

Anaemia: A Reason for Reduced Physical Fitness, Mental Inefficiency and Behavioural Changes among Females of Early Adulthood Period

Asra Sheikh¹ and Deepti Rai²

^{1,2}Department of Nutrition Isabella Thoburn College, Lucknow, U.P., India
E-mail: ¹sheikh.asra@gmail.com, ²dsrai23@gmail.com

Abstract—Anaemia has been the major problem in developing countries. By WHO “Anaemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.” It has an influence on the whole population but it majorly affects menstruating girls, women and children. The present study focuses on the early adulthood period as it corresponds to marriage and family planning. One of the causes of anaemia is increased demand during pregnancy. It is of utmost importance that the iron level is maintained to avoid low birth weight babies or prematurity, perinatal and neonatal mortality, inadequate iron stores for newborn, maternal morbidity and mortality. The haemoglobin level for mild anaemia is 10-11.9gm/dl, severe anaemia is 7-10gm/dl and acute anaemia is below 7gm/dl. The types of anaemia commonly seen are microcytic(size of RBC is smaller), macrocytic(size of RBC is larger) and normocytic(size of RBC is normal) anaemia. Anaemia also reduces physical fitness and brings about behavioural changes. There is a strong relationship between BMI and socioeconomic status in females which clearly indicates that their physical fitness will be affected. This research is significant in estimating the percentage of subjects suffering from anaemia. This study also shows that there is an inter-relationship between anaemia, nutritional, physical and mental status of females.

Keywords: Anaemia, physical fitness, mental inefficiency, early adulthood period.

1. INTRODUCTION

Iron is an essential mineral that is required by our bodies to function properly. If iron stores are depleted, the body makes fewer red blood cells (RBCs) with decreased amounts of haemoglobin in them, resulting in anaemia. Thus, WHO has given the following definition “Anaemia is a condition in which the number of red blood cells or their oxygen-carrying capacity is insufficient to meet physiologic needs, which vary by age, sex, altitude, smoking, and pregnancy status.”

The study done by Kumar R. (2015) shows that more than half of women (55 percent) and almost one-quarter of men (24 percent) are anaemic, out of these thirty-nine percent of women have mild anaemia, 15 percent have moderate

anaemia, and 2 percent have severe anaemia. And in men, 13 percent have mild anaemia, 10 percent have moderate anaemia, and 1 percent has severe anaemia^[1]. According to the National Family Health Survey (NFHS)-(III), more than half of women in India (55%) have anaemia, including 39 % with mild anaemia, 15 % with moderate anaemia and 2 percent with severe anaemia^[2].

Some of the causes of iron deficiency can be heavy menstrual bleeding, poor dietary iron intake, and failure to absorb iron by the body. The common symptoms of anaemia can be fatigue, a swollen tongue, heart palpitations, shortness of breath, pale complexion, suppressed immune system, decreased mental functioning, impaired social development in children, body temperature regulation impairments, tiredness and lethargy (lack of energy).

In recent years there is increasing concern regarding the nutritional status of young women who are at the threshold of adulthood and constitute an important segment of vulnerable group. Early adulthood also corresponds to the phase of marriage and family planning. The young population especially women need to be prepared for this stage as it calls for pregnancy related risks. One of the causes of iron deficiency anaemia is its increased demand during pregnancy. If the iron stores are not maintained at this stage then it may lead to increased risk of low birth weight or prematurity, perinatal and neonatal mortality, inadequate iron stores for newborn, maternal morbidity and mortality.

Anaemia among young females is likely to limit their physical well-being, mental efficiency and lead to behavioural changes. Therefore, to improve the prevalent condition it is necessary to study the relationship between iron deficiency anaemia, physical fitness and behavioural changes of young women.

This study will be significant in assessing the health status of reproductive-aged women. It will also check for the number of subjects suffering from anaemia, evaluating their nutritional, physical and mental statuses. The present study will also ensure that pre-pregnancy iron stores are maintained and

adequate diet is followed among this age group. Moreover, the study will help the subjects to know about their nutritional levels and will also suggest few ways to improve the condition.

2. STUDY DESIGN

The study is a cross-sectional study conducted on college-going girls of Lucknow. Different parameters were assessed like socio-economic status, BMI, dietary intake and haematological assessment.

A total of 110 subjects were considered in the study.

3. RESULT AND DISCUSSION

Table 3.1: Distribution of BMI

BMI	No. (n=110)	%
<18.5 (Underweight)	11	10.0
18.5-24.99 (Normal)	38	34.5
25-29.99 (Overweight)	48	43.6
≥30 (Obese)	13	11.8

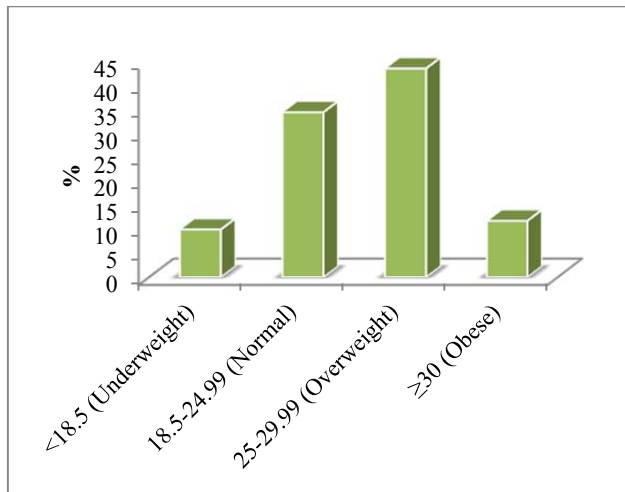


Fig. 3.1: Distribution of BMI

Table 3.2: Hb level of the subjects

Hb level/Anaemia	No. (n=110)	%
>10.9 (Normal)	63	57.3
10-10.9 (Mild)	32	29.1
7-9.9 (Moderate)	9	8.2
<7 (Severe)	6	5.5

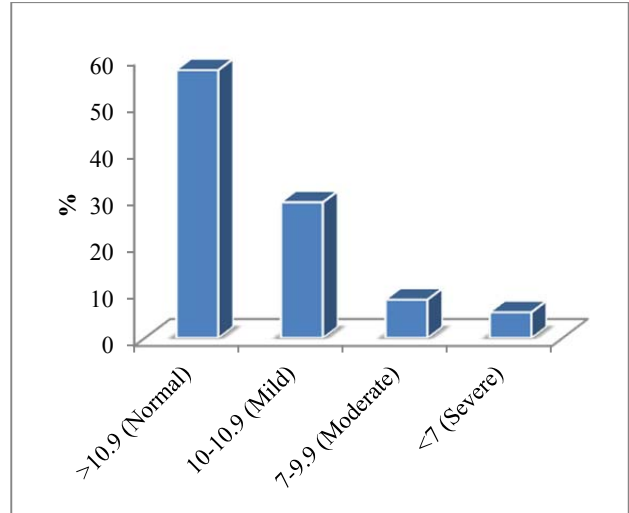


Fig. 3.2: Hb level of the subjects

Table 3.3: Clinical symptoms of the subjects

Clinical symptoms*	Present		Absent	
	No.	%	No.	%
Fatigue	85	77.3	25	22.7
Pale complexion	65	59.1	45	40.9
Temperature regulation impairment	70	63.6	40	36.4
Difficulty in concentration	59	53.6	51	46.4
Heart palpitations	80	72.7	30	27.3
Breathlessness	85	77.3	25	22.7
Weakness	60	54.5	50	45.5
Headache	71	64.5	39	35.5

*Multiple responses

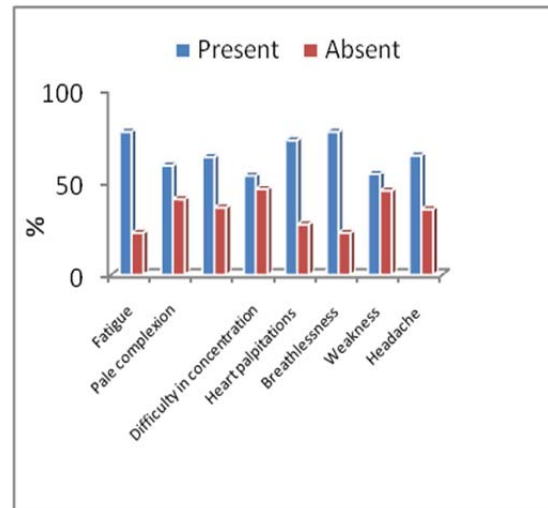


Fig. 3.3: Clinical symptoms of the subjects

Table 3.4: Clinical history of the subjects

Other clinical history	No.	%
Irregular menstrual cycle		
Yes	37	33.6
No	73	66.4
Feeling of Numbness coldness in hands and feet		
Yes	21	19.1
No	89	80.9
Duration of exercise in a day		
One hour	5	4.5
More than 1 hour	31	28.2
Less than 1 hour	22	20.0
Not at all	52	47.3
Behavioural changes		
Irritation	71	64.5
Restlessness	20	18.2
Any other	19	17.3
Weight loss		
Yes	33	30.0
No	77	70.0
Bowel changes		
Yes	27	24.5
No	83	75.5
Family history of anaemia & other diseases		
Yes	18	16.4
No	74	67.3
Any other	18	16.4
Difficulty in swallowing in tongue		
Yes	2	1.8
No	108	98.2
Previous surgery		
Yes	36	32.7
No	74	67.3
Drugs consumed		
Chemotherapeutic drugs	37	33.6
Bone marrow suppressing drugs	21	19.1
Anti-cancer drugs	52	47.3

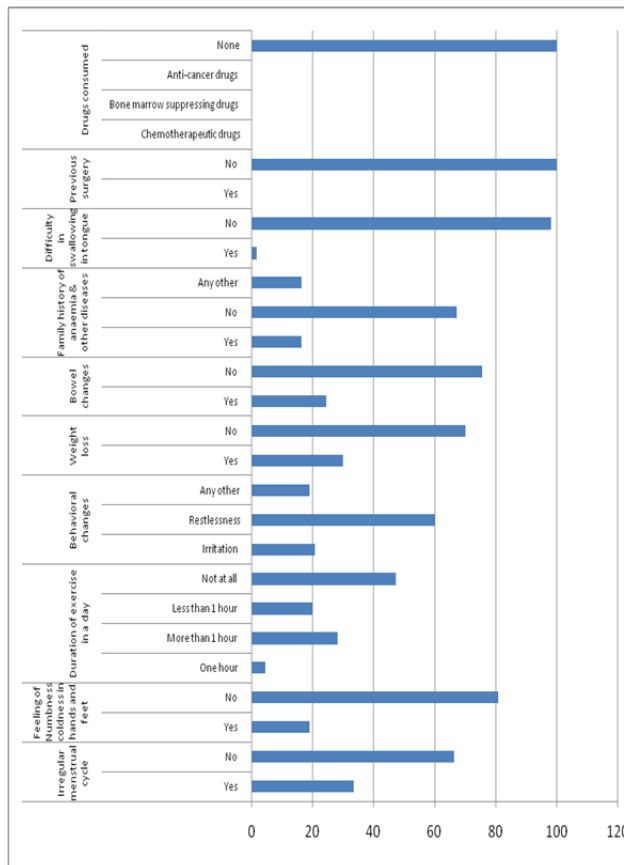


Fig. 3.4: Clinical history of the subjects

4. CONCLUSION

Various studies have stated the prevalence and status of anaemia in the country in relation to communities, gender, age, SES, etc. The present study shows the effect of anaemia on women belonging to early adulthood period. There is an alarming increase in the number of females suffering from anaemia.

Iron deficiency and anaemia should be tackled simultaneously using a multifactorial and multi sectorial approach. It should also be tailored to local conditions and take into account anaemia's specific aetiology and the population groups affected. The results of this study can be used by public health programmes to design target interventions aimed at reducing the huge burden of anaemia in India. Dietary counselling can also be done through this study.

REFERENCES

- [1] Kumar R., "Anaemia: A Common Health Problem, Consequence and Diet Management among Young Children and Pregnant Women", Biological Forum- An International Journal, 2014.
- [2] National Family Health Survey (NFHS-III), 2005 -2006.