

Original Research Article

Knowledge, attitude and practices towards anemia among late adolescent girls of JSS schools and colleges of Mysuru, India: a cross-sectional survey

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ABSTRACT

Background: Anemia is a serious issue globally affecting all age groups. Anemia can be both acute and chronic. The most common cause is undernutrition which is a common issue in underdeveloped countries. Knowledge about anemia, attitude, and practices are important to decrease the burden of anemia. The community should be educated about the causes and prevention of anemia. Despite various measures like WIFS, POSHAN abhiyan, and National iron plus initiative, etc., there is still a long way to go to improve the nutritional status of adolescents and curb nutrient deficiency disorders.

Methods: A cross-sectional study was conducted in JSS schools and pre-university during February 2021. The sample size was 292, but a total of 300 girls in the late adolescent age group were included in the study. A structured proforma was used to collect data regarding knowledge, attitude, and practices towards anemia. Descriptive statistics such as mean, frequencies, and percentages were calculated.

Results: Mean age of the participants was 16.8±1 years. The knowledge about anemia was poor, positive attitudes and good practices were noticed among the participants.

Conclusions: Anemia is a huge problem among adolescent girls. The awareness is poor regarding the disease and its effects. The community is ignorant about the detrimental effects of anemia. Hence appropriate health interventions targeting women and children are needed to see any positive changes in their status.

Keywords: Knowledge, Attitude, Practices, Anemia

INTRODUCTION

World health organization has defined 'adolescence' as a period between 10 and 19 years. Adolescence in girls has been recognized as a period of transition from girlhood to womanhood. Adolescent girls constitute one-fifth of the female population in the world. Anemia adversely affects the cognitive performance, behavioral characteristics, and physical growth of infants, preschool, and school-age children. It also affects the immune status and morbidity from infections of all age groups and the use of energy

sources by muscles. Hence, the physical capacity and work performance of adolescents and adults of all age groups are significantly affected.¹ Among adolescents, anemia affects not only the present health status but can also have deleterious effects in later life. The rates of low birth weight, prematurity, neonatal, and infant mortality among children born to undernourished adolescent girls are high. Later on, these undernourished girls become anemic and produce low birth-weight babies.² During adolescence the need for iron increases from the preadolescent level of 0.7-0.9 mg Fe/day to up to 2.2 mg

Fe/day both among adolescent boys and girls. This increased iron requirement is attributable to peak pubertal development characterized by expansion of total blood volume, increase in lean body mass, and the onset of menstruation in adolescent females.³ Iron need in females continues to remain high after menarche due to menstrual blood loss where the iron need averages about 20 mg of iron per month and it may also be as high as 58 mg in some individuals.⁴ To reduce the burden of anemia health education, nutrition counselling, iron, and folic acid supplementation, deworming, etc are some of the keys concerns to be addressed.

Objectives

Objective of current study was to assess the knowledge, attitude, and practices related to anemia in late adolescent girls

METHODS

A cross-sectional study was conducted in JSS schools and pre-university during February 2021. The sample size was 292, but a total of 300 girls in the late adolescent age group were included in the study. A structured proforma was used to collect data regarding knowledge, attitude, and practices towards anemia. Descriptive statistics such as mean, frequencies, and percentages were calculated.

Inclusion and exclusion criteria

Inclusion criteria for current study were female students in the late adolescent (15-19 years) age group and all female students who were willing to participate in the study. Girls who are already on treatment for anemia were excluded.

RESULTS

The mean age of the participants was 16.8±1 years. Out of 300 adolescent girls, 19 (6.3%) of the girls were in the age group of 15 years, 117 (39%) were in the age group of 16 years, 75 (25%) were in the age group of 17 years, 79 (26.3%) were in the age group of 18 years and 10 (3.3%) were in the age group of 19 years. In the study out of 300 adolescent girls, 283 (94.3%) belonged to class I, 16 (5.4%) of them belonged to class II and 1 (0.3%) belonged to class III. Thus, most of the girls in this study belonged to class I and a few belonged to class III. 46 (15.4%) of the girls belonged to a joint family, 245 (81.6%) of them were from nuclear family and 9 (3%) of them belonged to a three-generation family 299 had attained menarche. A regular menstrual cycle was observed in 70.4% of the adolescents and 29.6% had irregular cycles. In this study, 263 (87.7%) of the participants had a mixed diet and 37 (12.3%) were vegetarians. The average BMI was 19.9±2.9 kg/m² 102 (34%) were underweight, 186 (62%) had normal weight, 12 (4%) were overweight. In this study, 75 (25%) had heard of anemia, none of them aware of the micronutrient

deficient in anemia, at least one cause of anemia was known to 46 (15.3%) of the participants, at least one sign and symptom of anemia was known to 242 (80.6%) of the girls, 44 (14.6%) of them knew common iron-rich foods and 77 (25.6%) of them considered anemia to be a serious health issue. 265 (88.3%) had a positive attitude towards including iron-rich foods in daily diet, 232 (77.3%) felt good to prepare meals with iron-rich foods, 188 (62.6%) had difficulty in preparing meals with iron-rich foods, 91 (30.3%) felt confident to cook meals with iron-rich foods and 210 (70%) of them liked the taste of iron-rich food. 291 (97%) always washed their hands with soap before food, 296 (98.6%) washed fruits and vegetables before consuming, 216 (72%) regularly consumed vitamin c rich fruits, 58 (19.3%) had taken deworming tablets in the recent past and 58 (19.3%) took deworming tablets once in 6 months.

Table 1: Knowledge regarding anemia in late adolescent girls.

Knowledge regarding anemia	N	%
Have you heard of anemia	75	25
The nutrient deficient in anemia	0	0
Causes of anemia	46	15.3
Signs and symptoms of anemia	242	80.6
Preventive measures of anemia	193	64.3
Iron-rich foods	44	14.6
Anemia is a serious health issue	77	25.6

Table 2: Attitude towards anemia in late adolescent girls.

Attitude towards anemia	N	%
Iron-rich food should be a part of the daily diet	265	88.3
Feels good to prepare meals with iron-rich foods	232	77.3
Finds it difficult to prepare meals with iron-rich foods	188	62.6
Feels confident in preparing meals with iron-rich foods	91	30.3
Like the taste of iron-rich food	210	70

Table 3: Practices towards anemia in late adolescent girls.

Knowledge regarding anemia	N	%
Do you wash your hands with soap before food?	291	97
Do you wash fruits and vegetables before consuming them?	296	98.6
Consumption of vitamin c rich fruits	216	72
Have you taken deworming tablets in the recent past?	58	19.3
Deworming is taken once in 6 months	58	19.3

DISCUSSION

In our study out of 300 adolescent girls, 75 (25%) had heard of anemia, none of them were aware of the micronutrient deficient in anemia, at least one cause of anemia was known to 46 (15.3%) of the participants, at least one sign and symptom of anemia was known to 242 (80.6%) of the girls, 44 (14.6%) of them knew common iron-rich foods and 77 (25.6%) of them considered anemia to be a serious health issue. In current study out of 300 adolescent girls, 265 (88.3%) had a positive attitude towards including iron-rich foods in their daily diet, 232 (77.3%) felt good while prepare meals with iron-rich foods, 188 (62.6%) found it difficult to prepare meals with iron-rich foods, 91 (30.3) felt confident in preparing meals with iron-rich foods and 210 (70%) of them liked the taste of iron-rich food.

In current study out of 300 adolescent girls, 291 (97%) always washed their hands with soap before food, 296 (98.6%) washed fruits and vegetables before consuming, 216 (72%) regularly consumed vitamin c rich fruits, 58 (19.3%) had taken deworming tablets in the recent past and 58 (19.3%) took deworming tablets once in 6 months. Among the 210 girls, most of the girls 170 (80.9%) used soap for washing their hands and the rest (19%) cleaned with just water. Only 52% of the girls cleaned their hands with soap before consuming food. 6 (2.8%) girls consumed IFA, and 8 (3.8) girls consumed deworming tablets in the past 6 months.⁵ A study conducted in Delhi observed that out of 210 girls, only 60 (28.5%) had heard the term anemia. Knowledge assessment of anemia was done in sixty adolescent schoolgirls only. Of these sixty girls, 50 (83.3%) considered anemia is a health problem. When assessed for understanding of anemia, 46 (76.7%) girls answered that anemia is caused by decreased iron blood and 12 (20%) did not know the reasons for anemia. Thirty-eight (63.3%) adolescent schoolgirls felt that decreased dietary intake of iron causes anemia and 18 (30%) girls also said that worm infestation causes anemia. Regarding symptoms of anemia, the majority 42 (70%) of the girls answered that anemia causes pale skin. Twenty-eight (46.6%) girls opined that anemia affects growth and development, 10 (26.6%) girls said that it decreases learning abilities, and 17 (28.3%) girls said that it decreases the working capacity of a person. Regarding prevention of anemia, 46 (76.4%) girls felt that increased intake of dietary iron will prevent anemia, 47 (78.3%) girls reported that iron and folic acid (IFA) supplementation can treat anemia, and 16 (26.6%) girls reported that deworming can also help in the treatment of anemia.⁵

A study conducted in Delhi revealed 34.9% of girls had heard about anemia and 38.7% felt that anemia is a health problem. Around 8 (7.5%) could answer correctly about causes of anemia, 3 girls had taken deworming tablets including iron Folic Acid tablet (IFA) in the last 6 months. Use of soap for washing hands after defecation by adolescent girls was 76 (71.7%), before consuming

food 78 (73.5%).⁶ A study showed, >50% of students did not know a balanced diet, 42.8% had a positive attitude, and the practice of consuming a balanced diet was poor (only 4.5%).⁷ A study conducted in Nagpur revealed out of 296 subjects, 35.1% subjects were anemic. Anemia was found to have a significant association with the socio-economic status of study subjects. A significant association was found between the mother's and father's educational status. Other factors like attainment of menarche, age, family size, type of family, and type of diet were not associated with anemia. This study showed a significant association between age group ($p=0.01467$), mother's education ($p=0.0000$), BMI category ($p<2.2e-16$) and family type ($p<2.2e-16$). Other factors like the father's education status, socio-economic status, and dietary type/habit of the study participants were not significantly associated with anemia.⁸

CONCLUSION

Anemia is highly prevalent among adolescents so interventions focusing on nutrition education, awareness about adolescent health, and promotion of health and hygiene can prove beneficial in addressing the poor knowledge, attitude, and practices towards anemia among adolescents. There is a need to educate the adolescents, their parents, teachers, and the community as a whole about the importance of nutritious food during the early years to prevent micronutrients deficiency and the consequences of anemia. Education regarding deworming and emphasis on deworming once in 6 months are crucial. The periodic medical examinations in schools and colleges and referral services need to be organized and monitored systematically. Awareness of adolescent friendly health clinics is recommended.

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