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*Original Research Article*

## Prevalence of anemia and nutrient status among MBBS students

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**Abstract**

Anaemia is the most common haematological disorder affecting humanity. Although it is unknown whether anaemia is a causal factor or a subrogated marker of worse health status, its correction can improve the patients' physical and functional capacity. Since the medical students undergo rigorous physical exertion and mental training throughout their career, the study was conducted on the MBBS 1<sup>st</sup> year students for early detection and hence facilitate treatment of this reversible hematological condition. This study was conducted after obtaining informed consent from the study subjects in November 2017 to March 2018. The hemoglobin estimation of the subjects was done by Sahli's acid hematin method. Estimation of Serum Iron, Folate and B12 was carried out in the anemic subjects. Among the 78 students who participated in the study, mean value for hemoglobin was  $12.4 \pm 4.3$  gm/dl. 38 were diagnosed of anemia, mean hemoglobin was  $9.8 \pm 1.7$  gm/dl. 39 students had B12 deficiency, 58 had folate deficiency and 26 had iron deficiency anemia. The association between severity of anemia and serum vitamin B12 levels, iron intake, folate intake, Vitamin B12 intake, vegetarian diet, attainment of menarche and history of worm infestation was statistically significant.

**Keywords:** Anemia, nutrient status, MBBS students

**Introduction**

Anaemia is the most common haematological disorder affecting humanity and is usually observed in chronic disease states such as non-specific anaemia, which may cause diagnostic difficulties. In chronically ill patients with anaemia, this has a negative impact on quality of life as well as survival [1].

Anaemia is associated with an increased risk of physical, functional, and cognitive impairment, hospitalisation and mortality. Although it is unknown whether anaemia is a causal factor or a subrogated marker of worse health status, its correction can improve the patients' physical and functional capacity. Detection, classification, and treatment of anaemia should be a priority for the health system [2].

Since the medical students undergo rigorous physical exertion and mental training throughout their career, the study was conducted on the MBBS 1<sup>st</sup> year students for early detection and hence facilitate treatment of this reversible hematological condition.

**Materials and Methods**

This study was conducted after obtaining informed consent from the study subjects in November 2017 to March 2018. Of those who consented to participate in the study, by history and clinical examination, causes of anemia like thyroid dysfunction, chronic disease, bowel disease, hemolytic, aplastic disorders etc were ruled out. The hemoglobin estimation of the subjects was done by Sahli's acid hematin method. Estimation of Serum Iron, Folate and B12 was carried out in the anemic subjects. The data were expressed in mean and standard deviation. Results were expressed in percentage.

## Result

**Table 1:** (Prevalence of Anemia)

Anemia Status	Number	Percentage (%)
Anaemic	38	48.7
Not Anaemic	40	51.3
Total	78	100

**Table 2:** (prevalence of nutrient deficiency)

Nutrient	Number	Percentage (%)
Iron	52	26
Folic Acid	20	58
Vit B12	39	39

Among the 78 students who participated in the study, mean value for hemoglobin was  $12.4 \pm 4.3$  gm/dl. 38 were diagnosed of anemia, mean hemoglobin was  $9.8 \pm 1.7$  gm/dl. 39 students had B12 deficiency, 58 had folate deficiency and 26 had iron deficiency anemia. The association between severity of anemia and serum vitamin B12 levels, iron intake, folate intake, Vitamin B12 intake, vegetarian diet, attainment of menarche and history of worm infestation was statistically significant.

## Discussion

Folate and vitamin B12 deficiencies are more common than iron deficiency in anemic adolescents. Low dietary intake of these nutrients seems to be a significant determinant of their deficiencies<sup>[3]</sup>. Our findings are in agreement with this study<sup>[3]</sup>. As reported by Metz in developed countries, folate-deficiency anemia is uncommon. It is unlikely that folate deficiency makes a major contribution to the burden of anemia in developing countries. Iron-deficiency anemia may coexist with vitamin B12 and especially folate deficiency, and may confound the hematological features of the vitamin deficiencies whose prevalence would then be underestimated<sup>[4]</sup>. However in our study 79.5% of anemic students had folate deficiency.

## Conclusion

Iron, folate and vitamin B12 deficiency was present in 30.5% 79.5% and 50% of students, respectively. The association between severity of anemia and serum vitamin B12 levels, iron intake, folate intake, Vitamin B12 intake, vegetarian diet, attainment of menarche and history of worm infestation was statistically significant.

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