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Prevalence of anemia among pregnant women at community area

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Abstract

Anemia continues to be a major public health problem worldwide with the highest prevalence in developing countries. It is found especially among women of reproductive age, young children and during pregnancy and lactation. Anemia affects half a billion women of reproductive age worldwide. In 2011, 29% (496 million) of non-pregnant women and 38% (32.4 million) of pregnant women aged 15-49 years were anemic. Nutritional anemia is a disease syndrome caused by malnutrition in its widest sense. According to WHO, anemia is defined as a condition in which the hemoglobin content of blood is lower than normal as a result of a deficiency of one or more essential nutrients, regardless of the cause such deficiency. The present study aim to assess the prevalence of anemia among pregnant women at community area. This prospective observational study was conducted among 100 pregnant women who were residing in a community area, Eriyamangalam, for a period of 2 weeks. Anemia was classified as per the Indian Council of Medical Research (ICMR) criteria. The diagnosis of anemia was undertaken by peripheral blood smear examination and standard hemoglobin estimation by shale's method. The average age of pregnant women was 23.5 years, ranging between 18 and 40 years. Most of the women belonged to below poverty line families (84.6%) and Hindu religion (98%). Regarding education, 28.9% were illiterates. The mean hemoglobin level was found to be 8.95. Prevalence of anemia was 96.5% among the pregnant females in this region of Eriyamangalam. Out of these 22.47% had mild anemia, 56.30% had moderate anemia, 14.98% had severe anemia and 2.73% very severe anemia according to ICMR classification of anemia. High prevalence of anemia among pregnant women indicates anemia to be a major public health problem in the rural community and indicates strict implementation of National Nutrition Anemia prophylaxis programme. Factors such as socioeconomic status, education, birth interval, and Gravida contribute to this high prevalence.

Keywords: Prevalence, anemia, pregnant women, community population

Introduction

Anemia continues to be a major public health problem worldwide with the highest prevalence in developing countries. It is found especially among women of reproductive age, young children and during pregnancy and lactation. Anemia affects half a billion women of reproductive age worldwide. In 2011, 29% (496 million) of non-pregnant women and 38% (32.4 million) of pregnant women aged 15-49 years were anemic. Nutritional anemia is a disease syndrome caused by malnutrition in its widest sense. According to WHO, anemia is defined as a condition in which the hemoglobin content of blood is lower than normal as a result of a deficiency of one or more essential nutrients, regardless of the cause such deficiency.

Anemia impairs health and well-being in women and increases the risk of maternal and neonatal adverse outcomes. Mild, anemia may not have any effect on pregnancy and labour except that the mother will have low iron stores and may become moderately-to-severely anemic in subsequent pregnancies. Moderate anemia may cause increased weakness, lack of energy, fatigue and poor work performance. Severe anemia, however, is associated with poor outcome. The woman may have palpitations, tachycardia, breathlessness, increased cardiac output leading on to cardiac stress which can cause de-compensation and cardiac failure which may be fatal. Increased incidence of pre-term labour (28.2%), pre-eclampsia (31.2%) and sepsis have been associated with anemia. Adverse perinatal outcome in the form of pre-term and small-for-gestational-age babies and increased perinatal mortality rates have been observed in the neonates of anemic mothers.

Anemia is a major health problem for adults as well as children, affecting 55 percent of women and 24 percent of men.

The prevalence of anemia for ever-married women in the age-group of 15-49 has increased from 52 percent in NFHS-2 to 56 percent in NFHS-3 and thus anemia continues to be a serious problem in India.

The best approach to combat mild anemia among population of a developing country would be through 12 initiation of food fortification, creating more awareness about benefits of dietary diversification like use of iron rich diet, use of fresh fruits and green leafy vegetables. Iron and folic acid tablets supplementation is recommended to combat moderate and severe anemia. Although anemia has been recognized as a public health problem for many years, little progress has been reported and the global prevalence of anemia remains unacceptably high. The prevalence and incidence of anemia among women is high in India especially among urban slum dwellers. This scenario motivated the researchers to conduct study among urban slum women of reproductive age group and to identify the factors influencing anemia and thereby adopting preventive measures to improve the women health. The purpose of the study to assess the prevalence of anemia among pregnant women in community area.

Methods and Materials

This prospective observational study was conducted among 100 pregnant women who were residing in a community area, Eriyamangalam, for a period of 2 weeks. Anemia was classified as per the Indian Council of Medical Research (ICMR) criteria. The diagnosis of anemia was undertaken by peripheral blood smear examination and standard hemoglobin estimation by shale's method. Pregnant women using antenatal care services at the district hospital were taken as the source population. While the study population was women after 37 weeks of gestation who either visited the OPD for routine antenatal check-up or were admitted for delivery. We excluded women who were not term i.e. gestational age of less than 37 completed weeks, non-singleton pregnancies, with defined congenital malformations and maternal diabetes. After institutional ethical clearance, 1769 pregnant women were enrolled in the study after taking written consent from the participants. The data were recorded in a pretested and semi structured questionnaire by the interview technique. The diagnosis of anaemia was estimated by using the standard peripheral blood smear examination and shale's acid haematin method of Haemoglobin estimation. The hemoglobin levels of >11 mg/dL was considered as normal, 10–11 mg/dL as mild, 7–9.9 mg/dL as moderate, > 7mg/dl and as severe anemia as recommended by the Indian Council of Medical Research (ICMR).

Result and Discussion

Section A: Description of the demographic variables of pregnant women

The study presents that most of them 15(50%) were in the age group of 21 – 30 years, 22(73.3%) were Hindus, 16(53.3%) were illiterates, 16(53.3%) were housewives, 15(50%) were single and married respectively, 14(46.7%) had menstrual duration for 4 – 6 days and >7 days respectively, 11(36.7%) used 2 pads / day and 3 pads/day and 12(40%) were underweight.

Chaudhary *et al.* (2003) conducted a study on nutritional status of adolescent girls in rural area of Varanasi. The cross sectional community-based study covering 270 adolescent girls were enrolled for the study in Chicagooan block selected

by simple random sampling. Data was collected through interviews and examination schedules anthropometric measurements of weight, height and mid arm circumference (MAC) recording and hemoglobin estimation. Data were analyzed with the help of the SPSS package. Nutritional status of study subjects was assessed by using various parameters *viz.* weight for age, height for age, weight for height, MAC for age and BMI at different age points were compared with the corresponding reference values.

Section B: Assessment of prevalence of anemia among pregnant women

Table 1: Frequency and percentage distribution of prevalence of anemia among pregnant women. N = 100

Level of Prevalence	Percentage (%)
Mild	22.47%
Moderate	56.30%
Severe	14.98%
Very Severe	2.73%

The above table 2 shows Out of these 22.47% had mild anemia, 56.30% had moderate anemia, 14.98% had severe anemia and 2.73% very severe anemia according to ICMR classification of anemia.

In this study, the prevalence of anemia in pregnant women was 96.5%, as also reported by Kaul *et al.* and Mangal M *et al.* in rural Harayana in their study observed a very high prevalence of anemia i.e 91% and 98% respectively. 6,7 The mean hemoglobin level of pregnant women in this study was found to be 8.95 g%, ranging from 5 to 15 g%, which is similar to that in the study by Mangal M *et al.*

The reasons for high prevalence of anemia in this area are various. The high prevalence of anemia can be attributed to low dietary iron and folic acid intake or deprived bioavailability of iron or chronic blood loss owing to infections. Women in rural areas rarely get to choose when they can marry, or regarding timings and spacing of child birth. Majority of women in our country are vegetarians. Irregular ANC visits by pregnant patients because of Lack of proper means of transport, poor condition of roads and inadequate medical facilities available in rural areas are some of the reasons for high prevalence in this area. In this study, the prevalence of mild, moderate, and severe anemia was observed as 22.47%, 56.3%, and 14.98%, respectively, which is comparable with the studies conducted by Sharma *et al.* in Rajasthan and by Wadgav HV.

Poverty, ignorance, and non-availability or failure to utilise available medical facilities can be contributing to various degree of anemia. Anemia was predominantly seen among pregnant women belonging to BPL families compared with APL families. Similar observation was made in a study conducted by Lokare *et al.* Improvement in health-care delivery system with health education targeting improved utilization of availability of healthcare facilities at the beneficiary door steps will help in reducing anemia prevalence. Hemoglobin level of pregnant women seemed to have a negative correlation with gravid. Gatea *et al.* reported similar observation among pregnant women in Baghdad. Increased requirement of iron with repeated pregnancy had contributed to the decreased hemoglobin levels. Anemia was found to be more in uneducated group in this study. The impact of literacy status on anemia was also studied by Dutta *et al.* and was found to be

significant.12 Present study had certain limitations. Only patients coming to a single medical centre were included in this study. Patients in other parts of the area may be having different prevalence of anaemia and different socio demographic factors contributing to the same.

Table 2: Mean and standard deviation of prevalence of anemia among pregnant women. N = 100

Prevalence of Anemia	Values
Mean	7.17
S.D	3.43
Minimum	1.0
Maximum	14.0

The table 2 depicts that the mean score of prevalence of anemia was 7.17 with standard deviation 3.43. The maximum score was 1.0 and the minimum score was 14.0

Section C: Association of level of prevalence with selected demographic variables

The study depicts that none of the other demographic variables had shown statistically significant association with prevalence of anemia among pregnant women.

Conclusion

A high prevalence of anemia (64%) indicates that the anemia continues to be a major public health problem in rural area. Socioeconomic status, literacy of women, gravida, and birth interval are the major determinants that contribute to the problem of anemia. All practitioners handling obstetrics cases should be motivated for prescribing iron preparations and balanced diet with good compliance.

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