general profile of the respondents including name, sex, age, education, occupation and family income for knowing the respondents socio-economic status. The anthropometric measurement of the respondents i.e. height (in cm) and weight (in kg) were taken. Dietary intake was determined by 24 hours dietary recall method and the average nutrient intake was calculated and compared with RDA (ICMR). The average dietary intake of all nutrients by the respondents was less by Recommended Dietary Allowance (RDA) except energy, calcium and vitamin A which was found to be satisfactory based on the results. The results of the study showed that majority of the selected adolescent girls were belonging to Upper Middle Class. The mean values of BMI revealed that a large proportion (90.67%) of college girls were normal (BMI 18.5-25). The prevalence of underweight were only (4%) based on BMI and overweight were (5.33%). None of the college girls were found to be obese. Maximum (95.94) per cent of college girls belonging to upper middle class were having the BMI <18.5-25 followed by lower middle class, upper class, upper lower class and lower class. The association between socio –economic status and Body Mass Index was comparatively significant by using frequency and percentage.*

Keywords: *Recommended Dietary Allowance (RDA), Body Mass Index (BMI)*

1. Introduction:

A balance nutritious diet is necessary for individuals from each stage of the lifecycle. The physical well-being and maintenance of normal health of an individual is closely related to the status of nutrition. Nutritional status refers to the health of an individual as it determined by the intake of nutrients and their utilization. Proper nutrition keeps human healthy and fits whereas inadequate or improper nutrition reduces fitness and causes susceptibility disease.. The girls constitute a more vulnerable group especially in the developing countries where they are traditionally married at an early age and are exposed to greater risk of reproductive morbidity and mortality. Nutritional deficiencies have far reaching consequences, especially in girls. If their nutritional needs are not met, they are likely to give birth to undernourished children, thus transmitting under nutrition to future generation. Unfortunately assessment of nutritional status of adolescent girls has been the latest explored area of research particularly in rural India. Malnutrition prevails in rural area due to low economic status, less awareness about healthy diet. Nutrition and physical growth are integrally related; optimal nutrition is a requisite for achieving full growth potential. Total nutrient needs are higher during adolescence than any other time in the lifecycle. Eating patterns are frequently erratic in college girls and might predispose them to some nutritional problems such as obesity or micronutrient deficiencies. Problems related to nutrition that originate earlier in life can track into adulthood. They can also be corrected if current ones can be addressed, so



nutrition-related chronic diseases in adulthood can, then be prevented. Therefore, up to date information is necessary about health and nutrition, and this has to start at young age; the 2005 WHO report has as well called for policies and regulations at a country level to improve nutrition (Benodist *et al.*, 2008). Eating habits of young people are affected by many factors related to the socio-economic conditions – dietary habits acquired in the family home, education of caregivers and the state of knowledge on proper nutrition. Effects of many of these factors have a synergistic or antagonistic effect, so that their joint correlations are difficult to estimate. Factors such as gender, type of school, consumption of drugs, physical activity, living in the family home for the duration of education and, in particular, the economic situation of the family and the education of parents can significantly influence the diet of young people (Szeczko *et al.*,2014). The development of eating behaviours is affected by factors such as availability of and preference for particular foods, portion size, cultural values regarding food types and preparation, parents’ beliefs and practices, mealtime structure, and feeding styles. Research has shown that the family strongly influences childhood eating practices, including children’s attitudes toward food and children’s assessment of satiety, factors which may later influence children’s weight. Clearly the family and other social factors influence children’s eating patterns which may subsequently influence the onset of obesity (Heather Patrick *et al.*, 2005).

Methodology:

A total of 150 respondents from East Khasi Hills, District, Shillong, Meghalaya was purposively selected for the study and were personally interviewed. The data pertaining to the study according to the research problem. Pre-structured questionnaire was used for the collection of data from the respondents. The schedule was included the aspects which lead to the fulfilment of the objective of the study. The interview schedule consisted of General profile (Kuppuswamy revised scale 2016), Anthropometric measurement, Dietary intake, 24 hours dietary recall method (Swaminathan, 2013) and clinical sign and symptoms (Park, 2005). The data was analysed by using statistical i.e. t-test (Gupta and Kapoor, 2002).

Results and Discussion:

The data collected, tabulated and calculated under the study are present with the appropriate illustration and discussed in this chapter.

Table 4.1: Scoring of the family background of the respondents.

Particulars	Score	Frequency N=150	Percentage
Education			
Professional or honours	7	20	13.33
Graduate or post graduate	6	62	41.33
Intermediate or post high school diploma	5	28	18.67
High school Certificate	4	24	16
Middle school Certificate	3	8	5.33
Primary school Certificate	2	6	4
Illiterate	1	2	1.333
Occupation			
Professional	10	32	21.33
Semi-Professional	6	48	32
Clerical, Shop Owner, Farmer	5	37	24.67
Skilled worker	4	13	8.67
Semi-Skilled worker	3	15	10
Unskilled worker	2	5	3.33
Unemployment	1		
Family income			
≥ 42,876	12	20	13.33



21,438-42,875	10	52	34.67
16,078-21,437	6	34	22.67
10719-16,077	4	12	8
6,431-10,718	3	18	12
2,165-6,430	2	8	5.33
≤ 2164	1	6	4

Table.4.1.scoring of the family background of the respondents

EDUCATION; Out of 150, 13.33 were belong to professional or honours,41.33 per cent are graduate and post graduate,18.67 are intermediate or post high school diploma,16 per cent are high school certificate,5.33 per cent are middle school certificate,4 per cent are primary certificate and only 1.333 was illiterate during the present study.

OCCUPATION; Out of 150, 21.33 per cent are doing professional job, 32 per cent were doing semi-professional, 24.67 are belong to clerical, shop owner and farmer, 8.67 are skilled workers, 10 per cent are semi-skilled workers, 3.33 per cent are unskilled workers and no unemployment are found during the present study.

FAMILY INCOME; Out of 150 there are 13.33 per cent getting $\geq 42,876$ monthly income, 34.67 per cent getting 21,438-42,876 monthly income, 22.67 per cent are getting 16,077-21.438 monthly income, 8 per cent are getting 10719-16.077 of the monthly income, 12 per cent are getting 6,431-10,718 of the monthly income, 5.33 per cent are getting 2,165-6,430 monthly income and there were only 4 per cent getting ≤ 2164 monthly income.

Table.4.2. Distribution of SES according to family background of the respondents.

CLASS	TOTAL SCORE	NO.OF RESPONDENTS N=150	%
Upper Class	26-29	32	21.33
Upper Middle Class	16-25	74	49.33
Lower Middle Class	11-15	30	20
Upper Lower Class	5-10	8	5.33
Lower Class	≤ 5	6	4

Table.4.2. Shows the classification of SES of the family background of the respondents in East Khasi hills district of Meghalaya .Out of 150 respondents 21.33 per cent belong to Upper Class, 49.33 per cent belong to Upper Middle Class, 20 per cent belong to Lower Middle Class, 5.33 per cent belong to Upper Lower Class and 4 per cent belong to the category of Lower Class. With the help of Kuppuswamy scale it is easy to categorized the socio-economic status of the respondents and the total scoring which I get from this survey are categorized according to the class.

Table.4.3. Distribution of the respondents according to their BMI

Particulars	Category	N=150	
		N	%
BMI (wt/kg)/ht ² (m)			
≤18.5	Underweight	6	4
18.5-25	Normal	136	90.67
25-30	Overweight	8	5.33

Source; Srilakshmi (2010)



Table.4.3. shows that out of 150 respondents, 4 per cent college girls are underweight , 90.67 per cent are having normal BMI, 5.33 per cent are overweight and there no obese was found during the present study.

According to the study conducted by Parimalavalli (2012) socio–economic and nutritional status of the tribal children. A total of 149 tribal children were selected for the study. The data was collected on socio-economic, anthropometric measurements, food intake, clinical signs and symptoms. The results of the study showed that most of the velala tribles lived in small size families, belonged to low income group and they were illiterates. Mean height, weight and food intake of the selected tribal children were found to be significantly less than reference values .Their food intake was lacked in many nutrients. Majority of the velala tribal children had brownish hair and carries tooth. Moreover scaly skin and hypo pigmented vitamin A disorder were seen between 16 and 18 years. The magnitude of tribal children was suffered from the maladies of malnutrition.

Table-4.4. Distribution of respondents according diet related information.

Dietary pattern	Girls N=150	%
Type a	16	10.67
Type b	55	36.67
Type c	72	48
Type d	7	4.67

Dietary pattern

- a) Lunch + dinner
- b) Breakfast+ lunch + dinner
- c) Breakfast + lunch + evening tea + dinner
- d) Breakfast + lunch + evening tea + dinner + bed time.

Table 4.4. Shows that out of 150 respondents 10.07 per cent were followed Type a,36.67 per cent were followed type b ,48 per cent were followed Type c and 4.6 per cent are type d.

According to the study conducted by Pendergast *et al.*, (2016) the habit of skipping meal among young population and defined as the skipping of any meal throughout the day. It was reported in 12 studies with prevalence ranging between 5 per cent and 83 per cent . The remaining 25 studies identified specific meals and their skipping rates, with breakfast the most frequently skipped meal 14-88 per cent compared to lunch 8-57 per cent and dinner 4-57 per cent.

Table 4.5. Distribution of respondents according to their food habits.

Food habits	Girls N=150	%
Vegetarian	16	10.47
Non vegetarian	134	89.33



Table 4.5. shows that out of 150 respondents 10.47 per cent belong to vegetarian and 89.33 belong to non - vegetarian.

Szczeko *et al.*, (2014) studied that eating habits of young people are affected by many factors related to the socio-economic conditions – dietary habits acquired in the family home, education of caregivers and the state of knowledge on proper nutrition. Effects of many of these factors have a synergistic or antagonistic effect, so that their joint correlations are difficult to estimate. Factors such as gender, type of school, consumption of drugs, physical activity, living in the family home for the duration of education and, in particular, the economic situation of the family and the education of parents can significantly influence the diet of young people.

Table.4.6. Distribution of Average dietary intake per day of the respondents

Parameters	Energy (kcal)	CHO (g)	Proteins (g)	Fat (g)	Calcium (mg)	Iron(mg)	VitA (µg)	VitC (mg)
ICMR(RDA) 2010	1900	375	55	20	600	21	600	40
Average Intake	1817	452	42	16	545	30	537	60
Differ	83	-77	13	4	55	-9	63	-20
Cal(t)	44.781	0.0711	7.465	9	20.811	5.66	18.046	9
t-table	12.706	12.706	12.706	12.706	12.706	12.706	12.706	12.706
Results	S	NS	NS	NS	S	NS	S	NS

Table 4.6. shows the average nutrients intake with reference to energy, carbohydrate, protein, fat, calcium, iron, vitamin A and vitamin C. After comparing the average nutrients intake with ICMR, RDA (2010) it was observed that carbohydrate, protein, fat, iron and vitamin A was found less than RDA. On applying t-test, significant differences were found between the intake and RDA for energy, carbohydrate, protein, fat, calcium, iron, vitamin A and vitamin C.

Doustmohammadian *et al.*, (2013) investigated nutritional status and dietary intake among adolescent girls. Total 256 adolescent girls of the senana secondary schools were randomly selected for the study. The data was collected on food and nutrient intake, anthropometric measurement and socioeconomic background. The results of the study showed that the prevalence of underweight, normal weight, overweight, and obese was 5.7 per cent, 77.7 per cent, 11.7 per cent, and 4.7 per cent seen in adolescent girls respectively. In comparison with RDI recommended values, the intake of energy and some micronutrients such as vitamin B12, folate, calcium, zinc ,and fibre was insufficient among adolescent girls in some malnutrition (underweight and overweight) is higher than the expected rate.

Table.4.8. Distribution of the respondents according to clinical assessment.

Clinical assessment	Girls n=150	
	N=150	%
General appearance of the skin		
Fair	36	24
Good	104	69.33
Poor	10	6.67



Pale conjunctiva		
Absent	142	94.67
Present	8	5.33
Visible thyroid		
Absent	147	98
Present	3	2
Nails colour		
Normal	142	94.67
Pale yellow	8	5.33
Loss of appetite		
Absent	145	96.67
Present	5	3.33
Shortness of breath		
Absent	150	100
Present	0	0
Headache		
Absent	136	90.67
Present	14	9.33
Weakness		
Absent	145	96.67
Present	5	5.33
Gum		
Normal	143	95.33
Bleeding gum	7	4.67
Pale/grayish		
Absent	114	76
Present	36	24

Table.4.8.shows the clinical assessment of college girl.



GENERAL APPEARANCE; The above table shows that the general appearance of the respondents are categorised as fair, good and poor. 24 per cent are found as fair, 69.33 percent as well and 6.67 per cent are found as poor in general appearance.

PALE CONJUNCTIVA; The data shows that the present and absent of pale conjunctiva of the respondents 94.67 are found to be absent and 5.33 are present.

VISIBLE THYROID; Out of 150 respondents its shows that the visible thyroid is less present among the college girls in East Khasi district in Shillong, Meghalaya were only 98 percent are absent and 2 per cent are present.

NAIL COLOUR; The above data shows that nail colour according to normal were 94.67 and pale yellow only 5.33 were present the results its shows that most college girls in East Khasi hills district ,Shillong, Meghalaya have healthy colour nails.

LOSS OF APPETITE; The above data shows that 96.67 were absent and 3.33 were present of loss of appetite.

SHORTNESS OF BREATH; The above data shows that there were no present of shortness of breath according to the survey which is done among the college girls of East Khasi hills district in Shillong, Meghalaya.

HEADACE; The above data shows that the absent of headache were 90.67 percent and 9.33 were present.

WEAKNESS; The above data shows that the absent of weakness in college girls were 96.67 percent and the present of weakness were only 5.3 percent.

GUM; The above data shows the normal gum of college girls were 95.33 per cent and the bleeding gum were only in less that is only 4.67 per cent.

PALE/GRAYISH; The above data shows the absent and present of pale and greyish skin of the college girls residing in East Khasi district of Shillong, Meghalaya it shows that 76 per cent were absent and 24 percent were present.

Table.4.9. Comparison of BMI with SES.

BMI (wt/kg)/ht ² (m)	N=150		UPPER CLASS (32)		UPPER MIDDLE CLASS (74)		LOWER MIDDLE CLASS (30)		UPPER LOWER CLASS (8)		LOWER CLASS (6)	
	n	%	n	%	N	%	n	%	n	%	N	%
Underweight	6	4	0	0	1	1.351	2	6.667	2	25	3	50
Normal	136	90.67	26	81.25	71	95.94	28	93.334	6	75	3	50
Overweight	8	5.33	6	18.75	2	2.702						

Table.4.9. Shows that the comparison of BMI with SES and are found that out of 150 respondents 32 respondents are belong to upper class, 81.25 per cent are having normal BMI and 18.75 per cent are underweight. There were no obese found in this class. In upper middle class the total number of respondents



are 74 and it was found to be less were only 1.351 per cent are underweight , 95.94 per cent are found to be high percentage of having normal BMI compared to other class, 2.702 per cent are overweight. In lower middle class about 6.667 per cent are overweight and 93.334 per cent are having normal BMI. In upper lower class 25 per cent of the total respondents are underweight and it was found to be high in this class and 75 per cent are having normal BMI . In lower class 50 per cent are underweight and are found to be high while comparing with other class and 50 per cent are having normal BMI.

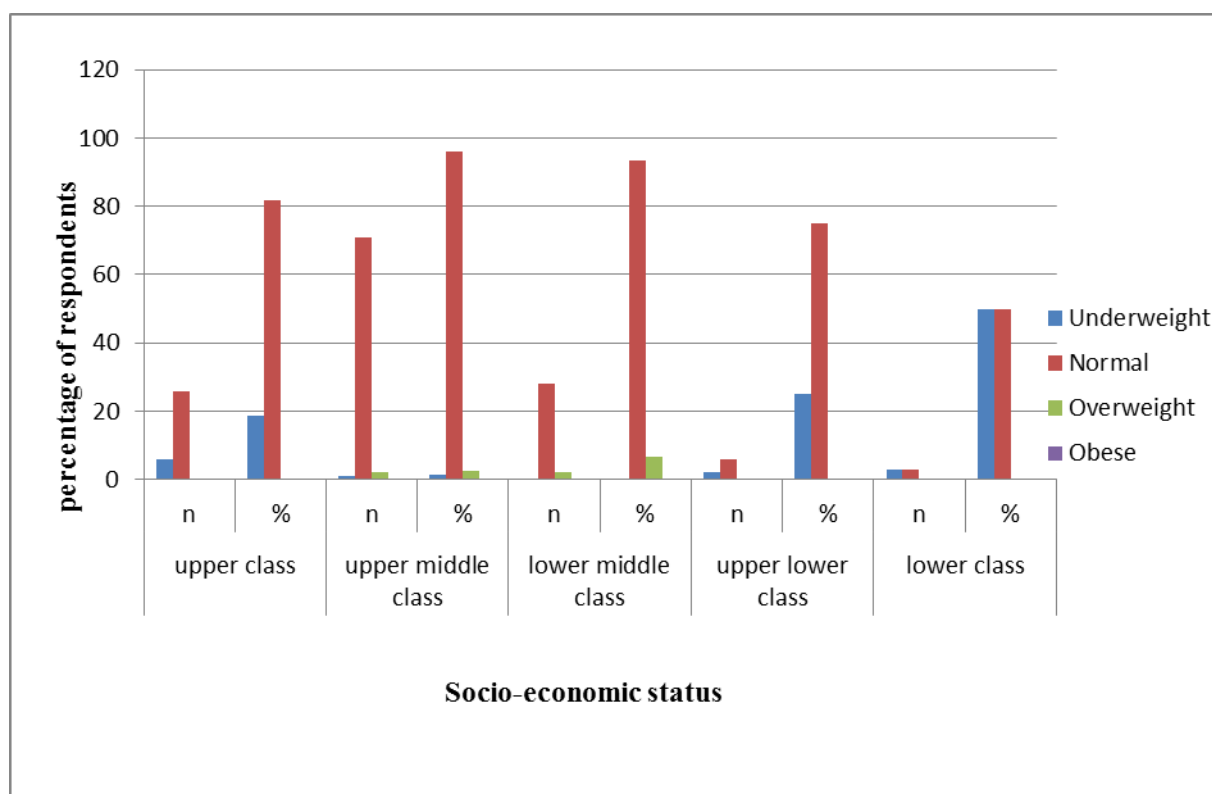


Figure 1: Comparison of BMI

Conclusion

From the results, it is concluded that out of 150 respondents 4 per cent respondent were underweight, 90.67 per cent were found to be normal and 5.33 per cent were overweight. Result shows that out of 150 respondents, 88.33 per cent were non vegetarian and 10.47 per cent were vegetarian. Result shows that out of 150 respondents 10.07 per cent were followed Type a, 36.67 per cent were followed type b, 48 per cent were followed Type c and 4.6 per cent are Type d. The average nutrient intake (CHO, protein, fats, iron, vitamin A and vitamin C) of the respondents was found significantly less than the recommended dietary allowance. Results shows that out of 150 respondents 21.33 per cent belong to Upper class , 49.33 per cent belong to Upper middle class , 20 per cent belong to Lower middle class, 5.33 per cent belong to Upper lower class and 4 per cent belong to Lower class family. Result shows that the socio economic status affect the nutritional status of the respondents. The prevalence of underweight are found higher in lower class and less in upper middle class, the normal BMI are found higher in upper middle class and less in lower class and overweight girls are found higher in upper class during the present study.



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