

Original article**STUDY OF ANAEMIA AMONG PREGNANT WOMEN IN URBAN AREAS OF KANPUR**Firoza Bano¹, P.C. Mahajan²

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Abstract: Anaemia affects 1.62 billion people globally with about estimated 56 million pregnant women to be anaemic. In India anaemia is widely prevalent in all age groups especially among the most vulnerable groups, the pregnant women. It is a major factor responsible for maternal mortality. This study was planned to estimate the prevalence of anaemia among pregnant women and its association with various socio-demographic determinants in the urban field practice areas of the Department of Community Medicine, Rama Medical College, Hospital and Research Centre, Kanpur, U.P. **Material and Methods:** This cross sectional study was conducted among 207 pregnant women selected through simple random sampling at urban field practice areas associated with the department of Community. **Result:** A high prevalence of anaemia 78.7%, was observed in our study. Among 207 selected subjects, 163 pregnant women were found to be anaemic. Among these anemic women, 58 (28%), 90 (43.4%), 15 (7.2%) had mild, moderate and severe anaemia, respectively. **Conclusion:** Anaemia continues to be a major public health problem with an increasing trend, indicating the failure of existing approaches to alleviate this burden. Therefore, further improvements are needed in the ongoing programmes to address the nutritional determinants of low haemoglobin, especially during pregnancy.

Keywords: Anaemia, Pregnant women.

Introduction

The importance of anaemia as a major public health problem throughout the world is widely recognised. According to World Health Organization (WHO), hemoglobin level below 11 g/dl is labeled as anemia during pregnancy and classified as mild (10.0-10.99 g/dl), moderate (7.0-9.9 g/dl), and severe (less than 7.0 g/dl) anemia. The same criteria are used for diagnosing anaemia in pregnancy.^[1] According to WHO, in developing countries the prevalence of anaemia among the pregnant

women averages 56%^[2] whereas in developed regions, it has been reported to be only 18%^[3]. Worldwide it is estimated that about 20 percent of maternal deaths are caused by anaemia, in addition anaemia contributes partly to 50 percent of all maternal deaths^[4].

The National Family Health Survey-3 (NFHS-3) data suggests that anaemia is widely prevalent in all age groups and particularly high among the most vulnerable groups, the prevalence among pregnant women estimated to be around 58 percent^[5].

A study carried out among 7 states by Nutrition Foundation of India (2006) had observed the overall prevalence of anemia among pregnant women found to be 84%^[6]. Low haemoglobin concentrations during pregnancy can be associated with an increased risk of maternal and perinatal mortality and low size or weight at birth^[7].

It adversely affects cognitive and motor development and cause fatigue and low productivity^[8]. Subsequent to maternal anaemia, babies suffering from anaemia may experience numerous deleterious effects like delayed psychomotor development, impaired performance and coordination of language and motor skills as well. These all reduced level of milestones is equivalent to 5-10 points deficit in intelligence quotient^[9].

Since the mortality ratios associated with maternal and neonatal health are invariably very high in Empowered Action Group (EAG) states including Uttar Pradesh, special attention has being paid on it, in our primary health care system.

We need to focus the problems in relation to its determinants as well as to improve the general health status of pregnant women in our community. We need to improve general health status of women not only at ante-natal, intra-natal and post-natal period but also at the pre-conceptional stage and even more preferably to pre-marital stage. There should be an appropriate implementation and creating awareness regarding ongoing strategies like NNAPP (National Nutritional Anaemia Prophylaxis Programme) and recently developed Community Obstetrics which combines the obstetrical concerns with the concept of primary health care.^[10]

Material & Methods

The present cross sectional study was conducted among pregnant women belonging to urban field practice areas, by the department of Community Medicine of Rama Medical College and Research Centre, Kanpur from April 2013 to March 2014.

Ethical approval for the study was obtained from the institutional medical ethical committee at Rama Medical College, Kanpur.

A total of 207 pregnant women regardless of age and gestational age selected through simple random sampling were included in the study. The pregnant women were interviewed using pre structured, pretested schedule after taking their consent. A detailed demographic profile, obstetric and medical histories were collected. After thorough clinical examination, hemoglobin estimation was done by Sahli's acid haematin method on the spot. Anaemia was classified as per WHO criteria. Hemoglobin below 11 g/dl is labeled as anemia during Pregnancy. Severely anemic pregnant women were referred to Rama Medical College Hospital, Mandhana, Kanpur for further management. The collected data was compiled and tabulated using Microsoft Excel 2007 and then analyzed using SPSS Version 21.0. Group comparisons were done by Chi-square test. P-value less than 0.05 were considered significant.

Results

In our study among 207 selected subjects, 163 pregnant women were found to be anaemic. The overall prevalence of anaemia

among the study subjects was 787 per thousand [Table-1]. From the total of 207 selected pregnant mothers, 58 (28%), 90(43.4%), 15 (7.2%) were with mild, moderate and severe anaemia, respectively(Table:2).

Table 1: Distribution of anaemic pregnant women

	Presence of anaemia				Prevalence
	Frequency	%	Valid %	Cumulative %	
Yes	163	78.7	78.7	78.7	787/1000
No	44	21.3	21.3	100	
Total	207	100	100		

Table 2: Distribution of pregnant women according to grading of anaemia

Grading of anaemia	Frequency	%	Cumulative %
Normal	44	21.3	21.3
Mild anaemia	58	28.0	49.3
Moderate anaemia	90	43.5	92.8
Severe anaemia	15	7.2	100.0
Total	207	100	

Discussion

This study revealed the overall prevalence of anaemia among pregnant women as 78.7%.(Table: 1) Our result is found to be less than the national prevalence of anaemia during pregnancy, as per data of DLHS-3, (District Level Household Survey-3), 2005, which had been estimated as 87% [11]. The earlier studies by Khan et- al at rural communities attached with RHTC, Rama Medical College, Ghaziabad (January 2014)

(80%)^{[12], [13]}, by Piyush et-al (Jan – Mar 2014) at Index Medical College, Hospital (62.7%)^[14], by Singh et al (2009) at Deharadun (65.5%)^[15]. “Indian Council of Medical Research (ICMR) Task Force Multicenter Study” revealed that the overall prevalence of anaemia among pregnant women from 16 districts was 84.9%^[16]. Majority of the antenatal women were moderately anaemic (44%) (Table: 2), similar to earlier studies^{[12],[13]}. With advancing age, the prevalence of anemia during pregnancy declines. It has been observed in this study that teenage pregnancy has the prevalence of 90%; whereas at age 30, it is less than 70%. (p=0.048). (Table: 3). It was more likely to find anaemia among 14–25 years age group than 30–34 years old respondents similar to earlier studies^{[12],[13]}. indicating Hemoglobin deficient status of the adolescent girl's.^[12] Younger age group (≤ 24) in our study seems to show the highest prevalence rate of anaemia (80 – 90%). This is in agreement with previous reports among such age groups as adolescent women are at higher risk for developing anaemia due to the fact that they must meet their nutritional needs for their growth in addition to the nutritional needs during pregnancy. It is also well known that iron needs are high in adolescent girls because of the increased requirements for expansion of blood volume associated with the adolescent growth spurt and the onset of menstruation. In India, UNRWA (United Nation Relief And Work Agency) maternal health policy advocates early registration of women for antenatal care as early as possible after the establishment of pregnancy status in order to ensure early assessment of the risk status and carry out

Table 3: Distribution of anaemic in pregnant women according to age group

Age (Yrs)	No. of cases with anemia (%)		Total	Prevalence	P - value
	Yes	No			
< 20	13 (92.9%)	1(7.1%)	14(100%)	62/787	
20-25	60(83.3%)	12(16.7%)	72(100.0%)	289/787	
26-30	46(75.4%)	15(24.6%)	61(100.0%)	222/787	
30-35	43(74.1%)	15(25.9%)	58(100.0%)	207/787	
≥36	1(50.0%)	1(50.0%)	2(100.0%)	342/787	
Total	163(78.7%)	44(21.3%)	207(100.0%)	787/1000	0.048

P-value: 0.048; significant.

effective and timely intervention, as and when necessary.

Conclusion

Reduction of anaemia is an important component of women's health. Age, gestational age, no. of gravid, registration of pregnancy, intake of iron rich food sources, iron supplements and deworming, are the selected determinants that significantly contributing to the burden of anaemia according to this study. Anaemia continues to be an endemic problem of large magnitude and the increasing trends in several developing countries point to the burden. Therefore, further improvements are likely to need a combination of programmes that address the nutritional determinants of low haemoglobin especially during pregnancy. Since the maternal mortality ratios are invariably high in Empowered Action Group (EAG) states including Uttar Pradesh, we need to carry out more studies related with the probable causative factors

like anaemia among pregnant women in such vulnerable areas. Addressing the challenge of anaemia will necessitate a holistic response to the determinants of anaemia, together with consideration of the intergenerational aspects. Identification of the local determinants of anaemia and improvement of the implementation of contextually appropriate strategies will be crucial for progress in this important global health issue. Finally, our study focused on national-level patterns of haemoglobin and anaemia, it would be likely to be more helpful to have information about nutritional indicators.

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