

# Assessment of Prevalence of Anaemia in Pregnant Women Attending Kims, Hubballi

Dattatraya D Bant<sup>1</sup>, Tewe U Kapfo<sup>2</sup>

<sup>1</sup>HOD and Professor, <sup>2</sup>Post Graduate, Department of Community Medicine, Karnataka Institute of Medical Sciences, Hubballi, Karnataka

## Abstract

**Background:** Anaemia in pregnancy is one of the major causes of maternal morbidity and mortality in India as well as in the world. It continues to be a problem in spite of national programs for its prevention and control. It accounts for 1/5<sup>th</sup> of maternal deaths worldwide and 16% in India and is the major factor responsible for low birth weight, abortions, premature birth, and Post-partum haemorrhage. Hence determining the status and factors influencing anaemia among pregnant women is essential to treat and prevent the same.

**Objectives :** To study the prevalence and risk factors associated with anaemia among pregnant women.

**Methods:** A cross sectional study was conducted among 100 pregnant women attending at KIMS OPD from May to June 2012. A pretested, semi-structured questionnaire was used to collect data.

**Results:** Prevalence of anaemia among pregnant women was found to be 92%; majority were mildly anaemic 75 %. Majority of the study participants were in the age group of 20-30 years and 55% belonging to lower socioeconomic status and 79 % residing in rural areas. Factors influencing anaemia were multi-parity, short inter-pregnancy interval and poor socio-economic status.

**Conclusion:** In the present study, the prevalence of anaemia among pregnant women was found to be very high i.e. 92% especially in low income groups, multiparous women, short inter-pregnancy interval despite of high ANC check up and Iron and folic acid supplementations.

**Key Words:** Anaemia, pregnant women, risk factors

## Introduction

Anaemia is the most common nutritional deficiency disorder in the world. WHO has estimated that prevalence of anaemia in developed and developing countries in pregnant women is 14% in developed and 51 per cent in developing countries and 65-75% in India<sup>(1)</sup>. It continues to be a major health problem in many

developing countries and is associated with increased rates of maternal and perinatal mortality, premature delivery, low birth weight, and other adverse outcomes<sup>(2,3)</sup>.

The most common cause of anaemia in pregnancy worldwide is iron deficiency<sup>(3)</sup>. Iron deficiency in late pregnancy results in poor foetal iron stores<sup>(4,5)</sup>. Latent iron deficiency is known to alter brain iron content and neurotransmitters irreversibly in foetal life and postnatal babies<sup>(6)</sup>.

The predisposing factors include grandmultiparity, low socioeconomic status, malaria infestation, late booking, HIV infection, and inadequate child spacing – among others<sup>(7-10)</sup>. The World Health Organization (WHO) defined anaemia as haemoglobin concentration

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### Corresponding author:

**Dr. Tewe U Kapfo**

Department of Community Medicine,  
Karnataka Institute of Medical Sciences,  
Hubballi, Karnataka,  
Phone (or Mobile) No.: +91-7005859240  
Email: tewekapfo@gmail.com

below 11g/dl in pregnancy. Anaemia in pregnancy is classified as: Mild (9-10 g %), Moderate (7-8.9 g %), Severe (4-6.9g %) and Very severe (<4g %) <sup>(11)</sup>.

In view of the low dietary intake of iron and folate, high prevalence of anaemia and its adverse health consequences, India became the first developing country to take up a National Nutritional Anaemia Prophylaxis Program (NNAP) to prevent anaemia among pregnant women. NNAPP was initiated in 1970 during the fourth 5-year health plan with the aim of reducing the prevalence of anaemia to 25%. The Government of India recommends a minimum dose of total 100 iron and folic acid tablets to be prescribed during pregnancy. However, high prevalence of anaemia among pregnant women persists despite the availability of this effective, low-cost intervention for prevention and treatment <sup>(12)</sup>. Therefore, the present study was conducted to investigate the prevalence and risk factors of anaemia in pregnant women of KIMS, Hubballi.

### Methods

This was a cross sectional study conducted in the month of May and June 2012 in KIMS OPD, Hubballi, to assess the prevalence and risk factors for anaemia among pregnant women.

Permission was obtained from Head of the Department, OBG, KIMS and verbal informed consent

was taken from the pregnant woman.

Convenient sampling method was used with a sample size of 100.

A pre tested, semi structured questionnaire was prepared which consisted of socio demographic data and specific history such as menstrual history, Obstetric history and physical examination. Gestational age of present pregnancy, iron folic acid supplementation and nutritional supplements were included. Risk factors includes age of 1<sup>st</sup>conception, multiple pregnancies, inter pregnancy interval, rectal bleeding, and regular ANC check-ups. Physical examination was done to measure height, weight, BMI and pallor.

### Statistical Analysis

Data was entered in MS-Excel and analysed using SPSS-21 software and Chi-Square test was applied as test of significance and p-value of <0.05 was considered statistically significant

### Results

Majority of the study participants were in the age group of 20-30 years (71%), Hindu (88%), literate (69%), from rural area (79%), belonging to class-V socio-economic status (55%) according to modified B G Prasad classification.

**Table 1: Socio-demographic profile of the study participants**

Variables		Percentage
Age in years	<20	25
	20- 30	71
	>30	4
Religion	Hindu	88
	Muslim	12
Husband's occupation	Professional	9
	Skilled	25
	Unskilled labourer	66
Residence	Rural	79
	Urban	21

**Cont... Table 1: Socio-demographic profile of the study participants**

Education	Illiterate	31
	Literate	69
Socio-Economic status	Class IV	45
	Class V	55
Type of Family	Nuclear	40
	Joint	58
	Three Generation	2
Type of diet	Vegetarian	40
	Mixed	60

**Table 2: Risk factors of anaemia**

Risk factors	Percentage
Regular ANC Check-up	96
IFA Supplementation	96
H/O helminthic infestation	3
H/O recent infections	9
Abnormal menstrual bleeding	3
Birth interval >3	6

Majority of the study participants visit Regular ANC check-up (96%), took iron and folic acid supplementations (96%) (Table 2).

**Table 3: Signs and symptoms of Anaemia among the study participants**

Signs and Symptoms	Percentage
Pallor	76
Palpitations	6
Breathlessness	4
Chest pain	4
Swelling of feet	4

Majority of the study participants presented with pallor (76%) and few of them with complains of palpitation, breathlessness, chest pain and swelling of feet (Table 3).

**Table 4: Grading of Anaemia among the study participants**

Grade of Anaemia	Number (percentage)
Mild Anaemia	75
Moderate Anaemia	12
Severe Anaemia	5
No Anaemia	8

Only 8% of the participants were not anaemic. Among those anaemic, 75% were having mild anaemia followed by moderate (12%) and severe anaemia (5%) (Table 4).

The types of Anaemia mentioned in the above table was according to WHO guidelines

In this study, majority of the participants with anaemia were in the age group of 20-30 years. 73% with anaemia were residents of rural areas and surprisingly majority of the participants were literate but the prevalence of anaemia was even higher among them (64%). All the study participants belonged to lower middle and lower socio-economic class according to modified BG Prasad classifications and the prevalence of anaemia was found to be very high in both the groups. Majority of the participants did not give any history of helminthic infestation. Multigravida mothers were at more risk of anaemia when compared to primigravida mothers.

The overall prevalence of Anaemia in this study was found to be 92% (Table 5).

**Table 5: Risk factors and their relation to anaemia**

Variables	Anaemia	No Anaemia	p value
Age	< 20	23	0.97
	20-30	63	
	>30	4	
Residents	Rural	73	0.97
	Urban	19	
Education	illiterate	28	0.7
	literate	64	
Socio-economic status	Lower Middle	40	0.46
	Lower	52	
Type of Family	Nuclear	38	0.47
	Joint/ three generations	54	
Helminthic infestation	Yes	2	0.1
	No	90	
Type of Diet	Mixed	55	0.88
	Vegetarian	37	
Gravida	Primi	43	0.12
	Multigravida	49	

## Discussions

This study demonstrated that the prevalence of anaemia is 92%. In our study, total 100 pregnant women participated, out of which 71% of the study participants were in the age group of 20-29 years, 88% were Hindu by religion, 58% resided in joint family, 55% belonged to low socio-economic class and 69% were literate. In a similar study conducted by Mirzaie F et al., 62.75 were in the age group of 20-29 years, 61% were literates<sup>(13)</sup>.

In our study 51% were multiparity, 96% had taken iron and folic acid supplementation. Similar findings were found in the study conducted by Mirzaie F et al. where 55.2% of the participants were multiparity and 91% had used iron supplements during pregnancy<sup>(13)</sup>.

It was found that 66 % husband's of the study participants were unskilled workers by occupation and 25% were skilled workers. 75% of pregnant women attained menarche in 14-16 years age group and 34 % between the ages of 12-14 years. 73% of pregnant women were pregnant for first time in 20-25 age group and 23% between 15-20 years age group. 61 % of pregnant women were in third trimester of present pregnancy and 39% in second trimester.

49% were primipara and 27% had a birth interval of 2 years. 97% did not have any history of abnormal menstrual bleeding, 91% had no history of recent infection and 97% had no history of helminth infestations. 96% had regular ANC Check-ups as well taking regular IFA supplements.

In our study, 75 % were mildly anaemic and 12% were moderately anaemic. Similarly, in the study conducted by Dim CC et.al, 90.7% were mildly anaemic and 9.3% were moderately anaemic<sup>(14)</sup>.

54.66% with mild anaemia were between the age group of 20-25 years and 60% with severe anaemia were in same age group. 82.66 % with mild anaemia and 80% with severe anaemia were residents of rural areas. 29.33 % of and 40% with severe anaemia were illiterate. 53.33 % with mild anaemia and 60% with severe anaemia belong to poor socio-economic 57.33 with mild anaemia were from joint family and 60% with severe anaemia from nuclear family. 65.33% with mild anaemia were in third trimester of

pregnancy and 60% with severe anaemia were in second trimester. 48% with mild anaemia and 60% with severe anaemia were multipara.

## Conclusions

Pregnant women were particularly vulnerable to anaemia with a high prevalence of 92%. Majority of the anaemic women had mild anaemia (75%). Social factors like socioeconomic status, type of residents, type of family and maternal factors like gestational age, parity, inter-pregnancy interval were contributing to the higher prevalence of anaemia. Even though majority of the study participants were literate, anaemia among them was still found to be high.

## Limitations

The study has some limitations. Firstly, since it was a hospital based study the results might not be generalizable. Secondly, despite the study participants responded on being regular ANC check-up, regular intake of iron and folic acid supplementations and high level of literacy, the prevalence of anaemia was still found to be very high. Since no intervention was planned due to limited study period, further assessment could not be carried out.

## Recommendations

Efforts should be made to focus not only to improve the health status of antenatal, intra-natal and post-natal stage but also on the adolescent health. All pregnant women should be educated to utilise the available ANC services.

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## Declaration

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**Conflict of Interest:** None declared

**Ethical Approval:** Not required

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