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Prevalence of Anaemia among Adolescent Girls in Palani Block

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ABSTRACT

According to World Health Organisation, Adolescents are defined as the period of life spanning the age between 10-19 years. This particular period in girls has been recognised as a special period of transition from girlhood to womanhood. It is a vulnerable period in the human life cycle for the development of nutritional anaemia. Number of nutritional programmes, schemes and anaemia control programme in India had been implemented by the Government but still there is a need for prevalence. The aim of the study is to estimate the prevalence of anaemia among adolescent girls and to study the socio-demographic factors associated with anaemia. A Cross-sectional study was conducted to determine the prevalence rate of anaemia among adolescent girls in the urban area. The data was collected from the Thiruvalluvar School in Palani Block which is located in Dindigul District, Tamil Nadu. A total of 40 school going girls between the age of 15-17 years were included in the study. Overall prevalence of anaemia was 77.1% (N=40). Where in 42.5% (N=17) were mild anaemia followed by 32.5% (N=13) moderate anaemia. Among the group only one student is suffering from severe anaemia 2.1% (N=1). From the selected samples majority of them were suffering from mild and moderate anaemia and fifty five percent of them revealed that four days they have bleeding in menstrual cycle history. Thus the study concludes that anemia were widely prevalent in adolescent girls. There is a need to initiate intervention actions aimed at this group in order to reduce the prevalence of anemia among anaemic girls.

KEYWORDS: *Adolescent girls, Anaemia, Prevalence, Menstrual cycle, Palani*

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INTRODUCTION

The term "adolescence" is derived from the Latin word "AD-OLESCERE" meaning "TO GROW" or "TO MATURE". WHO defines adolescence as the segment of life between the ages of 10 to 19 years [4]

This period has been considered as the transitional phase from childhood to adulthood. During this phase, major psychological, behavioral, and physical developments ensue, because of marked physical activity and rapid growth spurt adolescence needs additional nutritional requirements [2].

Adolescents constitute over 21.4% of the population in India and adolescent girls constitute about 10 percent of the Indian population. This age group needs special attention because of the turmoil of adolescence which they face due to the different stages of development that they undergo, different circumstances that they come across, their different needs and diverse problems [8].

Nutritional anemia refers to a condition in which the hemoglobin content of the blood is lower than normal as a result of a deficiency of one or more essential nutrients, regardless of the cause of such deficiency [10]. The prevalence of anaemia in adolescents is disproportionately high in developing countries. During this stage the requirement of nutrition and micronutrients is relatively high. Therefore, adolescents, especially girls, particularly those between the ages of 12-15 years, are vulnerable to iron deficiency mainly because requirements are at a peak. The other major responsible factors behind this scenario of high risk of iron deficiency and anaemia are poor dietary intake of iron, high rate of infection, poverty, certain diseases, worm infestations as well as the social norm of early marriage, adolescent pregnancy and poor access to health services[9].

Females were consistently at greater risk of anemia than men across almost all geographic regions and in most age groups [3]. The National Nutritional Anaemia Prophylaxis Programme (NNAPP) was initiated Nationwide in 1970 as a measure to prevent anaemia in the country [12]. Adolescent health programmes are implemented by various ministries under the Government of India. They provide different types of services targeting adolescent health problems in different areas [10].

Adolescent girls are chosen for the study as by improving anemia and awareness among adolescent girls, maternal morbidity and mortality especially during pregnancy can be improved [2]. Thus the study has been planned to highlight the burden of anaemia in adolescent girls and it was conducted to estimate the prevalence of anaemia among adolescent girls and to study the socio- demographic factors associated with anaemia in Thiruvalluvar School in Palani block.

Objectives of the Study

- To assess the prevalence of Anaemia among Adolescent girls.
- To find out the association between prevalence of anaemia with selected socio demographic variables.

Methodology

Methodology is the general research strategy that outlines the way in which a research project is to be undertaken and, among other things, identifies the methods to be used in it [6].

Research design

In the present study a cross sectional descriptive research design was carried out to find out the prevalence of anaemia among adolescent girls.

Population

Study consists of 40 adolescent girls from Thiruvalluvar School which is located in Palani block, Dindigul District, Tamil Nadu.

Sample technique

Convenient sampling technique was used by the researcher to select the subjects. In this method, the investigators enroll subjects according to their availability and accessibility. Therefore, this method is quick, inexpensive, and convenient. It is called convenient sampling as the researcher selects the sample elements according to their convenient accessibility and proximity[5].

Criteria for anaemia

The severity of anaemia is graded as per WHO classification

Grades of Anaemia	WHO
Normal	12gm/dl and above 12 gm/dl
Mild	10-11.9 gm/dl
Moderate	7-9.9 gm/dl
Severe	Below 7gm/dl

Sampling criteria

Samples were selected with the following predetermined set of criteria.

A. Inclusive criteria

Adolescent girls at the age of 15-17 years.
Adolescent girls studying in the class 10th , 11th and 12th Standard.

B. Exclusive criteria

Adolescent girls who were under the treatment of anaemia.
Adolescent girls who are terminally ill.

Data collection procedure

Permission was obtained from District Educational Officer and Head Master for recruitment of study participants. Data was collected from 40 school going adolescent girls from Thiruvalluvar School which is located in Palani block, Dindigul District, Tamil Nadu. Hemoglobin (Hb) estimation was recorded from the Primary Health Center of the Palani Block.

Tool for data collection

A semi structured questionnaire was used as a tool to assess the family background, anaemia prevalence rate and the history of menstrual cycle among adolescent girls. The questionnaire was distributed to the individuals and the responses were recorded.

Statistical analysis

The data were entered and analysed using SPSS version 23 to give clear picture of background information and to determine the prevalence of anaemia in school going adolescent girls. Quantitative data were represented in the form of frequency and percentages then the data was analysed, tabulated and interpreted.

Results and Discussion

Table 1 Socio demographic factors of the respondents

Variables	No.of students (N=40)	Percentage (%)
Age		
15 years	17	42.5
16 years	11	27.5
17 years	12	30
Class		
10th Std	17	42.5
11th Std	11	27.5
12th Std	12	30
Religion		
Hindu	25	62.5
Christian	6	15.0
Muslim	9	22.5
Community		
SC	32	80
BC	6	15
MBC	2	5
Residency		
Urban	14	32
Rural	26	65

Socio economic factor of the selected respondents are given in the Table1. Out of 40 adolescent girls 17(42.5%) of them were in the age of 15 years, 12(30%) of them were in the age of 17 years and 11(27.5%) of them were in the age of 16 years. The selected adolescent girls were studying in 10th, 11th, and 12th standard. Nearly 17(42.5%) of them were in 10th standard, 12(30%) of them are in 12th standard and 11(27.5%) of them are in 11th standard.

About 25(62.5%) of the respondents belonged to Hindu religion. 9(22.5%) of them belonged to Muslim and very few 6(15%) of them belonged to Christians. Those who belonged to Scheduled Community, Backward Community and Most Backward Community constituted 32(80%), 6(15%) and 2(5%) respectively. About 26(65%) of the subjects were from rural area and 14(32%) of the subjects were from urban area in and around Palani.

Table 2 Educational and economic status of the family members of the respondents

Variables	No.of students (N=40)	Percentage (%)
Educational status of the father		
Primary education	11	27.5
Secondary education	9	22.5
Higher Sec education	11	27.5
Degree	9	22.5
Educational status of mother		
Primary education	16	40
Secondary education	9	22.5
Higher Sec education	11	27.5
Degree	4	10
Occupational status of the father		
Government employee	2	5
Private organization	12	30
Business	7	17.5
Coolie	10	25
Farmer	9	22.5
Occupational status of the mother		
Working women	21	52.5
House wife	19	47.5
Family income		
Rs.3000/-5000/-	2	5
Rs.5001/-10000/-	24	60
Above Rs.10,000/-	14	35

Educational and economic status of the family members of the respondents is depicited in the Table 2. About 11(27.5%) of the respondents fathers educational status was Primary and Higher secondary education were as 9(22.5%) of the respondents fathers educational status was Secondary education and Degree. Nearly 16(40%) of the respondents mothers educational status was Primary level, 11(27.5%) of them were Higher secondary, 9(22.5%) of them were Secondary and very few 4(10%) of the respondents mothers were degree holders. Most of the respondents fathers are private organizers 12(30%), 10(25%) are coolie, 9(22.5) are farmers, 7(17.5%) are business men and very few 2(5%) are government employs. 21(52.5%) of the respondents mothers are working women and 19(47.5%) are house wife. Most of the income was between Rs.5001-10000/-. Only 5% of the families were living below the poverty line. Those who are in the bracket of above Rs.10000 constituted 14(35%).

Table 3 Status of Anaemia of the respondents

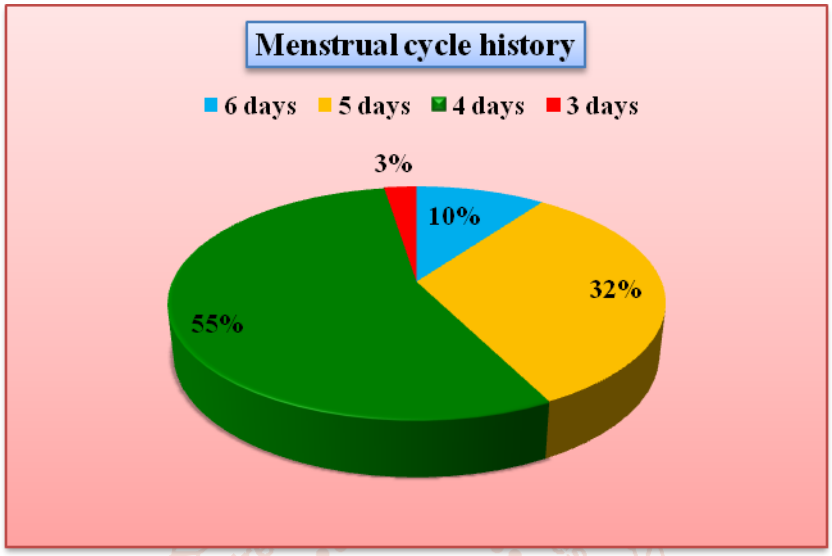
Hemoglobin level (g/dl%)	No. of students (N=40)	Percentage (%)
Normal/No anaemia	9	22.5
Mild anaemia(10.0-11.9)	17	42.5
Moderate anaemia(9.9-7.0)	13	32.5
Severe anemia (below 7.0)	1	2.1

The above table reveals that out of 40, 9(22.5%) have no anaemia, 17(42.5%) of the adolescent girls were mild anaemic, 13(32.5%) were moderate anaemic and remaining 1(2.1%) were severe anaemic.

Approximately 15% of anemic population represented with moderate to severe degree anemia. WHO estimated the prevalence of moderate and severe anemia to be 10% to 20%. Main cause for anemia is dietary iron deficiency and many studies have also supported [7].

Table 4 Menstrual Cycle history of the respondents

Menstrual cycle history	No. of students (N=40)	Percentage (%)
6 days	4	10
5 days	13	32.5
4 days	22	55
3 days	1	2.5



In the present study the author found that anaemia was more prevalent in the girls who had bleeding for 6 days. 4(10%) of the adolescent girls reported that they have bleeding for 6 days, 13(32.5%) reported that they have bleeding for 5 days, about 22(55%) of the adolescent girls expose that they have bleeding for 4 days and only one reported that she have bleeding for 3 days.

There is a correlation between girls who have higher menstrual bleeding and anemia.There is no difference between Hemoglobin of premenarcheal girls and girls with regular menstrual cycle. This study shows the influence of menstrual bleeding on anemia which is significant statistically as well as clinically. This finding diverges from the reports of study done in Nagpur-India and Rajini in 2010 which explicated that the menstrual bleeding was not an associating factor for anemia [11].

Conclusion

Anemia is considered as a pandemic public health problem. Implementation of supplementation programme is not just enough to treat the endemic due to marked disparities in socioeconomic status, dietary pattern, cultural practices, non-compliance for supplementation and primary health care services [7].

The government is making continuous efforts to check anemia and many nutritional intervention programmes and policies have been launched to curb the prevalence of anemia like National Anemia Prophylaxis Programmes (1972), Integrated Child Development Services scheme in 1975 and the recently launched National Rural Health Mission. The main purpose was promotion of iron rich food, provision of iron and folate supplements to high risk groups (all pregnant and lactating women, Intra Uterine Device users), identification and treatment to severely anemic people and to educate mothers on health and nutrition to prevent maternal anemia, but the evaluation of large scale programmes shows that maternal anemia has not declined significantly [1]. But still severity of anaemia is high among women, pregnant women, lactation women and especially adolescent girls. There is need to reallocate the center of attention from old paradigm of anaemia.

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