International Journal of Advanced Research in Medicine

E-ISSN: 2706-9575
P-ISSN: 2706-9567
www.medicinepaper.net/
IJARM 2019; 1(2): 16-19
Received: 15-05-2019
Accepted: 17-06-2019

Dr. Rajesh Upreti
Department of medicine, Kathmandu University School of Medical Sciences, University in Dhulikhel, Dhulikhel, Nepal

Corresponding Author:
Dr. Rajesh Upreti
Department of medicine, Kathmandu University School of Medical Sciences, University in Dhulikhel, Dhulikhel, Nepal

Assessment of prevalence and profile of anemia among Labourer of a known population

Dr. Rajesh Upreti

DOI: https://doi.org/10.22271/27069567.2019.v1.i2a.12

Abstract
Background: Anemia refers to a condition in which the blood hemoglobin concentration is lower than normal, resulting in poor cognitive and motor development in children and loss of work productivity in adulthood. Hence; the present study was undertaken for assessing the prevalence and profile of anemia among labourer of a known population.
Materials & methods: A total of 200 subjects were enrolled in the present study. Complete demographic details of all the subjects were obtained. Blood samples were obtained from all the subjects and were collected in the microcuvettes. Alcohol swabs were used to clean the skin area before pricking. The blood samples in the microcuvette were loaded Hb photometer and Hb values were obtained.
Results: The overall prevalence of anaemia in the present study was 29 percent. Among the anaemia subjects, 31.1 percent of the subjects belonged to the age group of less than 5 years. 44.8 percent of the patients belonged to the age group of 5 to 8 years. 24.1 percent of the patients belonged to the age group of more than 8 years. Out of 58 anaemic patients, 42 were of rural residence while the remaining 16 were of urban residence. 75.9 percent of the subjects belonged to the lower socio-economic class, while 20.7 percent belonged to middle class.
Conclusion: Anemia is a significant health hazard affecting a significant proportion of pediatric population. Rural and lower class population are significant more affected with this pathologic condition.

Keywords: anemia, children, pediatric

Introduction
Anemia refers to a condition in which the blood hemoglobin concentration is lower than normal, resulting in poor cognitive and motor development in children and loss of work productivity in adulthood [1-3].
Iron deficiency is the most common cause of anemia. It is estimated that about 50% of anemia cases are attributed to this micronutrient deficiency, although this proportion probably varies substantially across regions and countries. Other causes of anemia include other micronutrient deficiencies, such as folic acid, vitamin A and vitamin B12 deficiencies; the presence of infectious diseases and genetic hemoglobin disorders [4].
Low birth weight, inadequate nutritional intake, reduced gastrointestinal (GI) iron uptake, blood loss are the most common causes of Irony deficiency status in childhood. There are various manifestations of ID including many disturbances that compromise organ function. In children and adolescents without anemia, ID status can produce neuropsychological effects on cognitive development and tissue alterations with impaired endurance capacity [5, 6]
Hence; the present study was undertaken for assessing the prevalence and profile of anemia among children less than 10 years of age: An observational study

Materials & Methods
The present study was commenced in the department of pediatric medicine of the medical institute and it included assessment of the prevalence and profile of anemia among children less than 10 years of age. A total of 200 pediatric subjects were enrolled in the present study. Complete demographic details of all the subjects were obtained. Ethical approval was obtained from institutional ethical committee and written consent was obtained from parents/guardians of all the subjects after explaining in detail the entire research protocol.
Exclusion criteria for the present study included:

- Subjects more than 18 years of age
- Subjects with presence of any other systemic illness

- Subjects with presence of any other hematological malignancy

Blood samples were obtained from all the subjects and were collected in the microcuvettes. Alcohol swabs were used to clean the skin area before pricking. The blood samples in the microcuvette were loaded Hb photometer and Hb values were obtained. All the results were assessed by SPSS Software. Chi- square test and Mann-Whitney U test were used for assessment of level of significance. P- value of less than 0.05 was taken as significant.

Results

In the present study, a total of 200 paediatric subjects were analysed. Among these subjects, anaemia was found to be present in 58 subjects. Therefore, the overall prevalence of anaemia in the present study was 29 percent. Among the anaemia subjects, 31.1 percent of the subjects belonged to the age group of less than 5 years. 44.8 percent of the patients belonged to the age group of 5 to 8 years. 24.1 percent of the patients belonged to the age group of more than 8 years. Significant results were obtained while assessing the age-wise distribution of patients. 37.9 percent of the patients were males while the remaining 62.1 percent of the patients were females.

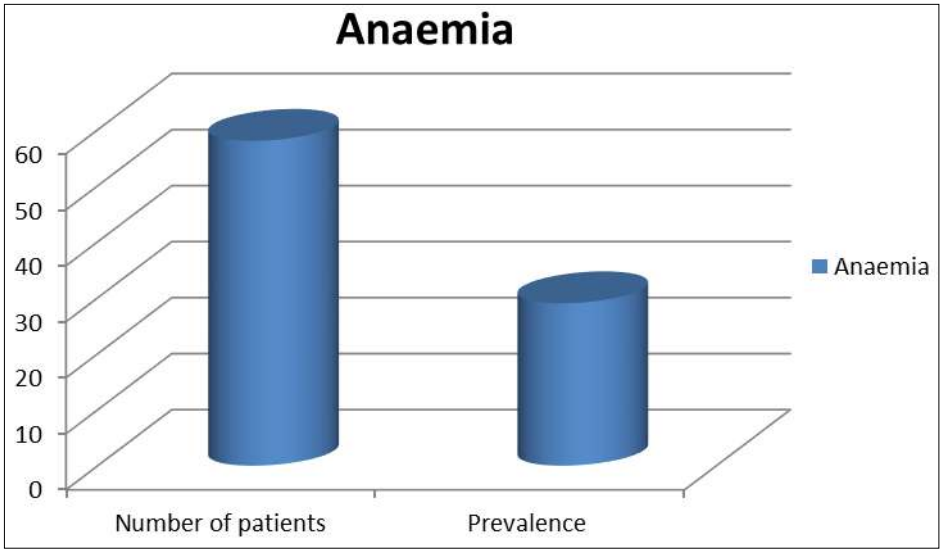
In the present study, out of 58 anaemic patients, 42 were of rural residence while the remaining 16 were of urban residence. On the basis of occupation of the household head, 56.9 percent were farmers, while 31 percent were daily workers. 5.2 percent were self-employed, while the remaining 6.9 percent were regular employed. 75.9 percent of the subjects belonged to the lower socio-economic class, while 20.7 percent belonged to middle class.

Discussion

Anemia is one of micronutrient deficiency which has serious and common public health significance in the world and it is the second leading nutritional cause of disability. Globally, about 42.6% of children (5–59 months) are suffering from anemia. It affects quarter of world population, primarily pregnant women and young children are at greatest risk [7-9]. Hence; the present study was undertaken for assessing the prevalence and profile of anemia among children less than 10 years of age: An observational study.

In the present study, a total of 200 paediatric subjects were analysed. Among these subjects, anaemia was found to be present in 58 subjects. Therefore, the overall prevalence of anaemia in the present study was 29 percent. Among the anaemia subjects, 31.1 percent of the subjects belonged to the age group of less than 5 years. 44.8 percent of the patients belonged to the age group of 5 to 8 years. 24.1 percent of the patients belonged to the age group of more than 8 years. Significant results were obtained while assessing the age-wise distribution of patients. 37.9 percent of the patients were males while the remaining 62.1 percent of the patients were females. Malako BG *et al*. Assessed the prevalence of anemia and to identify associated factors among children 6–23 months of age. A community-based cross-sectional study was carried out among 485 children of Damot Sore, South Ethiopia from March to April 2017. Data on socio-demographic, dietary, blood samples for hemoglobin level and malaria infection were collected. Both descriptive and bivariate analyses were done and all variables having a p-value of 0.25 were selected for multivariable analyses. Out of 522 sampled children, complete data were captured from 485 giving a response rate of 92.91%. For altitude and persons smoking in the house adjusted prevalence of anemia was 255(52.6%). The larger proportion, 128(26.4%) of children had moderate anemia. On multivariable logistic regression analyses, household food insecurity, poor dietary diversity, early or late initiation of complementary feeding, poor breastfeeding practice, and poor utilization of folic acid by mothers were significantly associated with anemia. Prevalence of anemia among children was a severe public health problem in the study area. Most important predictors are suboptimal child feeding practices, household food insecurity, and poor diet [10].

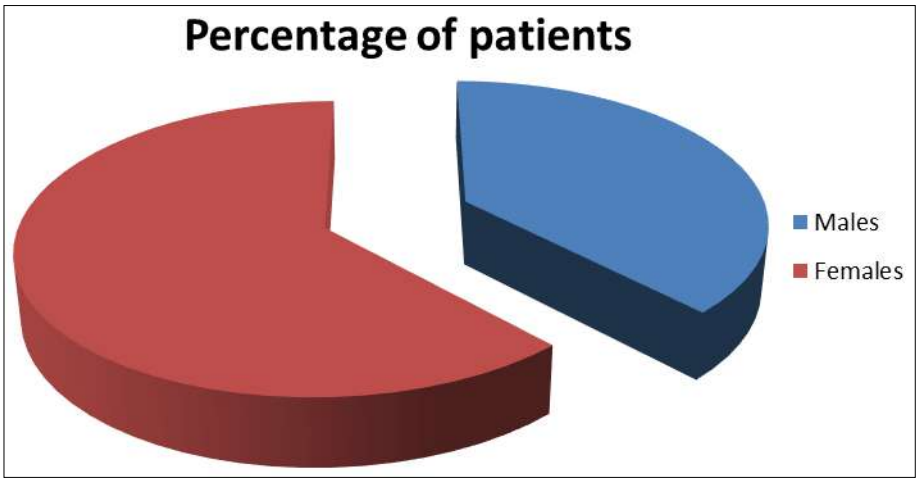
In the present study, out of 58 anaemic patients, 42 were of rural residence while the remaining 16 were of urban residence. On the basis of occupation of the household head, 56.9 percent were farmers, while 31 percent were daily workers. 5.2 percent were self-employed, while the remaining 6.9 percent were regular employed. 75.9 percent of the subjects belonged to the lower socio-economic class, while 20.7 percent belonged to middle class. da Silva LLS *et al*. assessed the associated factors of anemia in young children who visited primary public health care facilities in Brazil. A cross-sectional study was conducted with 520 children aged 11 to 15 months who visited the primary health care in four Brazilian cities. Anemia was defined as hemoglobin concentration < 110 g/L in venous blood samples. Multilevel Poisson regression models were used to describe the associations between anemia and independent variables. The frequency of anemia was 23.1%. A higher frequency was observed in children who live with more than one other child younger than 5 years in the house, who started to receive fruits and vegetables after 8 months of age, who were stunted, who were hospitalized at least once in their life and who were in the lower tertile of serum folate concentration. Inadequate complementary feeding practices and morbidity were the main predictors for anemia in early childhood in population [11].



Graph 1: Prevalence of anaemia

Table 1: Distribution of subjects according to age group

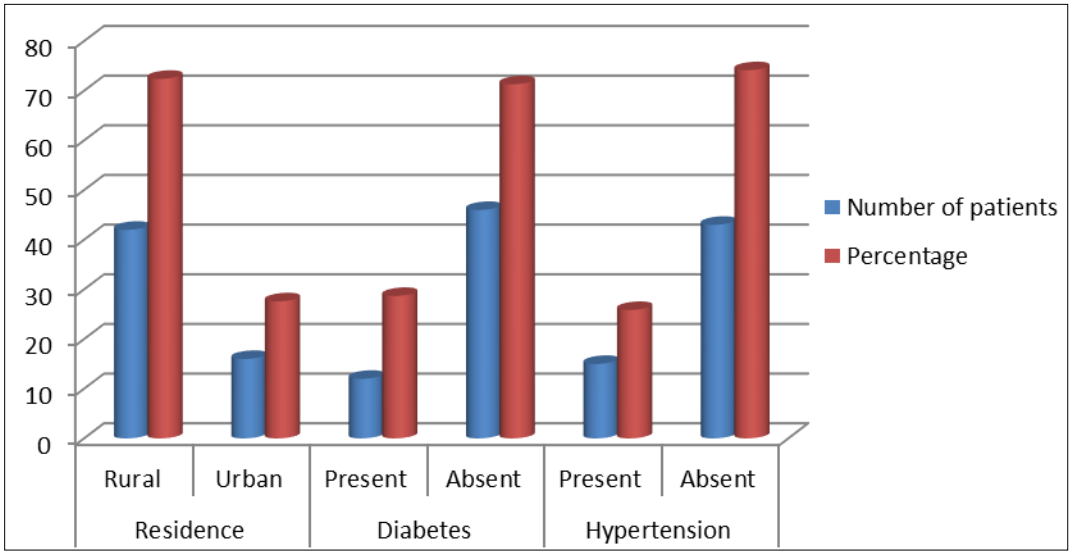
Age-group (years)	Frequency	Percentage	p- value
Less than 30	18	31.1	0.00 (Significant)
30 to 50	26	44.8	
More than 50	14	24.1	
Total	58	100	
Mean age (years) ± SD=41.7 years ± 3.3			



Graph 2: Gender distribution of subjects

Table 2: Profile of anaemic patients

Parameter		Number of patients	Percentage
Residence	Rural	42	72.4
	Urban	16	27.6
Diabetes	Present	12	28.69
	Absent	46	71.31
Hypertension	Present	15	25.86
	Absent	43	74.14



Graph 3: Profile of patients

Conclusion

From the above results, the authors conclude that anemia is a significant health hazard affecting a significant proportion of pediatric population. Rural and lower class population are significant more affected with this pathologic condition. However; further studies are recommended.

References

1. Umbreit J. Iron deficiency: A concise review. Am J Hematol March 2005; 78(3):225-231.
2. Poppe M. Iron deficient children. NZ Med J Sep 8 1993; 106(963):392.
3. Crampton P, Farrell A, Tuohy P. Iron deficiency anaemia in infants. N Z Med J Feb 23 1994; 107(972):60-61.
4. De Andraca I, Castillo M, Walter T. Psychomotor development and behavior in iron-deficient anemic infants. Nutr Rev. 1997; 55(4):125-132.
5. Kejo D, Petrucka PM, Martin H, Kimanya ME, Mosha TC. Prevalence and predictors of anemia among children under 5 years of age in Arusha District, Tanzania. Pediatric Health Med Ther. 2018; 9:9-15.
6. WHO. The global prevalence of anaemia in 2011. Geneva, Switzerland, 2015. [Accessed: 02 Feb 2017]; Available from: http://apps.who.int/iris/bitstream/10665/177094/1/9789241564960_eng.pdf.
7. Ganong WF. Review of Medical Physiology, Twenty-Second Edition University of California, San Francisco, USA: McGraw-Hill Companies, 2003.
8. Guyton AC, Hall JE. Text Book of Medical Physiology, thirteenth edition. Jackson, Mississippi, USA: Elsevier Inc, 2006, 11.
9. Burke RM, Leon JS, Suchdev PS. Identification, prevention and treatment of Iron deficiency during the first 1000 days. Nutrients. 2014; 6:4093-4114.
10. Malako BG, Teshome MS, Belachew T. Anemia and associated factors among children aged 6-23 months in Damot Sore District, Wolaita Zone, South Ethiopia. BMC Hematol. 2018; 18:14.
11. Da Silva LLS, Fawzi WW, Cardoso MA; ENFAC Working Group. Factors associated with anemia in young children in Brazil. PLoS One. 2018; 13(9):e0204504.

Published 2018; doi:10.1371/journal.pone.0204504