

Prevalence of Anemia in Pregnant Women Visiting Abbasi Shaheed Hospital : a cross Sectional Study

ERUM JAHAN¹, ASMA JABEEN², RAHILA IMTIAZ³, SARWAT KHALID⁴, SHUMAILA JAVAID⁵, MOMNA KHAN⁶

^{1,3}Assistant Professor Gynaecology, Karachi Medical and Dental College Abbasi Shaheed Hospital Karachi, Pakistan.

²Associate professor Gynaecology, Muhammad Medical Collage Mirpurkhas, Pakistan.

⁴Assistant Professor Gynaecology, Karachi Medical and Dental College Abbasi Shaheed Hospital, Pakistan.

⁵Post Graduate Resident Trainee Gynaecology, Sharif Postgraduate Medical Institute/Sharif Medical city Hospital Lahore, Pakistan.

⁶Assistant Professor Gynaecology, Bilawal Medical College Kotri Hospital/Liaquat University of Medical and Health Sciences Jamshoro, Pakistan.

Corresponding author: Erum Jahan, Email: Erummustafa@gmail.com

ABSTRACT

Aim: To determine the prevalence of anemia in rural pregnant patients and its relationship with education and birth spacing.

Study Design: Cross sectional study

Place and duration: This study was conducted at Abbasi Shaheed Hospital Karachi, Pakistan from August 2019 to August 2020

Methodology: Total 450 pregnant ladies visited the OBS/Gyne department at Abbasi Shaheed Hospital Karachi, Pakistan for a check-up, treatment, and follow-u were included. The percentage of hemoglobin was used to determine the diagnosis of anemia. The SPSS program version 21.0 was used to analyze the data. The Chi-Square test was used to look into the association between the variables.

Result: Out of 450 subjects, we found that 291 pregnant ladies were anemic. We found that 64.66 % of the population suffers from anemia. 43.98 % (n=128) of the cases had mild, 30.92 % (n=90) had moderate, and 25.08 % (n=73) had severe anemia. Total 13.74% (n=40) females were under 20 years of age. Women aged 20 to 25 years old made up 52.92 % (n=154). It has been discovered that there is a link between age and the severity of anemia. (P<0.001) (X²=25.68). The degree of anemia in pregnant women is linked to their educational level and the spacing of their births. (P<0.001)

Conclusion: Anemia is common among pregnant women visiting Abbasi Shaheed Hospital Karachi, Pakistan. Low birth spacing and a lack of education are also linked to severity of anemia.

Keywords: Anemia, Pregnancy, Birth Spacing, Pakistan

INTRODUCTION

In developing nations, gestational anemia is the main health concern.[1] Anemia in pregnancy is common in the tropics, with rates ranging from 40 to 80 % in the tropics and 10 to 20 % in the industrialized nation.[2] Anemia is the cause of 50% of maternal mortality worldwide. According to the World Health Organization, anemia is responsible for 20 % of all maternal fatalities in developing nations.[3] Anemia continues to be a significant public health problem, despite the efforts of numerous national programs.[4] Numerous factors lead to anemia in pregnancy, including geographic location, ethnicity, nutritional status, prior iron status, and the use of prenatal iron supplements.[5]

According to the studies, south Asian countries have the highest prevalence of anemia globally. [6, 7] An Indian study reported that 50% of the women were anemic at some instance during their pregnancy, and 40% were anemic during the entire pregnancy. [3] Researchers studied 1000 Indian women and concluded that anemia during the second and third trimesters was connected with preterm labor and low birthweight.[3] Chang and colleagues examined 850 children who were born to mothers who were anemic due to iron insufficiency. Children who did not receive iron supplementation exhibited worse mental development at the ages of 12, 18, and 24 months, indicating that prenatal iron deficiency is connected with mental development in children. [8]

A study performed in Pakistan reported that anemia was prevalent in 75 % of women of Faisalabad. Moreover,

studies have reported that anemia was more common in the third trimester of pregnancy than in the second and first. [9] Other factors, including parity, literacy level, socioeconomic status, and birth gap, also significantly affect the outcome. [10]. Furthermore, recent data show that maternal anemia is more common among females in Sindh than in other Pakistani provinces, reaching dangerous levels.[11] Limited data from Karachi city regarding the prevalence of anemia in pregnant females are available. The study's primary goal is to determine the prevalence of anemia in rural pregnant patients, the association of education and birth spacing with the severity of anemia.

METHODOLOGY

The research was carried out at Abbasi Shaheed Hospital Karachi, Pakistan following approval from the institution's ethical review committee. This prospective cross sectional study was carried out, with 450 patients being included in the research. After giving their informed consent, the information was gathered from the study participants using a pretested data collection form. Pregnant women came to our hospital for check up, treatment, and follow-up were included in the study. Women having anemia as a result of acute blood loss or due to any chronic diseases such as tuberculosis, renal failure, and heart failure were excluded from the study. The diagnosis of anemia was determined based on the hemoglobin % for age. According to the World Health Organization, the severity of anemia was

rated as Mild (Upto 11gm), Moderate (7-9 gm), and severe (< 7 gm). In this study Age, education, and other demographic factors, socioeconomic status, parity, childbearing intervals, and iron supplements were investigated. The researchers looked into the results of both the mother and the child. The information was tabulated in Microsoft Excel 2000, and data were analyzed using the SPSS program version 18.0. The relationship between the variables was investigated using the Chi-Square test.

RESULTS

Total 450 women were accessed. Out of 450 subjects, we found that 291 pregnant women were anemic. The prevalence of anemia is 64.66% of the study population. We evaluated that 43.98% (n=128) cases of mild anemia, 30.92% (n=90) cases of moderate and 25.08% (n=73) cases of severe anemia. Total 13.74% (n=40) females were below 20 years of age. Between, 52.92% (n=154) women were between 20-25 years of age. Only 11.13% (n=33) were above 30 years of age. (As shown in Table 1)

We found mild anemia in 37.5 % (n=15) , moderate in 27.5 % (n=11) and severe in 35% (n=14) females below 20 years of age. In age group 20 -25 years, mild, moderate and severe anemia was found in 35.71% (n=55) , 39.61% (n=61), 24.67% (n=38) respectively. Women between 26 to 30 years reported mild anemia in 67.18% (n=43) , moderate in 18.75% (n=12) and severe anemia in 14.06% (n=9) cases. We analyzed mild, moderate and severe anemia was prevalent among 45.45% (n=15), 18.18% (n=06) and 36.36% (n=12) of the women above 30 years of age. Significant association between age and severity of anemia has been observed. ($\chi^2=25.68$, $P<0.001$). (As shown in Table 1)

Table1: Severity of anemia in different Age groups.

Age (Years)	Mild	Moderate	Severe	X ²	P-Value
Less than 20	15 (11.71%)	11 (12.22)	14 (19.17%)	25.68	0.000255
20-25	55 (42.96%)	61 (67.77%)	38 (52.05%)		
26-30	43 (33.59%)	12 (13.33%)	09 (12.32%)		
More than 30	15 (11.71%)	06 (6.66)	12 (16.43%)		
Total	128 (43.98%)	90 (30.92%)	73 (25.08%)	291	

Table 2: Association of Educational level and Birth Spacing with different levels of anemia

	Mild n=128 n(%)	Moderate n=90 n(%)	Severe n= 73 n(%)	X ²	P-value
Educational Status				31.031	<0.001
Illiterate	17 (13.28)	8 (8.88)	8 (10.95)		
Primary	26 (20.31)	40 (44.44)	18 (24.65)		
Middle	41 (32.03)	28 (31.11)	32 (43.83)		
Highschool	44 (34.37)	14 (15.55)	15 (20.54)		
Birth Spacing				22.04	<0.001
Less than 2 years	87 (67.96)	39 (43.33)	56 (76.71)		
More Than 2 years	41 (32.03)	51 (56.66)	17 (23.28)		

The severity of anemia among pregnant females is directly associated with the education level. We also observed that birth spacing is significantly associated with the severity of the anemia. ($P<0.001$). In 76.71% of the women, severe anemia was found where birth spacing is less than two years reported and those with the birth spacing of more than two years had severe anemia reported in 23.28% of the cases. (As shown in Table 2)

DISCUSSION

It was discovered in this study that anemia is prevalent in 64.66% of the study population. Literacy rate and birth spacing are significantly linked with the severity of anemia. Higher the birth spacing, the less anemic the women are.

A recent study performed in Pakistan reported that 61.3% of the enrolled women were anemic. [12] This study was conducted on married and unmarried women. However, our study was solely on pregnant females. Moreover, Our observation regarding the prevalence of anemia is consistent with different studies performed in Pakistan. [13, 14] According to a survey, 26% of women in urban regions are on the edge of developing maternal anemia, with this figure rising to 47% in rural women while 75% of maternal anemia cases are moderate. [7, 15] Furthermore, various socioeconomic variables such as poverty, incorrect food of pregnant women, lack of information, and lack of birth control all have a role in increasing the prevalence of maternal anemia in Pakistan. [16]

We found that the incidence of anemia rises in lockstep with lower educational attainment. A lack of education was linked to a high prevalence of anemia. These findings are also reported in other studies. [16, 17] anemia was shown to be more frequent in the 20-24-year-old age group. This is in comparison to the findings of an Indian Study. [18]

When it comes to pregnancy, anemia has a significant association with younger age groups, poorer socioeconomic position, parity, birth spacing of less than two years, and inadequate prenatal care are all factors to consider. [6] The findings of the current study have a similar outcome. An increase in the number of antenatal follow-ups might be beneficial. Preventing anemia and its consequences in women at risk of pregnancy a higher level of danger. Both mortality and morbidity are reduced when anemia is managed correctly [19]

Our study has a few limitations. It was a cross-sectional study and utilized to explore anemia's prevalence and risk factors among pregnant women visiting Abbasi Shahid Hospital Karachi, which was one of the study's limitations. We cannot draw causal inferences from the findings since the study design does not clearly indicate the sequence of events. There is a risk of recall bias in the study because most of the replies were based on mother recall.

CONCLUSION

Anemia among pregnant women visiting Abbasi Shahid Hospital Karachi is highly prevalent. Low birth spacing and lack of education are also associated with the severity of anemia

Funding Source: None

Permission: It was taken from the ethical review committee of the institute

Declaration: Nothing to declare

REFERENCES

1. Mahamoud NK, Mwambi B, Oyet C, Segujja F, Webbo F, Okiria JC, et al. Prevalence of anemia and its associated socio-demographic factors among pregnant women attending an antenatal care clinic at kisugu health center iv, makindye division, kampala, uganda. *Journal of blood medicine*. 2020;11:13.
2. Stevens GA, Finucane MM, De-Regil LM, Paciorek CJ, Flaxman SR, Branca F, et al. Global, regional, and national trends in haemoglobin concentration and prevalence of total and severe anaemia in children and pregnant and non-pregnant women for 1995–2011: a systematic analysis of population-representative data. *The Lancet Global Health*. 2013;1(1):e16-e25.
3. Kumar KJ, Asha N, Murthy DS, Sujatha M, Manjunath V. Maternal anemia in various trimesters and its effect on newborn weight and maturity: an observational study. *International journal of preventive medicine*. 2013;4(2):193.
4. Camaschella C. Iron-deficiency anemia. *New England journal of medicine*. 2015;372(19):1832-43.
5. New S, Wirth M. Anaemia, pregnancy, and maternal mortality: the problem with globally standardised haemoglobin cutoffs. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2015;122(2):166-9.
6. Noronha JA, Al Khasawneh E, Seshan V, Ramasubramaniam S, Raman S. Anemia in pregnancy-consequences and challenges: a review of literature. *Journal of South Asian Federation of Obstetrics and Gynecology*. 2012;4(1):64-70.
7. Seshadri S. Prevalence of micronutrient deficiency particularly of iron, zinc and folic acid in pregnant women in South East Asia. *British Journal of Nutrition*. 2001;85(S2):S87-S92.
8. Chang S, Zeng L, Brouwer ID, Kok FJ, Yan H. Effect of iron deficiency anemia in pregnancy on child mental development in rural China. *Pediatrics*. 2013;131(3):e755-e63.
9. Anjum A, Manzoor M, Manzoor N, Shakir HA. Prevalence of anemia during pregnancy in district Faisalabad, Pakistan. *Punjab Univ J Zool*. 2015;30(1):15-20.
10. Khan YP, Bhutta SZ, Munim S, Bhutta ZA. Maternal health and survival in Pakistan: issues and options. *Journal of obstetrics and gynaecology canada*. 2009;31(10):920-9.
11. Jessani S, Saleem S, Hoffman MK, Goudar SS, Derman RJ, Moore JL, et al. Association of haemoglobin levels in the first trimester and at 26–30 weeks with fetal and neonatal outcomes: a secondary analysis of the Global Network for Women's and Children's Health's ASPIRIN Trial. *BJOG: An International Journal of Obstetrics & Gynaecology*. 2021.
12. Ali SA, Abbasi Z, Shahid B, Moin G, Hambidge KM, Krebs NF, et al. Prevalence and determinants of anemia among women of reproductive age in Thatta Pakistan: Findings from a cross-sectional study. *PloS one*. 2020;15(9):e0239320.
13. Ullah I, Zahid M, Khan MI, Shah M. Prevalence of anemia in pregnant women in district Karak, Khyber Pakhtunkhwa, Pakistan. *International Journal of Biosciences*. 2013;3:77-83.
14. Shah T, Khaskheli MS, Ansari S, Lakhan H, Shaikh F, Zardari AA, et al. Gestational Anemia and its effects on neonatal outcome, in the population of Hyderabad, Sindh, Pakistan. *Saudi Journal of Biological Sciences*. 2021.
15. Javed A, Rasheed N, Rafique S, Iqbal M. Alarming frequency and after effects of maternal anemia in Pakistan. *American Scientific Research Journal for Engineering, Technology, and Sciences (ASRJETS)*. 2020;70(1):163-71.
16. Ullah A, Sohaib M, Saeed F, Iqbal S. Prevalence of anemia and associated risk factors among pregnant women in Lahore, Pakistan. *Women & health*. 2019;59(6):660-71.
17. Harding KL, Aguayo VM, Namirembe G, Webb P. Determinants of anemia among women and children in Nepal and Pakistan: An analysis of recent national survey data. *Maternal & child nutrition*. 2018;14:e12478.
18. Gopinath S, Dhananjaya B, Sreelasya K, Krishna C. Prevalence of anemia in pregnancy and its outcome in rural Tertiary Care Centre in India. *Indian Journal of Obstetrics and Gynecology Research*. 2018;5(1):104-8.
19. Allen LH. Anemia and iron deficiency: effects on pregnancy outcome. *The American journal of clinical nutrition*. 2000;71(5):1280S-4S.