

A CROSS SECTION STUDY ON IRON DEFICIENCY ANEMIA IN ADOLESCENT GIRLS

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Abstract

Background: Iron deficiency is the most common cause of anemia and is one of the leading risk factors for disability and death worldwide, affecting an estimated 2 billion people

Methods: This was cross-sectional study. All the adolescent girls who were given consent to hemoglobin estimation were included in the study.

Results: The prevalence of anemia among adolescent girls was found as 73.6%. Out of 736 anemic girls, 536 girls were suffering from mild degree of anemia and 173 girls were having moderate degree of anemia. Only 27 girl was found severely anemic.

Conclusion: The prevalence of anemia among adolescent girls is alarmingly high in India.

Keywords: Prevalence, Anemia, Adolescent.

Introduction:

Iron deficiency is the most common cause of anemia and is one of the leading risk factors for disability and death worldwide, affecting an estimated 2 billion people¹. It is a state in which the content of iron in body is decreased, which manifests as decreased serum iron, decreased transferrin saturation, low hemoglobin and low hematocrit. It occurs in varying degrees of severity, which merge imperceptibly into one another^{2,3}

Iron deficiency impairs work performance both during intense short-lived exercise and longer intervals. The decrease in work capacity is proportional to blood hemoglobin concentration. Low hemoglobin concentration in blood results in decreased oxygen capacity of hemoglobin with the parallel effect on blood carbon dioxide transport⁴. Iron deficiency also results in decreased iron containing enzymes of mitochondrial respiratory chain in skeletal muscles with a concomitant decline in muscle respiratory capacity to utilize oxygen. This reduction in aerobic metabolism is associated with an increased susceptibility to fatigue⁵.

WHO has classified anemia into three categories: mild (11.0 - 11.9 g/dl), moderate (8.0 - 10.9 g/dl) and severe (< 8 g/dl) anemia⁶. UNICEF classified anemia to be mild in children, adolescent girls and pregnant women if the Hb level in blood is between 8.0 and 10.99 g/dl among children, 10.0 to 11.99 g/dl among adolescent girls and 8.0 - 10.99 g/dl Hb level among pregnant women. For severely anemic the Hb level should be below 5.0 g/dl among children, 8.0 g/dl among adolescent girls and 5.0 g/dl among pregnant women. Accordingly moderate anemia is denoted when the Hb level is between mild and severe anemia⁷.

Materials and Method

This was cross-sectional study. All the adolescent girls who were given consent to hemoglobin estimation were included in the study. The girls ≥ 20 years, and those suffering from any chronic disease were not included in the study. A total of 1000 girls were interviewed and were investigated for their Hemoglobin concentration. A predesigned and pretested schedule was used to collect the information about the participants.

Results

Table 1: Prevalence of anemia among adolescent girls

(N = 1000)

Hb level (g/dl)	No. of girls	Percentage
>11	264	26.4
10.0-11.9	536	53.6
7.0-9.9	173	17.3
<7.0	27	2.7
Total	1000	100.00

The prevalence of anemia among adolescent girls was found as 73.6%. Out of 736 anemic girls, 536 girls were suffering from mild degree of anemia and 173 girls were having moderate degree of anemia. Only 27 girl was found severely anemic.

Table 2: Distribution of adolescent girls according to general appearance

General appearance	No. of girls	Percentage
Well nourished	652	65.2
Moderately nourished	242	24.2
Mal nutrition	106	10.6
Total	1000	100.00

The above table reveals that out of 1000 of the adolescents girls 65.2% adolescents girls were well nourished, 24.2% were moderately nourished and remaining 10.6% were malnourished.

Discussion

Anemia during adolescence influence women's entire life cycle. It also has negative consequences for survival, growth, development of their children later in life. The Government of India has made the adolescent health as a part of RCH package since 1997.

Later to combat the problem, Government of India started Adolescent Girls anemia Control Program with technical support from UNICEF. The main interventions of this program were later continued under the heads of SABLA and WIFS scheme under Rashtriya Kishor Swasthya Karyakram (RKSK). In the base line survey for the program by UNICEF, 65- 99% of adolescent girls were found anemic, at various states of country.⁸

In this study the prevalence of anemia among adolescent girls was observed as 73.00%, which is very close to the observations taken by Ratiet al⁹ and Patnaik et al¹⁰, who found the prevalence as 80% and 78.8% in their studies in rural areas of Karnataka and Odisha respectively. Though Kaur et al¹¹ observed anemia prevalence rate as 59.8% in rural Wardha (Maharashtra). Whereas a very high prevalence of anemia (90.1%) was noted by Kulkarni et al¹² in adolescent girls of a urban slum in Nagpur.

Conclusion

The prevalence of under nutrition and anemia among adolescent girls is alarmingly high in India.

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