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THE STUDY OF ANAEMIA & ITS RELATED SOCIO-DEMOGRAPHIC FACTORS AMONGST PREGNANT WOMEN IN RURAL COMMUNITY OF UTTAR PRADESH

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ABSTRACT: BACKGROUND: Anaemia in pregnant women is one of India's major public health problems and is a major factor responsible for low birth weight. One fifth of the maternal deaths occurred worldwide due to anemia. **OBJECTIVES:** To find out prevalence of anaemia in pregnant women and its association with socio demographic factors. **Study Design:** Cross sectional study. **SETTING**: The study was conducted in village Khera at RHTC, Rama Medical College Hospital and Research Centre, Ghaziabad. **MATERIAL & METHODS:** The study was carried from Oct 2012 to June 2013. A total of 321 pregnant women with gestational period between 12 to 20 weeks were registered. Haemoglobin was estimated and peripheral smear examination was carried out. **Statistical Analysis:** Chi-Square test. **RESULTS:** A high prevalence of anaemia (79.75%) was observed in pregnant women. Majority of the primipara were moderately anaemic (58.38%) and were less than 20 years of age. 37% of multipara pregnant women were severely anaemic . Occurrence of anaemia in pregnancy was found to be inversely proportional to the socioeconomic class. Statistically significant association (P<0.05) were found amongst anaemic pregnant women with their age, parity and socioeconomic class.
KEYWORDS: Rural Health Training Centre, pregnant women, anemia, socioeconomic class, primipara, multipara, rural area.

INTRODUCTION: Anaemia is the most common nutritional deficiency disorder in the world. According to WHO in developing countries the prevalence of Anaemia among pregnant women averages 56% ranging between 35 to 100% among different region of the world[1]. Various studies from different region of India have reported the prevalence of anaemia to be between 33 to 100%[2, 3].

In India, Anaemia contribute directly to 20% material death and indirectly to further 20%[4, 5]. The main causes of Anaemia in the developing countries includes deficiency of iron in-takes and poor absorption, hook worms infestation, infections such as Malaria, blood loss during delivery and heavy menstrual blood loss[6,7].

Iron deficiency & Anaemia during pregnancy are associated with low birth weight babies, premature birth, increased perinatal and neonatal mortality and inadequate iron store in new born. Anaemia increases the risk of maternal morbidity & mortality and adverse maternal outcome such as puerperal sepsis, ante partum haemorrhage and post-partum haemorrhage[8,9,10].

National Nutritional Anaemia prophylaxis programme (NNAPP) was initiated in 1970 during the fourth five year plan with the aim to reduce the prevalence of Anaemia to 25%[11]. Subsequent evaluation has shown no change in the situation. Since 1992 the daily dosage of elemental iron for prophylaxis and therapy has been increased to 100 mg & 200 mg, respectively under Child Survival and Safe Motherhood Programme (CSSM Programme).

ORIGINAL ARTICLE

The present study was carried out to determine the prevalence of the Anaemia in pregnant women and the socio demographic factorsb associated with anaemia in rural areas.

MATERIAL AND METHODS: The present cross sectional study was carried out at Rural Health Training Centre, khera, Rama Medical College Hospital & Research centre Ghaziabad, from October 2012 to June 2013. Total 321 pregnant women with gestational period 12-20 weeks, visiting Antenatal Clinic RHTC were registered for the study, as more Haemodilution occurs after this period. Pregnant women giving history of worms infestation, bleeding disorder, taking iron tablets in last 3 months and had bleeding in last pregnancy were excluded from the study.

The pregnant women were interviewed using pre structured, pretested schedule after taking their consent. Haemoglobin estimation was done by sahli's method. Anaemia was classified as per WHO criteria[12]. Haemoglobin below 11 gm/dl is labeled as anaemia during Pregnancy. Typing of anaemia was done as per standard peripheral smear examination[13]. Socioeconomic status was assessed according to modified B.G. Prasad Classification[14-15]. Severely anaemic pregnant women were referred to Rama Medical College Hospital, Hapur for further management. Data was analyzed by using Chi-Square Test. P-value less than 0.05 were considered significant.

RESULTS: In the present study, 321 pregnant women were studied. The socio-demographic profile of the study population is shown in Table 1. Majority of them (47.35%) were below 20 years of age, 75.70% were Hindus, 47.97% & 39.25% were from joint & Nuclear family respectively and majority were from Class III (29.59%) and class IV (31.77%) socioeconomic class.

As shown in table no. 2, 79.75% subjects were found to have anemia. The prevalence of mild moderate and severe anaemia was observed as 20.56%, 44.21% & 14.98% respectively. Majority of the pregnant women were moderately anaemic (65.75%) below the age of 20 years of age, 17.77% were severely anaemic between 20-24 years age and 7.14% were severely anaemic above the age of 30 years. Mild anaemia was observed between 20-24 years age (26.66%), between 25 to 29 years of age (30.76%) and more than 30 years of the age (28.5%). The observed difference was found statistically significant (x2=35.35 P-value <0.05)

Amongst Primipara pregnant women, 58.38% were moderately anaemic and 24.27% were mildly anaemic . 37% of the Multipara pregnant women were found severely anaemic . Majority of the second Para pregnant women were moderately anaemic (39.58%). Significant difference was found – (x2=32.56 p-value <0.05) as shown in table no. 3.

The proportion of pregnant women suffering from anaemia in class I & II were less (27.77% & 55.55%) as compared to class III-V (85.26%, 90.19%, 92.30%) respectively. Statistically significant difference was found amongst the various social classes and anaemia (x2=261.06, p-value <0.05) as shown in table no. 4.

DISCUSSION: The high prevalence of Anaemia (79.75%) was observed in pregnant women in this study which is similar to earlier studies[2,3.] Majority of them were less than 20 year of age and most of them had moderate anemia. The result was in contrast to the similar study in rural area of Delhi where maximum pregnant women were between 20-24 years of age group[16].

Majority of the primipara pregnant women had moderate Anaemia (58.58%) and most of them were less than 20 years of age which indicate haemoglobin deficient status of the Adolescent

ORIGINAL ARTICLE

Girl's. Majority of the Multipara (37%) were severely anaemic and most of them were from joint family, indicate Nutritional (dietary) deficiency of the pregnant women.

It is obvious in this study that lower the socioeconomic status, higher the prevalence of anaemia in pregnancy and vice versa. Anaemia in pregnant women is inversely related to the socioeconomic status as seen in earlier studies[17.18]

Normocytic hypochromic and Microcytic hypochromic type of Anaemia in pregnancy was predominantly present which is consistent with other studies except for dimorphic blood picture[19]. It indicates deficient iron intake and absorption irrespective of age, type of family & parity.

CONCLUSION: High prevalence of Anaemia in less than 20 years of age between 12-20 weeks of gestation, calls for further studies of Anaemia in adolescent girls.
- Dietary counselling and Nutritional education to all the pregnant women is recommended at Rural Health Centre.
- Early detection of anaemia in pregnancy, effective and affordable management and supplement of iron to all pregnant women should be implemented.

Parameter	Number	Percentage
1. Age in group (yrs.)		
< 20 yrs.	152	47.35
20 – 24 yrs.	90	28.03
25 – 29 yrs.	65	20.24
> 30 yrs.	14	4.36
2. Religion		
Hindu	243	75.70
Muslim	39	12.14
Christian	12	3.73
Other	27	8.41
3. Type of family		
Nuclear	126	39.25
Joint	154	47.97
Extended Family	41	12.77
4. Socio economic class		
Class I	18	5.60
Class II	54	16.82
Class III	95	29.59
Class IV	102	31.77
Class V	52	16.19
Total	321 (n)	100

Table1:Distribution of socio demographic profile of the subjects. (n = 321)

Age	Normal	Mild Anemia	Moderate Anemia	Severe Anemia	Total
< 20 yrs.	11 7.2%	18 11.84%	100 65.75%	23 15.13%	152
20 yrs-24 yrs.	28 31.11%	24 26.66%	22 24.4%	16 17.77%	90
25 yrs-29 yrs.	22 38.84%	20 30.76%	15 23.07%	8 12.30%	65
> 30 yrs.	4 28.57%	4 28.5%	5 35.71%	1 7.14%	14
Total	65 20.24%	66 20.56%	142 44.21%	48 14.98%	321
Table 2: Distribution of Anaemic pregnant women according to their age					

(n = 321)

Table No. 2 shows that 256 subjects (79.75%) were anaemic . Majority of the subjects were of moderate anaemia (44.21%), however 65.75% moderate anaemic pregnant women were below 20 yrs. of age. Severe anaemia was seen in 14.98% and majority of them were between 20-24 yrs. of age (17.77%). The chi-square test revealed significant association. (P <0.05)

Parity	Normal	Mild Anemia	Moderate Anemia	Severe Anemia	Total
1	21 12.13%	42 24.27%	101 58.38%	9 5.25%	173
2	24 50%	3 6.25%	19 39.58%	2 4.16%	48
3 & above	20 20%	21 21%	22 22%	37 37%	100
Total	65	66	142	48	321
Table 3: Distribution of Anaemic pregnant women according to parity					

(n = 321)

Table No. 3 shows that amongst primipara pregnant women, 58.38% were of moderate anemia& 24.27% were mildly anaemic while 37% of multipara were severely anaemic. Second Para were moderatly anaemic (39.58%). Statistically significant difference was observed between different parity in the subject.(P <0.05)

ORIGINAL ARTICLE

Socio-economic status	Anaemia n (%)				Normal	Total
	Mild	Moderate	Sever	Total		
Class I	3 16.66%	2 11.11%	0 0%	5 27.77%	13 72.22%	18
Class II	8 14.81%	15 27.77%	7 12.96%	30 55.55%	24 44.44%	54
Class III	15 15.78%	50 52.63%	16 16.84%	81 85.26%	14 14.75%	95
Class IV	19 18.6%	57 55.88%	16 15.68%	92 90.19%	10 9.20%	102
Class V	21 40.38%	18 34.61%	9 17.30%	48 92.30%	4 3.69%	52
Total	66	142	48	256	65	321

Table 4: Distribution of the Anaemic subject according to theirsocioeconomic class

(n = 321)

Table No. 4 shows that in Class III - V subjects prevalence of anaemia was 85.26%, 90.19% and 92.30% respectively. Class III (52.63%) & Class IV (55.88%) subject were moderately anaemic and Class V (17.30%) subjects were severely anaemic . Significant association was seen in various classes of anaemic subjects. ($P < 0.05$),

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ORIGINAL ARTICLE

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