

A Cross-Sectional Study to Assess Anemia among Women Attending Antenatal Clinic

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Abstract

Background: Anemia is highly prevalent among pregnant women. Hence this study aims to assess the prevalence and factors associated with anemia

Methods: The present study was a cross sectional study conducted among 100 pregnant women attending antenatal clinic. A predesigned semi structured questionnaire was used to collect the data. The data was analyzed for frequency, percentage, chi-square.

Results: The prevalence of anemia among pregnant women was found to be 76%. Among these majority were mildly (73.68%) anemic. A statistically significant association was found between socio-economic status, age of marriage and anemia.

Conclusions: Anemia is highly prevalent among pregnant women. Hence, awareness has to be given regarding the complications and preventive measures of anemia during the antenatal period.

Key-words: anemia, antenatal women, prevalence, pregnancy

Introduction and Need for the Study

Iron deficiency anemia is the most common nutritional problem in the world today, accounting for ~50% of cases worldwide¹ and it is the cause of 75% of anemia cases during pregnancy². Anemia is significantly associated with pregnancy as there will be diminished intake, increased demand and altered metabolism.³

According to WHO, anemia is defined as hemoglobin concentration less than 11g/dl in pregnancy³. It is further divided into mild (10.0-10.9g/dl), moderate (7-9.9g/dl), severe (less than 7g/dl)⁴.

The WHO categorized the countries based on prevalence of anemia into: normal ($\leq 4.9\%$), mild (5.0-19.9%), moderate (20.0-39.9%), and severe ($\geq 40\%$)⁵ public health problem.

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According to NFHS-5 prevalence of anemia among antenatal women in India is 55.2%⁶ which falls in categories of countries with a severe public health problem⁵.

Due to a number of sociocultural factors, including a lack of iron, folate, vitamins, poverty, parasitic infestation, poor dietary habits, blood loss, malaria, tuberculosis, human immunodeficiency virus, high parity, short interpregnancy intervals, cultural beliefs and practices, non-use of insecticide-treated bed nets, and late booking of pregnant women at antenatal care (ANC) units, anemia in pregnant women continues to be one of the most unmanageable major public health issues, particularly in developing nations⁶⁻¹².

In antenatal women, anemia is one of the causes for maternal and perinatal mortality. Antenatal women suffering from anemia and their neonates face problems like general fatigue, fetal anemia, low birth weight, preterm delivery, increase risk of postpartum hemorrhage, intrauterine growth restriction, perinatal mortality, still birth, reduced work capacity, low tolerance to infections, shortness of breath, reduced physical and mental performance^{7,13}.

Reducing anemia is recognized as an important component of the health of women and children. World Health Assembly in 2012 planned the second global nutrition target and one of these targets was a 50% reduction of anemia among women of reproductive age by 2025¹⁴.

Hence this study aims to assess the prevalence and factors associated with anemia among pregnant women attending the antenatal clinic of Urban primary health centre, Kalaburagi.

Objectives

1. To assess the prevalence of anemia among pregnant women attending antenatal clinic.
2. To identify the factors associated with anemia among pregnant women attending antenatal clinic.

Materials and Methods

Study design and period

A health facility based cross-sectional study was conducted for the period of three months.

Study setting

The study was conducted at Urban primary health centre, Maktampur, Kalaburagi district of Karnataka, India.

Study population

Pregnant women attending Antenatal clinic.

Inclusion criteria and Exclusion criteria.

Those Pregnancy confirmed by urine pregnancy test or pelvic ultrasonography, Antenatal women having their hemoglobin (Hb) report and who are willing to participate in the study were included in the study. Pregnant women who are not willing to participate in the study were excluded from the study.

Operational definitions

Anemic pregnant women: Pregnant women who are having Blood hemoglobin concentration below 11g/dl⁵.

Sample size determination.

The sample size was calculated using Cochran formula $4pq/d^2$ with prevalence of anemia among urban pregnant women as 37.3%, according to NFHS-5 Karnataka¹⁵.

$$\text{Sample size}(n) = \frac{4pq}{d^2} = \frac{(4)(0.373)(1-0.373)}{(0.1)^2} = \frac{0.93}{0.01} = 93$$

The sample size was rounded off to 100 antenatal women.

Sampling procedure and technique

All the pregnant women attending the antenatal clinic and willing to participate in the study were included in the study till the sample size was achieved

Data collection tools and procedures

A pre-designed pre-tested semi-structured interviewer administered questionnaire was used to collect the data.

Data analysis

The data collected was entered in Microsoft excel and analyzed for frequency, percentage and chi-square tests. *p*-value less than 0.05 was considered statistically significant.

Results

Table No: 1 Socio-demographic details of the study participants (n=100)

Socio-demographic details		n
Age group (years)	18-19	6
	20-29	80
	>30	14
Literacy	Literate	97
	Illiterate	03
Type of family	Joint	67
	Nuclear	33
Socioeconomic status	Lower class	45
	Lower middle class	31
	Middle class	24

Among 100 antenatal women, most woman were between 20-29years of age (80%), literate (97%) , belonged to joint family (67%) and were from lower socio-economic status (45%)

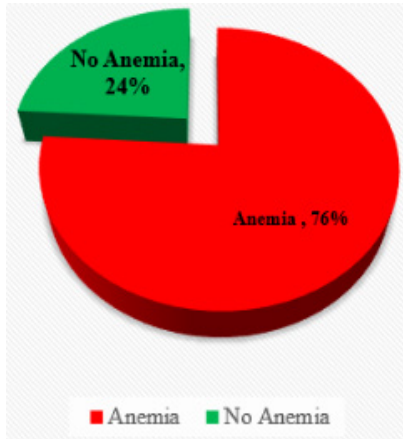


Fig. No: 1 Prevalence of Anemia among antenatal women (n=100)

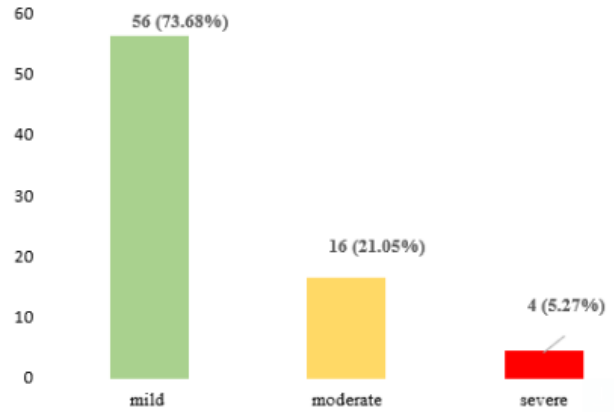


Fig. No: 2 Category of severity of Anemia among antenatal women as per WHO (n=76)

In our study 76% of the women were anemic and among these women; 56(73.68%), 16(21.05%), 4(5.27%) were having mild, moderate and severe anemia respectively.

Table No: 2 Association between Socio-demographic factors and prevalence of Anemia (n=100)

Socio-demographic factors		Anemic	Non-Anemic	Chi-square	p-value
Literacy	Literate	73 (75.25%)	24 (24.75%)	0.11	0.73
	Illiterate	02 (66.66%)	01 (33.34%)		
Type of family	Joint	51 (76.11%)	16 (23.89%)	2.99	0.08
	Nuclear	25 (75.75%)	08 (24.25%)		
Socio-economic status	Lower class	41 (91.11%)	04 (8.89%)	10.27	0.005
	Lower middle class	20 (64.51%)	11 (35.49%)		
	Middle class	15 (62.5%)	09 (37.5%)		

Anemia prevalence was more in lower socioeconomic class and a statistically significant association was found.

Table No: 3 Association between various factors and prevalence of Anemia (n=100)

Baseline variables		Anemic	Non-Anemic	Chi-square	p-value
Age at marriage	18-21	44 (88.00%)	6 (12.00%)	11.16	0.003
	22-24	20 (74.07%)	7 (25.93%)		
	25-27	12 (52.17%)	11 (47.83%)		
Age at 1 st pregnancy	19-21	32 (84.21%)	6 (15.79%)	4.44	0.1
	22-24	28 (77.77%)	8 (22.23%)		
	25-27	16 (61.53%)	10 (38.46%)		
ANC visit	<3	47 (81.03%)	11 (18.97%)	1.91	0.1
	≥3	29 (69.04%)	13 (30.96%)		
Gravida	Primi	30 (71.42%)	12 (28.58%)	0.82	0.3
	Multi	46 (79.31%)	12 (20.69%)		

Anemia is more prevalent in pregnant woman who had married at younger age and a statistically significant association was found. In antenatal women whose 1st pregnancy was at younger age, who had less than 3 antenatal visits and Multigravida, Anemia prevalence was more but not statistically significant.

Discussion

Anemia during pregnancy increases the risk of maternal mortality and morbidity. This study observed that the prevalence of anemia is 76% which is higher than the NFHS-5 national average (52.5%) and Karnataka¹⁶ (37.3%). A study conducted by Ponny et al¹⁷ (53.33%) had lower prevalence of anemia compared to our study whereas Bansal et al¹⁸(81.8%) and Kumar et al¹⁹(81.8%) showed higher prevalence.

In the current study mild (73.68%) anemia was more prevalent compared to the studies conducted by Ponny et al¹⁷ (26.66%), Bansal et al¹⁸ (8.8%) and Kumar et al¹⁹ (35%).

In the present study a statistically significant association was found between anemia and socio-economic status and age at marriage whereas in Ponny et al¹⁷ it was only associated with socio-economic status. In a study conducted by Bansal et al¹⁸ statistically significant association was found with socio-demographic factors whereas Kumar et al¹⁹ observed Age, Parity, occupation, time of first ANC visit were significantly associated with high prevalence of anemia.

Limitations of the study

This study was health facility base, which included only pregnant women who had ANC contact. Hence, the study cannot be generalized.

Conclusion

In this study area, there is high prevalence of anemia among study population. The majority of the anemic women were mild. The prevalence of anemia is more among woman who married at younger age, with higher order of pregnancy and low-socio economic status. Counselling the women regarding food and nutrition during pregnancy including adherence to the consumption of iron tablets and regular antenatal visits during ANC, promoting

postnatal family planning method utilization, birth spacing, should be done to decrease the prevalence of anemia.

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Conflict of interest: All authors declare that they don't have any Conflicts of interest

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