



## Prevalence of Anaemia among Women Residing in Urban Samayapuram, Trichy, Tamil Nadu, India

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### Abstract

Anaemia is one of the important public health problems which affect world population widely. Among all types of anaemia iron deficiency anaemia is seen in developing countries. The prevalence is high specifically in school children and pregnant women. To study the prevalence and severity of anaemia and its associated factor among women in urban Samayapuram, Trichy. A cross sectional descriptive study was carried out among 150 women residing in urban Samayapuram, Hb levels were evaluated using sahli's haemoglobinometer by acid haemoglobin method. The overall prevalence of anaemia between the age group 18-35yrs was 30.67% among 150 women of urban Samayapuram, The haemoglobin level of 5 women were below 7mg/dl which indicates they were severely anaemic the severity of anaemia was analysed and found that around 3.33% women were severely anemic, 12.67% women have been diagnosed with moderate anaemia 69.33% have been diagnosed with mild anaemia and 23.3% population taken for study were already diagnosed as anaemia and 24.7% taken for iron supplements. To reduce prevalence of anaemia the government need to emphasise on community and primary health care program and create awareness of continuation of iron supplements till complete correction of anaemia and regarding health and reproductive health which can help reduce burden of anaemia.

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Severity of anaemia,  
Sahli's haemoglobinometer,  
Samayapuram.

### Introduction

Nutritional anaemia is the most common type of anaemia worldwide, this mainly includes iron, folate and vit B12 deficiencies. Most common cause of anaemia is iron deficiency anaemia especially in developing countries among women, preschool children, and adolescent girls.<sup>1</sup> According to WHO, global prevalence of anaemia is 24.8% which amounts to 1.62 billion people worldwide. Highest prevalence is among preschool children (49.4%), least in men 12.7%, pregnant women 41.8%, non-pregnant women 30.2%.<sup>1,2</sup> High demand for iron during

pregnancy, lactation, menstrual blood loss and nutritional deficiencies are the most common cause of Iron deficiency anaemia among women of reproductive age group. Although diagnosis of anaemia is simple it may go undiagnosed for a long time because of non-specific clinical signs.<sup>4,5</sup> Compared to other developing countries prevalence of anaemia in all groups is higher in India. Anaemia affects an estimated 50% of population<sup>7</sup> according to national consultation on control of nutritional anaemia in India,<sup>8</sup> Anaemia is defined as haemoglobin level less than 12 g/dl in females, [Mild – 10 – 11.9g%, Moderate – 7 – 9.9g%, Severe- <7g%].

Data from NNMB<sup>11</sup>, ICMR<sup>12</sup>, DLHS<sup>13</sup>, survey shows prevalence of anaemia is very high in preschool children.

Pregnant, lactating women, adolescent girls low birth weight infants, young children women of child bearing age group are particularly at risk of anaemia. This way anaemia begins in childhood, worsens during adolescence and gets aggravated during pregnancy. In milder forms anaemia is silent, in severe form it is associated symptoms and becomes an underlying cause of chronic ill health such as impaired foetal development, delayed cognition, more prone to infections, impaired immune function and reduced working and productive capacity<sup>14, 15, 16</sup>

### Materials and Methods

A cross-sectional descriptive study was conducted in urban health centre Samayapuram, Trichy, Tamilnadu. 150 women aged 18 to 35yrs were selected as study population. This study was conducted for a period of 2 months. A predesigned profoma was used to collect data, and data was analysed using SPSS Ver 16.150 women were examined for Haemoglobin level and measured by sahli's haemoglobinometer in Urban Health Centre, Samayapuram. SAHLI'S METHOD: Blood is mixed with N/10 HCL resulting in conversion of Haemoglobin to Acid haematin which is brown in colour, the solution is diluted till colour matches the brown coloured glass of comparison<sup>17</sup>. Based on the WHO criteria for classification of anaemia the cases were categorized

according to their Haemoglobin level % status as mild, moderate and severe.<sup>16</sup>

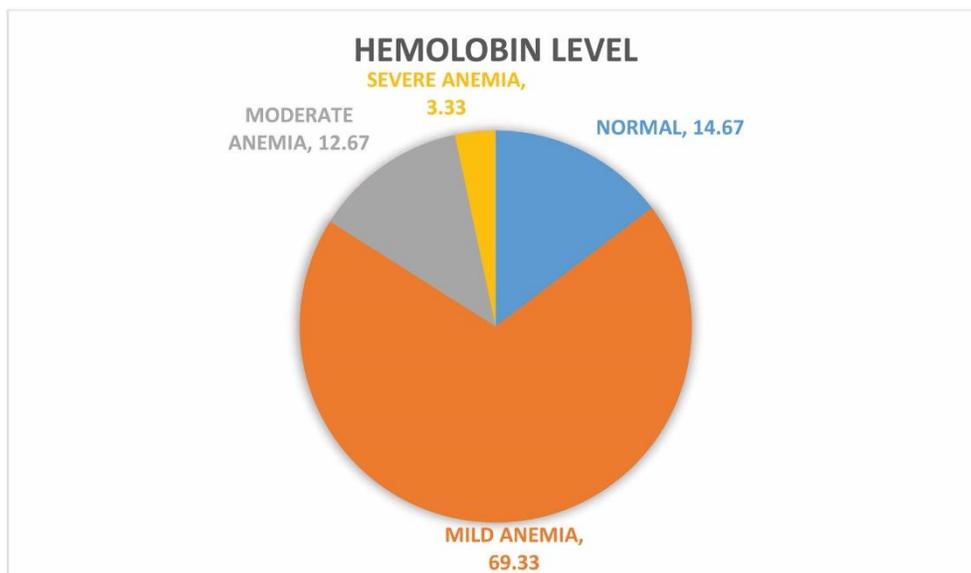
### Results and Discussion

Table 1 shows the description of socio demographics details of the study population, this study shows that majority of the study population (59.3%) belong to 26-35yrs of age group, most of study population (27.3%) belong to high school level, majority women are married. Many of them are belong to upper lower socioeconomic status.

Table 2 shows that 23.3% have been diagnosed with anaemia earlier, 16% were pregnant, 15.3% are taking medications for other medical illness, 7.3% have familial history of anaemia, 33.3% in the study group have experienced prolonged menstrual bleeding, 5.3% have history of passing dark stools, 50.7% have peptic ulcer disease and 52% have tested for haemoglobin levels earlier. 24.7% of study population have taken iron supplements, 3.3% of study population takes iron rich foods on daily basis, 8% did not take iron rich foods. On the total study population only 20% have experienced the symptoms anaemia. On general examination 24.7% have pallor and on systemic examination 3.3% have systolic murmur and 5.3% have epigastric tenderness.

Figure 1 shows 69.33% have been diagnosed as mild anaemia, 12.67% have been diagnosed as moderate anaemia, 3.33% have been diagnosed as severe anaemia.

Fig.1 Distribution of aneamia according to haemoglobin level



**Table.1** Sociodemographic characters of study population

<b>Sociodemographic Details</b>	Frequency	Percentage
<b>AGE GROUP</b>		
18-25	61	40.7
26-35	89	59.3
<b>TOTAL</b>	150	100
<b>Education Status</b>		
Honors	0	0
Graduate	15	10
Post high school diploma	34	22.7
High school	41	27.3
Middle school	23	15
Primary school	27	18
Illiterate	10	6.7
<b>Total</b>	150	100
<b>Socioeconomic Status</b>		
Upper	5	3.33
Upper middle	12	8
Upper lower	88	58.7
Lower	45	30
<b>Total</b>	150	100
<b>Marital Status</b>		
Married	111	74
Unmarried	39	26
<b>Total</b>	150	100

**Table.2** Anaemia related question details among study population

<b>Study Population Already Diagnosed as Anemia</b>	Frequency	Percentage
Yes	35	23.3
No	115	76.7
<b>Study Population who were Pregnant</b>		
Yes	24	16
No	126	84
<b>Total</b>	150	100
<b>Study population taking medication for other medical illness</b>		
Yes	23	15.3
No	127	84.7
<b>Total</b>	150	100
<b>Study population with family history of anaemia</b>		
Yes	11	7.3
No	139	92.7
<b>Total</b>	150	100
<b>Study population those who have experienced heavy menstrual bleeding</b>		
Yes	50	33.3
No	100	66.7
<b>Total</b>	150	100

<b>Study population with history of passing dark coloured stools</b>		
Yes	8	5.3
No	142	94.7
Total	150	100
<b>Study population with history of peptic ulcer disease</b>		
Yes	76	50.7
No	74	49.3
Total	150	100
<b>Study population with hemorrhoids</b>		
Yes	26	17.3
No	124	82.7
Total	150	100
<b>Study population those who have experienced symptoms of anaemia</b>		
Yes	30	20
No	120	80
Total	150	100
<b>Study population those who have been tested for HB earlier</b>		
Yes	78	52
No	72	48
Total	150	100
<b>Study population taking iron rich foods</b>		
Daily	5	3.3
1-3 times a week	65	43.3
1-2 times a month	68	45.3
Never	12	8
Total	150	100
<b>Study population those who have taken iron supplements earlier</b>		
Yes	37	24.7
No	113	75.3
Total	150	100
<b>General examination</b>		
Present	51	34
Absent	99	66
Total	150	100
<b>Systemic examination</b>		
Clinically normal	137	91.3
Systolic murmur	5	3.3
Epigastric tenderness	8	5.4
Total	150	100

In the present study it was observed that majority of women belong to 26-35 years of age. Mean age of study population is 27 years with 27.3% educational status of high school level. In our study majority of study population belong to upper lower socio economic status (58.7%). Similar study done by Kim JY *et al.*, shows that 32% of women belong to lower socio economic status.<sup>6</sup> We had expected to find highest prevalence of anaemia among rural women, based on standard of living index,

however the poor rural and urban women both had the greatest risk of anaemia, actually poor urban women have greater risk of developing anaemia<sup>8</sup>. since rate of growth is more in urban area poor housing, overcrowding, poor sanitation increased risk of infection, limited education, insufficient diet, despite greater opportunities of urban health care, inability to access health services due to constrains in financial and

administrative resources.<sup>9</sup> According to our study 67.3% have mild anaemia.

12.67% have moderate anaemia. 3.33% have severe anaemia. Study by Bentley *et al.*, shows that 32.4% mild anaemia. 14.9% moderate anaemia. 2.2% severe anaemia.<sup>8</sup> Manjushasajitha *et al.*, study shows that 56% women taking iron supplements have higher HB levels compared to others<sup>11</sup>. Our study shows 24.7% have taken iron supplements.

The side effects associated with iron and folic acid supplementation was major factor that hindered adherence. 58% of women with low complaints reported side effects as a reason for non-adherence. Similar results from studies done in districts of Ethiopia and India.<sup>7,8</sup> A Study done by Georgie bruinvels *et al.*, shows that 54.1% women with heavy menstrual bleed have anaemia.<sup>4</sup> In our study 33.3% of study population have experienced prolonged menstrual bleeding.

In our study majority of women were diagnosed as mild anaemia. Awareness programs regarding anaemia and its detrimental effects are needed to improve the knowledge regarding anaemia. New programs and strategies are needed particularly those that improve overall nutritional status of women of reproductive age. This requires tailored programs across all socioeconomic groups and within both rural and urban areas particularly among rural and urban poor.

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