CONSUMPTION OF FAST FOOD & ITS EFFECT ON NUTRITIONAL STATUS OF SCHOOL GOING GIRLS IN BIJNOR(UTTAR PRADESH)

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ABSTRACT

Growth age is an intense anabolic period when requirements for all nutrients increases. Unsound food habits and lack of nutritional awareness are considered to be the main factors in determining nutritional status in rural areas. Specially Girls are more vulnerable to malnutrition. (WHO, 1994).The aim of this study is to assess the nutritional status of girls using weight and height measurement. This is a cross-sectional study design using multistage random sampling method. A number of girls aged 03-18 years were selected as the study subjects. Pertinent information was obtained on a predesigned and pretested Interview schedule. The data thus obtained was analysed by using many methods. Analysis shows that most of the girls were undernourished, at high risk of developing obesity etc. Therefore the study recommends the strong need of nutritional education for school going girls in the rural area. [14]

Key words: BMI, Adolescents, Malnutrition, Obesity

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I. INTRODUCTION:

Girl child is the future of every nation and India is no exception. A little amount of care, a handful of warmth and a heart full of love for a girl child can make a big difference. In India, discriminatory practices have greatly influenced the health and well-being of a girl child, resulting in a higher mortality rate. The status of the girl child is the key to achieving women's equality and dignity which is, in many ways, a litmus test of the maturity of a society. Girls are to be the future mothers, besides future policy makers and leaders. Jawaharlal Nehru once said "To awake the people it is the women who should be awakened first. Once she is on the move the family moves …the nation moves".

Objectives:

1. To assess the nutritional status of adolescent girls
2. To ascertain the association between consumption of fast food and nutritional status.

II.RELATED DATA AND CAUSES:

As per the report of NNMB and NIN[1] nearly 43.8% children suffer from moderate degree of protein energy malnutrition, 8.7% suffer from extreme form of malnutrition and only 9.9% of the children are normal. In India, malnutrition is the direct cause of death of 500,000 children every year[2]. An estimated 450 million adult women in developing countries are stunted as a result of childhood protein energy malnutrition. [3]The young girls are very important section of our society as they are our potential mothers and future homemakers. In this period of rapid growth, of child is not taken care of, this influence the state of her health not only as a child but throughout the life.[4]

The root cause of malnutrition amongst girls is not just poverty and lack of nutritious food, but also like lack of value attached to girls. Discriminatory feeding practices reveal:

- Girl's nutritional intake is inferior in quality and quantity;
- Boys have access to more nutritious food;
- Boys are given first priority with the available food within the family;
- Female infants are breastfed less frequently, for shorter duration and over a shorter period than boys.

Improper nutrition during adolescence results in various reproductive health disorders. The effects of these disorders further exacerbates by early marriage, closely spaced pregnancies, poor access to information about family planning, traditional practices, etc. It is well established that nutritional status is a major determinant of the health and well-being among adolescent and there is no doubt regarding the importance of the study of nutritional status. Present study is expected to throw light on nutritional status of school going girl's age group and will provide a base line data for future research.

III.MATERIAL AND METHOD:

The present study conducted on 400 girls aged 3 between 18 years selected from g o v e rnment and private schools in Bijnor (UP) in the group was made as primary school, middle, high school, higher secondary school. The samples were taken by random sampling technique. Basic information about age, income group, and qualification, and occupation, no. of siblings, caste, and disease history were collected through interview method. The 24 hours food is analyzed using a transfer sheet of the food taken into quantity (cup/bowl/glass). The food is then calculated to detect whether each subject will take the food from the entire food group according to the food pyramid. The anthropometric measurements Weight, height (compared with ICMR table 1990) [6], BMI (compared with CDC growth chart: body mass index for age percentiles) [5], Triceps skin fold thickness were measured with nearest accuracy and were compared with standard tables and charts[7].

Following standard techniques were used for measurements-

Height

Height in centimetres was marked on a wall with the help of a measuring tape. All girls were measured against the wall without foot wear and with heels together and their heads positioned so that the line of vision was perpendicular to the body. A glass scale was brought down to the topmost point on the head. The height was recorded to the nearest 1 cm.

Weight

The weight was measured using a weighing machine with nearest accuracy. The subjects were asked to remove their footwear before measuring their weight. The scales were recalibrated after

each measurement. Accuracy of the weighing scale was verified from time to time against known weights.

BMI

BMI of the study subject was calculated by using the formula weight (kg)/ height^2 (m^2). For grading proposed criteria of BMI for Asians (Choo V 2002) and CDC (2010) was adopted. [14]

Statistical analysis

The data was analyzed by using mean and standard deviation and the data was represented by using graphical presentation such as bar graph, conical graph and pie diagram.

IV.MEASUREMENTS & FINDINGS:

Research findings are listed below:

Table no1: Distribution of respondents according to triceps skin fold percentiles

Age Group (yrs)	Triceps skin fold percentile				
	5th No(%)	15th No(%)	50th No(%)	85th No(%)	95th No(%)
3-6 Yrs	39 (50.65%)	5 (6.49%)	5 (6.49%)	25 (32.47%)	3 (3.9%)
7-10 Yrs	19 (16.24%)	2 (1.71%)	55 (47.01%)	31 (26.5%)	10 (8.55%)
11-14 Yrs	16 (12.5%)	3 (2.34%)	105 (82.03%)	4 (3.13%)	Nil
15-18 Yrs	8 (10.26%)	2 (2.56%)	62 (79.49%)	6 (7.69%)	Nil

Table no.1 shows the distribution between the age group of children and their triceps skinfold measurement. It may be seen that in the age group of 3-6 years, most of the respondents were found either in 5th percentiles i.e. 50.65% or in 85th percentile i.e.25%. While in age group 7-10 years maximum respondents were recorded in 50th percentile i.e. 47.01% followed by 85th

percentile i.e. 31%. In the age groups of 11-14 and 15-18 years the 95th percentile is nil while most of the respondentsi.e.82.03% and 79.49% observed in 50th percentile respectively. Younger children were classified as obese if their triceps skinfold was greater than or equal to the 85th percentile for age and sex, using the percentiles by age for United States children as normative standards, as recommended by the WHO. So this study reveals that maximum number of respondents was categorized as obese belonged to 3-6 and 7-10 age group.

Table no.2: Distribution of respondents according to fast food consumption

Fast food consumption	Age Group (Years)			
	3—6	7—10	11—14	15—18
2-3 times in a week(%)	18.91	29.72	32.43	18.91
5-6 times in a Week(%)	17.29	32.33	28.57	21.8
Never(%)	23.17	23.17	36.58	17

It was observed that maximum respondents i.e. 32.43% taking fast food 2-3 times in a week belonged to 11-14 years. Respondents taking fast food 5-6 times in a week were belonged to age group 7-10 years i.e. 32.33%. Maximum respondents 36.58% who never take fast food were belonged to 11-14 years age group in table no.2

Table no.3: Distribution of respondent according type of fast food intake

Type of fast food	Age Group (years)			
	3—6	7—10	11—14	15—18
Chinese(%)	16.88	24.78	32	43.58
South Indian(%)	11.69	28.2	21	15.38

Continental(%)	**10.38**	**31.6**	**40.6**	**21.79**
Deep fried food (%)	**61**	**15.38**	**6.25**	**19.23**

Table no.3 shows that Maximum respondents i.e. 61% belonged to 3-6 years age group preferd deep fried food, minimum preference 10.38% was given to continental food. Maximum respondents i.e. 31.6% belonged to age group 7-10 year prefer continental food, minimum respondent i.e. 15.38% preferd deep fried food. Maximum percent i.e. 40.6% respondents belonged to age group 11-14 years age group also prefer continental food whwereas maximum respondents i.e. 43.58% belonged 15-18 years prefer chinese food.

Table no.4: Distribution of respondents according to drink preference

Drink Type	**Age Group (years)**			
	3-6	**7-10**	**11-14**	**15-18**
Fruit juices(%)	**23.5**	**26.36**	**34.21**	**21.92**
Soft drinks(%)	**37.2**	**42.35**	**38.9**	**51.35**
Hot drinks(%)	**28.3**	**31.29**	**26.78**	**26.95**
Alcoholic drinks(%)	**-**	**-**	**-**	**-**

Maximum respondents of all age group prefer soft drink. It is visible that 51.35% respondents belonged to age group 15-18 years prefer maximum, minimum percent i.e. 21.92 preferred fruit juices.

Table no. 5:Percentwise distribution of respondent according to have physical signs of nutritional deficiencies

Nutritional deficiencies	**Dry Hair**	**Acne (%)**	**Dark circle**	**Lips(crack**	**Tooth decay/**	**Bleeding Gums(%)**	**Flat/ spoon**	**Dry skin**	**Pale Tongue**	**nervous system**

	(%)		& floater (%)	at corner of mouth)	spotted teeth (%)		nail shape (%)	(%)	(%)	(%)
3—6	44.54	0	27.27	20.77	44.15	9	19.48	63.6	0	0
7—10	11.11	1.56	2.56	5.98	10.25	0	1.7	14.5	0	0
11—14	3.1	3.41	13.28	1.56	13.28	0	0	25.78	0	0
15—18	8.97	18.23	5.97	7.69	33.3	0	19.23	15.38	0	0

Table no.5 reveals that maximum percent nutritional deficiency recorded among 3-6 years age group. It is also visible that teething problems were also recorded in all age groups. Similarly dry skin /acne and dry hair was recorded in all groups.

V.RESULT:

The findings indicate that percentage of normal weight respondents increases as per age increase. Percentage of obesity or over weight decreases as per age increase. It may be concluded that due to growth spurt of adolescence, the energy was required more than normal. The deposited energy was utilized and due to normal or less dietary intake children were losing weight age increase.

It was also observed that maximum over weight and at risk of overweight respondents were taking Chinese foods. The flavor enhancer monosodium glutamate (MSG), most often associated with Chinese food.[12] Researchers found that MSG consumption was positively related to increases in body mass index. Weight gain was significantly greater in MSG users than in nonusers. For the third of participants using the highest amount of MSG, the odds of reaching overweight status were between 2.10 and 2.75 greater than for nonusers. [10]

It was analyzed that respondents who were taking south Indian foods maximum came under category of normal weight and under weight . South Indian food consists of spicies and peepers that contains capsaicin.[13]

There is preliminary evidence for capsaicin possibly affecting weight regain where capsaicin may produce "a shift in substrate oxidation from carbohydrate to fat oxidation".The effect may elicit a decrease in appetite as well as a decrease in food intake. In one study, oral and gastrointestinal exposure to capsaicin increased satiety and reduced food intake.[9]The fact with south Indian food that it contains tamarind. Tamarind contains HCA – hydroxy citric acid which slows down the production of fat. HCA inhibits the enzyme in the body that promotes fat storage. Hydroxycitric acid also suppresses appetite by increasing serotonin neurotransmitter levels. It also burns fat during long exercises.[11]However this interpretation needs further research. Chinese and continental dishes include maida and other simple carbohydrates that are stored in body. Respondents taking deep fried foods maximum came under normal weight ,the reason concluded that they were having sour chillied chutneys with it that consume up some energy.

Result have clearly shown that respondents having 4 or less food groups showed more deficiency symptoms than respondents having five or six food groups. It was concluded that all food group together make a balance diet .Skipping one or more food groups causes nutrient deficiency symptoms.

A cross sectional study shows that 90% students were having fast food in their diet, but only 22.45% and 9.52% were found to be pre obese and obese respectively. On the same side, more frequency of fast food in a week and less physical exercise were significantly related to high BMI.[8]

VI.CONCLUSION & RECOMENDATION:

It may be concluded that the nutritional status of school going girls was found poor. Taking inadequate nutrition is the major fact responsible for poor nutritional status of gilrs. Consuming more fast foods resulted in obesity was found in the respondents. So awareness on health hazards

of fast foods needs to be taught at schools so as to minimize its consumption. Parents as well as children should be aware of food labeling as it carries many important information regarding food which help in making good choices of food, nutritional information. Healthy lifestyle and eating among children and adolescents should be presented through televisions, newspapers and effective school education campaigns.

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