

## Study of Assessment of Anemia in Patients Visited to Medicine OPD at a Tertiary Care Hospital in Karnataka, India

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### ABSTRACT

**Background:** Anemia is a severe public health problem affecting both developed and developing countries with major consequences for human health as well as socioeconomic development. The present study was conducted to assess prevalence of anemia in patients visited to hospital.

**Materials and Methods:** The present cross-sectional study was conducted among adult patients visited to the hospital. The sample size was 600. A self-developed, semistructured interview questionnaire was used to record the sociodemographic profile. Hemoglobin (Hb) estimation was done using HemoCue Hb 201+ system. Results of the Hb tests were provided to them. The recorded data was compiled, and data was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA).

**Results:** In the present study a total of 600 participants were selected who visited to the hospital in which 50% were males and 50% were females. Out of which 36.66% males and 68.33% females were anaemic. Maximum patients of age group 18-40 yrs (43.49%) were anaemic. Mild anaemic were 60.63% patients, moderate anaemic was 47.30% and severe anaemic were 7.93% patients.

**Conclusion:** The present study concluded that anaemia was more prevalent in females than males and in the age group 18-40yrs. Mild anaemia was more prevalent in the participants.

**KEYWORDS:** Anaemia, Mild, Moderate, Severe.

### INTRODUCTION

Anemia refers to decreased erythrocyte count in circulation or decreased hemoglobin content of the blood. Anemia is a finding rather than a disease. The correct diagnosis in a patient with anemia must include the cause of anemia (ie. iron deficiency anemia, and hemolytic anemia etc.), otherwise only a finding is detected, but not the disease.<sup>1,2</sup> According to the World Health Organization (WHO), there are two billion people with anaemia in the world and half of the anaemia is due to iron deficiency.<sup>3</sup> Anaemia is a late indicator of iron deficiency, so it is estimated that the prevalence of iron deficiency is 2.5 times that of anaemia.<sup>3,4</sup> The estimated prevalence of anaemia in developing countries is 39% in children <5 years, 48% in children 5–14 years, 42% in women 15–59 years, 30% in men 15–59 years, and 45% in adults >60 years.<sup>3</sup> WHO identifies anemia as the most common nutritional deficiency disorder in the world and a serious health concern among pregnant women. The 2011

estimates suggest that anemia affects around 800 million children and women all over the world, including 273 million children, 496 million nonpregnant women, and 32 million pregnant women.<sup>5</sup> There are few data concerning anemia in adolescents and in elderly people which precludes any precise estimates for these two groups but it is thought that the prevalence rate for adolescents is close to that for adult females and the rate for the elderly is slightly higher than that for adult males.<sup>6</sup> India became the first developing country to take up the National Nutritional Anaemia Control Programme to prevent anemia among pregnant women. The Government of India recommends 100 mg of elemental iron+500 ug of folic acid for prophylactic supplementation for minimum of 100 days starting in the second trimester and double this dose for the treatment of anemia, that is, 200 mg of elemental iron+1000 ug of folic acid.<sup>3</sup> The present study was conducted to assess prevalence of anemia in patients visited to hospital.

## MATERIALS AND METHODS

The present cross-sectional study was conducted among adult patients visited to Medicine OPD, Department of General Medicine, B.V.V. Sangha's S Nijalingappa Medical College & H.S.K. Hospital & Research Centre, Bagalkot, Karnataka, India. The sample size was 600. Written consent was taken from the patient after explaining the study. Persons of age group 18-60 yrs, who gave informed consent were included in the study. A self-developed, semistructured interview questionnaire was used to record the sociodemographic profile. Hemoglobin (Hb) estimation was done using HemoCue Hb 201+ system. Mild anemia was defined as hemoglobin level of 10-12.9 g/dL in males and 10-11.9 g/dL in females, moderate anemia was defined as

hemoglobin of less than 7-9.9 g/dL and severe anemia as hemoglobin less than 7 g/dL.<sup>3</sup> Results of the Hb tests were provided to them. The recorded data was compiled, and data was done using SPSS Version 20.0 (SPSS Inc., Chicago, Illinois, USA).

## RESULTS

In the present study a total of 600 participants were selected who visited to the hospital in which 50% were males and 50% were females. Out of which 36.66% males and 68.33% females were anaemic. Maximum patients of age group 18-40 yrs (43.49%) were anaemic. Mild anaemic were 60.63% patients, moderate anaemic was 47.30% and severe anaemic were 7.93% patients.

**Table 1: Prevalence of anaemia according to gender**

| Gender        | N(%)        |             |
|---------------|-------------|-------------|
|               | Normal      | Anaemia     |
| Male(n=300)   | 190(63.33%) | 110(36.66%) |
| Female(n=300) | 95(31.66%)  | 205(68.33%) |
| Total(n=600)  | 285(47.5%)  | 315(52.5%)  |

**Table 2: Prevalence of anaemia according to age group**

| Age group (yrs) | N(%)        |             |
|-----------------|-------------|-------------|
|                 | Normal      | Anaemia     |
| 18-40           | 87(30.52%)  | 137(43.49%) |
| 41-60           | 89(31.22%)  | 70(22.22%)  |
| Above 60        | 109(38.24%) | 108(34.28%) |
| Total (n=600)   | 285(47.5%)  | 315(52.5%)  |

**Table 3: Prevalence of anaemia according to severity**

| Severity | N(%)        |
|----------|-------------|
| Mild     | 191(60.63%) |
| moderate | 149(47.30%) |
| Severe   | 25(7.93%)   |
| Total    | 315(100%)   |

## DISCUSSION

Anaemia is a major health problem in India. In the 2005-2006 National Family Health Survey (NFHS-3), a household survey aimed at having national and state representative data on population health and nutrition; the prevalence of anaemia was 70% in children aged 6-59 months, 55% in females aged 15-49 years, and 24% in males aged 15-49 years.<sup>7</sup> Although the NFHS-3 showed that the prevalence of anaemia was higher in rural areas, there is a paucity of data about the epidemiology of anaemia in rural settings.<sup>8</sup>

In the present study a total of 600 participants were selected who visited to the hospital in which 50% were males and 50% were females. Out of which 36.66%

males and 68.33% females were anaemic. Maximum patients of age group 18-40 yrs (43.49%) were anaemic. Mild anaemic were 60.63% patients, moderate anaemic was 47.30% and severe anaemic were 7.93% patients.

Agarwalla et al. from Assam in northeastern India reported a higher prevalence of 45.5%.<sup>9</sup>

Punia et al.'s study from North India found that almost all study participants (96%) had anemia.<sup>10</sup>

In a study by Bhargavi Vemulapalli et al., 40.97% had a moderate degree of anemia and 6.28% of the population had a severe degree of anemia.<sup>11</sup> The prevalence of anemia was unusually high in elderly residents of Holmsted County: 20.5% in men and 15.9% in women.<sup>12</sup>

A study in Malawi reported a prevalence of anemia in the study population was 16.2%.<sup>3</sup>

Other Indian studies have also shown high prevalence of iron deficiency anaemia among young women.<sup>13,14</sup> The high prevalence of iron deficiency anaemia among women in childbearing age has important public health implications. It is estimated that anaemia accounts for 12.8% of maternal mortality in Asia.<sup>15</sup> Iron requirements are greater in pregnancy, and iron deficiency is associated with maternal death, preterm delivery, and low birth-weight.<sup>16,17</sup> Effective public health programmes aimed at reducing iron deficiency among young women could have a major impact in reducing maternal and infant mortality.<sup>18</sup>

## CONCLUSION

The present study concluded that anaemia was more prevalent in females than males and in the age group 18-40yrs. Mild anaemia was more prevalent in the participants.

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