

Original Research Article

Prevalence of anaemia in pregnant and lactating women in rural Vijayapur

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ABSTRACT

Background: Nutritional anaemia is defined as a condition in which the haemoglobin content of the blood is lower than normal as a result of deficiency of one or more essential nutrients. Anaemia is the late manifestation of deficiency of nutrient(s) needed for haemoglobin synthesis. The prevalence of anaemia in developing countries is estimated to be 43% and that of developed countries is 9%. Anaemia is estimated to contribute to more than 115000 maternal deaths and 591000 prenatal deaths globally per year. The objectives of the present study were to determine the prevalence of anaemia among the pregnant women and lactating mothers and to explore the associated factors with anaemia.

Methods: A cross sectional study was conducted among pregnant and lactating women in Ukkali a rural field practice area Shri B. M. Patil Medical College, Vijayapur. Criteria for inclusion were pregnant women- current pregnancy of more than 6 months and lactating mother with child aged up to 6 months of age. Estimation of haemoglobin was carried by standard Sahlis pipette method. Anaemia was classified according to WHO grading criteria.

Results: The maximum number of pregnant women (85.71%) in the age group of 35-49 years was anaemic followed by those who were in the age group of 20-34 years (61.54%). Prevalence of anaemia was 72 % in women of less than 20 years, whereas it was as high as 80% among lactating women of 35-49 years age group.

Conclusions: Anaemia continues to be a problem with the existing health care resources. Socio-economic status, literacy of women and awareness related to health concerns are the major determinants that contribute to the problem of anaemia.

Keywords: Anaemia, Haemoglobin, Lactation, Pregnancy, Rural, Nutritional anaemia

INTRODUCTION

Nutritional anaemia is defined as a condition in which the haemoglobin content of the blood is lower than normal as a result of deficiency of one or more essential nutrients.¹ Anaemia is the late manifestation of deficiency of nutrient(s) needed for haemoglobin synthesis. Most of the anaemia are due to inadequate supply of nutrients like iron, folic acid and vitamin B12, proteins, amino acids, vitamins A, C, and other vitamins of B-complex group

i.e., niacin and pantothenic acid are also involved in the maintenance of haemoglobin level.²

Anaemia is affecting 1.62 billion people globally. The prevalence of anaemia in developing countries is estimated to be 43% and that of developed countries is 9%. Anaemia is estimated to contribute to more than 115000 maternal deaths and 591000 prenatal deaths globally per year. Anaemia occurs at all stages of the life cycle but its risk is higher in state of pregnancy due to an

increased iron requirement, physiological demand, loss of blood and due to infections.^{3,4}

The National Family Health Survey (NFHS-2) states that 52% of women in India are suffering from anaemia, mainly nutritional. Incidence of anaemia among women is as high as 60% in Assam, Bihar, Orissa and West Bengal. Whereas the prevalence of anaemia is around 54 per cent in Karnataka and only 23 per cent in Kerala.⁵ According to Rapid Household Survey Reproductive Child Health project, the prevalence of anaemia in Kodagu district of Karnataka during 2002 was 61.5 per cent. Among these anaemic pregnant women, 38.5 per cent was mild and 23.1 per cent was moderate.⁶

Despite the existing programs on prevention and control of anaemia, such as Iron and folic acid supplementation and free supply of parenteral iron preparations, reports from multiple large national surveys indicate that there has been no significant decline in the prevalence of anaemia or adverse consequences attributed to it.^{5,7} Often programs and projects aiming to prevent and control anaemia are constrained by the erroneous data regarding socio economic profile of the target group and/or causative factors responsible for the same. So, the main objective of the present study was to understand the health profile and the socio demographic factors of the country's rural pregnant women and to estimate the exact prevalence of anaemia and other associated factors among pregnant women at term based on the level of haemoglobin.

The objectives of the present study were to determine the prevalence of anaemia among the pregnant women and lactating mothers and to explore the associated factors with anaemia.

METHODS

A cross sectional study was conducted among pregnant and lactating women attending primary health centre Ukkali village. It is the field practice area of the Department of Community Medicine, BLDEUS Shri B. M. Patil Medical College. Study was carried out from June to November 2015 over a period of six months. Sample size was calculated by taking prevalence of anaemia as 21.3% sample size is 258 at 95% level of confidence with 5% margin of error.

Criteria for inclusion were pregnant women— current pregnancy of more than 6 months and lactating mother with child aged up to 6 months of age. Venous blood was collected to determine hemoglobin concentration after an informed consent is obtained from the study subjects. The women were interviewed using a pre-structured, pre-tested questionnaire, which was administered in the local language included questions that assessed socio-economic and demographic factors, pregnancy related characteristics, dietary diversity and meal frequency. Data compilation and analysis was done by SPSS package.

RESULTS

Table 1 shows that maximum number of pregnant women (85.71%) in the age group of 35-49 years were anaemic followed by those who were in the age group of 20-34 years (61.54%). Prevalence of anaemia was 72 % in women of less than 20 years, whereas it was as high as 80% among lactating women of 35-49 years age group. The present study revealed that prevalence of anaemia among pregnant women is to be 64.34% and lactating mothers were 65.89%. However this difference was statistically not significant ($p>0.05$).

Table 2 shows that prevalence of anaemia was lowest among those pregnant women who were graduate or above (30%) followed by those who were just literate (75%) and those who were educated up to middle school (76.74%). Among the literate group of lactating women, 93% were anaemic in primary school group followed by high school (63%) and minimum of 25.0% in graduate or above. This difference was statistically significant in both the groups ($p<0.05$).

Table 3 shows that socioeconomic status of the prevalence of anaemia among pregnant women was seen to be about 70.73% of the females each were anaemic in both the middle and lower socioeconomic groups individually. On the differing this prevalence was about 26.67% among pregnant women of upper socioeconomic status. This difference was found to be statistically significant ($p<0.001$). Among the lactating group 70.27% of the females were anaemic in middle socioeconomic group followed by 67.8% in the lower socioeconomic group, whereas only 46.15% of lactating females were anaemic in the upper class. However this difference in the prevalence of anaemia among lactating women was statistically not significant ($p>0.05$).

Table 1: Prevalence of anaemia in women by age.

Age in years	Pregnant women				Lactating mothers				Total			
	Examined		Anaemic		Examined		Anaemic		Examined		Anaemic	
	N	%	N	%	N	%	N	%	N	%	N	%
20	18	13.95	13	72	8	6.20	5	62.5	26	10.07	18	69.23
20-34	104	80.62	64	61.54	116	89.92	76	65.52	220	85.28	140	63.64
35-49	7	5.43	6	85.71	5	3.88	4	80	12	4.65	10	83.33
Total	129	100	83	64.34	129	100	85	65.89	258	100	168	65.12

2=2.06, df=2, $p>0.05$ 2=1.532, df=2, $p>0.05$.

Table 2: Prevalence of anaemia in women by educational status.

Educational status	Pregnant women				Lactating mothers				Total numbers			
	Examined		Anaemic		Examined		Anaemic		Examined		Anaemic	
	N	%	N	%	N	%	N	%	N	%	N	%
Illiterate	45	34.88	28	62.22	33	25.59	24	72.72	78	30.23	52	66.66
Primary	8	6.20	6	75	14	10.85	13	92.85	22	8.53	19	86.36
Middle school	43	33.33	33	76.74	56	43.41	35	62.5	99	38.37	68	68.68
High school	19	14.73	11	57.89	16	12.40	10	63	35	13.56	21	60
Intermediate	4	3.10	2	50	2	1.55	1	50	6	2.33	3	50
Graduate and above	10	7.76	3	30	8	6.20	2	25	18	6.98	5	27.78
Total	129	100	83	64.34	129	100	85	65.89	258	100	168	65.12

2=13.33, df=5, p<0.052=19.99, df=5, p<0.05.

Table 3: Prevalence of anaemia in women by socio-economic status.

Socioeconomic status	Prevalence of anaemia											
	Pregnant women				Lactating mothers				Total numbers			
	Examined		Anaemic		Examined		Anaemic		Examined		Anaemic	
	N	%	N	%	N	%	N	%	N	%	N	%
Upper	15	11.63	4	26.67	13	10.07	6	46.15	28	10.85	10	35.75
Middle	41	31.78	29	70.73	37	28.69	26	70.27	78	30.24	55	70.51
Lower	73	56.59	50	68.49	79	61.24	53	67.08	152	58.91	103	67.76
Total	129	100	83	64.34	129	100	85	65.89	258	100	168	65.12

2=14.14, df=2, p<0.001 2=3.53, df=2, p<0.05.

DISCUSSION

The present study reveals that higher prevalence of anaemia was both in pregnant and lactating mothers as compared to the study done by NFHS-2 survey (49.1%). In spite of the significantly higher haemoglobin levels and lower prevalence of anaemia reported in NFHS-2 survey. The reason for this high prevalence could be varied.⁵

An inverse relation emerged between the prevalence of anaemia and literacy status. This may be due to better knowledge of nutritive value of foods and also better affordability of quantity and quality of food items with increasing literacy. The prevalence observed is similar to that reported for anaemia amongst pregnant and lactating women Singh et al and prevalence of anaemia Arlappa et al.^{8,9}

Screening for anaemia, treatment of anaemic women, and availability of food fortification (wheat flour with iron and folic acid), milk sugar and salt with iron to build long term iron stores remains the key to reduce anaemia. Even cooking in cast iron utensils improves iron content in diet.¹⁰ The anaemia control programme needs to be implemented more efficiently in these states. The interstate differences observed may guide the health planner to alter the strategies for control of anaemia in poor performing states.

CONCLUSION

Anaemia continues to be a problem with the existing health care resources. Socio-economic status, literacy of women and awareness related to health concerns are the major determinants that contribute to the problem of anaemia. Therefore, public health education/information on reproductive health, monitoring the compliance of women with ante-natal care services, and strengthening of their health care seeking behaviour are important health care measures to be undertaken at the community level. Also, it is time for realization that health system should focus on various factors that contribute to the occurrence of anaemia and include them as an important indicator in the national health care policy.

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