impairment. Iron deficiency has also been linked to many learning and behavioural problems. It has been demonstrated to affect aerobic fitness and efficiency of work.¹⁻³ Anemia is a global public health problem affecting the

majority of the population of the world in both developed and developing countries with major consequences on human health as well as social and economic development. It is the world's second leading cause of disability of the

whole global disease burden. It is considered as a public health problem when the hemoglobin (Hb) value is below the population-specific Hb threshold. It can be classified as and one of the leading causes of disability. Iron deficiency is the most common cause of anemia. Numerous studies no, mild, moderate and severe public health problem when the prevalence is $\leq 4.9\%$, 5.0-19.9%, 20.0-39.9%, and have shown that anaemia remains as a major public health problem among children and adolescents in India. Anaemia \geq 40%, respectively. Globally, anemia affects around 305 million (25.4%) SC (children aged 5.00-14.99 years), and has negative impact on the health of school children it is three to four times more prevalent in non-industrialized regions than industrialized ones.⁴⁻⁶ Hence; the present

anaemia among school going children.

MATERIALS & METHODS

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incidence of anaemia among school going children. A total

of 600 students within the age range of 10 to 16 years were

enrolled in the present study. Complete demographic and

children were recorded. Blood samples were obtained and haemoglobin levels were recorded using Sahli's hemoglobinometer. Anaemia was defined based on WHO criteria. All the results were recorded in Microsoft excel sheet and were analysed by SPSS software.

Results: Anaemia was found to be present in 135 children. Hence; the prevalence rate of anaemia was 22.5 percent. Among these 135 children, 85 were females and 50 were males. Incidence of anaemia was significantly higher among females. Out of these 135 children,

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Background: Globally, anemia is the most common nutritional problem and one of the leading causes of disability. Hence; the present study was undertaken for assessing the incidence of anaemia among school going children. Materials & methods: A total of 600 students within the age range of 10 to 16 years were enrolled in the present study. Complete demographic and clinical details of all the

Analysis of incidence of Anaemia among school going children

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Original **R**esearch

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ABSTRACT:

significantly higher incidence of anaemia was seen among children of 15 to 16 years of age group. Conclusion: Significantly higher prevalence of anaemia among school going female girls have been observed. Key words: School going children, Anaemia Received: 10 January, 2021 Accepted: 18 January, 2021

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INTRODUCTION Globally, anemia is the most common nutritional problem

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clinical details of all the children were recorded. Blood samples were obtained and haemoglobin levels were recorded using Sahli's hemoglobinometer. Anaemia was defined based on WHO criteria described previously in literature.⁷ All the results were recorded in Microsoft excel sheet and were analysed by SPSS software. Chi-square test was used for evaluation of level of significance.

RESULTS

In the present study, a total of 600 school going children were analysed. Among these children, 300 were males while the remaining 300 were females. Anaemia was found to be present in 135 children. Hence; the prevalence rate of anaemia was 22.5 percent. Among these 135 children, 85 were females and 50 were males. Incidence of anaemia was significantly higher among females. Out of these 135 children, significantly higher incidence of anaemia was seen among children of 15 to 16 years of age group.

 Table 1: Prevalence of Anaemia

Variable		Number
Gender	Males	50
	Females	85
	Total	135
Age group (years)	10 to 12	24
	13 to 14	46
	15 to 16	65

DISCUSSION

Anemia is a public health problem both in developed and developing countries. The causes of anemia are multifactorial. Iron deficiency is the primary cause of anemia which results iron-deficiency anemia (IDA). However, it also coexists with malaria and parasitic infection. Iron is an essential micronutrient and major cause of anemia, intrinsically found in every cells of human body and has several metabolic function including hemoglobin transport and storage, DNA synthesis, electron transport, and energy production.⁶⁻⁹ Hence; the present study was undertaken for assessing the incidence of anaemia among school going children.

In the present study, a total of 600 school going children were analysed. Among these children, 300 were males while the remaining 300 were females. Anaemia was found to be present in 135 children. Hence; the prevalence rate of anaemia was 22.5 percent. Among these 135 children, 85 were females and 50 were males. Incidence of anaemia was significantly higher among females.

estimated the prevalence of anemia among school going children. Hemoglobin of 880 students of 6th to 9th standard in 11 randomly selected schools of Ernakulam district was estimated using HemoCue 201 photometer. Prevalence of anaemia was expressed using frequencies and percentages. Univariate analysis for factors associated with anemia was done. Selected variables were entered into a logistic regression model. The prevalence of anemia was estimated to be 44% (95% CI 40.67–47.33). Among them 0.8% had severe anemia, 3.5% had moderate anemia and 39.7% had mild anemia. Among them 21.3% and 52.6% reported not in the habit of consuming green leafy vegetables and citrus fruits respectively, at least three times on a usual week. Anemia among children was associated with female gender (adjusted OR 1.53, 95% CI 1.16–2.04), higher age group (adjusted OR 2.24, 95% CI 1.69–2.91) and regular intake of tea/coffee along with major meals (adjusted OR 1.62, 95% CI 1.20–2.04). Anemia among school going children in Ernakulam remains a public health problem and was more among females, higher age groups (12–15 years) and those reported regular intake of tea/coffee along with major meals.¹⁰

In the present study, Out of these 135 children, significantly higher incidence of anaemia was seen among children of 15 to 16 years of age group. Sabita Basu et al assessed the prevalence of anemia and determine serum ferritin status among 1120 apparently healthy adolescents (12 to 18 years) sampled from 11 city and 2 rural schools in Chandigarh. All the boys and the girls were subjected to anthropometric examination and hemoglobin estimation. The estimation of hemoglobin was done bv cyanmethemoglobin method. Serum ferritin was estimated by ELISA (UB1 Magiwel enzyme immuno assay) method in 183 students. The overall prevalence of anemia calculated as per WHO Guidelines was significantly higher among girls (23.9%) as compared to boys. Anemia was observed more in rural (25.4%) as compared to urban (14.2%) adolescents. Iron stores estimated by serum ferritin in 183 subjects were deficient in 81.7% and 41.6% of the adolescent girls and boys, respectively.¹¹ Getaneh Z et al assessed the prevalence and associated factors of anemia among SC attending public primary schools. A schoolbased cross sectional study was conducted on a total of 523 SC aged from 6-14 years old. Multi-stage sampling followed by systematic random sampling techniques was employed to select study participants. Data on sociodemographic and socio-economic characteristics, and dietary status of children were collected using pre-tested structured questionnaire through face-to-face interview of children's caregivers. Anthropometric measurements were taken. Hemoglobin (Hb) concentration was determined by using HemoCue 301+analyser. Of the total SC participated in the study, 269 (51.4%) were males. The median (inter quartile range (IOR)) age was 12 (10-13) years, and 332 (63.5%) of them were in the age group 11-14 years. About 81 (15.5%; 95%CI: 12.4%, 18.7%) of them were anemic: 56 (69.1%) and 25 (38.9%) of them were mildly and moderately anemic, respectively. Low maternal education, stunting (AOR = 2.22; 95%CI: 1.30, 3.80), severe food insecurity, and soil-transmitted helminthic (STH) infection were found significantly associated with anemia. Anemia among SC was found to be a mild public health problem.¹²

CONCLUSION

Significantly higher prevalence of anaemia among school going female girls have been observed.

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