

Prevalence of Anaemia in Female Medical Students Staying in College Hostel

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ABSTRACT:

Background: Anemia is a common condition characterized by a deficiency of red blood cells or hemoglobin, resulting in reduced oxygen carrying capacity. The prevalence of anemia in this population is significant due to the demanding nature of medical studies, hostel living, and the potential impact on academic performance and overall well-being.

Aim: The aim of this study is to determine the prevalence of anemia among female medical students residing in college hostels, while also understanding the potential factors contributing to anemia within this specific group, as well as its associated consequences.

Materials and Methods: This study employs a cross-sectional design, collecting data through a survey questionnaire distributed among female medical students residing in college hostels. The questionnaire investigates potential contributing factors such as dietary habits, sleep patterns, stress levels, menstrual history, and socioeconomic status. Additionally, the study explores potential consequences of anemia, including fatigue, impaired cognitive function, decreased academic performance, and decreased quality of life. Data is analyzed using appropriate statistical methods to determine the prevalence of anemia in this group.

Result: In our study, the mean age of the study population was 19.8 ± 2.2 years. The mean weight of the students was 55.2 ± 5.6 kilograms. The prevalence of anemia was 51%. Among them, 36 students had mild anemia, 13 had moderate anemia and 2 had severe anemia. The mean hemoglobin values were 10.6 ± 2.2 gm%.

Keywords: Anemia, medical students, hemoglobin, academic performance, college hostels, female medical students.

Introduction:

Anemia, a nutritional issue of significant global prevalence, is observed with higher frequency among young children, pregnant women, and women of reproductive age. According to figures provided by the World Health Organisation (WHO), the prevalence of iron deficiency anemia, the most frequent cause of anemia, is 52% among women aged 15-49 years in India. The global prevalence of anemia among women of reproductive age is estimated to be approximately one-third. The World Health Organisation (WHO) (1) has defined nutritional anemia, characterizing it as a state in which the hemoglobin levels in the blood are below the standard range due to a lack of one or more vital nutrients, irrespective of the underlying cause of this insufficiency (2). Despite being in the medical field, numerous female medical students tend to neglect their health, particularly those residing in hostels away from their parents. Medical students,

particularly female residents, are at an elevated risk of developing anemia due to their suboptimal dietary practices, such as missing meals, as well as the demanding nature of their medical education, extensive college schedules, clinical placements, and involvement in extracurricular activities. The occurrence of anemia might indirectly impair an individual's learning capacity, leading to decreased efficiency (3). This study is aimed at finding the prevalence of anemia among female first-year MBBS students at our college.

Aim:

- To determine the prevalence of anemia in female medical students staying in the college hostel.

Objectives:

- To estimate the prevalence of various grades of anemia in female medical students staying in college hostel.
- To study the impact of various grades of anemia on the overall health of the students.

Materials and Methods:

This is a cross-sectional observational study conducted over 6 months from Sep 2022 to Feb 2023 on 100 female MBBS students staying at the college hostel of Andhra Medical College, Visakhapatnam. Students who were willing to participate and those who gave consent and were of age group 18-25, students not suffering from any hemoglobinopathies, and staying at the hostel were included in the study. Students staying in hostels other than the college hostel, students who have recently undergone major surgery less than 3 months before, and who have donated blood within the last 3 months, and students suffering from hemoglobinopathies were excluded from the study. After obtaining ethical committee clearance from the institutional ethics committee, they were examined clinically for anemia, and investigations like Haemoglobin, and total RBC count were done and samples were sent to the laboratory. Data entry and statistical analysis were performed with the help of Microsoft Excel and SPSS28. The statistical significance level was fixed at a p-value less than 0.05. This study abides by the guidelines laid by the Declaration of Helsinki.

Results:

The mean age of the study population was 19.8 ± 2.2 years. The mean weight of the students was 55.2 ± 5.6 kilograms. The mean BMI of the students was 22.3 ± 3.4.

Parameter	Mean value
Mean age	19.8 ± 2.2 years
Mean weight	55.2 ± 5.6 Kilograms
Mean BMI	22.3 ± 3.4

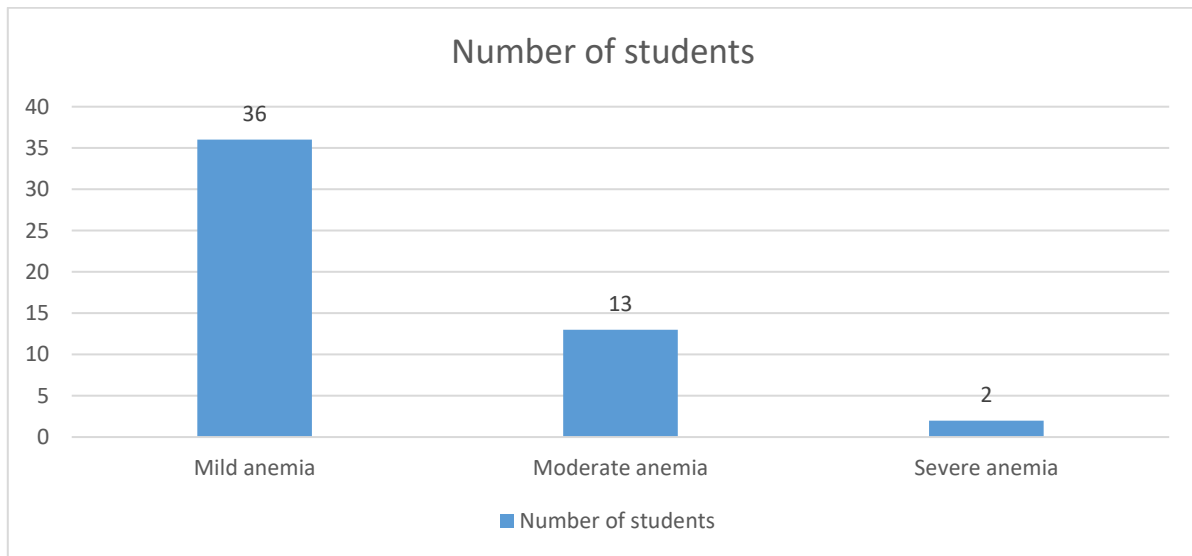
The mean hemoglobin values were 10.6 ± 2.2 gm%. The mean value of mean corpuscular volume (MCV) = 72.2 ± 8.2 fl. The mean corpuscular hemoglobin (MCH) was 22.3 ± 4.6 pg. The mean corpuscular hemoglobin concentration (MCHC) was 29.5 ± 3.2 gm/dl.

Parameter	Mean	Standard deviation
Hemoglobin	11.6 gm%	2.2
Mean corpuscular volume (MCV)	78.2 fl	8.2

Mean corpuscular hemoglobin concentration (MCHC)	29.5 gm/dl	3.2
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Grade of anemia	Number of students	%
Mild anemia	36	36
Moderate anemia	13	13
Severe anemia	2	2

The prevalence of anemia was 51%. Among them, 36 students had mild anemia, 13 had moderate anemia and 2 had severe anemia.



Total RBC counts ranged from 3,400 to 6,500 cells/cu.mm. The mean RBC count value was 5102 cells/cu.mm

Discussion:

The etiology of iron deficiency anemia (IDA) during adolescence may be attributed to several factors such as heightened iron demand or loss, reduced iron intake, chronic blood loss, impaired iron absorption (as seen in celiac disease), pregnancy, or parasite infection (specifically helminthiasis). These factors might potentially result in diminished intellectual and work performance, as well as learning difficulties (4). There is a significant correlation between iron deficiency anemia (IDA) and diminished activity levels, worse mental functioning, and suboptimal educational outcomes in students. These adverse consequences may persist into adulthood and result in reduced job efficiency, ultimately impacting overall economic productivity. Female medical students represent a susceptible demographic in this context, particularly due to their irregular and demanding schedules, as well as unpredictable eating times (5).

In our study, the mean age of the study population was 19.8 ± 2.2 years. The mean weight of the students was 55.2 ± 5.6 kilograms. The prevalence of anemia was 51%. Among them, 36 students had mild anemia, 13 had moderate anemia and 2 had severe anemia. The mean hemoglobin values were 10.6 ± 2.2 gm%. The mean value of mean corpuscular volume (MCV) = 72.2 ± 8.2 fl. The mean corpuscular hemoglobin (MCH) was 22.3 ± 4.6 pg. The mean corpuscular hemoglobin concentration (MCHC) was 29.5 ± 3.2 gm/dl.

The prevalence of nutritional anaemia among female medical students in Karad was investigated in a study conducted by Vibhute et al in 2019. The study found that the prevalence of anaemia in the community was 86 individuals, accounting for 28.6% of the total sample. According to the classification of anaemia severity, around 54 individuals (18%) exhibit mild anaemia, whereas 32 individuals (10.6%) present with moderate anaemia. There is no evidence of severe anaemia in the observed cases (6).

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