The Prevalence of Anemia among the Adolescent Girls in a Selected College in Kanchipuram

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Abstract

In developing nations, the adolescent group is progressively exposed to health issues and young girls are increasingly weak due to anemia. An observational study was conducted to assess the prevalence of anemia among the adolescent girls in a selected college in Kanchipuram. The objectives were to assess the socio-demographic variables of the adolescent girls, to assess the prevalence of anemia among the adolescent girls and to associate the prevalence of anemia and the socio-demographic variables of the adolescent girls. The cross sectional design was used to conduct the study. The setting of the study was a selected Allied Health Science college in Chennai. Adolescents in the age group of 17 to 19 years were selected as samples for the study. The convenience sample technique was used to select the samples. The sample size was 32. The results showed that 16 (50.0%) of the participants belong to the age 17 years and 18 years equally and the majority of the study participants 27 (84.0%) belong to nuclear family and 05 (16.0%) of the population belong to joint family and the 08 (25.0%) of the study participants were vegetarian and 24 (75.0%) of them were non vegetarian. The level of hemoglobin showed that majority of the study participants 22 (56.0%) suffer low hemoglobin level.

Keywords: *Adolescent girls, Adolescence, Anemia, Prevalence, level of hemoglobin, pallor.*

Introduction

Anemia is defined as a clinical condition characterized by low Hemoglobin level for the age, sex, physiological condition and related disease condition of that human being[1]. It is a worldwide problem, mainly affecting poor people from countries with low income. Women are the main victims of the anemia because of blood loss during menstruation and childbirths when compared to other groups of the population. It is seen that no one is immune to anemia. This can be caused by innumerable factors, the most common one is the deficiency of essential elements of Hemoglobin synthesis, blood loss, inadequate intake of iron-rich foods and worm infestation. Iron deficiency anemia is the most common anemia found among the human population and it is reported that anemia affects 01.62 billion people and 30.0% of the adolescent girls globally[2].

As indicated by an examination by WHO on iron deficiency during 1993-2005, the overall prevalence of anemia was 25.0%[3]. As indicated by WHO guidelines for control of anemia, nutritional anemia is the most common issue in India and is essential because of iron insufficiency. The National Family Health Survey-3 (NFHS-3) information recommends that the predominance of anemia in adolescent girls (15-19 years) is 56.0%. As per the National Nutrition Monitoring Bureau Survey (NNMBS) 2006, the severity of weakness in pre-adult young ladies (12-14 years) is 68.60% while in (15-17 years) it is 69.70%[4]. Iron insufficiency is a

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preventable disease. The high predominance of pallor (Hemoglobin <12.0 gm%) among immature young ladies in India, causes 01.80% loss of GDP. Every day prerequisite of iron for an adolescent girl is 0.80 mg/1000 K cal of dietary energy[5]. In the twelfth five year plan, the Indian government has defined an objective to lessen the burden of iron deficiency in adolescent girls by half.

In developing nations, the adolescent group is progressively exposed to health issues and young girls are increasingly weak due to anemia. Studies demonstrated that anemia was the most common issue experienced in low-income nations. India had revealed a high incidence of anemia among adolescent girls, which is evidently higher when contrasted and the other nations. There were numerous investigations centered around anemia among pregnant ladies and youngsters, however, just a couple of studies were accessible on anemia among young ladies. This examination was meant to discover the commonness of anemia among pre-adult young ladies and to correspond with socio-demographic status in a college zone of south India[18].

Adolescent girls are selected for the examination as by improving anemia and knowledge among adolescent girls, maternal morbidity and mortality particularly, during pregnancy, can be improved. In perspective on the above mentioned, this investigation was done to discover the predominance and components related to pallor among young girls.

Statement of the Problem: An observational study to assess the prevalence of anemia among the adolescent girls in a selected college in Kanchipuram.

Objectives:

To assess the socio-demographic variables of the adolescent girls

To assess the prevalence of anemia among the adolescent girls

To associate the prevalence of anemia and the socio-demographic variables of the adolescent girls

Hypothesis: There was a significant association between the prevalence of anemia and the socio demographic variables of the adolescent girls.

Operational Definition:

Prevalence – In this study prevalence referred to the widespread of anaemia among the adolescent girls of Kanchipuram District.

Anaemia – Anaemia is a condition in which there is low level of haemoglobin in the blood (<12.0gm/dl)

Adolescent girls – In this study adolescent girls refers to the age group of 17 to 19 years old.

Methodology

The cross sectional design was used to conduct the study. The setting of the study was a selected Allied Health Science college in Chennai. The target population was the adolescent girls in Tamil Nadu. The accessible population in the present study was the adolescent girls (17-19years) in Allied Health Science, Chettinad Academy of Research and Education, Kelambakkam. Adolescents in the age group of 17 to 19 years were selected as samples for the study. The convenience sample technique was used to select the samples. The sample size was 32.

Inclusion Criteria:

1. Adolescents who were having age of 17-19 years.
2. Adolescents who were willing to participate in the study.
3. Adolescents who were present during the data collection.

Exclusion Criteria:

1. Adolescents who had history of any significant illness.
2. Adolescents who were sick during data collection.

Data Collection: The data collected for a week. The investigator introduced her/him to the participants and the purpose of the study was explained to ensure better co-operation during the data collection period. The study participants were asked to fill the socio-dempgraphic questionnaire and the blood sample was collected from the participants and send to the pathology lab for the results. Procedure of Haemoglobin testing was done by Cyanmethemoglobin method (Drabkin's method). Data was analyzed by using descriptive and inferential statistics with PSPP software package.

Results and Discussion

It is showed that 16 (50.0%) of the participants belong to the age 17 years and 18 years equally. A study

conducted to assess the prevalence of anemia among adolescent girls in Ethiopia showed that the mean age of the study participants was 14.5 (±2.28) years[6]. Similarly, an Indian study results on the same topic and population showed that that majority (53%) of girls were in the age group of 15-16 years[7]. In the present study, 24 (75.0%) of them were from Hindu, 01 (03.0%) were Muslim, 07 (22.0%) of them were Christians. A study conducted to assess the prevalence of anemia and its risk factors showed that the majority 172 (66.90%) of the study participants belonged to Hindu, Christian 74 (28.80%) and Muslim 11 (04.30%)[8]. In contrary, another study conducted in Ethiopia showed that around 99.0% of them are christian followers[6].

In the current study, 01 (03.0%) of participants' family earned below Rs.5,000 per month, 07 (22.0%) of them earn Rs.5,001-10,000 per month, 07 (22.0%) of them earn Rs.10,001-15,000 per month, 07(22.0%) of them earn Rs.15,000-20,000 per month, 10 (31.0%) of them earn Rs.15,001 and above per month. A study conducted in South India showed that majority of the study subjects belonged to middle class 137 (53.40%) followed by upper lower 117(45.50%)[8]. An Ethiopian study showed that 30.30% of study participants had an estimated average monthly household income of less than 1000 Ethiopian birr[6].

In the present study, the majority of the study participants 27 (84.0%) belong to nuclear family and 05 (16.0%) of the population belong to joint family. A study on prevalence of anemia in Bihar showed that the 68 (33.0%) in adolescent girls who belong to joint family and 138 (66.90) belong to nuclear families[9]. Another study of anaemia and its correlates among adolescent girls in schools of Haldwani, India showed that the majority of the study participants 487 (63.25% belong to nuclear and joint families 283 (36.25%) [10].

The current study showed that the 08 (25.0%) of the study participants were vegetarian and 24 (75.0%) of them were non vegetarian. A Study of correlation between dietary habits and anemia among adolescent girls in Ranchi and its surrounding area showed that 117 were vegetarians and remaining 183 were non-vegetarians[11]. Similarly, anemia and Iron deficiency in adolescent school girls in Kavar Urban Area, Southern Iran showed that the majority of them are non vegetarian[12].

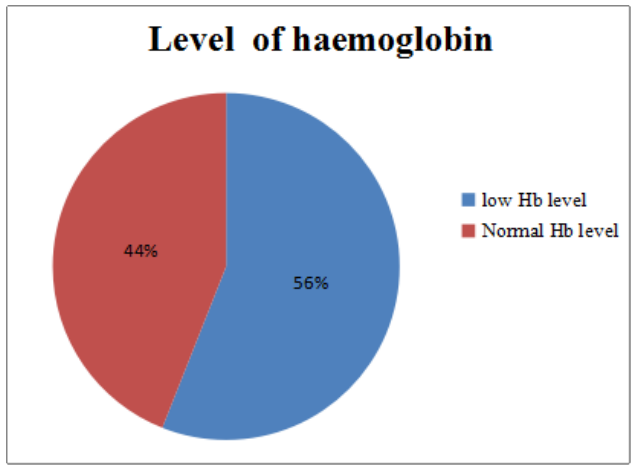

Fig 1: Distribution of adolescent girls based on the level of haemoglobin

The current study on the previous knowledge on anaemia depicted that 12 (38.0%) of the population gained knowledge from mass media, 20 (62.0%) from friends and relatives. A similar study conducted in Karnataka showed that the study participants learned about anemia from school teachers, followed by doctors and health care workers[13]. Similarly another study conducted in Indonesia showed that the majority of the study participants heard about anemia through parents and family members and from doctors also[14].

Figure 1 illustrates the distribution of haemoglobin based on the level of hemoglobin and it is showed that majority of the study participants 22 (56.0%) suffer low hemoglobin level. The study on the prevalence of anaemia and its associated risk factors among adolescent girls of central Kerala showed that the the prevalence of anemia was 21% and risk factors associated with anemia in the uni variate analysis were presence of ova or cyst in stool ($p = 0.003$, OR = 2.94) and number of pads per day during menstruation[8]. Another similar study conducted in Uttar Pradesh showed that the prevalence of anemia among the adolescent girls was found to be 78.50%, of which 40.0% had mild, 33.0% had moderate and 05.50% had severe anemia[13].

The current study results showed that there was no significant association between the age and level of hemoglobin of the study participants. Similarly a study conducted in Southwest Ethiopia showed that there was no significant association between the age and level of hemoglobin of the study participants ($P<0.63$)[15]. However, another study conducted to assess anemia and associated factors among adolescent girls living in Aw-Barre refugee camp, Somali regional state, Southeast

Ethiopia showed that late young girls were all the more fundamentally influenced by anemia and the chances of developing anemia were 2 times more among late young people as compared with early aged girls (10 – 14yrs) (AOR: 1.95, 95% CI (1.09, 3.47)[16]. It is showed that there was no significant association between the religion and level of hemoglobin of the study participants. Likewise, another study conducted in North Kerala showed that there was no significant association between the religion and level of hemoglobin of the study participants (P<0.8)[8]. In contrary, another similar study results showed that there was a significant association between the religion and level of hemoglobin of the study participants and the adolescent girls who belonged to Hindu religion are mostly affected (P<0.03)[17].

The present study showed that there was no significant association between the family monthly income and level of hemoglobin of the study participants. Likewise, another study conducted in North Kerala showed that there was no significant association between the income and level of hemoglobin of the study participants (P<0.95)[8]. The current study showed that there was no significant association between the type of family and level of hemoglobin of the study participants. Likewise, another study conducted in North Kerala showed that there was no significant association between the type of family and level of hemoglobin of the study participants (P<0.25)[8]. However, another study conducted in Southwest Ethiopia showed that there was a significant association between the type of family and level of hemoglobin of the study participants (P<0.001)[15].

The present study showed that there was no significant association between the type of diet and level of hemoglobin of the study participants. Likewise, another study conducted in North Kerala showed that there was no significant association between the dietary habit and level of hemoglobin of the study participants (P<0.35)[8]. In contrary, a study of correlation between dietary habits and anemia among adolescent girls in Ranchi and its surrounding area showed that on comparing type of diet, anemia was more common in vegetarians[11].

The present study showed that there was no significant association between the previous knowledge on anemia and level of hemoglobin of the study participants. However, a study conducted on Ethiopia showed that more than three-fourths, 332 (78.5%), of the study subjects had not heard about anemia. The majority of them, 240 (56.7%) of members had poor information on anemia. Around 43.3% adolescent girls had great learning about iron deficiency. Of all investigation members, just 162 (38.3%) knew on the reasons for iron deficiency, 178 (42%) on signs and manifestations, 196 (46.3%) on side effects and 183 (38.5%) on prevention and management of anemia[6].

These are findings derived in the present study.

Conclusion

Anemia was observed to be a general medical issue in the study setting. Family month salary, family size, intestinal parasite infections, span of menstrual stream per each cycle and BMI for age were the fundamental indicators of anemia. Hence, college-based Iron folic acid supplementation and regular screening and deworming projects ought to be executed to help juvenile young ladies who are in danger of pallor.

Conflict of Interest: Nil

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