Journal of Cardiovascular Disease Research
ISSN: 0975-3583,0976-2833 VOL15, ISSUE 02, 2024

ORIGINAL RESEARCH

To associate the knowledge and prevalence of anaemia among the Antenatal mother

[1]Neelam ladiya, [2]Nisha Tiwari, [3]Tameshwari Rahangdale, [4]Jyoti Gohe

[1]Assistant professor, Department of Child Health nursing, Govt college of nursing NSCB Jabalpur
[2]Assistant professor, Department of Child Health nursing, Govt college of nursing GMC Bhopal
[3]Assistant professor, Department of Obstetrics and gynaecology, Govt. College of Nursing N.S.C.B. Medical College Jabalpur, Jabalpur
[4]Assistant professor, Department of Community Health Nursing, Govt college of nursing GMC Bhopal,

Corresponding author: Jyoti Gohe,
Email id - arpanjyoti.90@gmail.com

Received Date: 28 January 2024 Acceptance Date: 14 February 2024

ABSTRACT
Aim: To associate the knowledge and prevalence of anaemia among the Antenatal mother
Material and methods: 30 antenatal mothers suffering from anemia and admitted in Sultania Hospital Bhopal were included in this study. The purposive sampling technique were used in this study. Purposive sampling – In these types of non probability sampling the research or attempt identify typical cases whatever is being studied. A descriptive research design with non experimental approach was selected as a research design and approach for the study.
Results: 30% antenatal mother obtained Excellent score (>80%) , 70% of antenatal mother got good score (61%-80%) & not a single antenatal mother score below 60% .Mean knowledge score of antenatal mother regarding anaemia was 26 were excellent & 22.6 in good &mean percentage of knowledge score of antenatal mother regarding anaemia was 86.7 in excellent group and 75.3% in good group obtained good score.
Conclusion: we concluded that most of the antenatal mother was 20-25yrs.of age. Most of the antenatal mothers were educated. Most of them belonging from nuclear family. Overall mean, standard deviation and mean score revealed that antenatal mothers were having knowledge regarding anaemia in pregnancy.
Keywords: Knowledge, Anaemia, Antenatal mother

Introduction

Anaemia in pregnancy is an important public health problem worldwide. WHO estimates that more than half of pregnant women in the World have a haemoglobin level indicative of anaemia (<11.0gldl), the prevalence may however be as high as 56 or 61% in developing countries. Women often become anaemic during pregnancy because the demand for iron & other vitamin is increased due to physiological burden of pregnancy.[1] The inabilities to meet the required level of these substances either as a result of dietary deficiencies or infection give rise to anaemia. Anaemia ranges from mild, moderate to severe & the WHO pegs, the haemoglobin level for each of these type of anaemia in pregnancy at 10.0-10.9g\dl (moderate anaemia) &<7g\dl. (Severe anaemia). Prevalence can be as high incidence in developing countries with a high incidence & severity occurring among primigravida living in malaria endemic areas. Studies in Nigeria have shown that malaria is still a major problem among pregnant women. In pregnancy, anaemia has a significant impact on the health of the mother. 20% of maternal deaths in Africa have been attributed to anaemia fetus are at risk of preterm delivery , low birth weights ,morbidity & prenatal mortality due to the impairment of oxygen delivery to placenta & fetus.[2] The management & control of anaemia in the pregnancy is enhanced by the availability of local prevalence. Statistic which is however not adequately provided in Nigeria. Therefore, these studies aim at providing prevalence statistic of anaemia in pregnancy and to assess the effectiveness of antenatal care in preventing anaemia among pregnant women in Abeokuta Nigeria.[3] Anaemia is defined as reduction in circulating haemoglobin mass below the critical level on normal haemoglobin concentration in the body is between 12-14 gm% therefore any Hb level below 11 gm% in pregnancy should be considered as anemia. However in India and most of the other developing countries the lower limit is often accepted as 10 gm%. Who has accepted up to 11gm% as the normal pregnancy level in the pregnancy.[4] Iron deficiency anaemia is the most common form of nutritional anaemia. Iron deficiency anaemia occur when insufficient quantity of iron is only available for bodies

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 02, 2024

requirements. Anaemia is a serious health problem in public affixing mainly the vulnerable population all over the worlds was estimated that 2000 million people all over the worlds is suffering with anaemia.[5,6] All most 90% cases are from developing countries and directly responsible for 20% of death and indirectly for another 20%. According to Indian health statistics 1993-2003 prevalence of anaemia in pregnant women was 87.5%. India has an unacceptable mortality rate of 540 per 1,00,000 live birth and has been estimated that about 16% of the maternal death are due to anaemia. In developed countries it is estimated that approximately 2% are women are anaemic. In developing world this figure may be as high as 50% and this contribute to the high rate of maternal mortality.[7,8]

Material and methods

30 antenatal mothers suffering from anemia and admitted in Sultania Hospital Bhopal were included in this study. The purposive sampling technique were used in this study. Purposive sampling – In these types of non probability sampling the research or attempt identify typical cases whatever is being studied. A descriptive research design with non experimental approach was selected as a research design & approach for the study.

INCLUSION CRITERIA

Antenatal mother between the age group of 23 – 30 Years
Patients available during the period of data collection
Patients were willing to participate in the study.
Antenatal mother who are suffering from anaemia.

EXCLUSION CRITERIA

The mothers who are not suffering from anaemia.
The antenatal mothers who are not admitted in Sultania Hospital Bhopal.
Mothers who are not willing to participate in the study.

Methodology

The tools of the study are closed ended questionnaire is prepared to assess the knowledge of antenatal mothers regarding prevention of anemia. The tools consist of two sections that are Section A and section B. SECTION – A:It consists of demographic characteristics of antenatal mothers such as age, education, type of family, income, residence, source of information regarding prevention of anemia. SECTION – B:It consists of knowledge items regarding prevention of anemia among antenatal mother.
In each item, the corrected responses carry the score one and wrong response carries zero score.

Table: 1 Score

GRADE	SCORE	SCORE%
Very Poor	0-6	0-20
Poor	7-12	21-40
Average	13-18	41-60
Good	19-24	61-80
EXCELLET	25-30	81-100

Prior to collection of the data, permission was obtained from medical superintendent of Sultania Janana Hospital Bhopal. The investigator was present personally and explains the knowledge and prevalence of anemia to antenatal mothers. Data was collected by asking questions to the samples and recorded in the questionnaires by the investigator.

Data Analysis

The collected data was organized, tabulated and analyzed by using descriptive statistics, that is frequency, percentage and mean to assess the existing knowledge.chi square test were used to assess the association of demographic variables which categories at knowledge. Data was presented in the form of tables and figures. Data analysis was done by SPSS 25.0 version.

Results

Table 1. Frequency and percentage distribution of sample characteristics of antenatal mothers

VARIABLES	DIVISION	NO. OF SAMPLE	PERCENTAGE

			(%)
Religion	Hindu Muslim Sikh Christian	22 08 - -	73.4 % 26.7 %
Education	Educated Uneducated	20 10	66.7 % 33.4 %
Age	20-25yrs. 25-30yrs.	23 07	76.7 % 23.4 %
Family income	2000-4000Rs. 3000-6000Rs. 6000-8000Rs. Above 8000Rs.	09 06 09 06	30 % 20 % 30 % 20 %
Type of family	Nuclear family Joint family	17 13	56.7 % 43.4 %

TABLE-1 depicts that maximum antenatal mothers, i.e.(73.4%) were Hindu & (26.7%) were Muslims under this religion . Regarding educational status, maximum (66.7%) were educated & (33.4%) were uneducated. According to age group maximum number i.e. 20-25 year were (76.7%) & (23.4%) belongs to the age group of 25-30 years. As per the monthly income is concern, (30%) at respondents belongs to 2000-4000Rs. income group , (20%) were from 3000-6000Rs income group,(30%)were from 6000-8000Rs.group while only (20%) of respondents belongs to above 8000Rs. group. According to type of family (56.7%) of subjects belongs to Nuclear family & (43.4%) belongs to joint family. Hence it can be concluded that maximum antenatal mother were from Hindu religion with the qualification of secondary education & belongs to nuclear family. Majority of antenatal mothers were having monthly family income 2000-4000& 6000-8000 Rs with the age group of 20-25 years.

Table -2 Frequency and percentage distribution of level of knowledge of antenatal mother regarding anaemia.

LEVEL OF KNOWLEDGE	FREQUENCY	PERCENTAGE	MEAN	MEAN%	SD
EXCELLENT (25-30)	9	30%	26	86.666	1.111
GOOD (19-24)	21	70%	22.523	75.33	0.271
AVERAGE (13-18)					
POOR (7-12)					
VERYPOOR (0-6)					

Table -2 Shows frequency & percentage distribution regarding the level of knowledge of anaemia among the antenatal mother, 30% antenatal mother obtained Excellent score (>80%) , 70% of antenatal mother got good score (61%-80%) & not a single antenatal mother score below 60% .Mean knowledge score of antenatal mother regarding anaemia was 26 were excellent & 22.6 in good &mean percentage of knowledge score of antenatal mother regarding anaemia was 86.7 in excellent group and 75.3% in good group obtained good score.

TABLE-3 Prevalence of Anemia

TOTAL SAMPLE	**ANAEMIA**		**PERCENTAGE**	
	PRESENT	ABSENT	ANAEMIC	NORMAL
30	26	4	86.66%	13.66%

Table 3 Depicts that 86.66 maximum score of anaemic antenatal mother & The difference in mean knowledge score was tested & found statically – non significant at 0.05 level (P-value). Hence it can be concluded that large number of antenatal mother being affected from anaemia.

Table :4 The knowledge score of anaemia among the antenatal mother on religion bases .

RELIGION	EXCELLENT	GOOD	AVERAGE	POOR	VERY POOR	TOTAL	P value
HINDU	05	16	0	0	0	21	0.6029
MUSLIM	04	05	0	0	0	9	
SIKH							
CHRISTIAN							

TABLE: 4 Depicts that the highest knowledge score & percentage 24.3(81.11%) of antenatal mother were Religion of Muslim, followed by mean knowledge score percentage 23.238 (77.46%) of antenatal mother were hindu. The difference in the mean knowledge score of antenatal mother according to religion was tested & found statistically non significant at 0.05 level (P value=0.6029). Hence, it can be concluded that the Muslim antenatal mother increase, their knowledge in compaism to Hindu Antenatal mother.

TABLE :5. The knowledge score of anemia among the antenatal mother according to education.

EDUCATIONAL STATUS	EXCELLENT	GOOD	AVERAGE	POOR	VERY POOR	TOTAL	CHI. SQUARE	P value
EDUCATED	7	13				20	0.712	0.6029
UNEDUCATED	2	8				10		

TABLE :5. Depicts that mean knowledge score of antenatal mother was highest 23.35 (79.83%) among educated, followed by mean knowledge score 23 (76.66%) of those who were uneducated. The difference in the mean knowledge score of antenatal mother according to education was tested & found statistically non significant at 0.05 level (P value=0.6029). So, it can be concluded that pregnant women with educational status were good having more knowledge as compared to other may be because their source of information is health team workers.

TABLE :6. The knowledge score of anemia among the antenatal mothers according to age.

AGE	EXCELLENT	GOOD	AVERAGE	POOR	VERYPOOR	TOTAL	CHI.SQUARE	DF	P VALUE
20-25yrs.	5	81	0	0	0	23	3.202	1	0.6029
25-30yrs.	4	3	0	0	0	7			

TABLE: 6. Depicts that mean knowledge score & percentage 25.142 (83.806%) of antenatal mother were age group of 25-30 year, followed by mean knowledge score percentage 23.086 (76.933%) of antenatal mother in age group of 20-25 Year. The difference in the mean knowledge score of antenatal mother according to Age group was tested & found statistically non significant at 0.05 level (P value=0.6029). Hence it can be concluded that as age of antenatal mother increases , their knowledge also increases may be because of their experience. But stastically age has no impact on knowledge of antenatal mother.

TABLE :7. The knowledge score of anemia among the antenatal mothers according to family income.

FAMILY INCOME	EXCELLENT	GOOD	AVERAGE	POOR	VERY POOR	TOTAL	CHI. SQUARE	DF	P-VALUE
2000-4000	3	6				9	10.146	3	0.5415
3000-6000	2	4				6			
6000-8000	3	6				9			
ABOVE 8000	1	5				6			

TABLE 7. Depict that highest mean knowledge score that is 24.5 (81.666%) was found in antenatal mother who beyond to 3000-6000Rs. Income group followed by mean knowledge score 23.45 (78.15%) of 200-4000 &

ISSN: 0975-3583,0976-2833 VOL15, ISSUE 02, 2024

6000-8000Rs income group, the lowest mean knowledge score is 23 (76.67%) was found in antenatal mother who belongs to above 8000Rs income group. The difference in the mean knowledge score of antenatal mother according to Monthly family income was tested & found statistically non significant at 0.05 level (P value=0.5415). So it can be concluded that mean knowledge score that if family income is more than the knowledge also improve but statistically family income has impact on knowledge of antenatal mother.

TABLE 8. The knowledge score of anaemia among the antenatal mother according to type of family.

FAMILY TYPE	EXCELLENT	GOOD	AVERAGE	POOR	VERY POOR	TOTAL	CHI SQUARE	DF	P VALUE
NUCLEAR FAMILY	5	12				17	14.025	1	0.6029
JOINT FAMILY	4	9				13			

Table 8. Shows that maximum mean knowledge score & percentage 23.65 (78.83%) was found in antenatal mother who belong to nuclear family followed by the mean knowledge score & percentage 23.47(78.21%) of antenatal mother who belongs to joint family. The difference in the mean knowledge score of antenatal mother according to Family type was tested & found statistically non significant at 0.05 level (P value=0.6029).Therefore, it can be inferred that mean knowledge score maximum in antenatal mother belongs to nuclear family & lowest belonging to joint family.

Table 9. Comparative mean percentage According to area and total knowledge score of antenatal mother regarding anaemia.

FACTORS	MAXIMUM SCORE	MEAN	SD	MEAN%
Introduction & Definition	4	3.035	0.961	11.166
Risk factors	5	3.758	0.576	12.526
Etiology	4	3.233	0.858	10.77
Symptoms	4	3.2	0.924	10.666
Prevention	6	4.866	0.776	16.22
Treatment	4	3.066	0.827	10.22

Table 9. Depicts the mean & mean percentage of knowledge score of antenatal mother regarding anemia & area of anemia in accordance with that. The mean percentage of knowledge score varied from 8.448 to 16.22% in different divisions of anemia. The mean & mean percentage of knowledge score of antenatal mother regarding prevention was maximum 4.866(16.22%). Hence, on the basis of knowledge score of Antenatal mother regarding anemia, deficit area regarding anemia have been identified that is most of Antenatal mother were having knowledge prevention & control of anemia but found less knowledge regarding its introduction & definition & causes followed by knowledge & least knowledge of its complication.

Discussion

Anaemia is a prevalent haematological condition that accounts for 40-60% of maternal mortality in underdeveloped nations. Underdeveloped nations have a notable prevalence of adverse outcomes, including maternal illness and death, as well as perinatal mortality. Pregnant women are susceptible to developing anaemia. This is due to their heightened demand for more attention towards the prevention of anaemia compared to the general population. Nevertheless, the likelihood of increased risk is seen when women are pregnant with several foetuses, have closely spaced pregnancies, exhibit excessive vomiting due to morning sickness, or are adolescents. A considerable number of women start pregnancy with a mild degree of anaemia. During pregnancy, the presence of moderate anaemia has the potential to escalate into a more serious condition at a fast pace, necessitating prompt intervention and treatment. Iron deficiency anaemia is a prevalent medical problem that often occurs during pregnancy. This is mostly attributed to the growth of plasma volume without a corresponding increase in maternal haemoglobin mass. A significant contributing factor to nutritional issues is the deficiency of understanding pertaining to nutrition, leading to poor practises in this domain. Consequently, these practises may give rise to difficulties such as malnutrition and non-communicable illnesses. Iron deficiency anaemia has a global prevalence that exceeds two billion individuals. According to the World Health Organisation, around 58% of pregnant women residing in underdeveloped nations are affected with anaemia. Nevertheless, possessing awareness about the prevention of anaemia and adhering to appropriate practises may

effectively avert the occurrence of anaemia during pregnancy [9-11].This study show that the maximum antenatal mothers, i.e.(73.4%) were Hindu & (26.7%) were Muslims under this religion . Regarding educational status, maximum (66.7%) were educated & (33.4%) were uneducated. According to age group maximum number i.e. 20-25 year were (76.7%) & (23.4%) belongs to the age group of 25-30 years. As per the monthly income is concern, (30%) at respondents belongs to 2000-4000Rs. income group , (20%) were from 3000-6000Rs income group,(30%)were from 6000-8000Rs.group while only (20%) of respondents belongs to above 8000Rs. group. According to type of family (56.7%) of subjects belongs to Nuclear family & (43.4%) belongs to joint family. Hence it can be concluded that maximum antenatal mother were from Hindu religion with the qualification of secondary education & belongs to nuclear family. Majority of antenatal mothers were having monthly family income 2000-4000& 6000-8000 Rs with the age group of 20-25 years. Similar demographic profile were also found in others studies.[11,12]In this study we found that the 30% antenatal mother obtained Excellent score (>80%) , 70% of antenatal mother got good score (61%-80%) & not a single antenatal mother score below 60% .Mean knowledge score of antenatal mother regarding anaemia was 26 were excellent & 22.6 in good &mean percentage of knowledge score of antenatal mother regarding anaemia was 86.7 in excellent group and 75.3% in good group obtained good score. This study showed slight improvement than study previously conducted in teaching hospital of Kathmandu which revealed only 48.7% of mothers have adequate knowledge and 34% of study participants have good practiced regarding prevention of anemia during pregnancy. This slight difference might be due to study period and place differences [13]. In their study, Berhanu et al discovered a significant association between participants' knowledge about preventing anaemia during pregnancy and their practise of anaemia prevention. The calculated p-value was 0.000, indicating a strong statistical significance. The adjusted odds ratio (AOR) was 4.931 (95% confidence interval: 2.801, 8.678), suggesting that having good knowledge about preventing anaemia during pregnancy was associated with a nearly five-fold increase in the likelihood of pr In a study conducted by [13], it was observed that there is a significant association between the participants' awareness of anaemia prevention during pregnancy and their adherence to preventive practises. The p-value of 0.000 indicates a strong statistical significance, and the adjusted odds ratio (AOR) of 4.311 (95% confidence interval: 2.376, 7.822) suggests a substantial effect size. Ghimire et al. discovered similar findings regarding the relationship between knowledge, attitude, and practise of pregnant women and anaemia in India. Their study revealed that a lower level of knowledge about anaemia among pregnant women was associated with a fivefold increase in the risk of anaemia. Additionally, poor practises related to the prevention of anaemia among pregnant women were found to be associated with a six fold increase in the risk of anaemia [14].

Conclusion

we concluded that most of the antenatal mother were 20-25yrs.of age. Most of the antenatal mothers were educated. Most of them belonging from nuclear family. Overall mean, standard deviation and mean score revealed that antenatal mothers were having knowledge regarding anaemia in pregnancy.

References

1. Frayne J, Pinchon D. Anaemia in pregnancy. Aust J Gen Pract. 2019;48(3):125-9. doi: 10.31128/AJGP-08-18-4664, PMID 31256475.
2. Adam I, Ibrahim Y, Elhardello O. Prevalence, types and determinants of anemia among pregnant women in Sudan: a systematic review and meta-analysis. BMC Hematol. 2018;18(1):31. doi: 10.1186/s12878-018-0124-1, PMID 30455961.
3. Kimiywe J, Ahoya B, Kavle J, Nyaku A. Barriers to maternal Iron_Folic acid supplementation & compliance in Kisumu and Migori. Kenya: United States Agency for International Development Maternal and Child Survival Program; 2017.
4. Acheampong K, Appiah S, Baffour-Awuah D, Arhin YS. Prevalence of anemia among pregnant women attending antenatal clinic of a selected hospital in Accra, Ghana. Int J Health Sci Res. 2018;8(1):186-93.
5. Mbule MA, Byaruhanga YB, Kabahenda M, Lubowa A. Determinants of anaemia among pregnant women in rural Uganda. Rural Remote Health. 2013;13(2):2259. doi: 10.22605/RRH2259, PMID 23679828.
6. Appiah PK, Nkuah D, Bonchel DA. Knowledge of and adherence to anaemia prevention strategies among pregnant women attending antenatal care facilities in Juaboso district in Western-north region, Ghana. J Pregnancy. 2020;2020:2139892. doi: 10.1155/2020/2139892, PMID 32802508.
7. Margwe JA, Lupindu AM. Knowledge and attitude of pregnant women in rural Tanzania on prevention of anaemia. Afr J Reprod Health. 2018;22(3):71-9. doi: 10.29063/ajrh2018/v22i3.8, PMID 30381934.
8. Ademuyiwa IY, Ayamolowo SJ, Oginni MO, Akinbode MO. Awareness and prevention of anemia among pregnant women attending antenatal clinic at a university teaching hospital in Nigeria. Calabar J Health Sci. 2020;4(1):20-6. doi: 10.25259/CJHS_22_2020.
9. Balasubramanian T, Aravazhi M, Sampath SD. Awareness of anemia among pregnant women and impact of demographic factors on their hemoglobin status. Int J Scient Study. 2016;3(12):303-5.
10. Sivapriya S, Parida L. A study to assess the knowledge and practices regarding the prevention of anemia among antenatal women attending a tertiary-level hospital in Pune. IJSR Net. 2015;4(3):1210-4.
11. Al-Sattam Z, Hassan S, Majeed B, Al-Attar Z. Knowledge about anemia in pregnancy among females attending

primary health care centers in Baghdad. Open Access Maced J Med Sci. 2022;10(B):785-92. doi: 10.3889/oamjms.2022.8506.

12. Rizwan AAM, Hasan F, Huda MS, Talukder N, Siddique RAH, Anwar A, et al. Knowledge and attitude on anemia among the women attending a government tertiary level hospital at cox's Bazar, Bangladesh. World J Pharm Res. 2021;10(12):84-94.
13. Berhanu K, gopal J, Demisie DB. Assessment of knowledge and practice towards prevention of anemia among pregnant women attending antenatal care at Government Hospitals in west Shoa Zone, Ethiopia. Journal of Health, Medicine and Nursing. An international peer-reviewed journal Vol. 50, 2018.
14. Ghimire N, Pandey N. Knowledge and practice of mothers regarding the prevention of anemia during pregnancy in teaching hospital, Kathmandu. J Chitwan Med Coll. 2013;3(3):14-7. doi: 10.3126/jcmc.v3i3.8631.