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**IRON DEFICIENCY ANEMIA AMONG COLLEGE GOING WOMEN,
JHAJJAR DISTRICT OF HARYANA**



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ABSTRACT

In India 53 Percent of Women was suffering from anemia. Anemia can result in mental mortality, weakness, diminished physical and mental capacity, prenatal mortality, premature delivery Anemia is a major health problem in Haryana, especially among women and children. The main objective of the study was to know the iron deficiency anemia among college going women, Jhajjar district of Haryana. For the purpose of the present study 193 female age 17 to 22 years were selected from MACW institute to test their hemoglobin level. A health camp was organized to check their Hemoglobin measure. Descriptive study shows that not a single woman had normal hemoglobin level of >12 gm/dl. 22.8% women were suffering from mild Iron Deficiency Anemia (IDA), 68.5% were suffering from moderate IDA and 8.8 % were suffering from severe IDA.

Keywords: (IDA) Iron Deficiency Anemia & College Women.

INTRODUCTION

Iron is an important micronutrient which is essential for various functions in human body. Iron is essential for growth of cells, oxygen binding in blood cells, transport and storage, good immune function, mental and physical growth etc. therefore, deficiency of iron due to either physiological or pathological reason can affect mental and physical

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growth which can result as decreased learning capacity and work productivity. IDA is characterized by a defect in hemoglobin synthesis, resulting in hypo chromic and microcytic red blood cells. (Rekha Kumari, 2017). According to National Family Health Survey 2015-16 (NFHS-5) 53 percent of Indian Women were suffering from anemia and according to NFHS-5 Haryana state study, 63% women in Haryana have anemia, in which 43 percent with mild anemia, 18 percent with moderate anemia and 1 percent with severe anemia. According to the same study of 2015-16 61.1% women (N=795) of Jhajjar District were suffering from anemia.(National Family Health Survey, 2015-2016). Over the three year study of SRL diagnostic, in their recent reports it was highlighted the alarming fact and concerns on women's health in India. Nutritional Anemia is the major health problem in developing countries among women of reproductive age. 600million people in Southeast Asia are suffering from iron deficiency anemia, predominantly affecting adolescent girls, women of reproductive age (Ehealth, 2015).

Anemia is a condition that is marked by low levels of hemoglobin in blood. Iron deficiency is estimated to be responsible for about half of all anemia's globally, but anemia can also cause by nutritional deficiencies, chronic infections, malaria, hookworm and genetic conditions.

According to national family health survey, Anemia can result in mental mortality, weakness, diminished physical and mental capacity, increased morbidity from

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infectious diseases, prenatal mortality, premature delivery, low birth weight, and in children impaired cognitive performance, motor development, and scholastic achievement. Anemia is a major health problem in Haryana, especially among women and children. (National Family Health Survey, 2015-2016)

Anemia is classified as mild, moderate or severe based on the concentrations of hemoglobin in blood. Mild Anemia in normal women correspond to a level of 10.0 to 11.9 gm/dl, moderate anemia corresponds to 7.0 to 9.9 g/dl while severe anemia corresponds to a level less than 7.0 gm/dl. (G.K. Kariyeva)

OBJECTIVE OF THE STUDY

The main objective of the study was to know the iron deficiency anemia among college going women, Jhajjar district of Haryana.

DESIGN OF THE STUDY

This cross-sectional study was conducted in the Maharaja Aggrasen College for Women, Jhajjar. The subjects, who are studying at MACW Jhajjar, were tested using convenience sampling. Students participated in the test were from rural villages of Jhajjar district. Participation in the test was voluntary. A two day health camp was conducted by the Red Cross Group of college to collect the data.

Participants:

A total number of one hundred and ninety three (N=193) female students in the age group of 17-22 years participated in camp for blood test.

Criterion Measure:

Blood hemoglobin was tested by the hemoglobin testing tool by the well trained lab technicians. Blood Group was tested by the blood group testing kit by the trained lab technicians.

STATISTICAL ANALYSIS

To evaluate the hemoglobin level in the college going students, descriptive statistical evaluation was done. Descriptive statistics computed were frequency, percentage, mean and Standard Deviation. The hemoglobin measure was collected from the female students of Maharaja Aggrasen College for women (age 17-22 years) residing in rural areas of district Jhajjar, Haryana. Samples were divided in six hemoglobin level categories. Findings related to descriptive statistics were presented in table 1. Percentage of students falling in different hemoglobin level is illustrated by pie charts in fig 1 and frequency distribution of hemoglobin measure is illustrated in fig 2.

FINDINGS

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The descriptive statistics with mean (SD), frequency, percentage and number of subject is depicted in table 1 and table 2. Percentage of women falling in different hemoglobin levels and different blood groups was illustrated in fig 1 and fig 2.

Table No: I

Table showing the mean, standard deviation and minimum and maximum scores of hemoglobin level in mg/dl among college going young women in respective age group

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Hemoglobin level	193	5.9gm/dl	11.9gm/dl	8.7gm/dl	1.44

Table I shows the mean, SD, minimum and maximum scores of hemoglobin measures of college going young women in the age group of 17 to 22 years. Table clearly shows the mean score of hemoglobin among college going women, (N=193) mean 8.7 gm/dl, SD 1.44. Which indicates that in the tested group most of the colleges going young women were suffering from mild iron deficiency anemic, maximum score of 11.9gm/dl indicates that not a single young woman in tested group was having healthy hemoglobin level of 12 mg/dl to 14 gm/dl. Further, frequency distribution and percentage of tested group is depicted in table 2 and illustrated in fig I.

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Table No: II

Table showing the frequency distribution and percentage of students according to their hemoglobin levels distributed in 7 hemoglobin level groups

Number of women falling in different hemoglobin levels and there percentage

Hemoglobin measures in mg/dl	Frequency	Percent	IDA %
5.9 to 6.9 mg/dl	17	8.8	Severely anemic
7 to 7.9 mg/dl	43	22.3	Moderate anemic
8 to 8.9 mg/dl	53	27.5	68.5%
9 to 9.9 mg/dl	36	18.7	
10 to 10.9 mg/dl	26	13.5	Mild anemic
11 to 11.9 mg/dl	18	9.3	22.8%
12 to 14 mg/dl	0	0	Healthy 0 %
N	193	100.0	

Table II clearly shows the frequency and percentage of college going young women of tested group falling in different hemoglobin levels. After distributing into four different hemoglobin categories results shows that 8.8 percent women among tested group were

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suffering from Severe Iron deficiency anemia (IDA), 68.5 percent were suffering from moderate IDA and 22.8 percent have mild IDA. Figure 1 also illustrates the percentage of women falling in different hemoglobin categories.

Fig: I
 The percentage of women falling in different hemoglobin categories among Tested group

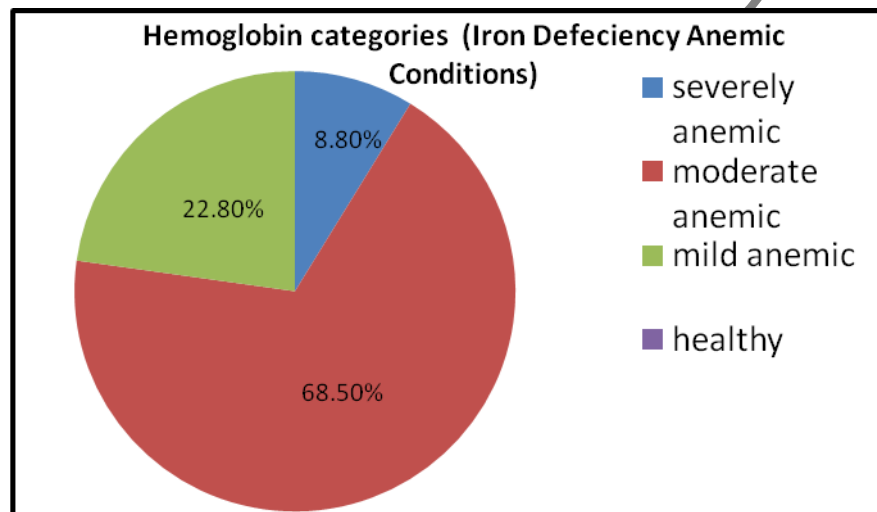


Fig.1 clearly shows that 68.5% of young students of tested group have moderate IDA, 28.8% have mild IDA and 8.8% have severe IDA.

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Fig: II
Hemoglobin distribution of college going young women

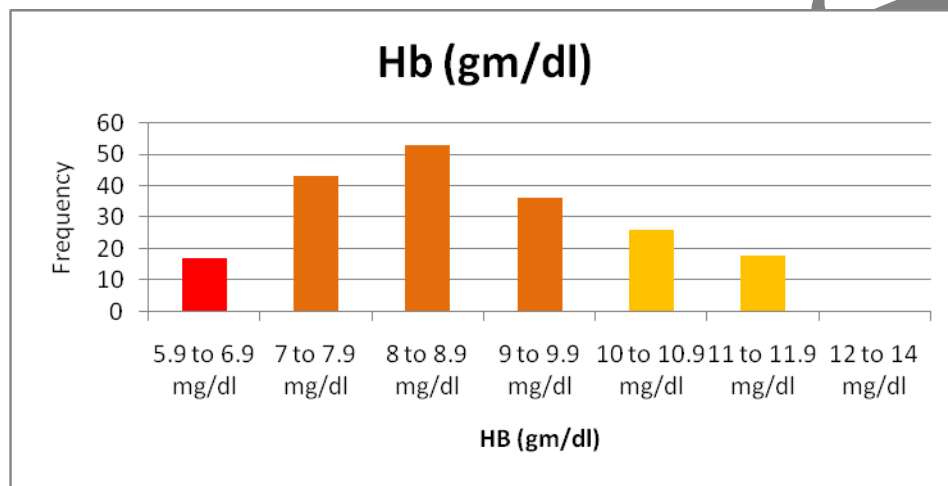


Fig II clearly shows that most of the young women were suffering from severe to mild IDA. And non-of the woman had normal Hb level of > 12hb/dl.

DISCUSSION ON FINDINGS

The selection of the college student was opportunistic, blood donation and health checkup camps were organized under the guidance of Red Cross Cell to aware students about their health. It also provides young and well-educated subjects belonging to rural areas of Jhajjar district.

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In our test, we found the mean hemoglobin level of college going young women (age 17-22 years) was 8.7gm/dl which represents that most of the college going young women were suffering from mild IDA. After distributing in four different hemoglobin categories results shows that 8.8 percent women among tested group were suffering from Severe Iron deficiency anemia (IDA), 68.5 percent were suffering from moderate IDA and 22.8 percent have mild IDA. If we compare with the NFHS-5, 2015-16 study of Haryana we found the difference, where they say 1% population was severely anemic, 18% were moderate and 43% were mild anemic. We found difference between the whole population and young population according to this data. In our tested group, not a single student was falling in healthy Hb level of >12hb/dl which is an alarming situation for our society. Therefore, there is a requirement to do such kind of tests at schools and college level and to aware young population about healthy diet and fitness.

It is worth speculating why Indian women have a lower Hb level and iron parameters. It has been a conventional wisdom to dismiss lower Hb values in females compared to males due to menstrual loss. There has never been any evidence for this presumption. Close examination of NHANES III age specific data for parameters of iron metabolism and RBC suggests that Hb remains relatively constant in women throughout the life, but lower than men after puberty, irrespective of menstrual phase. Neither menstruation decreases Hb nor menopause increases it. On the other hand puberty

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induces increased muscle mass in men with concomitant increases in parameters of iron and Hb (Guralink JM, 2005)

Although the sample size is taken from a single institute situated in Jhajjar district of Haryana, students come from the nearby rural area connected to proper Jhajjar. Thus, students of the study represent microcosm of the rural population of Jhajjar district. However, similar studies should be conducted in different regions of the state and across India in schools and colleges to Increase our knowledge of Hb Distribution in the Indian Population and subpopulation. Also there is need to identify the health related problems women are facing due to lower level of Hb.

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