Prevalence of Iron Deficiency among Adolescents' Female in Rural Areas of Faridabad: The Impact of Lack of Awareness

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INTRODUCTION

Iron deficiency anaemia (IDA) is the most common dietary deficiency anaemia in India and is classified as a type of microcytic anaemia. According to the World Health Organization (WHO), anaemia is defined as a haemoglobin concentration of less than 11 g/dL in children under five years of age and pregnant women, and less than 12 g/dL in non-pregnant women 【1】.

Globally, anaemia affects more than 30% of the population 【2】, with adolescents being at a particularly high risk due to increased iron requirements during puberty, menstruation, and growth 【3】.

The causes of anaemia include both nutritional factors (such as iron, folate, and vitamin B12 deficiencies) and non-nutritional factors, including genetic blood disorders (e.g., haemoglobinopathies), inflammation, infectious diseases, and other physiological conditions 【4】.

Anaemia not only impacts physical health, leading to fatigue, reduced immunity, and poor academic performance, but it also has significant long-term consequences. This is especially evident in rural communities, where limited access to education about nutrition and healthcare often leaves girls unaware of the symptoms and risks of anaemia 【5】.

AIMS

To investigate the prevalence of iron deficiency, anaemia among adolescent females of ruler area and to assess the lack of awareness contributing to this major public health issue.

OBJECTIVES

1. To know the prevalence of iron deficiency anaemia.
2. To know the level of haemoglobin
3. To assess nutritional awareness
4. To know whether they are familiar with the government schemes or not

MATERIALS AND METHODOLOGY

A retrospective study will be conducted in a medical college of Haryana, involving 87 participants, calculated based on an effect size of 0.3, a significance level of 0.05, and a statistical power of 0.80. The study will target adolescent females aged 10 to 19 years, selected through random sampling.

This study will adopt a retrospective design, wherein patient data from the last four months (August to November) will be obtained from the pathology department after obtaining proper permissions from the department. Data collection will focus on haemoglobin levels, which will be used as a key parameter for analysis.

The collected data will be organized and analysed using Microsoft Excel and documented in Microsoft Word. All steps will be conducted with strict adherence to confidentiality, ensuring that the data is used exclusively for educational purposes

Inclusion Criteria

1. Females aged 10 to 19 years: Adolescent females, as defined by the World Health Organization (WHO), will be included in the study.

2. Unmarried females: Only unmarried females within the specified age group will be part of the study.
3. Geographical location: Participants must reside within the defined geographical area of the study.
4. Available haemoglobin records: Only records with documented haemoglobin values will be included.

Exclusion Criteria

1. Age outside the range: Females younger than 10 years or older than 19 years will be excluded.
2. Comorbid conditions: Participants with known comorbid conditions will not be part of the study.
3. Outside geographical location: Data from females residing outside the defined geographical area will be excluded.
4. Recent surgery: Participants who have undergone surgery within the last six months will not be included in the study

RESULTS

A study was conducted to assess the prevalence of anaemia among 87 female participants. Anaemia, characterized by a decrease in red blood cells or haemoglobin levels, was categorized into three severity levels: mild, moderate, and severe.

The distribution of anaemia among the participants revealed that:

*   22 participants (25.3%) had mild anaemia.
*   38 participants (43.7%) had moderate anaemia.
*   14 participants (16.1%) had severe anaemia.

Distribution of Anemia Severity Among Adolescents
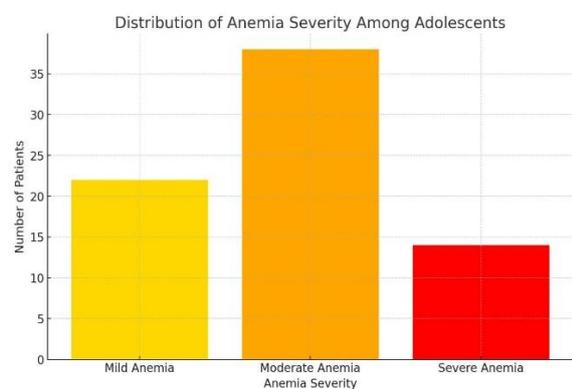
CONCLUSION

The study highlights a significant prevalence of iron deficiency anaemia (IDA) among adolescent females in rural areas of Faridabad, with 87 participants revealing 22 cases of mild anaemia, 38 of moderate anaemia, and 14 of severe anaemia, leaving only 13 participants with normal haemoglobin levels. This underscores the urgent need for targeted interventions in this vulnerable population.

A key contributing factor is the lack of awareness among these adolescents about government schemes and nutritional programs designed to address anaemia. Being from rural areas, they face compounded challenges such as limited access to education on health, poor dietary practices, and inadequate healthcare infrastructure. The findings emphasize the necessity of community-based awareness campaigns, regular health screenings, and strengthening the implementation of government anaemia-control initiatives to improve the overall health and quality of life for adolescent females in these regions.

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