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Prevelance of Anaemia among Pregnant Woman Residing in a Rural Area: A Cross Sectional Study

Vijayalakshmi V.

Intern, Jawaharlal Nehru Medical College , Belgaum, Karnataka, India.

Padmaja R. Walvekar

Professor, Department of Community Medicine, KLE University's Jawaharlal Nehru Medical College, Belgaum, Karnataka, India.

Mallapur M.D.

Asst Professor in Biostatistics, Department Of Community Medicine, ,KLE University's Jawaharlal Nehru Medical College, Belgaum, Karnataka, India.

Abstract

Background: Around the world 115,000 out of 510,000 maternal deaths and out of 2,464,000 perinatal deaths 591,000 are associated with anaemia. Even though National nutritional anaemia prophylaxis programme was implemented to reduce nutritional anaemia in the year 1970 still anaemia is more common in rural pregnant women.Hence the present cross-sectional study. **Material & Methods:** ***Objectives:*** To know the prevalence of anaemia among pregnant women residing in rural area & the factors associated with anaemia.Study was carried out from May-July 2011 in Primary Health Center, Handignur Belgaum, among 214 pregnant women residing in that area during the study period. With the help of pre designed questionnaire all pregnant women were interviewed & data was collected. **Statistical Analysis:** Chi-square test was used for testing association between anaemia and factors associated with it. **Results:** In the present study prevalence of anaemia was 57.1% and 60.3% of pregnant women were in age group of 18-24 years, 77.8% were illiterates & 88.2% belonged to class V of B.G.Prasad's socio-economic classification. 78.6% women were gravida 4 & above were found to be anaemic. **Conclusion:** Our study showed that prevalence of anaemia was > 50% among pregnant women. Anaemia was positively associated with educational status of pregnant women and their husbands, age at menarche, parity, spacing between children. There was no statistical association between anaemia and the age of pregnant women.

Keywords: Anaemia prevalence; Pregnant women; Rural India.

Introduction

World Health Organization (WHO) has estimated that prevalence of anaemia in pregnant women is 14 % in developed and 51 % in developing countries. Available estimates also suggest that the magnitude of reduction in the prevalence of anaemia during nineties in India was lower than that in neighbouring South East Asian countries.[1] In India anaemia is estimated to contribute to 20 % of all maternal deaths, three times greater premature delivery and nine times higher risk of perinatal mortality.[2]

Among pregnant mothers anaemia can cause increased risk of Post Partum Hemorrhage (PPH), infections, premature rupture of membranes etc...[4] Anaemia in pregnancy may be due to low socioeconomic status, infestation of worms, malaria, faulty dietary habits, quality of antenatal care, parity, frequent births etc...[3]

Because of illiteracy, ignorance, cultural

Corresponding Author : Vijayalakshmi V., 59A–13–28, Old Postal Colony, Patamata, Vijayawada, Andhra Pradesh 520010, India.

E-mail: vihari.vijju@gmail.com

factors &lifestyle, anaemia is more common in pregnant women residing in rural area. Early detection and treatment of anaemia can prevent complications.

Hence the present cross-sectional study was undertaken to know the prevalence of anaemia among pregnant women residing in rural area and also to know the factors associated with it.

Material and Methods

Study Design

Cross-sectional study

Study Setting

Handignur PHC, rural field practice area of J.N. Medical College, Belgaum.

Study Participants

Pregnant women registered during study period.

Study Period

15th May – 15th July -2011

Sample Size

Universal sampling, all 214 pregnant women registered during the study period.

Method of Collection of Data

List of all pregnant women residing in the study area was obtained from the records of Health worker females and ASHA workers These pregnant women were interviewed with the help of pre-designed & pre-tested questionnaire at antenatal clinic or immunization clinic. Pregnant women who failed to attend antenatal and immunization clinic were contacted by making home visits. Informed consent was taken before collecting the data.

Relevant data about socio-demographic factors and obstetric history and antenatal care received was collected. Ante natal records were also used to collect the information regarding number of visits, investigations undergone and also about the number of Iron tablets received.

Haemoglobin estimation was done in pregnant woman who had not yet undergone any investigation or who did not have their Hb estimated within past one month by any authentic laboratory, Sahli's method of haemoglobin estimation was used to find the Hb%.

Statistical Analysis

Percentages and chi-square tests were used to calculate the prevalence and factors associated with anaemia respectively.'p' <0.05 was considered as significant.

Ethical Clearance

It was obtained from JNMC ethical committee.

Results

In our study about 74% of pregnant women had registered in their 1st trimester, about 24 % did not receive IFA tablets & only 30.6% took >100 IFA tablets. All the pregnant women had received injection Tetanus Toxoid 1or 2 doses or one booster dose.

Out of 214 pregnant women, 63.6% of pregnant women consumed iron rich foods and 46.3% of them had occasionally, only 18.4% of pregnant women had a daily intake of iron rich foods.40.2% of pregnant women weighed e"46 kgs & only 2.8% women were below 140 cms of height. 43.4% pregnant women had a BMI of 18.1–23.5, 23% had BMI less than 18.

The prevalence of anaemia among pregnant women who were in their 3rd trimester was 64.5% & 45.6% among those in 2nd trimester. This difference was statistically significant.

Table 1: Distribution of Pregnant Women Based on Socio Demographic Variables

N= 214

Variable	Number	Percentage
Age		
18 – 24	161	75.2%
25 – 30	50	23.3%
>31	3	1.5%
Socio- economic status (Modified B.G. Prasad)		
Class I	4	1.9%
Class II	10	4.7%
Class III	95	44.3%
ClassIV	49	22.9%
Class V	56	26.2%
Literacy status – Pregnant women		
Illiterate	36	16.8%
Primary	99	46.2%
Secondary	60	28.2%
College (PUC &>)	19	8.8%
Literacy status – Husband		
Illiterate	25	11.6%
Primary	55	25.7%
Secondary	105	49.2%
College (PUC &>)	29	13.5%

Table 2: Distribution of Pregnant Women According to Gynaecological and Obstetric History

N= 214

Variable	Number	Percentage
Age at menarche		
10-12 years	55	25.7%
13- 15 years	131	61.2%
16-18 years	28	13.1%
Years of married life		
<1 year	45	21.2%
2-5 years	129	60.2%
6-10 years	28	13.2%
11-15 years	12	5.4%
Parity		
Primi	99	46.3%
Gravida 2	78	16.8%
Gravida 3	23	26.4%
Gravida 4 &>	14	10.5%
Spacing between children		
Primi		
1 year	99	46.3%
2 years	36	16.8%
3 and > years	56	26.4%
	23	10.5%
Period of gestation		
1st trimester	45	21.1%
2nd trimester	112	52.7%
3rd trimester	57	26.2%

Table 3: Distribution of Pregnant Women According to Presence of Anaemia

Anaemia	Number	Percentage
No	92	42.9%
Mild	51	23.8%
Moderate	58	27.2%
Severe	13	6.1%
Total	214	100.0 %

The prevalence of anaemia was low in women who had registered in their first trimester. Statistically significant association was found between time of registration and presence of anaemia.

The prevalence of anaemia showed a downward trend with increase in number of intake of IFA tablets; as anaemia was more i.e. 81% in those who had not received IFA tablets and was 35.4% in those who had taken more than 100 tablets of IFA. This association was statistically significant. 96% of pregnant women who consumed iron rich foods daily were not anaemic, but occasional intake did not help in combating anaemia.The difference was a statistical significant.

The prevalence of anaemia showed a

Table 4: Association between Anaemia & Socio-Demographic Variables

Variables		Total	% of Pregnant women without anaemia	% of Pregnant women with anaemia	χ^2 Square value	p Value
Age	18-24	161	39.7	60.3	7.83	0.095
	25&>	53	52.8	47.2		
Education	Illiterate	36	22.2	77.8	25.39	0.00001
	Primary	99	35.3	64.7		
	Secondary	60	55.0	45.0		
	Puc&>	19	84.2	15.8		
Economic status	Class I	4	100.0	-	30.478	0.000
	Class II	10	70.0	30.0		
	Class III	95	56.8	43.2		
	Class IV	49	34.7	65.3		
	Class V	56	17.8	82.2		

Table 5: Association between Anaemia and Obstetric Variables

Variable		Total	% of Pregnant women without anaemia	% of Pregnant women with anaemia	X^2 Square Value	P Value
Age at menarche	10-12	55	21.8	78.2	17.80	0.000
	13&>	159	50.3	49.7		
Parity	Primi	99	33.4	66.6	18.004	0.0004
	Gravid 2	78	61.5	38.5		
	Gravida3&>	37	29.7	70.3		
Birth spacing in years	Primi (NA)	99	37.3	62.7	35.365	0.000
	<1	36	22.2	77.8		
	2	56	55.3	44.7		
	3&>	23	69.5	30.5		

downward trend with increase in the weight of pregnant women and this difference was statistically significant. 75.5% of pregnant women with BMI of <18 were found to be anaemic whereas 23.1% with BMI more than 23.5 were anaemic.BMI and anaemia showed significant statistical association.

Discussion

Present study was a cross sectional study conducted in Handignur PHC.The overall prevalence of anaemia among pregnant women was found to be 57.1%.

Similar to our study in a study conducted in rural area of Delhi among 114 pregnant women; 56.1% were between 20-24 years of age 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.5 In contrast a study conducted in Vishakapatnam showed that 44% of pregnant women were less than 20 years, 90% were between 15-24 years.

In our study Literacy rate was 89.4%. About 44.5% women belonged to class III B.G. Prasad classification and very few women i.e 1.9% belonged to class I. Similarly in a study in Vishakapatnam literacy rate was found to be 61.7% and 67.6% of pregnant women had an income /annum of 20,000-40000, in 12.3% > 40000.7

In a cross sectional study conducted in rural areas of Vishakapatanam it was found that about 40% of pregnant women had a spacing of 18-35 months and 24.6% women had an interval period of >36 months between pregnancies.7 In our study 26.4% of pregnant women had 24 months of spacing and 10.5% women had an interval period of above 36

months.

In a study conducted in rural areas of Lucknow, 3.2% of pregnant women were in gestational age of d"12 weeks, while 73% of them were between 13- 24 weeks.6 Our study also showed similar findings.

In a study conducted in rural area of Delhi irrespective of their age >95% of pregnant women were anaemic.5 But in contrast our study showed 60.3% of women between 18-24 years were anaemic and 47.1% above 25 years were anaemic, this difference was statistically significant.

In a study conducted in rural areas of Vishakapatanam it was found that 61.7% of illiterate pregnant women were anaemic7.Our study also showed a similar result that is 77.8% of illiterate pregnant women had anaemia and prevalence of anaemia decreased as the educational level improved which was statistically significant.

In a study conducted in rural areas of Vishakapatanam 80.7% pregnant women with annual income of < Rs. 20000 had Hb <11gm%, 62.9% women with income > Rs. 20000 were anaemic.7 In our study the prevalence of anaemia decreased as socio economic status improved which was statistically significant.

Our study showed that a 78% of pregnant women who attained their menarche at the age of 10 – 12 years had anaemia, whereas only 32% of pregnant women who attained menarche at 16–18 had anaemia. In Vishakapatanam study 61% of the primi,s &70.1% of women with 2nd and 3rd pregnancy had anaemia.7Similarly in our study also parity was associated with anaemia ,maximum were among gravida e"4.

Delhi study showed that >90% of pregnant women were anaemic irrespective of birth interval5. In Vishakapatanam study 71.7% of pregnant women who practiced <24months of spacing and 59.5% who had a spacing of >24months had anameia7. In our study lesser the duration of spacing more was anemia which was statistically significant.

Conclusion

Our study showed that prevalence of anaemia was 57.2% among pregnant women. Anaemia was positively associated with educational status of both pregnant women and their husbands, socioeconomic status, spacing between children, number of iron and folic acid tablets consumed and also frequency of consumption of iron rich food. There was no statistical association between anaemia and the age of pregnant women.

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