

Study on Prevalence of Anaemia and Various Risk Factors among Pregnant Women Attending Rural Health Training Centre of Katihar Medical College, Katihar

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Abstract

Background: Anaemia during pregnancy is a public health problem affecting developing countries and it is associated with adverse outcomes in pregnancy.

Aims and Objectives: (1) To evaluate the prevalence of anaemia among pregnant women attending rural health training centre of Katihar Medical College, Katihar. (2) To assess the various risk factors associated with anaemia among pregnant women. Attending the rural health training centre of Katihar Medical College, Katihar.

Materials and Methods: The present study was a cross sectional observational study. Data collection involved 180 pregnant women of any trimester of pregnancy irrespective of Iron and Folic Acid (IFA) consumption. Pregnant women who attended the antenatal clinic of the Rural Health Training Centre for three months were taken as study sample. Written informed consent was taken. The study was conducted at Rural Health Training Centre of Katihar Medical College, Katihar. Participants were interviewed by using a predesigned and pretested questionnaire after taking consent.

Results: The prevalence of anaemia among pregnant women was 65.55%. majority of anaemic pregnant women 62 (51.69%) belonged to age group 21-25 years. Majority of study participants belonged to joint family 117 (65%). In this present study, most anaemic pregnant women were commonly found in lower socio-economic status 64 (54.24%).

Conclusions: The present study concluded that anaemia in pregnancy was commonly seen in age group 21 to 25 years and most pregnant women had mild anaemia. Parity >3, illiteracy, lower socioeconomic status was major predictors of anaemia in pregnancy. Anaemia continues to be a major public health problem in rural area. To reduce its prevalence there is a need for public health education on reproductive health. There is a need to improve the dietary level and to strengthen the healthcare seeking behaviour of women. Therefore, anemia continues to be a major public health problem in rural area of India.

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Introduction

Anaemia during pregnancy is a public health problem affecting developing countries and it is associated with adverse outcomes in pregnancy. [1] In developing countries, underprivileged people have often limited access to medical care and preventive measures and therefore it increases their risk of becoming anaemic and contributes to high maternal mortality. Anaemia is responsible for a number of maternal and foetal complications and apart from decreasing the woman's reserve to tolerate bleeding either during or after child birth, it is known to be associated with low birth weight, premature delivery, intra uterine growth retardation and thus increased perinatal mortality. [2] The World Health Organization has defined anaemia as a condition in which the number of red blood cells or their oxygen carrying capacity is insufficient to meet the various physiological needs which further can vary by age, sex, altitude, smoking and pregnancy status. [3]

According to NFHS-5, the prevalence of anaemia in Rural area of Bihar is 63.9%. [4] Iron deficiency is one of the most common nutritional deficiencies which affects both the developed and the developing countries and approximately it affects 25% of the world's population and is the most common cause of anaemia. It has been observed that a crude estimate is that 500 million women between 15-49 years of age worldwide are anaemic. In India iron deficiency anaemia ranges from 33-89% and it affects approximately 80% of the pregnant women and the prevalence of IDA in first trimester of the pregnancy ranges from 3.5% to 7.4% and it increases to 15.6% to 55% in third trimester. [5]

Materials and Methods

The present study was a cross sectional observational study. Data collection involved 180 pregnant women of any trimester of pregnancy irrespective of Iron and Folic Acid (IFA) consumption. Pregnant women who attended the antenatal clinic of the Rural Health Training Centre for three months were taken as study sample. Written informed consent was taken. The study was conducted at Rural Health Training Centre of Katihar Medical College, Katihar. Participants were interviewed by using a predesigned and pretested questionnaire after taking consent and this was followed by a short clinical examination for pallor. The study period was for three months i.e from August to October, 2021. Participants were interviewed by using a predesigned and pretested questionnaire and this was followed by a short clinical examination for pallor. Next a Laboratory estimation of haemoglobin was performed using Sahli's (Acid haematin) method for haemoglobin estimation. Anaemia was classified as per the World Health Organisation (WHO) grading criteria. Haemoglobin level below the cut-off of 11 g/dL was used to label a pregnant woman as anaemic and it was further classified as: Mild anaemia (10-10.9 g/dL), Moderate anaemia (7-9.9 g/dL) and Severe anaemia (<7g/dL). [6]

Results

This study was conducted in department of Community Medicine, Katihar Medical College, Katihar, Bihar. A total of 180 study participants completed the study out of which 118 (65.55%) were anaemic and 62 (34.44%) were non anaemic.

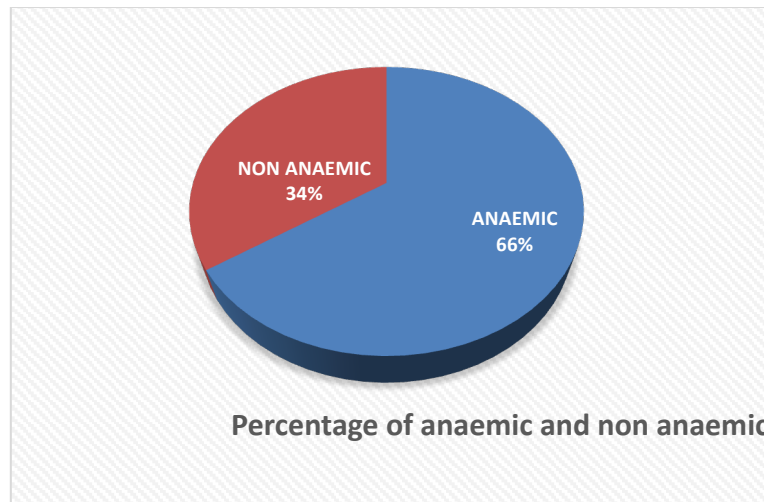


Figure 1: Percentage of anaemic and non anaemic

Title 1: Sociodemographic (N=180)

Age (years)	Anaemia(118)	No anaemia(62)	Total
18-20	42 (35.59%)	07 (11.29%)	49 (27.22%)
21-25	62 (51.69%)	36 (58.06%)	97 (53.88%)
26-30	07 (5.93%)	10 (16.12%)	17 (9.44%)
>30	07 (5.93%)	09 (14.51%)	17 (9.44%)
Type of family	Anaemic	Non anaemic	Total
Nuclear	41 (34.74%)	22 (35.48%)	63 (35%)
Joint	77 (65.25%)	40 (64.51%)	117 (65%)
Education	Anaemic	Non anaemic	Total
Illiterate	69 (58.47%)	29 (46.77%)	98 (54.44%)
Primary	37 (31.35%)	20 (32.25%)	57 (31.66%)
Secondary & above	12 (10.16%)	13 (20.96%)	25 (13.88%)

In this present study, majority of anaemic pregnant women 62 (51.69 %) belonged to age group 21-25 years. Majority of study participants belonged to joint family 117 (65%) out of which 77 (65.25%) had

anaemia and 40 (64.52%) did not have anaemia. Majority of study participants were illiterate 98 (54.44%). Most pregnant women 69 (58.47%) were illiterate having anaemia.

Table 2: Socioeconomical (According to Modified Bg Prasad Scale)

Socioeconomical	Anaemia (118)	No anaemia (62)
Upper higher (i)	2(1.69%)	5(8.07%)
High (ii)	6(5.08%)	15(24.19%)
Upper middle (iii)	14(11.86%)	10(16.13%)
Lower middle (iv)	32(27.13%)	19(30.64%)
Lower (v)	64 (54.24%)	13(20.97%)

Chi Square = 28.21, df = 4, P < 0.001

In this present study, most anaemic pregnant women were commonly found in lower socioeconomical status 64 (54.24%). The present study shows statistically significant (p value < 0.05).

Table 3: Severity of Anaemia

HB<11g/dl	Anaemia
Mild anaemia	68 (57.62%)
Moderate anaemia	44 (37.28%)
Severe anaemia	6 (5.08%)

In this present study, out of total 180 cases of pregnant women, majorities of pregnant women 68 (57.62%) were mild anaemic and 44(37.28%) were moderate anaemic, and 6 (5.08%) had severe anaemia.

Table 4: Parity in pregnant women

Parity	Anaemic	Non Anaemic	Total
<1	28 (23.72)	45(72.58%)	73 (40.55%)
1 to 3	37 (31.35%)	6 (9.67%)	43 (23.88%)
>3	53 (44.91%)	11 (17.74%)	64 (35.55%)

Chi square = 40.35 df=2 p <0.0001

Out of 180 pregnant women, majorities of cases 73(40.55%) were parity <1. Out of total 62 non anaemic cases, majority 45 (72.58%) were parity <1. Maximum no. of anaemic pregnant women 53 (44.91%) had parity >3. This study shows statistically significant (p value< 0.05).

Table 5: Interval between pregnancies

Interval b/w pregnancies (years)	Anaemic	Non Anaemic	Total
1 to 2	46 (38.98%)	14 (22.58%)	60 (33.33%)
2 to 3	57 (48.30%)	25 (40.32%)	82 (45.55%)
>3	15 (12.71%)	23 (37.09%)	38 (21.11%)

Chi square= 15.3 df=2 p=0.0005

In this present study it was observed that maximum no of study participants 2 to 3 years of interval between pregnancies. Maximum no. of pregnant women who were found to be anaemic 57 (48.30%) had 2 to 3 years of interval between pregnancies. The present study shows statistically significant. (p value < 0.05).

Table 6: Consumption of IFA table

Consumption (>100)	Anaemic	Non anaemic	Total
Yes	45 (38.13%)	34 (54.83%)	79 (65.83%)
No	73 (61.86%)	28 (45.16%)	101 (84.16%)

Chi square = 3.95 df=1 p= 0.0469

In this present study, out of total 180 cases, majorities of cases 101(84.16%) had not taken IFA tablets. Majority 34(54.83%) of non-anaemic cases were regularly taken IFA tablets. Most pregnant women having anaemia 73 (61.86%) did not consume IFA tablets. This study is statistically significant (p value < 0.05).

Discussion

In our present study a total of 180 study participants completed the study out of which 118 (65.55%) were anaemic and 62 (34.44%) were non anaemic. In this study, majority of anaemic pregnant women 62 (51.69 %) belonged to age group 21-25 years. Majority of study participants

belonged to joint family 117 (65%) out of which 77 (65.25%) had anaemia and 40 (64.52%) did not have anaemia. Majority of study participants were illiterate 98 (54.44%). Most pregnant women 69 (58.47%) were illiterate having anaemia. In a study done by Viveki PR et al. it was observed that out of 228 pregnant women the prevalence of anaemia was very high (82.9%). More than half of the study subjects (53.1%) were from nuclear families and 109 (47.8%) studied upto primary level. According to socioeconomic status 47.4% were from below class IV socioeconomic status. Majority (50.4%) had moderate degree of anaemia 7.0% had severe anaemia. Severity of anaemia was more in 26 years of age, from nuclear families, educated up to secondary level, having vegetarian diet, parity two or more. [6] In our present study, most anaemic pregnant women were commonly found in lower socio-economic status 64 (54.24%). The present study shows statistically significant (p value <0.05). In this present study, out of total 180 cases of pregnant women, majorities of pregnant women 68 (57.62%) were mild anaemic and 44(37.28%) were moderate anaemic, and 6 (5.08%) had severe anaemia. In this present study it was observed that maximum no of study participants 2 to 3 years of interval between pregnancies. Maximum no. of pregnant women who were found to be anaemic 57 (48.30%) had 2 to 3 years of interval between pregnancies. The present study shows statistically significant. (p value <0.05). In this present study, out of total 180 cases, majorities of cases 101(84.16%) had not taken IFA tablets. Majority 34(54.83%) of non-anaemic cases were regularly taken IFA tablets. Many pregnant women having anaemia 73 (61.86%) did not consume IFA tablets. This study is statistically significant (p value <0.05). Seema BN observed that out of 1769 pregnant women prevalence of anemia was 96.5% among the pregnant females Out of these 22.47% had mild anemia, 56.30% had moderate anemia,

14.98% had severe anemia and 2.73% very severe anemia according to ICMR classification of anemia. The average age of pregnant women was 23.5 years, ranging between 18 and 40 years. Based on education, 28.9% were illiterates. [7] A study done by Gautam PV et al. observed that out of a total of 114 pregnant women were studied most of the pregnant women were between 20 and 24 years of age (56.1%), followed by 25-29 years (21.1%), while less than 20 years accounted for 19.3% and only 3.5% were 30 years and above. A high prevalence of anaemia (96.5%) among pregnant women was observed. Majority (50.9%) had moderate anaemia. [8] A study by Noronha JA among pregnant women in Udupi district found that out of the total study population consisted of 1077 ante-natal women the prevalence of anaemia was 50.1 per cent among pregnant women (540 out of 1077). Out of 540, 348 (63.5%) had mild anaemia (hb10 to 10.99 gm/dl), 184 (35.0%) had moderate anaemia (hb 7 to 9.9 gm/dl) and 8 (1.5%) had severe anaemia (hb <7 gm/dl). The prevalence of anaemia was 57.72 per cent among ante-natal women who were in the age group of 17-21 years followed by the age group of 30 and above (50.75%) and 22.29 (48.74%). The prevalence of anaemia was 61.54 per cent among ante-natal women, who had high parity with more than two children. [9,10]

Conclusion

The present study concluded that anaemia in pregnancy was commonly seen in age group 21 to 25 years and most pregnant women had mild anaemia. Parity > 3 , illiteracy, lower socioeconomic status was major predictors of anaemia in pregnancy. Anaemia continues to be a major public health problem in rural area. To reduce its prevalence there is a need for public health education on reproductive health. There is a need to improve the dietary level and to strengthen the healthcare seeking behaviour of women. Therefore, anemia continues to be a major public health problem in rural

area of India. Age group, parity, interval between pregnancies, illiteracy and socioeconomic status are the major factors that contribute to the problem of anemia. To reduce the prevalence, there is a need to public health education on reproductive health, improve the dietary level and strength health care seeking behavior of women. Strategic efforts are needed to broaden the coverage of iron and folic acid distribution and its consumption. Out of 180 pregnant women, majorities of cases 73(40.55%) were parity <1. Out of total 62 non anaemic cases, majority 45 (72.58%) were parity <1. Maximum no. of anaemic pregnant women 53 (44.91%) had parity >3. This study shows statistically significant (p value < 0.05). In this present study it was observed that maximum no of study participants 2 to 3 years of interval between pregnancies. Maximum no. of pregnant women who were found to be anaemic 57 (48.30%) had 2 to 3 years of interval between pregnancies. The present study shows statistically significant. (p value < 0.05).

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