



A Study on Prevalence of Anemia among Pregnant Women Attending Antenatal Clinic at Rural Health Centre (RHC) and Hospital, Jabalpur City, M.P.

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Authors' contributions

This work was carried out in collaboration between both authors. Both authors read and approved the final manuscript.

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ABSTRACT

Weakness is a wholesome lack issue, and 56 percent of the women living in developing countries are pallid (World Health Organization). Iron deficiency is the second leading cause of maternal death in India, accounting for 20% of all maternal deaths. To focus on the incidence of sickliness in pastoral expecting women and investigate the factors coupled with paleness. The review focused on pregnant women, who visited the Maternity Clinic of the Rural Health Preparation Center and saw a clinic in India. The study will last one year, beginning on September 1, 2021, and ending on September 7, 2021. According to World Health Organization guidelines, iron insufficiency was designated. The total number of participants was 269, as determined by a pre-planned and pre-tested survey. The review subjects ranged in age from 20 to 30 and above 30. We've also found iron deficiency in the first, second, and third trimesters. Continuous renal sickness and postpartum drain were restricted as of late blood bonded. The conclusion of iron deficiency was attempted using a fringe blood smear analysis and a conventional haemoglobin analysis using Shale's approach. The prevalence of iron insufficiency is 58.36 percent across 269 individuals, including mild, moderate, and severe weakness. The mother's age, education, socioeconomic standing, equality, and food preferences were discovered to be profoundly important determinants. Family structure, size, and menarche completion were not

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found to be significant predictors of illness. The significant incidence of iron deficiency (58.36 percent) indicates that the National Nutrition Anemia Prophylaxis Program is not being implemented properly.

Keywords: Pregnancy; anemia and rural.

1. INTRODUCTION

Pregnancy anaemia is a major public health issue around the world, particularly in developing countries. Anemia is a condition in which the haemoglobin (Hb) concentration of the blood is lower than normal for a person's age, gender, and environment, resulting in a decrease in the oxygen carrying capacity of the blood [1,2]. The plasma extent extends during pregnancy (usually about 32 weeks), resulting in haemoglobin dilution. As a result, anaemia is defined as a haemoglobin level of less than 10 gm/dl at any point throughout pregnancy [3-5]. A haemoglobin level of less than 9 grammes per deciliter (gm/dl) demands thorough examination and treatment. The primary causes of anaemia in developing countries are: low iron consumption and negative iron absorption [6,7]. Malaria, hookworm infestation, diarrhoea, HIV/AIDS, genetic disorders (e.g., sickle cell anaemia and thalasemia), blood loss during strenuous labour, and pregnancies spaced too close together are all risks [1,2]. Pregnant women with iron deficiency anaemia are more likely to have low birth weight babies, deliver prematurely, and have a higher perinatal and neonatal death rate [8-10]. Iron deficiency anaemia (IDA) has been linked to maternal and newborn mortality and morbidity in previous studies [11]. The Ministry of Health, Government of India, has recommended taking 100mg of elemental iron with 500 mcg folic acid capsules in the second half of pregnancy for at least one hundred days. According to the World Health Organization (WHO)/World Bank statistics, IDA is the 0.33 leading cause of disability adjusted life years lost for women aged 15 to 44 years [1,12]. The World Health Organization launched its Safe Motherhood Initiative in 1993 with the goal of reducing maternal fatalities by half by the year 2000 [13]. In India, anaemia is the second leading cause of maternal death, accounting for 20% of all maternal deaths [14]. Anemia affects 33 percent to 89 percent of pregnant women and more than 60 percent of teenage girls, with considerable differences throughout the country [15]. 56.4 percent of pregnant women in rural Maharashtra, one of India's more developed regions, had anaemia, according to the data [16].

1970 National Nutritional Anemia Prophylaxis Programme (NNAPP) become initiated in India, with the purpose to lessen the superiority of anemia to twenty-five percent [17]. Since 1992, the daily dose of elemental iron for prevention and treatment has been reduced to 100 mg and 200 mg, respectively, under the Child Survival and Safe Motherhood (CSSM) Programme. The gift pass sectional study was created to evaluate haemoglobin levels in pregnant women attending Rural Health.

1.1 Objectives and Goals

- To explore the dominance of anaemia in pregnant women at the RHTC and Hospital in Jabalpur.
- To investigate the numerous variables that influence the anaemic categories.

2. MATERIALS AND METHODS

In a cross-sectional study, pregnant women were studied at the Anti-natal Clinic at the Rural Health Training Centre Anna-ram and the Obstetric Clinic at the teaching hospital. A total of 269 pregnant women were interviewed using 29 pre-designed and pre-tested questions, with prime gravida, second gravida, and > second gravida being included. The sample was selected using a technique known as purposive sampling.

2.1 Criteria for Inclusion

Subjects in the research ranged in age from less than 20 years to 30 years and older. We had also seen anaemia in the first, second, and third trimesters.

2.2 Exclusion Criteria

We excluded those with recent blood transfusions, chronic medical illnesses, confirmed haemoglobinopathies, bleeding disorders, or antepartum haemorrhage from our study. To detect anaemia, a traditional peripheral blood smear examination and the shale's acid haematin technique of haemoglobin testing were utilised.

The research will last one year, from September 1, 2021 to September 7, 2021. Anaemia is classified as 11 g/dL by the World Health Organization (WHO) grading rules. Anemia in pregnancy is characterised as mild (haemoglobin 10-10.9 g/dl), moderate (haemoglobin 7.0-9.9 g/dl), or severe (haemoglobin 10-10.9 g/dl). Or severe anaemia (haemoglobin 7 g/dL) by the World Health Organization.

2.3 Data Collection Method

The process of data collection includes the selection and development of tools. Validation and reliability testing, as well as data collection on a small sample size, are all part of the process.

2.4 Selection of Toolset

The mother's inquiry and the attitude scale based on the study's purpose are instruments to the researcher's data collection equipment.

2.5 The Evolution of Tools

The structured knowledge question was designed to connect the expectant mother's knowledge to the study's purpose.

The tool includes a structured knowledge questionnaire and a 3-point attitude scale (Liker's kind). It is divided into three portions, which are as follows:

Part I comprises of demographic variables such as age group, educational status, occupation, family occupation, household income trilogy, and family type.

Part II: A questionnaire with 30 knowledge questions is provided. Concerning the significance of anaemia information at the prenatal clinic, it is separated into two areas.

2.6 Project Pilot

Following official approval, a small scale version or trial of the larger study [9] was carried out. From May 10 to 17, 2021, the pilot study was conducted at the Antenatal Clinical at Rural Health Centre in Jabalpur, Madhya Pradesh, India.

2.7 Analytical Statistics

The data was analysed using analytical statistics in SPSS version 17.0 and the chi square test for categorical data. It was determined that P0.05 was statistically significant.

3. RESULTS

A total of 269 pregnant women took part in the study. There were 157 women who were pregnant and had mild, moderate, or severe anaemia (58.36 percent).

Table 1. Distribution of participants according to age

Age group	Number	Percentage (%)
<20years	59	22
20-24 years	159	59.1
25-29 years	49	18.2
≥ 30 years	2	0.7

Table 2. Distribution of anemia in study group according to age, education & occupation

Characteristics	Category	Strictness of Anemia							
		Gentle		Moderate		Rigorous		Total	
		N	%	N	%	N	%	N	%
Age Years	<20	18	11.4	23	14.6	3	1.9	44	28.0
	20-24	32	20.4	50	31.8	8	5.0	90	57.4
	25-29	12	7.6	8	5.0	3	1.9	23	14.6
	≥30	0	0	0	0	0	0	0	0.0
Education	Illiterate	32	20.3	35	22.2	6	3.8	73	46.4
	Primary School	9	5.7	25	15.9	3	1.9	37	23.6
	Secondary School	12	7.6	15	9.5	3	1.9	30	19.2
	Graduate /Pg	9	5.7	6	3.8	2	1.2	17	10.8
Occupation	Housewife, /Agriculture/ Working Women	62	39.4	78	49.6	12	7.6	152	96.8
	Employed Women	0	0	3	1.9	2	1.3	5	3.2

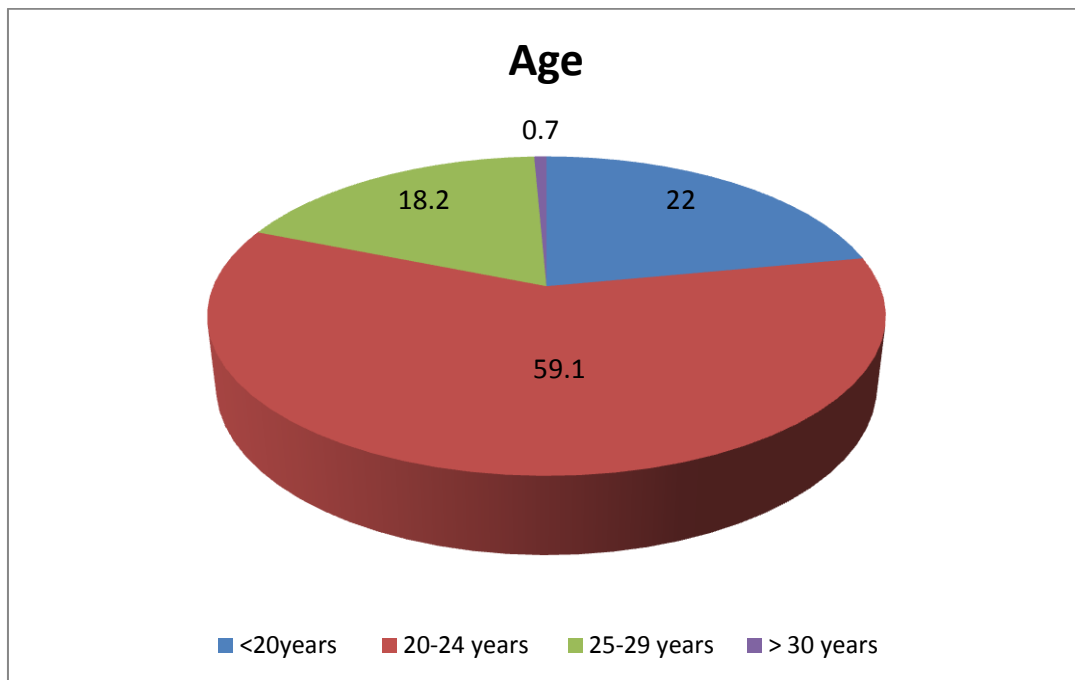


Fig. 1. Distribution of participants according to age

According to Table 1, 77.3 percent of the pregnant women in the research were between the ages of 20 and 29. This statistic suggests that the bulk of Anti-Natal Cases involve people under the age of 30.

Housewives and age cultural labours had a greater prevalence of anaemia (96.8%) than employees, as shown in Table 2. 7.71, P = 0.021, Chi-square test (significant). The data suggest that agricultural workers and housewives do not seek out health-care institutions that provide preventive iron and folic acid dosages (for 100 days) to avoid anaemia.

As shown in Table 3 and Fig. 2, the second gravid majority (43.3 percent) in the parity group suffered from anaemia. Multiple pregnancies, hunger, and a failure to take iron and folic acid preventive pills may all have a role in the high frequency of anaemia in the second trimester, according to this study.

In Table 4 and Fig. 3, vegetarians had a greater prevalence of anaemia (40.14 percent) than the mixed diet group. The findings demonstrated that conveniently accessible iron was better absorbed in mixed dietary groups.

Table 3. Anemia distribution amongst equivalence

Equivalence	Regular N (%)	Gentle Anemia N (%)	Reasonable Anemia N (%)	Rigorous Anemia N (%)	Sum Anemic N (%)
Primi gravid (1)	88(32.7)	24(8.92)	31(11.52)	5(1.85)	60(38.2)
Gravida 2	21(7.80)	28(10.40)	32(12.26)	7(2.60)	68(43.3)
Gravida >2	3(1.11)	10(3.71)	13(6.31)	2(0.74)	29(18.5)

Table 4. Dominance of anemia amongst vegetarian's & assorted diet

Diet	Normal N (%)	Mild Anemia N (%)	Moderate Anemia N (%)	Severe Anemia N (%)	Total Anemic N (%)
Mixed	50(18.58)	20(7.43)	24(8.92)	5(1.85)	49(18.21)
Veg.	62(23.04)	61(22.67)	38(14.12)	9(3.34)	108(40.14)

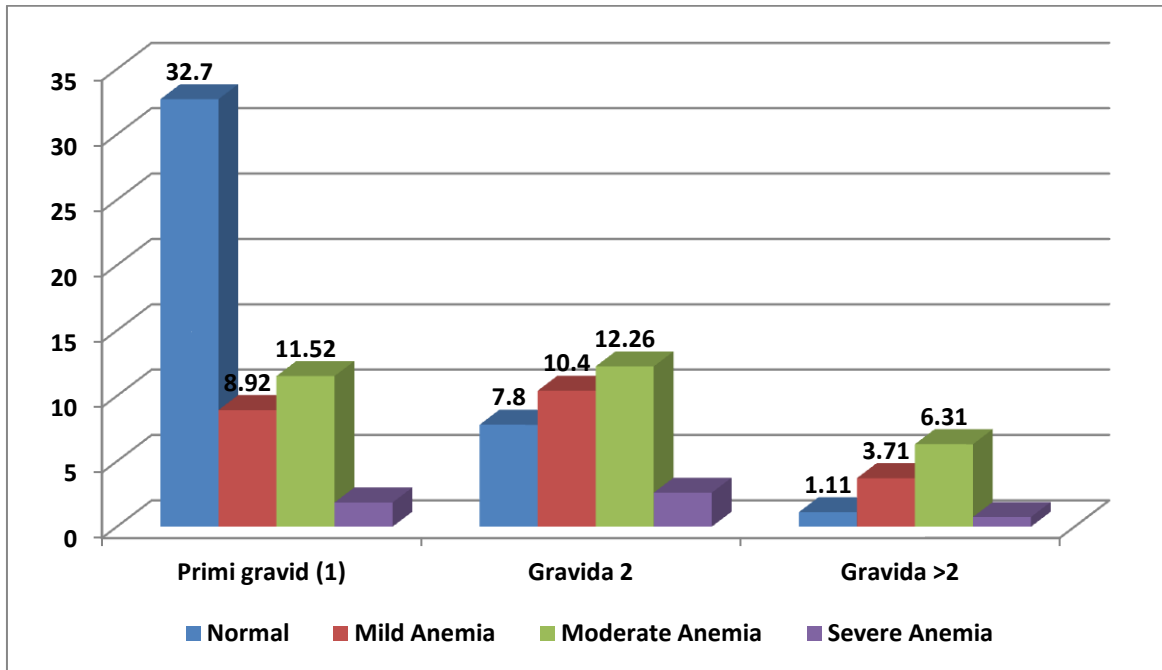


Fig. 2. Anemia distribution among parity

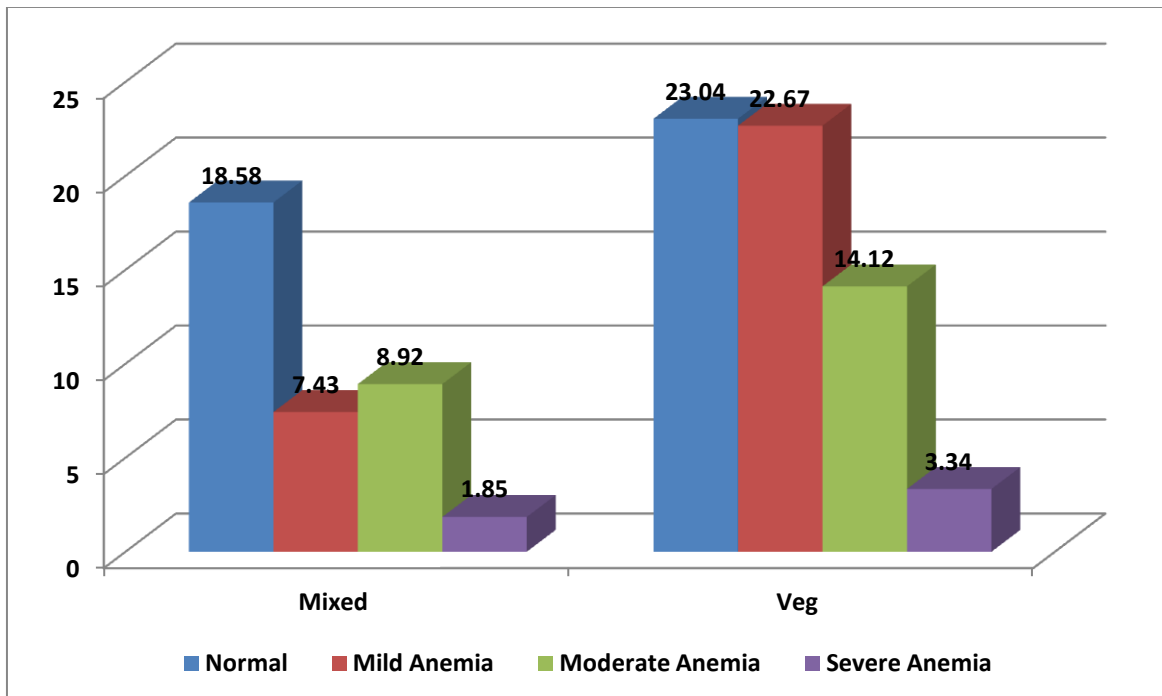


Fig. 3. Dominance of anemia amongst vegetarian's & assorted diet

4. DISCUSSION

Among the 269 pregnant women evaluated at RHTC & CAIMS Hospital, the prevalence of anaemia was significant (58.36 percent). Pregnant women in rural Maharashtra, India's developed state, were studied in a similar way,

with a 56.4 percent incidence [15]. According to the World Health Organization, up to 56% of all women in underdeveloped nations are anaemic [18]. 54 percent of rural women and 46 percent of urban women are anaemic, according to the National Family Health Survey 2, which was conducted in India between 1998 and 1999 [19].

The National Nutritional Anemia Prophylaxis Program (NNAPP) was founded in 1970 through the objective of dropping anaemia dominance to 25% [16].

According to Table 1, the majority of pregnant women (77.3%) at both RHTC and CAIMS Hospitals were between the ages of 20 and 29. Pushpa O Lokare conducted a similar study in Aurangabad, India, and concluded that the vast majority of the people (87.2 percent) were between the ages of 20 and 30 [20].

According to Table 2, anaemia afflicted 72.0 percent of persons aged 20 to 29. (Gentle 28.0 percent, reasonable 36.8 percent rigorous 6.9 percent). In stipulations of learning, the majority of people suffering from anaemia (46.4 percent) were illiterates, with less in primary school (23.6 percent), secondary school (19.2 percent), and graduates/(19.2 PG's percent) (10.8 percent).

K. N. Agarwal, D. K. Agarwal, and the Health Care and Research Association conducted a similar study in seven states and discovered that anaemia in illiterates (those who cannot read or write) among pregnant women was highest in M.P. (68.0 percent, 46.3 percent, 45.3 percent, and 30.7 percent), while Orissa, Assam, Haryana, Tamil Nadu, Himachal Pradesh, and Kerala have 28.7%, 8.8%, and 1.3 percent of Anemia affects 96.4 percent, 94.8 percent, 92.1 percent, and 91.5 percent of pregnant women, according to a similar research done by Pushpa and colleagues. Those educated up to elementary school, middle school, and high school among illiterates. It has been shown that the less educated a woman is, the more likely she is to develop anaemia when pregnant. Housewives and agricultural labourers had a greater anaemia prevalence (96.8%) than workers (3.2%), indicating that they are more likely to get it. According to a similar research, the percentage of pregnant women with anaemia was lower in classes I and II (47.61 percent and 71.42 percent, respectively) compared to those in lower socioeconomic groups (93.51 percent , 94.49 percent , and 94.11 percent in classes III-V, respectively). The prevalence of anaemia was clearly associated with one's socioeconomic position. The link between a family's socioeconomic level and anaemia during pregnancy has been demonstrated to be statistically significant (P 0.05) [20].

Second-trimester pregnant women had a greater frequency of anaemia (43.9%) than first-trimester

pregnant women, according to Table 3. (25.7 percent). The same rationale was discovered in a similar research with a mean gestational age of 22 weeks at booking: physiologic haemo dilution in pregnancy may explain the increased occurrence of mild anaemia [18].

Prenatal iron supplementation reduced the incidence of iron deficiency anaemia in women [21]. For improved compliance and outcomes, two injections of iron dextran (250 mg each) delivered intramuscularly at 4-week intervals in combination with tetanus toxoid injection have been recommended [22]. Dietary patterns have an influence on anaemia, as seen in Table 4. Compared to pregnant women who ate a variety of foods. Vegetarians were at the highest risk of anaemia (40.14 percent). (18.21%) is a percentage of the total population. Baig Ansary N, Badruddin SH observed in the literature that tea drinking and a reduced red meat diet were linked to anaemia in a comparable research [23].

Meat is a superb source of high-quality protein, iron, zinc, and all B vitamins, with the exception of folic acid. Turkey consumes 21 kilogrammes of meat per capita year, the United States consumes 124 kilogrammes annually, and European nations consume 100 kilogrammes annually [24]. These findings explain why industrialised countries have a reduced anaemia prevalence.

5. CONCLUSION

Anemia is quite common among pregnant women (58.36 percent), indicating that national and WHO programmes to treat the problem have been ineffectual. IFA pills are now required for teenage girls and pregnant women from 24 weeks to 12 weeks after birth, according to programme changes. To reduce the burden of malaria, worm infestations, and other infectious diseases, we must treat nutritional inadequacies through food fortification and appropriate medications. Iron preparations and a well-balanced diet should be prescribed by all obstetricians with excellent compliance.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline patient's consent and ethical approval has been collected and preserved by the authors.

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COMPETING INTERESTS

Authors have declared that no competing interests exist.

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