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Original Research Article

Anaemia in Pregnant Women: A Community Based Study in Rural area of Patna, Bihar, India.

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Abstract

Objectives: This study was done to evaluate the sociodemographic profile and prevalence of anaemia in rural area, of Patna district, Bihar. **Methods:** Haemoglobin estimation was done by using Sahli's method. Haemoglobin below 11 g/dL was labelled as anaemia during pregnancy. **Results:** Anaemia was seen in 125(83.33%) pregnant women. Most of the women 80(53.33%) were in age group of 25 to 29 years. Moderate anaemia was greatly seen in pregnant women 100(80%) in rural area, Patna, Bihar. **Conclusions:** Pregnant women who were associated with poor literacy, low socio-economy, multiparity had greater risk for developing anaemia in rural area of Bihar. So, the, health care system should organize medical camps time to time for awareness of maternal health during pregnancy and early detection and management of anaemia in pregnant women in rural area of Bihar.

Key words: Anaemia, sociodemographic profile, pregnancy

Introduction

Screening for anaemia is part of routine pregnancy care: all pregnant women should have a full blood count performed at the first antenatal visit and again at 26–28 weeks' gestation [1]. For women who are at high risk of anaemia, a repeat full blood count at 36 weeks gestation is also recommended [1].

Anemia is one of the most common nutritional deficiency disorders affecting the pregnant women; the prevalence in developed countries is 14%, in developing countries 51%, and in India, it varies from 65% to 75% [2,3].

The causes of anaemia during pregnancy in developing countries are multifactorial; these include micronutrient deficiencies of iron, folate, and vitamins A and B12 and anaemia due to parasitic infections such as malaria and hookworm or chronic infections like TB and HIV [4,5]. Contributions of each of the factors that cause anaemia during pregnancy vary due to geographical location, dietary practice, and season. But in Sub-Saharan Africa inadequate intake of diets rich in iron is reported as the leading cause of anaemia among pregnant women [6, 5]. Anaemia during pregnancy is reported to have negative maternal and child health effect and increase in risk of maternal and perinatal mortality [7, 8]. The negative

health efects for the mother include fatigue, poor work capacity, impaired immune function, increased risk of cardiac diseases, and mortality [8, 9]. Some studies have shown that anaemia during pregnancy contributes to 23% of indirect causes of maternal deaths in developing countries.

Anaemia in pregnancy is associated with increased risk of preterm birth and low birth weight babies [4, 10]. Preterm and LBW are still the leading causes of neonatal deaths in developing countries like Tanzania contributing to 30% of the deaths [11]. It has also been associated with increased risk of intrauterine deaths (IUFD), low APGAR score at 5 minutes, and intrauterine growth restriction (IUGR) which is a risk for stunting among children of less than two years [4, 12]. Objectives of our study was to evaluate the prevalence and sociodemographic profile of anaemia in rural area of Patna district, Bihar, India.

Methods

This study was conducted in Primary Health Centre, Fatuha (R.H.T.C, Department of Community Medicine, Patna Medical College, Patna) Department of Community medicine, PMCH, Patna during a period from January 2021 to July 2021.

Study Design: Pregnant women with gestational period 12-20 weeks attending in OPD, Primary Health Centre, Fatuha (R.H.T.C, Department of Community Medicine, Patna Medical College, Patna) were included in this study. Exclusion Criteria: Pregnant women not willing to respond even after requesting and severely ill were excluded from this study. Entire subjects/Attendants signed an informed consent approved by institutional ethical committee of PMCH, Patna, India was sought.

Socioeconomic status of the pregnant women was assessed by using updated BG Prasad Socioeconomic Classification, 2014 [29].

Anaemia was classified as per WHO criteria [30]. Haemoglobin estimation was done by using Sahli's method. Haemoglobin below 11 g/dL was labelled as anaemia during pregnancy.

Observations

A total of 150 pregnant women were enrolled in this study. Among them, anaemia was seen in 125(83.33%) pregnant women. Most of the women 80(53.33%) were in age group of 25 to 29 years. When compared the between different age group (18-24, 25-29 and >29 years) of women. P-value was found to be 0.022. which is statistically significant. When data was analysed in women of different sociodemographic profile (type of family, education, socioeconomic status and parity), p value was found to be greater than 0.05. which is statistically non- significant. Majorities of women 89(80.91%) were from nuclear family. When data was compared between nuclear and joint family women. P-value was found to be greater than 0.05, which is not significant.

Table 1: Showing Prevalence of anaemia (N=150) in pregnancy.

No. of subjects	Anaemic	Non-anaemic
	125(83.33%)	25(16.67%)

Table 3: Showing severity of anaemia (N=125) in pregnant women.

Severity	No. of cases	Percentages
Mild	18	14.4%
Moderate	100	80%
Severe	7	5.6%
Total	125	100%

Among anaemic women (125), they had 18(14.4%) mild, 100(80%) moderate and 7(5.6%) severe anaemia.

Table 2: Showing sociodemographic profile (N=150).

Sociodemographic profile		Total	Anaemia		Chi-square statistic	P-value
			Present	Absent		
Age (years)	18-24	45(30%)	37(82.22%)	8(17.78%)	7.64	0.022
	25-29	80(53.33%)	68(85%)	12(15%)		
	>29	25(16.67%)	15(60%)	10(40%)		
Type of family	Nuclear	110(73.33%)	86(78.18%)	24(21.81%)	0.21	0.644
	Joint	40(26.67%)	31(77.5%)	9(22.5%)		
Education	Illiterate	50(33.33%)	40(80%)	10(20%)	8.47	0.076
	Primary	54(16.67%)	43(79.63%)	11(20.37%)		
	Middle	31(20.67%)	26(83.87%)	5(16.13%)		
	High	13(8.67%)	11(84.61%)	2(15.38%)		
	Higher secondary	2(1.33%)	0	2(100%)		
Socioeconomic status	II	3(2%)	1(33.33%)	2(66.67%)	6.48	0.09
	III	15(10%)	11(73.33%)	4(26.67%)		
	IV	89(59.33%)	70(78.65%)	19(21.35%)		
	V	43(28.67%)	38(88.37%)	5(11.63%)		
Parity	0	74(49.33%)	60(81.08%)	14(18.92%)	2.98	0.562
	1	49(32.67%)	37(75.51%)	12(24.49%)		
	2	18(12%)	14(77.78%)	4(22.22%)		
	3	7(4.67%)	7(100%)	0		
	4	2(1.33%)	2(100%)	0		

When data was analysed between different educational status (illiterate, primary, middle, high and higher secondary) of pregnant women, p value was found to be greater than 0.05. which is not statistically significant. Similarly, when data was analysed between different socioeconomic status (II, III, IV and V), p-value was found to be greater than 0.05. which is not significant. And again, data was analysed between different parity (0,1,2,3,4) of pregnancy of women, p-value was found to be greater than 0.05. which is also not statistically significant. Women who were lived in nuclear family 86(78.18%) were greatly associated with anaemia.

Discussions

Anaemia impairs the capacity of blood to transport oxygen around the body and is an indicator of poor nutrition and health [13]. Anaemia in pregnancy is a major public health issue throughout the world, particularly in the developing countries where it is an important contributor to maternal morbidity and mortality [14]. It is also associated with increased risk of miscarriage [15], prematurity, stillbirth, low birth weight and consequently perinatal mortality [16]. The main cause of anaemia in women of reproductive age globally is iron deficiency, resulting from prolonged negative iron balance, which accounts for 50% of anaemia in women worldwide [17]. The negative iron balance may be due to inadequate dietary iron intake or absorption, increased needs for iron during pregnancy, and increased iron losses as a result of menstruation, worm infestation and infections [18]. Some genetic and socio-demographic and economic characteristics of women also influence the distribution of anaemia [19] and should be

taken into consideration in designing preventive interventions for pregnancy anaemia. The World Health Organisation (WHO) recommends intermittent iron and folic acid supplementation for menstruating women living in settings where the prevalence of anaemia is 20% or higher and daily iron and folic acid supplementation for pregnant women as part of antenatal care in order to prevent anaemia in pregnancy [20].

In this present study, prevalence of anaemia was seen in 83.33% pregnant women. Majorities of anaemic pregnant women (85%) were belonged in age 25-29 years. Among 125 anaemic women, moderate anaemia was greatly seen in the most of the pregnant women.

Socio-economic status of household was significantly associated with anemia among pregnant women. Women from lower socio-economic class had higher prevalence of anemia than those from higher socio-economic status. Our finding was consistent with other studies conducted in Nigeria, where higher prevalence of anemia (78.65%) was reported in lower socioeconomic class type IV [21]. This may be due to those women from lower socio-economic status being unable to purchase the good quality as well as enough quantity of foods.

The current study revealed that anaemia is more common in multiparous women than primi and nulliparous, which is in concordance with other studies [22,23]. This is because multiparous women tend to have greater menstrual losses that increases with parity [22].

This present study showed that women who had low dietary diversity score were 3.18 times more likely to develop anemia than those with higher dietary diversity score. This finding was consistent with previous studies conducted in Ethiopia [24] which were showed that women who had low dietary diversity score and not consuming iron rich food were more likely to develop anemia than their counter parts. Similarly, in Ethiopia, women with restricted dietary behavior were more likely to be anemic compared to those without restrictive dietary behavior [25]. Studies conducted in Pakistan and Turkey also reported that consumption of fruits two or more time per week was associated with decreased risk of anemia [26]. Moreover, other study from Ghana showed that high maternal dietary diversity was associated with reduced risk of anaemia and so nutritional factors may be important [27,28]. This might be potential evidence that increase in individual dietary diversity score is related with increased nutrient adequacy and it can be used as a proxy indicator for measuring nutrient adequacy among pregnant females [29,30].

Conclusions

This present study concluded that the pregnant women who were associated with poor literacy, low socio-economy, multiparous had greater risk for developing anaemia. Moderate anaemia was commonly seen in pregnant women in rural area. Hence, Analysis of various factors that contribute to the occurrence of anaemia, health education on reproductive health, monitoring the consumption of iron folic acid tablets, early diagnosis of high-risk pregnancy, and appropriate management and strengthening of their healthcare-seeking behaviours are important health-care measures to be undertaken at the community level in rural area of Bihar. Health care system should be organized medical camp time to time for awareness of maternal health during pregnancy and early detection and management of anaemia in pregnant women in rural area of Bihar.

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