



SOCIOECONOMIC STATUS AND PREVALENCE OF ANAEMIA IN PREGNANT WOMEN OF WARDHA DISTRICT

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ABSTRACT

The study was conducted among 500 pregnant women in Wardha District. The prevalence of anaemia was assessed using biochemical method (Sahli's biochemical procedure). Nutritional and socio-economic information was gathered using interview and questionnaire technique. About 16.8% of the pregnant women were below 20 years, 55% were within the age range of 20-25 years, 25% and 16% were 25-30 and above 30 years respectively. The overall prevalence of anaemia in this study using a cut off level of haemoglobin <12 g/dl was 81.4% (407/500). A significant association of anaemia with socio-economic status suggests a need to develop strategies for intensive adult education and to improve the socio-economic status of the population through poverty alleviation programs. There is high prevalence of anaemia among pregnant women in Wardha District.

Key Words : Anaemia in Pregnancy, Socioeconomic status, Prevalence of anaemia.

INTRODUCTION

A high proportion of women in both industrialized and developing countries become anaemic during pregnancy (WHO, 2007). Anaemia is a condition in which the number of red blood cells (and consequently their oxygen carrying capacity) is insufficient to meet the body's physiological needs (WHO 2001). Anaemia is the most common nutritional problem in the world & mainly affects women of childbearing age, teenagers & young children. Anaemia also increases maternal morbidity significantly. Most of the population of India lives in rural areas where the better health care services are not available to them.

Pregnancy is one of the nutritional demanding times in women's life. Maternal nutrition during pregnancy has a vital influence on long term health aspects of the foetus and an important regulator of foetal growth. (Cunneenham et al., 2005). **Along with physiological causes, social causes are also responsible for anaemia during pregnancy like early age at marriage, teenage pregnancy, ill spacing between two pregnancies and poor supplementation of iron, malnutrition, endemic diseases like malaria like infestations. (Upadhyay, C.M. 2011). Most of the pregnant women live where poverty, illiteracy, malnutrition,**

poor sanitation, hygiene, gender bias, unequal feeding practices from a young age, religious taboos and lack of awareness regarding availability of medical facilities render them prone to health hazards which are preventable (Park, 2002). Worldwide, it is estimated that 58.27 million women are anaemic during pregnancy, of whom 55.75 million (95.7%) live in developing countries, (WHO, 1992). Anaemia in pregnancy is one of the most important public health problems not only in India but also in most of the South East Asia countries. About 16% to 40% of maternal deaths occur due to anaemia.

Anaemia also increases maternal morbidity significantly. According to a WHO report, the global prevalence of anaemia among pregnant women is 41.8% (WHO, 2008). In India, the prevalence of anaemia among pregnant women ranges from 58.7% to 87%. The prevalence of anaemia at national level or state level cannot be generalised (NFHS-3).

Objectives: This research was conducted

1) To study the socioeconomic status of pregnant women in Wardha District and also

2) To study the prevalence of anaemia among pregnant women.

For the selection of pregnant women, outdoor patients (OPD) in government,

semi-government and private hospitals were selected.

MATERIAL AND METHODS

In the present study, 500 pregnant women were selected by Simple Random Sampling method. Pregnant women from 3rd month's pregnancy were interviewed, examined and investigated. A pre-tested, pre-designed questionnaire was used to record information. A structured questionnaire as the main methodological tool was used to collect the required data and information. A random selection of women attending the clinic in the maternity hospital was chosen. A questionnaire was used to gather and collect all information required. In this study all questions were answered with full consent of respondents. Accordingly, a coded questionnaire was prepared to obtain the socioeconomic status information and Laboratory information from the interviewed pregnant women.

Hemoglobin level was estimated by Sahli's acid hematin method of hemoglobin estimation. Haemoglobin levels are of great practical value in the nutritional assessment of expectant mothers and also for other segments of society. Haemoglobin analysis is an important tool in diagnosing anaemia. Anaemia is one of the most frequent complications in pregnancy. Haemoglobin level for anaemia is graded as [As per

Table 1: Distribution of Pregnant Women According to Age

Age Group (yrs.)	No. of Pregnant Women	Percentage (%)
<20	84	16.8
20-25	275	55
25-30	125	25
>30	16	3.2
Total	500	100

In the present study, there were 500 study participants aged between 19 and 38 years. 275 study participants (55%) were aged between 20 and 25 years. Mothers of age range less than 20 years and in between 25-30 years

WHO, (2008) classification] Anaemia : Hb < 12 gm/dl - Mild Anaemia, Hb < 10 gm/dl - Moderate Anaemia, Hb < 8 gm/dl - Severe Anaemia, Cut off : 12 gm/dl for pregnant women.

Data Processing and Analysis :

Descriptive statistics was used to summarize data. Proportions were used for categorical variables and mean or median with respective measures of dispersion for numerical variables. "Chi square test was used to find out the association between two attributes.

RESULTS AND DISCUSSION

Socioeconomic status

Socioeconomic status (SES) is the social standing of an individual or group in terms of their income, education and occupation. An individual's income, education and occupational status are often closely interrelated. Research indicates that SES is a key factor in determining the quality of life of women, with resulting effects on the lives of children and families. Inequities in wealth and quality of life for women are long standing and exist both locally and globally. Low SES among women and its correlates, such as poverty, lower education, and poor health for children and families, ultimately affect our society as a whole.

represented percentages of 16.8% and 25 % of the examined mothers, respectively. Only 16(3.2%) women had the pregnancies above 30 yrs

Table 2 Classification of Subjects on the Socio-economic Parameters

Parameter	No. of Pregnant Women	Anaemic	Non-anaemic
Caste			
Other Backward Classes	258(51.6%)	231(56.76%)	27(29.03%)
Scheduled Caste	166(33.2%)	128(31.45%)	38(40.86%)
Scheduled Tribe	63(12.6%)	39(9.58%)	24(25.81%)
Open	13(2.6%)	9(2.21%)	4(4.30%)
Family Type			
Nuclear	285(57%)	218(53.56%)	67(72.04%)
Joint	215(43%)	189(46.44%)	26(27.96%)
Education level			
Up to SSC	98(19.6%)	78(19.16%)	20(21.51%)
HSSC	33(6.6%)	18(4.42%)	15(16.13%)
Graduate	88(17.6%)	73(17.94%)	15(16.13%)
Post Graduate	118 (23.6%)	103(23.31%)	15(16.13%)
Other	163 (32.6%)	135(33.17%)	28(30.11%)
Occupation			
House Wife	140(28%)	106(26.04%)	34(36.56%)
Labour	54(10.8%)	46(11.30%)	8(8.60%)
Private Service	33(6.6%)	30(9.83%)	3(3.23%)
Govt. Service	53(10.6%)	46(13.76%)	7(7.53%)
Entrepreneur	117(23.4%)	81(19.90%)	36(38.71%)
Profession	103(20.6%)	98(24.08%)	5(5.38%)
Family Income			
Less than 5,000	59(11.8 %)	38(9.34%)	21(26.47%)
5,000 – 10,000	11(2.2%)	2(0.50%)	9(9.68%)
10,000 – 15,000	158(31.6 %)	85(20.88%)	73(78.49%)
15,000 – 20,000	209(41.8%)	184(45.21%)	25(26.88%)
Above 20,000	63(12.6%)	58(14.25%)	5(5.38%)
Family Size			
3-5	285(57%)	204(50.12%)	81(87.09%)
6-8	160(32%)	154(37.84%)	6(6.45%)
9-11	55(11%)	49(12.04%)	6(6.45%)

Table 2 shows that about majority of families were included in OBC (51.6%) and a few were included in open category.

In this study 57% pregnant women belonged to nuclear families and 53.56% pregnant women were anaemic from nuclear family. The study from rural area of Delhi showed that out of 114 pregnant women 30.91% pregnant women were anaemic from nuclear families and 69.09% women were anaemic from joint family (Gautam,2010).

Majority of the pregnant women i.e. 285 (57%) had 3 to 5 members in their family and about 204 (50.12%) women were suffering from anaemia.

It was found that highest percentage of anaemia (33.17%) was in other

educational level category which includes professions like doctors and engineers. Opposite observations observed in a study by Upadhyay (2011) on 'A Prospective Study on Prevalence and Management of Anaemia in Pregnancy with Perinatal Outcome'. It was observed that percentage of anaemia found in illiterate mothers was 30.5% and 42.5% in primary educated mothers while it was only 5% in higher educated mothers.

The level of occupation of women didn't determine the level of anaemia because 26.04% women were anaemic which were house wives and 24.08% women were

anaemic which were in the professions like doctors and engineers.

41.8 per cent families had income in between Rs.15,000 to 20,000 per month and most of the women were anaemic from this income group. But opposite findings were seen in Bangalore study. Khan (2012) studied 300 pregnant women observed that majority of the women having anaemia (71.33%) belong to lower-socioeconomic status and 10.33% belong to upper class.

Laboratory Investigation : Haemoglobin level - Scientifically, the level of haemoglobin is measured in terms of grams per deciliter (gm/dl). When the level of haemoglobin in the body differs vastly from the level that should normally be there, that is when women start facing health problems. However, a high level of haemoglobin is not as much of a cause for concern as low levels of haemoglobin. The biggest problem that women face due to a low level of haemoglobin is anaemia.

Table 3: Distribution of Pregnant Women on the basis of Mean Haemoglobin Level (Normal Hb Level = 12.00% - 14.00 % gm /dl)

Age Group (yrs)	No. of Pregnant Women	Anaemic Cases	Non-Anaemic Cases	Mean Hb (gm/ dl)		Min-Max. (gm/dl)
				For Anaemic	For Non-anaemic	
<20	84	50 (12.29%)	34 (36.56%)	10.72 (\pm 1.63)	12.42 (\pm 0.72)	8.49 - 12.98
20-25	275	256 (62.89%)	19 (20.43%)	10.20 (\pm 1.29)	12.19 (\pm 1.06)	8.77 - 12.60
25-30	125	91 (22.36%)	34 (36.56%)	10.61 (\pm 1.55)	12.25 (\pm 0.27)	8.66 - 12.52
>30	16	10 (2.46%)	6 (6.41%)	9.53 (\pm 2.52)	12.05 (\pm 0.18)	8.45 - 12.09

$$\chi^2=61.258, df = 3, p <0.05$$

It was noted that 62.89% pregnant women of 20 to 25 years age group were anaemic which was highest of all, 36.56% pregnant women were from two groups i.e. less than 20 years and 25 to 30 years who were non-anaemic. It is also revealed that meanvalue of haemoglobin level ranged from 9.53 to

10.72 gm/dl for anaemic group and 12.03 to 12.58 gm/dl for non- anaemic group. Significant association between pregnant women and anaemia was observed in this study. In the study conducted by Toteja et al (2006) the prevalence of anaemia among pregnant women was very high (81.4%).

Table 4: Distribution of Anaemia in Pregnant Women According to Severity of Anaemia

Severity of Anaemia	No. of Pregnant Women	Percentage (%)
Severe (<8 gm/dl)	19	3.8
Moderate (<10 gm/dl)	217	43.4
Mild (<12 gm/dl)	171	34.2
Normal (\geq 12 gm/dl)	93	18.6
Total	500	100

Approximately 81.4% of the pregnant women in the study sample showed

haemoglobin status below 12 gm/dl and hence considered as anaemic as per WHO

classification. Majority of the women were seen with moderate anaemia i.e.43.4%, whereas 34.2% were suffering from mild anaemia and severe anaemia was found in 3.8% women.

Table 5: Age-Wise Distribution of Pregnant Women and Prevalence of Anaemia

Age Group (yrs)	No. of Pregnant Women	Percentage Prevalence				(Mean \pm SD) Hb (gm/dl)
		Severe <8g/dl	Moderate <10g/dl	Mild <12 g/dl	Normal \geq 12 g/dl	
<20	84	6 (7.14%)	34 (40.48%)	10 (11.90%)	34 (40.48%)	10.72 (+1.63)
20-25	275	3 (1.09%)	139 (50.55%)	114 (41.45%)	19 (6.91%)	10.20 (+1.29)
25-30	125	2 (1.6%)	42 (33.6%)	47 (37.6%)	34 (27.2%)	10.61 (+1.55)
>30	16	8 (42.10%)	2 (12.5%)	-	6 (37.5%)	9.53 (+2.52)
Total	500	19 (3.8%)	217 (43.4%)	171 (34.2%)	93 (18.6%)	10.09 (+1.90)

$$\chi^2=152.603, df = 6, p < 0.05$$

About 171 (34.2%) pregnant women were suffering from mild anaemia, 217 (43.4%) women with moderate anaemia, and 19 (3.8%) women with severe anaemia. Severe anaemic women were more in greater than 30 years age group as compared to other age groups. Noronha et al (2006) studied 540 pregnant women from Udupi district, Manipal observed that 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 < 7gm/dl).

CONCLUSION

The overall prevalence of anaemia in this study using a cut off level of haemoglobin <12 g/dl was 81.4% (407/500). Out of 407 anaemic pregnant mothers, 34.2% (171/407) were mildly anaemic, 43.4% (217/407) were moderately anaemic and 3.8% (19/407) were severely anaemic. Majority of 275 (55%) pregnant women belong to 20-25 years of age group. The prevalence was higher 62.89% in this age group. There was a significant association between prevalence of

anaemia and caste, family composition, educational level, occupation of women, monthly income of the family and family size. The higher prevalence of anaemia was in the women having their marital age group 20-25 yrs. and their first pregnancy age was above 25 yrs.

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