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Anemia among Students of a Medical School in Srinagar City

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Abstract
Background: *Anemia is a common problem in our country. Many interventions are in place to lessen the burden of this deficiency but still a lot needs to be done. The objective of this study was to estimate the prevalence of anemia in students of a medical school.*
Materials and Methods: *Students studying in Ist professional of medical college were enrolled for the study. A semi structured pretested questionnaire was used. The questionnaire included information about the socio demographic characteristics of the students. Data was analysed using percentages, chi-square,.*
Results: *35.6% of students were 18 years of age.52.3% were females. 59.7% belonged to nuclear families.57.7% were from rural areas.85.9% were muslims with 96 % participants non vegetarians. 48.3% turned out anemic with 61.04% having mild anemia. None of the participants had severe degree of anemia.*
Conclusion: *The study found a huge burden of anemia among the students which prompts one to find out various factors associated with this problem.*
Keywords: *anemia, medical school, Srinagar city.*

Introduction

WHO defines anaemia as a condition in which the Haemoglobin (Hb) content of blood is lower than normal as a result of deficiency of one or more essential nutrients, regardless of the cause of such deficiencies[1] and thus estimating hemoglobin level is the main diagnostic method. Anemia decreases the work capacity of an individual, depending upon the degree of anemia. Mild and moderate decrease in hemoglobin levels does not have any overt symptoms but severe anemia incapacitates

an individual. India being one of the resource poor countries in world leads in prevalence of anemia. As per WHO, there are two billion people with this condition in the world and half of these is due to iron deficiency.[2] In India, anaemia affects an estimated 50 per cent of the population [3]. These staggering figures lead to economic and health consequences in resource poor countries like India. Anemia is a major public health problem of our country, keeping in view that ICMR (Indian Council for Medical Research) has classified the

public health significance based on the burden as under;

Classification of public health significance of anemia in populations on the basis of prevalence estimated from blood levels of hemoglobin.[4]

Category of public health significance	Prevalence of anemia (%)
Normal/Not a problem	4.9 or lower
Mild/Low	5.0-19.9
Moderate	20.0-39.9
Severe/ High magnitude	40 or higher

Adolescence is a critical time in the life of humans where behaviours developed at this point of time determine the health and well being for the lifetime. A girl child having anemia leads in return to a birth of anemic child too and the cycle goes on. To break down this vicious cycle intervention should be at the right time. Thus any nutritional disorder more so iron deficiency anemia require a collective effort for promotion of primordial cum primary preventive actions which are cost effective and simple to act upon.

Objectives

1.To find out the percentage of anemia among students of a medical school and different epidemiological factors associated with it .

Material and Methods

The study was conducted from November 2016 to December 2016 in government medical college Srinagar. The study employed a non probability convenience sampling technique. All the students of first professional were enrolled and interviewed. Information on socio-demographic variables like age, education of mother, type of family, residence ,sex, religion, type of diet, fathers occupation was collected using a semi structured pretested questionnaire. Weight was measured on a pre-calibrated weighing scale (bathroom scale).

The scale was calibrated using a standard weight. Measurements were taken to the nearest 0.1 kg. Participants were weighed in light clothing and bare feet. Height was measured in the Frankfort plane with a portable stadiometer. The measurements were taken to the nearest 0.1 cm. Blood sample was collected after taking a proper consent. Hemoglobin estimation was done by Sahli method.

The suggested cut-off values for anemia in various groups of population are as under.[5]

Population group	Non-anemia g/dL	Mild anemia	Moderate anemia	Severe anemia
Non-pregnant woman age 15 years and above	12 or above	11-11.9	8-10.9	Less than 8
Men(15 years and above	13 or above	11-12.9	8-10.9	Less than 8

The data was entered in Microsoft excel (2007) and analysis was done using percentages, chi-square. A p-value of <0.05 was taken as statistically significant.

Results

The study sample included 149 students in the age group of 18 -21 years, 35.6% of students were 18 years of age. Adolescents comprised about 62.4% of the study population.52.3% were females. 59.7% belonged to nuclear families with 42.3% of participants whose mother having upto 12 years of education. 48.3% having father as employees.

57.7% were from rural areas.85.9% were muslims with 96 % participants non vegetarians. (Table I)
48.3% having anemia in which 68.83% were females and 31.16% males which is shown in Table II.
61.04% respondents having mild anemia followed by 31.16% moderately anemic and none having severe anemia as shown in Table III.

Table I Socio demographic characteristics of the participants

Variables	Frequency n=149	Percentage
Age (years)		
18 years	53	35.6
19 years	40	26.8
20 years	45	30.2
21 years	11	7.4
Type of family		
Nuclear	89	59.70
Joint	60	40.30
Education of mother		
Illiterate	12	8.1
Upto Higher secondary	63	42.3
Graduate	55	36.9
Post graduate and above	19	12.7
Residence		
Rural	86	57.7
Urban	63	42.3
Sex		
Males	71	47.7
Females	78	52.3
Religion		
Muslims	128	85.9
Hindus	16	10.7
Buddhist	3	2.0
Sikh	2	1.3
Occupation of father		
Salaried	72	48.3
Farming and allied	40	26.8
Business	26	17.4
Others	11	7.4
Type of diet		
Non-vegetarian	143	96.0
Vegetarian	6	4.0

Table II Percentage of anemia

Anemia present	n= 77	48.3%
Females	n = 53	68.83%
Males	n= 24	31.16%

Table III Distribution of study participants in relation to severity of anemia

Degree of anemia	Frequency	Percentage
Mild anemia	**47**	**61.04**
Moderate anemia	**30**	**38.96**
Total	**77**	**100 %**

Table IV Relation of anemia with different socio demographic factors

Characteristics of participants	Chi-square value*	p-value
Age	**2.339**	**.5**
Sex	**17.354**	**0.000 ****
Type of family	**.45**	**.5**
Religion	**.29**	**.5**
Occupation of father	**1.714**	**.63**
Residence	**3.26**	**0.07**
Education of mother	**0.006**	**0.9**
Type of family	**0.45**	**0.5**
Body mass index	**0.79**	**.37**

*chi-square test   ** p value<0.05

Discussion

The present study was conducted in a medical school of Srinagar city. It included 149 students. A large number of students presented with anemia (48.3%)

No statistical relation of anemia was found with father's occupation, education, residence, age, type of diet taken by the individual. There was strong statistical significance found among males and females regarding presence of anemia. The low dietary intake of iron and folic acid coupled with poor bioavailability of iron is the major factor responsible for very high prevalence of anaemia in the country [6,7]. The bioavailability of iron for absorption in blood depends mainly on the components of diet [8]. Iron in the form of heme is highly bio available that is the reason, meat and meat products are useful for iron availability[9]. Vitamin C improves too the availability of iron for absorption as well as the avoidance of tea or other chelating substances [10] Cooking practices like deep frying in our part of country, worm load , and use of tea could be one among the possible factors .Lack of vegetables like green leafy or coloured vegetables in the main meals eaten everyday. Eating highly processed foods, junk foods could be also one of the factors related to such a high burden of anemia. Monotonous diets rich phytates inhibit iron absorption too [11].

Research and understanding of fundamental iron biology will help in devising novel strategies which will be aimed towards the elimination of this disease from world.

Conclusion

The study found a high burden of anemia in this group of population. So further studies need to be taken to see various factors responsible for this high level of anemia in pregnant women and monitoring of the interventions being taken at this point of time so that the burden is decreased or

brought to control. To conclude, food fortification, behaviour change communication, information and communication remain the key to decrease this high level of anemia in our population.

Author's contribution: Dr. Mahbooba conceived the study, prepared the manuscript and Dr. Sheema analysed the data. Dr. Shaugufta collected the data and did the data entry. Dr. Sheikh Imran reviewed the article.

References
1. WHO. Geneva, 1989.
2. WHO, UNICEF, and UNU, Iron deficiency anemia: Assessment, Prevention, and Control, A Guide for Programme Managers, WHO, UNICEF, UNU, Geneva, Switzerland,2001
3. Florentino RF. The burden of iron deficiency and anaemia in Asia: Challenges in prevention and control. Nutrition goals for Asia - vision 2020; *Proceedings IX Asian Congress of Nutrition*; 2003 p. 313-8.
4. Kishore J.Editor. National Health Programs of India.6th ed.New Delhi; Century Publications;2006;82-84
5. WHO. Haemoglobin concentrations for the diagnosis of anaemia and assessment of severity. Vitamin and Mineral Nutrition Information System. Geneva,World Health Organization.2011
6. National Nutrition Monitoring Bureau. NNMB Micronutrient Survey. National Institute of Nutrition, Hyderabad, 2002.
7. Indian Council of Medical Research, Micronutrient Profile of Indian Population, New Delhi, 2004.
8. Sharp PA.Intestinal iron absorption: Regulation by dietary and systemic factors.Int J Vitam Nutr Res.80:231-242
9. Lopez MA, Martos FC 2004.Iron availability :An updated review.Int J Food Sci Nutr 55 :597-606
10. Thankachan P,Walczyk T,Muthayya S,Kurpad AV, Hurrell RF 2008.Iron absorption in young Indian women ; the interval of iron status with the influence of tea and ascorbic acid.Am J Clin Nutr .87:881-886
11. S Agrawal; R Misra; A Aggarwal, *Rheumatol Int*, 2006, 26(12),1091-1095
12. Jeffery L.Miller.Iron deficiency anemia: A common and curable disease.Cold Spring Harb Perspect Med.2013 ; 3(7).