



## Prevalence of Anaemia among Antenatal Mothers

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### ABSTRACT

**Introduction:** The World Health Organization identifies anaemia in pregnancy as a haemoglobin reading of < 11.0 g/dl among antenatal mothers. The WHO estimates that more than half of pregnant women in the World have a haemoglobin level indicative of anaemia and the prevalence may be as high as 56 or 61 percent in developing countries. The present study was carried out to determine the prevalence of anaemia among antenatal mothers.

**Materials and methods:** The present descriptive study was conducted among 260 antenatal mothers visiting the obstetric out-patient department of the selected hospital. After taking informed consent, the data was collected by using baseline proforma and review of medical record.

**Results:** The results showed that more than half (51.5%) of the mothers had mild anaemia, 43.1 percent of the mothers had moderate anaemia and 1.5 percent mothers had severe anaemia. Only 3.8 percent of the mothers had no anaemia. It also revealed that the minimum haemoglobin level among the mothers was 6.80 and the maximum was 11.10. The mean haemoglobin level was  $9.16 \pm 1.08$  and the median was 9.35. The period of gestation was significantly associated with the level of blood haemoglobin.

**Conclusion:** Health education regarding anaemia is necessary for all the antenatal mothers, irrespective of the period of gestation, to prevent and treat anaemia during antenatal period.

**Key words:** Anaemia, Antenatal mothers, Blood haemoglobin levels.

### INTRODUCTION

Anaemia is one of the major health problems among antenatal mothers. Most of the anaemias seen in pregnancy are largely preventable and easily treatable if detected on time. Diminished intake and increased demands of iron, disturbed metabolism, pre-pregnant health status and excess iron demands as in multiple pregnancies, women with rapidly recurring pregnancies, blood loss during labour, heavy menstrual blood flow, inflammation and infectious diseases are important factors which lead to

development of anaemia during pregnancy. [1,2]

The World Health Organization identifies anaemia in pregnancy as a haemoglobin (Hb) reading of < 11.0 g/dl among antenatal mothers. WHO estimates that more than half of pregnant women in the World have a haemoglobin level indicative of anaemia (< 11.0g/dl), the prevalence may however be as high as 56 or 61 percent in developing countries. [3] There is a critical need to rapidly expand efforts with respect to prevention and treatment of anemia among antenatal mothers. [4]

If the mothers are anaemic, the fetuses are at risk of preterm deliveries, low birth weights, morbidity and perinatal mortality due to the impairment of oxygen delivery to placenta and foetus. [5-7] Studying the prevalence of anaemia in pregnancy in India will help for the better planning of care for the antenatal mothers and management of anaemia at the earliest during pregnancy. The 4<sup>th</sup> and 5<sup>th</sup> goals in the millennium development goals are to reduce child mortality and improve maternal health respectively. [8] It is important to study the prevalence of anaemia among antenatal mothers which helps in the attainment of the above mentioned goals to some extent.

The present study was carried out to determine the prevalence of anaemia among antenatal mothers. It was also intended to find the association between blood haemoglobin level and selected baseline variables.

## MATERIALS AND METHODS

A descriptive survey approach with a typical descriptive design and non probability purposive sampling technique was used in this study. Antenatal mothers visiting the obstetric OPD at the time of data collection and are willing to participate were included in the study. Those antenatal mothers who were having clinical infections, haemoglobinopathies, chronic diseases and multiple pregnancies were excluded. The sample consisted of 260 antenatal mothers who visited the obstetric outpatient department of Yenepoya Medical College Hospital, Mangalore. The data was collected by interview technique using baseline proforma and by reviewing the medical records of the participants. Prior permission was obtained from the Ethics Committee, Yenepoya University and concerned authorities such as Medical Superintendent and HOD, Department Of OBG, Yenepoya Medical College Hospital, Mangalore. Consent from the participants was taken before data collection.

The collected data were tabulated and analyzed in terms of the objectives of the study. The analysis is done by descriptive statistics and Chi-Square.

## RESULTS

**Table 1: Distribution of participants based on selected baseline variables (n = 260).**

Sl No	Variable	Frequency	Percentage
1.	<b>Age</b>		
	18 - 22	109	41.9
	23 - 27	138	53.1
	28 - 32	13	05.0
	33 and above	00	00.0
2.	<b>Period of gestation</b>		
	First trimester	32	12.3
	Second trimester	134	51.5
	Third trimester	94	36.2
3.	<b>Parity</b>		
	0	82	31.5
	1	133	51.2
	2	43	16.5
	3 and above	2	0.8
4.	<b>Age at marriage</b>		
	18 -22	246	94.6
	23 - 27	14	5.4
	28 - 32	00	00
	33 and above	00	00
5.	<b>Age at first childbirth</b>		
	18 - 22	200	76.9
	23 - 27	57	21.9
	28 - 32	03	1.2
	33 and above	00	00
6.	<b>Interval between the last childbirth</b>		
	1 year	33	18.64
	2 years	132	74.58
	3 years	12	6.78
	More than 3 years	00	00
7.	<b>Number of previous abortions</b>		
	0	243	93.5
	1	16	6.2
	2	1	0.4
	More than 2	00	00
8.	<b>Type of food</b>		
	Vegetarian	00	00
	Non-vegetarian	260	100
9.	<b>Iron supplementation</b>		
	Yes	260	100
	No	00	00
10.	<b>Type of family</b>		
	Nuclear	22	8.5
	Extended	136	52.3
	Joint	102	39.2
11.	<b>Religion</b>		
	Hindu	94	36.2
	Christian	24	9.2
	Muslim	142	54.6
12.	<b>Education</b>		
	No formal education	00	00
	Primary	09	3.5
	Secondary	147	56.5
	PUC/Diploma	104	40
	Graduate	00	00
13.	<b>Occupation</b>		
	Housewife	260	100
	Day labourer	00	00
	Professional	00	00

The data presented in table 1 reveals that majority of the mothers (53.1 %) belonged to the age group of 23 – 27 and were in the second trimester (51.5 %). The majority (51.2 %) of the mothers have parity 1. The age at marriage of the majority (94.6 %) were 18 – 22 and about three fourth (76.9%) had first childbirth in the age group of 18 – 22. About three fourth (74.58%) of the participants had interval between last childbirth as two years and majority (93.5%) had no abortions. All the mothers were non-vegetarian, housewives and were taking iron supplementation. About more than half (52.3%) of the mothers belonged to extended family and majority (54.6%) were

Muslims. Majority of the mothers (56.5 %) have secondary education.

**Table 2: Distribution of participants according to the level of anaemia (n=260).**

Sl No	Level of Anaemia	Frequency	Percentage
1.	No anaemia	10	3.8
2.	Mild anaemia	134	51.5
3.	Moderate anaemia	112	43.1
4.	Severe anaemia	4	1.5

Table 2 shows that about more than half (51.5%) of the mothers had mild anaemia, 43.1 percent of the mothers had moderate anaemia, 1.5 percent mothers had severe anaemia. Only 3.8 percent of the mothers had no anaemia.

**Table 3: Description of anaemia among antenatal mothers (n=260).**

	Minimum	Maximum	Mean	Median	Standard Deviation
Haemoglobin level	6.80	11.10	9.16	9.35	1.08

**Table 4: Association between blood haemoglobin levels and selected variables (n=260).**

Sl No	Baseline variables	Calculated value	p value	Inference
1.	<b>Age</b> a. 18-22 b. 23-27 c. 28-32 d. 33 and above	6.55	0.364	No association
2.	<b>Period of gestation</b> a. First trimester b. Second trimester c. Third trimester	12.4	0.00	Significant association
3.	<b>Parity</b> a. 0 b. 1 c. 2 d. 3 and above	1.40	0.23	No association
4.	<b>Age at marriage</b> a. 18-22 b. 23-27 c. 28-32 d. 33 and above	0.478	0.49	No association
5.	<b>Age at first childbirth</b> a. 18-22 b. 23-27 c. 28-32 d. 33 and above	1.57	0.21	No association
6.	<b>Number of previous abortions</b> a. 0 b. 1 c. 2 d. more than 2	0.349	0.554	No association
7.	<b>Type of family</b> a. Nuclear b. Extended c. Joint	2.77	0.96	No association
8.	<b>Religion</b> a. Hindu b. Christian c. Muslim	0.12	0.73	No association
9.	<b>Education</b> a. no formal education b. primary c. secondary d. PUC/Diploma e. graduate	0.01	0.91	No association

Table 3 depicts that the minimum haemoglobin level among the participants was 6.80 and the maximum was 11.10. It also showed that the mean haemoglobin level was  $9.16 \pm 1.08$  and the median was 9.35.

Table 4 shows that there was no association between the blood haemoglobin level and the selected baseline variables like age ( $\chi^2=6.55$ ,  $p=0.364$ ), parity ( $\chi^2=1.40$ ,  $p=0.23$ ), age at marriage ( $\chi^2=0.478$ ,  $p=0.49$ ), age at first childbirth ( $\chi^2=1.57$ ,  $p=0.21$ ), number of previous abortions ( $\chi^2=0.349$ ,  $p=0.554$ ), type of family ( $\chi^2=2.77$ ,  $p=0.96$ ), religion ( $\chi^2=0.12$ ,  $p=0.73$ ) and education ( $\chi^2=0.01$ ,  $p=0.91$ ) except for period of gestation ( $\chi^2=12.4$ ,  $p=0.00$ ).

## DISCUSSION

In the present study, more than half (51.5%) of the antenatal mothers belong to second trimester and 36.2 percent belonged to third trimester and 12.3 percent belonged to first trimester. About more than half (52.3%) of the mothers belonged to extended family, 39.2 percent belonged to joint family and the least (8.5%) belonged to nuclear family. It is comparable with a study conducted in Andhra Pradesh in which more than two fifth of the mothers belonged to second trimester, the least percentage of the participants were belonged to nuclear family. [9]

This study revealed that about more than half (51.5%) of the mothers had mild anaemia, 43.1 percent of the mothers had moderate anaemia, 1.5 percent mothers had severe anaemia. Only 3.8 percent of the mothers had no anaemia. The mean haemoglobin level was  $9.16 \pm 1.08$  and the median was 9.35. This findings were supported by a study conducted in Andhra Pradesh in which the mean haemoglobin level was 8.46 and 52.73 percent were having mild anaemia and 40.97 percent were having moderate anaemia. But in this study,

there were no antenatal mothers having blood haemoglobin level normal. [9]

There was no association between the blood haemoglobin level and the selected baseline variables like age ( $\chi^2=6.55$ ,  $p=0.364$ ), age at marriage ( $\chi^2=0.478$ ,  $p=0.49$ ), number of previous abortions ( $\chi^2=0.349$ ,  $p=0.554$ ), religion ( $\chi^2=0.12$ ,  $p=0.73$ ) and education ( $\chi^2=0.01$ ,  $p=0.91$ ). There was significant association between the blood haemoglobin level and period of gestation ( $\chi^2=12.4$ ,  $p=0.00$ ). A similar study conducted in Mangalore depicted that there was no association between the level of blood haemoglobin and age ( $p = 0.510$ ,  $p>0.05$ ), age at marriage ( $p = 0.120$ ,  $p>0.05$ ), abortion ( $p = 0.557$ ,  $p>0.05$ ), gravida ( $p = 0.407$ ,  $p>0.05$ ), education ( $p = 0.936$ ,  $p>0.05$ ) and religion ( $p = 0.721$ ,  $p>0.05$ ). [10]

The limitation of the study is that the findings cannot be generalized as there was no random selection of the sample. Keeping the present study in view, few recommendations were made for future studies.

- A similar study can be conducted on a large scale with different baseline variables.
- A similar study can be conducted with antenatal mothers in similar trimester.
- An experimental study can be conducted to find out the effectiveness of planned teaching programs on anaemia during pregnancy.
- Comparative study can be carried out among primi and multi mothers.
- Comparative study can be carried out among mothers in different trimesters.

A similar study can be conducted in different settings to find out the influence of changes in settings.

## CONCLUSION

The study revealed that about more than half (51.5%) of the mothers had mild anaemia, 43.1 percent of the mothers had moderate anaemia, 1.5 percent mothers had severe anaemia.. The mean haemoglobin level was  $9.16 \pm 1.08$ . Nurse plays a vital role at imparting the health services in all the level of prevention, promotion and treatment. Nurse's active participation is very vital in all fields of nursing practice including community. The nurses can contribute to eliminate the occurrence or development of anaemia during pregnancy by health education. Therefore health education regarding anaemia is necessary for all the antenatal mothers, irrespective of the period of gestation, to prevent and treat anaemia during antenatal period.

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