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RESEARCH ARTICLE

Association of eating behaviour with anaemia among female hostelites

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ABSTRACT

The aim of this study was to find out the eating behaviour of hostel students which could lead to anaemia. Mild- moderate anaemia was prevalent in 50% of the subjects with mean haemoglobin value as 10.88±1.93. Majority of the subjects were overweight or obese. There was a relationship between severity of anaemia and iron and protein intake. Poor dietary intake was observed, which had an impact on the nutritional status. Prevalence of anaemia among women hostelites highlights the importance of nutritional counselling not only to patients but also vulnerable groups like hostelites especially women to improve eating habits at least to stabilise the condition if not worsen.

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Key words : Anaemia, Anthropometry, Biochemical parameters

INTRODUCTION

Students living in hostels are a distinct group of students who have unique needs and problems. They have particular physical, social and emotional characteristics. They are away from home for the first time and have to learn to manage their own affairs, and adjust to new conditions of living without a family member of greater experience to guide them. Also students who live independently are subject to less parental control that can inhibit unhealthy behaviour. Such students are more prone to poor eating habits, increased fast food consumption leading to lack of inappropriate intake of essential nutrients, lack of sleep, or the acquisition of new habits. All these factors do not contribute positively to the development of a healthy lifestyle. Thus, the idea was perceived as to find out the eating behaviour of hostel students which could lead to anaemia, so that appropriate preventive treatment could be established.

MATERIALS AND METHODS

Fifty healthy female volunteers in the age group of 18 – 25 years who were residing a women's hostel were selected for the study by simple random selection method in a period of one month. Day scholars, adult males, females having any ailment such as asthma, diabetes, hypertension or any other obvious medical conditions which could lead to anaemia were excluded from the study. Written informed consent was collected from each of the participants prior to the study. Participation was purely voluntary. Demographic data such as name and age, anthropometric measurements such as height and weight, diet history and frequency of iron rich foods were collected from the selected subjects. Blood sampling was done by finger prick method and haemoglobin levels were estimated using cyanomethaemoglobin method. Statistical analysis was carried out using SPSS Version 17.1 and the results have been discussed below. On completion of the study a nutrition education programme was conducted in the ladies hostel focusing on enhancing health and facilitating dietary change among the group.

RESULTS AND DISCUSSION

The characteristic profile of the subjects is presented in Table 1. The mean height and weight of the selected subjects was normal when compared to the ICMR

Table 1 : Characteristic profile

Parameters	Values
Height (cm) (M±SD)	155.52±6.07
Weight (kg) (M±SD)	53.3±7.34
BMI Categories	
<18.5 kg/ m^2	10%
18.5 -27.5 kg/ m^2	20%
27.5 -30.0 kg/ m^2	46%
>30 kg/ m^2	24%
Serum Haemoglobin Values	
Normal (n) (M±SD)	(25) 12.56±0.55
Mild – moderate anemia (n) (M±SD)	(25) 10.88±1.93
Dietary Pattern	
Non- Vegetarian	62%
Vegetarian	38%

standards. Among the 50 subjects, 10% were undernourished, 20% were under the normal category, 46% were at the risk of obesity, and 24% had obesity. 50% of the subjects were having mild anaemia with a mean value of 10.88±1.93 S.D and 50% were normal. Among the 50 selected subjects, 62 % of the subjects were non-vegetarian and 38% were vegetarian. Most of these subjects had a habit of daily consumption of fast foods. Zamburro (1998) quotes that fast foods are foods which generally provide more of calories and carbohydrates than proteins, vitamins and minerals such as iron and calcium. Increased consumption of fast foods for an extended period of time can lead to iron deficiency anaemia.

Table 2 : Nutrient intake

Parameters	Mean±S.D	RDA	% Deficit
Energy(Kcal)	1201.18±271.96	1875	36
Protein(g)	25.66±9.06	50	50
Fat(g)	34±27.30	35	3
CHO(g)	188.12±48.40	304	38
Iron (mg)	21.1±6.45	30	30

Nutrient intake

From Table 2, it can be inferred that the percentage deficit for protein and iron intake of the subjects was 50% and 30%, respectively. Perurtz (1998) infers that decreased iron and protein consumption can lead to anaemia as both iron and protein are essential for haemoglobin formation. Therefore, some of the subjects were at the risks of developing anaemia. The probable reasons when probed into for decreased iron intake were skipping meals, fast food consumption, personal likes and dislikes, menstrual problem, stress, poor quality of food, inadequate consumption of pulses, animal foods, green leafy vegetables, dates, rice flakes, ragi etc which are rich sources of protein and iron. According to Prabhakaran (2003) women who have low iron diets are at an additional risk of iron deficiency and therefore they should be guided in optimizing their dietary iron intake. Similar observation was seen in the study subjects and therefore they should be encouraged to eat iron rich foods and foods which enhance iron absorption by promoting appropriate dietary habits through effective nutrition education (Saroja Prabhakaran, 2003).

Frequency of consumption of iron rich foods:

The frequency of consumption of iron rich foods was collected from the subjects as shown in Table 3. It revealed that consumption of iron rich vegetarian and non-vegetarian foods was very rare. Rice flakes which has a bioavailability of 74.2 % of iron was consumed rarely by 50% of the selected subjects (Sunitha, 1995). 80 % of the subjects never consumed ragi and bajra which has a bioavailability of 88% for iron (AID, 2003). Pulses which have a bioavailability of 47.5% for iron was consumed daily by 60% of the subjects (Randhawa, 1992). 45% of the subjects consumed green leafy vegetables weekly, which has a bioavailability of 40% for iron (Gupta, 2006). Dates and liver which have a bioavailability of 40% for iron was consumed rarely by 50% of the subjects. Jaggery which has a bioavailability of 25% for iron was never consumed by 50% of the subjects (Aoyagi, 1995). Thus, it can be

Table 3 : Frequency of consumption of iron rich foods

Food group	Times/day (%)	Times/week (%)	Monthly (%)	Rarely (%)	Never (%)
Rice flakes	10	10	20	50	10
Ragi, Bajra	-	-	10	10	80
Pulses eg: Bengal gram, cowpea, soybean	60	20	10	10	-
Green leafy vegetables	25	45	10	20	-
Dates	-	-	25	50	25
Liver	-	20	25	50	5
Jaggery	-	15	10	25	50

inferred that iron rich foods with high bioavailability was consumed less by the subjects and thus they were more prone to have anaemia.

Conclusion:

Prevalence of anaemia among women hostelites highlights the importance of nutritional counselling not only to patients but also vulnerable groups like hostelites especially women to improve eating habits at least to stabilise the condition if not worsen. Iron deficiency anaemia is associated with serious adverse outcomes that may not be reversible. It can be prevented through the use of iron-containing or iron-fortified foods. If anemia is detected, it should be treated by inculcating healthy eating habits among the vulnerable group.

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