International Journal of Home Science 2018; 4(1): 159-163

International Journal of Home Science

ISSN: 2395-7476
IJHS 2018; 4(1): 159-163

www.homesciencejournal.com
Received: 25-11-2017
Accepted: 26-12-2017

Alphonsamma
Associate Professor,
Department of Home Science,
Shri Dharmasthala
Manjunatheshwara Degree
College, Ujire, Karnataka, India

Correspondence
Alphonsamma
Associate Professor,
Department of Home Science,
Shri Dharmasthala
Manjunatheshwara Degree
College, Ujire, Karnataka, India

A study on factors associated with haemoglobin concentrations among female students in SDMC, Ujire

Alphonsamma

Abstract
Anaemia is a major global problem affecting between 20-70%of the population in various countries. In India it is an important public health problem affecting people from all walks of life. The disease is of particular significance in school children, adolescent and pregnant women because of high prevalence and the adverse functional consequences. Anaemia is also directly and indirectly responsible for 10-20% of maternal deaths, high incidence of premature births and intrauterine malnutrition.
Anaemia is most common in adolescent girls to the tune of 20-25% irrespective of the social class. Angular stomatitis and glossitis are more common in poor classes because of the poor quality of diet and non-availability of healthy foods. In higher classes personal likes and dislikes and food taboos lead to anaemia. Recent World Health Organisation (WHO) statistics indicate a worldwide anaemia prevalence of about 50% with higher rates in developing countries, adolescent and pregnant women are the most affected group with an estimated global prevalence of about 40% and 50% respectively.
Anaemia is very wide spread, more among females than males and higher among adolescents, sever anaemia (with Haemoglobin levels <8g. /dl) is more frequently seen in severely undernourished adolescents who also exhibit signs associated with deficiencies of calories, proteins, vitamins and minerals. This article will review the procedure for taking a history, determining the etiology, and creating awareness about anemia among adolescents.

Keywords: Anemia, adolescents, haemoglobin, and nutrition

Introduction
Nutritional anaemia may be defined as the condition that results from the inability of the erythropoietic tissue to maintain a normal haemoglobin concentration leading to reduction in the total circulating haemoglobin.
Anaemia is defined as reduction in the haemoglobin (Hb) level in circulation. WHO in 1972 after having analyzed data on large number of haemoglobin values has suggested cutoff points for different groups of population
Cutoff points for haemoglobin values for diagnosis of anaemia

Table 1

	Haemoglobin (gl dl)
Adult men	<12
Adult women	<12
Pregnant women	<11
Lactating women	<12
Children 6 years	<11
Older children	<12

Anaemia is a broad term applied to the condition in which there is inadequate or defective formation of haemoglobin and defective maturation and formation of red blood cells.

Anaemia may be broadly divided in to three groups.
1. Anaemia caused by dietary deficiencies
a. Anaemia due to inadequate production of erythropoietin.
b. Anaemia due to deficiencies of folic acid and vitamin B12 (Megaloblastic anaemias)

c. Iron deficiency anaemia.
d. Anaemias due to deficiencies of vitamin-C, Pyridoxine and certain hormones.

2. Anaemias due to genetic defects (Hemolytic anaemias)
a. Defective formation of haem
b. Defective formation of globin (harmoglobinapathies and thalassemias)
c. Defective formation of red blood cells
3. Anaemias due to other causes.
a. Drugs, toxic chemicals, infection and antibodies and non-availability of iron stored in tissue (Sideroblastic anaemia)

Iron deficiency Anaemia
This is the most common form of anaemia throughout the world affecting mainly women in their reproductive years, infant and children in both rural and urban areas in the tropics this type of anemia is extremely common.

Deficiency of iron may occur as a result of the following.
a. Inadequate iron intake
b. Inadequate utilisation of iron
c. Blood losses
d. Increased requirements
e. Inadequate absorption of iron.

Methodology
This chapter describe the aim, and objective of the study for which hypothesis are formulated, the sample and design of the research. Further this chapter describes the tools and procedure adopted for the study. Finally the chapter also describes analysis of the data and ethical consideration of the research.

Aim: A Study on factors associated with haemoglobin concentrations among female students in SDMC, ujire.

Objectives
- To study the causes for anemia / low hemoglobin levels among adolescents girls.
- To determine the nutritional knowledge among adolescent girls.
- To examine the association between anemia, socio economic factors, food habits etc…
- To create awareness and to disseminate the knowledge related to the prevention and control of anemia.

Scope of the study
The study was conducted on the haemoglobin level among Home Science girls, and to access their knowledge regarding anemia, the causes, and symptoms and based on it to create awareness among them on the importance of nutrients particularly iron in preventing anemia. The present study was done only on limited number of adolescent girls next which will be conducted on a wide range.

Hyphothesis
- Adolescent girls are not aware about anemia and knowledge on nutrition.
- There is no significant relationship between anemia, family income, and food habits of the subjects.

Procedure
The procedure for the study is classified under the following headings.

1. Formulation of the research design
In order to elicit the information on factors associated with haemoglobin concentrations among female students in SDMC, Ujire. A census survey and questionnaire tool was used.

2. Selection of the samples
Samples of 58 Home Science girls' students were selected in SDMC, Ujire.

3. Data collection
Questionnaires were framed using Google forms and collected responses from students in computer lab SDMC, Ujire. Clarifications about the questions in the questionnaire were done then data were saved for results and discussion.

4. Conducting the pilot study
In order to study the feasibility of the investigation, the pilot study was conducted. Selected sample of ten students was chosen. The questionnaire was given in Google forms and collected later. The necessary changes were made for the final survey.

5. Compilation, analysis and interpretation of the data
After the questionnaires were duly answered and Data were collected, the various aspects were grouped and analysed accordingly by using percentage method.
The results were tabulated and analysed statistically where ever required and results were presented and conclusions were finally drawn based on the data collected.

Results and Discussion

Table 1: Demographic profile N=58

Sl. no	Variables	Percentage
1.	Age 17-18	37.0%
	19-20	62.0%
	20 above	1.0%
	Total	100%
2.	Religion Hindu	79%
	Muslim	16%
	Christian	5%
	Total	100%
3.	Annual income 3lakhs	64%
	3-7lakhs	17%
	7-12lakhs	16%
	>12 lakhs	3%
	Total	100%
4.	Source of income Agriculture	40%
	Business	26%
	Coolie	14%
	salary	21%
	Total	100%
5.	Place of stay House	81%
	Hostel	15.5%
	PG/Mess	1.7%
	Relatives house	1.7%
	Total	100%
6.	Education Qualification of parents SSLC or Below	62.1%
	PUC or 12th	19.0%
	Under Graduate	6.9%
	Post Graduate	5.2%
	Professional Degree	5.2%
	Illiterate	1.7%
	Total	100%

Discussion

To the above table among the subjects 62% of them belongs to 19-20 years of age group, 79% are belong to Hindu religion, 64% of the subjects come under 3 lakhs annual income group and 40% of the respondents income source is agriculture, 81% come from home to college and 62% of the respondents parents education qualification is Below SSLC.

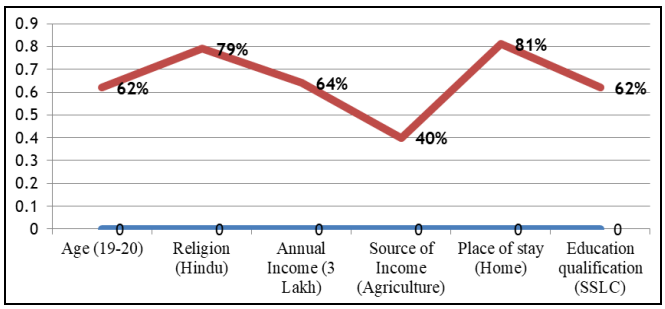

Fig 1: Demographic profile

Table 2: food habits of the subject

Sl. no	Variables	Percentage
1.	Food type Vegetarian	24%
	Non-vegetarian	76%
	Total	100%
2.	Do you eat leafy vegetables? Yes	97%
	No	30%
	Total	100%
3.	Do you have habit of drinking tea/coffee? Yes	65.5%
	No	34.5%
	Total	100%

Discussion

Table no.2 depicts the food habits of the subject the highest 76% of them are non- vegetarian, 97% of them eat leafy vegetables and only 65.5% of them have the habit of drinking tea/coffee.

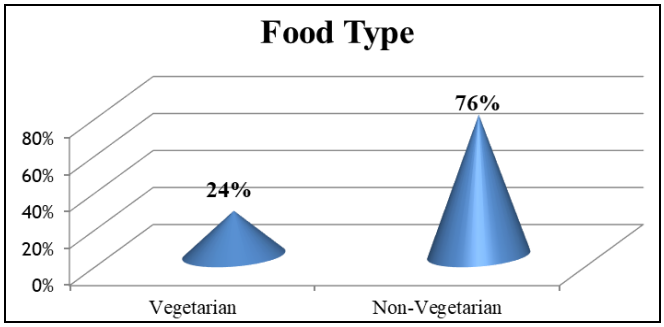

Fig 2

Table 3(a): Food frequency

Frequency	White Rice	Brown Rice	Whole Grain	Dry Fruits
Daily	41%	50%	10%	12%
Once in 2 Days	7%	9%	14%	19%
Weekly Once	14%	10%	31%	21%
Weekly Twice	2%	2%	22%	9%
Once in 15 Days	10%	5%	16%	14%
Once in a Month	19%	10%	3%	22%
Don't Eat	7%	14%	3%	3%

Table (b): How often does the subject take the following fruits during the season?

Frequency	Apple	Orange	Grapes	Papaya	Guava	Gooseberry
Daily	9%	9%	2%	5%	5%	3%
Once in 2 Days	12%	9%	12%	9%	10%	7%
Weekly Once	14%	33%	16%	19%	14%	9%
Weekly Twice	9%	7%	14%	3%	14%	12%
Once in 15 Days	22%	24%	17%	12%	16%	5%
Once in a Month	33%	19%	34%	34%	31%	26%
Don't Eat	2%	0%	5%	17%	10%	38%

Table (c): How often does the subject eat the following meats?

Frequency	Red Meat	Chicken	Sea Food
Daily	0%	4%	4%
Once in 2 Days	7%	22%	9%
Weekly Once	16%	34%	17%
Weekly Twice	7%	8%	6%
Once in 15 Days	9%	14%	19%
Once in a Month	14%	18%	26%
Don't Eat	48%	0%	19%

Table (d): How often does the subject take the following foods?

Frequency	Soft Drinks	Fast Food	Packed Food
Daily	0%	2%	7%
Once in 2 Days	5%	3%	16%
Weekly Once	17%	22%	22%
Weekly Twice	12%	26%	19%
Once in 15 Days	19%	29%	16%
Once in a Month	38%	12%	14%
Don't Eat	9%	5%	7%

Discussion

From the above food frequency table 36% of the subjects take brown rice daily, 41% consume white rice daily, 22% prefer whole grains weekly twice.

And from seasonal fruits frequency table we depict that 22% of them eat apple daily, 33% eat orange weekly once, 34% consume grapes once in a month, 34% eat papaya once in a month, 31% of them eat guava once in a month, 26% take gooseberry once in a month and 38% do not eat gooseberry at all.

According to the subject 48% of them do not eat red meat, 26% take sea food once in a month, and 34% eat chicken once in a week.

38% of the subject takes soft drinks once in a month, 29% take fast food once in 15 days, and 22% of them take packed food weekly once.

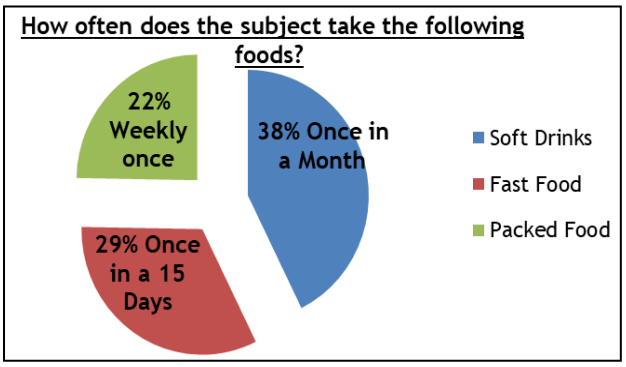

Fig 3

Table 4: Anemia related knowledge

Sl. no	Variables	Percentage
1.	Where do you usually eat lunch? Lunch Box	60%
	At Home	16%
	Hostel/PG	12%
	Hotel	12%
2.	Do you skip your breakfast? Yes	52%
	If Yes? Daily	13.3%
	Once in 2 Days	30.0%
	Weekly Twice	10.0%
	Weekly Once	26.7%
	Once in 15 Days	20.0%
	No	48%
3.	Have you taken multivitamin or Iron supplements? Yes	53%
	No	47%
4.	Do you donate blood? Yes	31%
	No	69%
	If Yes? Once in 6 Months	6.9%
	Once in a Year	10.3%
	More than 5 Years	69.0%
	Once in 2-5 Years	5.2%
	Don't donate	8.6%
5.	Family History: Parents having the following conditions? Anemia	5%
	Diabetes	5%
	Hypertension	10%
	Overweight	3%
	Underweight	5%
	No Issues	71%
6.	Fever in last 3 month period Yes	40%
	No	60%
	If Yes? Fever type. Fever with Cold	87%
	Viral Fever	9%
	Dengue	4%

Discussion

To the above table-4 highest percent of the subjects 60% bring lunch box from home, 52% skip their breakfast, 48% do not skip their breakfast, and 53% of the candidates take multivitamin and iron supplements, 69% donate blood, 71% subject parents have no health related problems and 60% of the subjects did not get fever in the last 3 months.

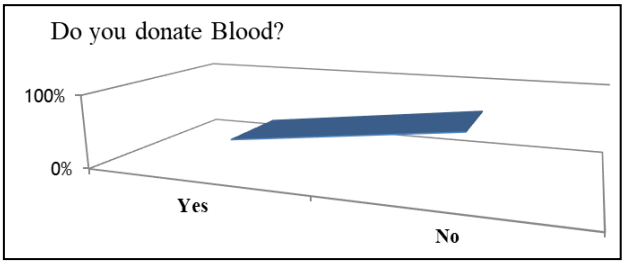

Fig 4

Statistical analyses

The statistical analyses were done using Chi-Square test, Fisher's exact test, Comparison t-test, standard error of proportion. The help of a statistician was sought while analyzing the data.

Conclusion

A high prevalence of anemia among adolescent females was found which was higher in the lower socio-economic strata and among those whose parents were less educated. It was seen that anemia affects the overall nutritional status of adolescent females. There is need to include iron rich food in diet at least once in a week they should consume grams, maize, green leafy vegetables, powder milk, and red meat. Adolescent girls should eat iron rich food to get recommended iron for the day to gain normal body mass index. They should avoid skipping breakfast, majorities are taking multivitamin, and iron supplements which are to be avoided. Counseling can be done to empower them to make understand the importance of precaution measures to avoid anemia in adulthood. General information is needed such as the adverse effects of drinking tea with meals, over use of iron pills, especially those women who don't follow the doctor prescription. The end result of iron deficiency is nutritional anemia which is not a disease entity. It is rather a syndrome caused by malnutrition in its widest sense. Poor appetite and gastro intestinal discomfort seriously interfere with an adequate food intake which gives the symptoms almost like general nutritional deficiency. Though anemia cannot be treated by diet it can be prevented by taking balanced diet. Anemia can be prevented by supplementation education and fortification.

Acknowledgement

First and foremost praise and thanks to the God, the almighty for his showers of blessing throughout my research work to complete successfully. I express my sincere gratitude to the Secretary Dr. B. Yashovarma, Shri Dharmasthala Manjunatheshwara College, Dakshina Kannada for his encouragement and blessing.

I would like to express my gratitude to Mr. Pradeep assistant professor of statistics department in S.D.M.C of PG Studies for sharing his pearls of wisdom with us and helping in doing statistical analysis for the data during the course of this research.

Reference

1. Anita FP, Abraham P, editors. clinical dietetics and nutrition, 4th edition, oxford university press, 1997.
2. Srilakshmi B. Dietetics, Wiley eastern limited, new age international publication limited, 1995.
3. Dr. Swaminathan M. advanced text book on food and nutrition, volume II, 2nd edition, Bangalore printing and publishing, 1974.
4. Guidelines for control of iron deficiency anemia adolescent division, ministry of health and family welfare, government of India, 2013.
5. ICMR Bulletin. A reappraisal of the iron status indicators, 1997, 27.
6. Mahtab S, Bamji N, Pralhad Rao. textbook of Human nutrition, oxford, and IBH Publishing co. Pvt. Ltd, Calcutta, 1999.
7. Malhan gupta, Jain Passi. Nutrition and Home Management, first edition, sulthanchand and sons published, New Delhi, 1992.

8. Park K. parks, text book of preventive and social medicine, 23rd edition, publisher Bhanot, 2017.
9. World Health Organization programming for adolescent health and development, WHO Tech Rep Ser. no 1996:2. www.google.com.