

**Impact
Factor
3.025**

ISSN 2349-638x

Refereed And Indexed Journal

**AAYUSHI
INTERNATIONAL
INTERDISCIPLINARY
RESEARCH JOURNAL
(AIIRJ)**

UGC Approved Monthly Journal

VOL-IV

ISSUE-XII

Dec.

2017

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CHIEF EDITOR – PRAMOD PRAKASHRAO TANDALE

**Prevelence of Malnutrition and Anaemia Among the Adult Girls- A Case Study
of Govt. College of Education,Bhiwani**

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Abstract:

Malnutrition means deficiency or excess of one or more essential nutrients like essential fatty acids, essential amino acids, minerals, vitamins etc. in the diet. Malnutrition is common health problem in rural areas and in poor urban area people. A large number of adolescent and adult girls are found to be suffering from mild to severe anaemia. Assessment of nutritional status of community, especially the women is very significant in formulating strategies to combat malnutrition. The risk group identified in the present study is of adult girl students. Gender based discrimination prevails in various ways like selective nutritional neglect of girls, differential investment on healthcare and excess work to perform at home. Anaemia is a major manifestation of malnutrition. Anaemia is a condition when the haemoglobin level falls below 12 gm / dl among the girls(by WHO). There are many causes of anaemia like deficiency of iron, vitamin B-12, folic acid etc.in the diet. Loss of blood during menstruation is also responsible for anaemia among girls. The present study was undertaken to investigate the prevalence of malnutrition and anaemia in the adult college girls of Govt. College of Education, Bhiwani(HR). The girls of this college represent the rural and urban areas mainly of district Bhiwani and partly from the adjoining districts like Rohtak, Hisar, Jhajjar, Charkhi Dadri etc. In all, 150 girls in age group of 20 to 30 years were enrolled for present study. Haemoglobin estimation and anthropometric methods like BMI were used to assess the malnutrition status. It was found that out of total study subjects 87.33% were anaemic while 44 % were severely anaemic.Majority of girls 57.33% were in normal range of BMI while 30.66 were underweight,10.66% were overweight and only 1.33% were suffering from obesity.From the present study it is concluded that prevalence of anaemia is highly prevalent among the study subjects and the body mass index is also of great concern. Further studies are required to find out the various factors associated with anaemia and abnormal BMI.

Key Words: Malnutrition, Anthropometry, Anaemia, Haemoglobin, Body mass Index.

Introduction:

The subject of food and nutrition is a fast growing area of research especially in India where malnutrition and deficiency diseases are very common. Malnutrition means deficiency or excess of one or more essential nutrients like essential fatty acids, essential amino acids, minerals, vitamins etc. in the diet. Malnutrition is common health problem in rural areas and in poor urban area people. A large number of adolescent and adult girls are found to be suffering from mild to severe anaemia. There are many reasons associated with it like sex, age, nutritional status(deficiency of Iron and vitamin. B-12),excessive loss of blood during menstruation,gut worms etc. A large section of people cannot fulfil their nutritional requirements even after spending their whole earning.Further; they do not know what to eat to remain healthy. Further they do not know what to eat to remain healthy.A large number of locally available cheap herbs like Chenopodium, gram etc.contain a large amount of iron and other vital nutrients. Unfortunately, the students are highly influenced by marketing of

multinational companies selling packaged foods, poor in nutrients but with higher costs. In the study area, practice of eating wheat and gram in chapattis is good as it can fulfil the deficiency of lysine amino acid.

Assessment of nutritional status of community, especially the women is very significant in formulating strategies to combat malnutrition. The risk group identified in the present study is of adult girl students. Clinical examination and nutritional anthropometries are commonly used methods to assess the nutritional status of people.

India has one of the highest incidents of malnutrition in the developing world, caused by lack of information of awareness, poverty preventing adequate availability of balanced diet. Malnutrition is manifested in the form severe anaemia, under weight and overweight body, poor musculature and other deficiency disorders. Anaemia adversely affect the growth and development of body. It also affect maternal health, maternal mortality rate, pre and post pregnancy conditions. Anaemia is a condition when the haemoglobin level falls below 12 gm/dc. Among the girls (by WHO). There are many causes of anaemia like deficiency of iron, vitamin B-12, folic acid etc. in the diet. Loss of blood during menstruation is also responsible for anaemia among girls. Further, the demand for these nutrients is very high among the girls, especially during menstruation and pregnancy.

A relationship may exist between anaemia and obesity. It may be one of the many causes of anaemia. Therefore, it become important to study the BMI status of the study subjects. BMI calculation is a recommended method to assess the health status of people. With the help of BMI status we can classify the people as normal, underweight and overweight. It utilises height and weight to calculate BMI. It can give an idea about the risk of getting diabetes, cardiac problems, hypertension, female infertility etc. So BMI status may serve as an important tool to relate the health status with anaemia.

Gender based discrimination prevails in various ways like selective nutritional neglect of girls, differential investment on healthcare and excess work to perform at home. Thus the relevance of the present study on adolescent girls is justified.

Delimitation of the Present Study: The present study is delimited to:

1. The adult girls of Govt. College of education, Bhiwani (HR).
2. All the girls were in the range of 19-30 years.
3. A total of 150 girls participated in the study from 1st year and 2nd year class during session 2016-17.
4. The study sample was not differentiated into married and unmarried, urban and rural etc.

All the study subjects were listed and assigned with consecutive serial numbers. The study subjects were explained about the objectives of the study.

Objectives of Present Study:

- i. To find out the nutritional status of girl students.
- ii. To find the precedence of anaemia among the adult girl students.
- iii. To develop awareness about the complications associated with malnutrition.
- iv. To address the issues relating to formulation of policies about prevention of malnutrition.
- v. To find out any relationship between anaemia and body mass index.

Methodology:

In this paper, the study subjects are girls of Govt. college of Education, Bhiwani. The girls of this college belongs to different villages, tehsils, blocks of not only of district Bhiwani but also from

many other adjoining districts. So, the study subjects cover a large area. The study subjects include married as well as unmarried girls.

Due to poverty and lack of awareness about healthy diet and more preference to male child, the adolescent and adult girls of this region are found to be suffering from malnutrition, specially the anaemia.

The present study was undertaken to investigate the prevalence of malnutrition and anaemia in the adult college girls of Govt. College of Education, Bhiwani(HR). The girls of this college represent the rural and urban areas mainly of district Bhiwani and partly the adjoining districts like Rohtak, Hisar, Jhajjar, Charkhi Dadri etc. In all, 150 girls in age group of 20 to 30 years were enrolled for present study. The girls were not classified in rural/urban as married/unmarried groups. However, the study sample was a mixed sample from rural and urban areas, majority were unmarried. The objectives of present study were explained to the study subjects and their consent was taken.

The nutritional status of selected subjects was assessed by questionnaire method, clinical examination, by anthropometry and haemoglobin estimation. For haemoglobin estimation, a team of pathologists/doctors was invited from the District Nagrik Hospital, Bhiwani. Haemoglobin was measured using haemoglobin meter. The clinical methods includes external observable symptoms like cheilosis, dental carries, and hair discolouration. Anthropometric methods include body weight, standing weight, mid arm circumference (MAC). Weight was measured by electronic weighing scale. Height and MAC was measured by simple measuring tape. Height and weight were measured with the subjects without shoes. BMI was calculated using equation

$$\text{BMI}(\text{kg}/\text{m}^2) = \text{mass}(\text{kg})/\text{height}(\text{m})^2$$

Results and Conclusion

From the results it was found that out of total study subjects 87.33% were anaemic while **44 % were severely anaemic**. Majority of girls 57.33% were in normal range of BMI while 30.66 were underweight, 10.66% were overweight and **only 1.33% were suffering from obesity**. Obesity was not a major problem in the study area. So no any correlation was found between anaemia and BMI status. However, almost all the underweight and overweight girls were mildly or severely anaemic. From the present study it was concluded that prevalence of anaemia is very high among the study subjects and the body mass index is also of great concern.

Table 1. Showing Status Of Heamoglobin In The Study Subjects(N=150)

No. of girls with Hb>12	%	No. of girls with Hb 9-12	%	No. of girls with Hb<9	%
19	12.66	65	43.33	66	44.00

Table 2. Showing Subjects Present In Different Bmi Classes(N=150)

BMI Classes Kg/m ²	Total No. of Subjects	% age	Remarks
<18.5	46	30.66	Underweight
18.6-24.9	86	57.33	Normal
25-29.9	16	10.66	Overweight
>30.0	2	1.33	Obese

The present study showed very high prevalence of anaemia among the adult girls. Majority of the study subjects were in their marriageable age or were married. The study sample being representative of a large study area irrespective of the rural urban differences, high rate of anaemia prevalence is a serious concern for the state health authorities. In long run the anaemia is going to adversely affect the maternal and neonatal health. Gender based discriminations are also responsible for chronic state of malnutrition and anaemia among girls. These discriminations should be minimised as soon as possible to achieve the recommended state of physical health of girls. There is a need for awareness generation about proper nutritional intake and discouraging consumption of fast food and beverages like tea that inhibit absorption of iron. Food rich in vitamin –C should be part of diet as it enhance iron absorption from the food.

Further studies are required to find out the various factors associated with anaemia and abnormal BMI.

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