A Descriptive Cross Sectional Study on Assessment of Haemoglobin Level and Factors Associated with Anemia During Pregnancy among Pregnant women attending OBG Unit of SNMC HSK Hospital and Research Centre Bagalkot, Karnataka

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Abstract

Background of the Study: Anemia in pregnancy is the public health problem which prime cause of maternal death in the world and also in India.

Objectives of the Study: To assess the hemoglobin level and find the factors associated with the anemia during pregnancy.

Materials and Methods: A descriptive cross sectional study was conducted at OBG Unit of SNMC, HSK Hospital and research center, Bagalkot, Karnataka. The data was collected by using interview schedule with structure questionnaire and hemoglobin values were taken from medical records and ANC Card of the pregnant women from 21/11/2019 to 30/01/2020 for this study.

Results: A sample of 100 (47 anemic and 53 nonanemic) were included in the study. Findings show that the family type, vaginal bleeding during pregnancy, miscarriage, infertility and malaria was significantly associated with anemia during pregnancy among pregnant women.

Conclusion: The researcher found that concentrating on above associated factors with anemia among pregnant women, which helps to overcome with this problem and more research study is needed with large scale sampling and aware the importance of regular maternal care which are the potential to play a more significant role in the health care.

***Key words**: Hemoglobin, pregnant women, associated factors, anemia.*

Introduction

A healthy woman makes a happy family and builds happy nation. Woman will be having so much of problems during her life cycle. Pregnancy is one of the wonderful and noble services imposed by nature on women. Most of the women may not have many problems during pregnancy, but some are not lucky, faces various problems related to pregnancy and child birth. Anemia in pregnancy is the prime cause of maternal death in the world and also in India. World Health Organization (WHO) estimates 529,000 maternal deaths globally each year. A majority of maternal deaths occur in Asia (253,000) and Africa (251,000). India has the dubious distinction of having the highest estimated number of

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maternal deaths in any country (136,000)[1].

One of the study done in Kolar district, Karnataka explains that Anemia is one of the most common nutritional deficiency disorder. Affecting the pregnant women; the prevalence in developing countries 51% and in India it varies from 65%-75%. The pregnant women were examined[2].

A cross sectional study carried in Belagavi in Feb-July 2016 amongst 400 pregnant women residing in PHC Handiganur. Study tells that prevalence of Anemia among pregnant woman was found to be 72-75%[3].

According to WHO Anemia in pregnancy is defined as a haemoglobin concentration of less than 11gm/dl in venous blood.[4] The risk factors of anaemia are dietary habits, faulty absorption mechanism and iron loss, excessive blood loss during menstruation, hook – worm infestation, chronic malaria, and chronic blood loss due to bleeding piles. The other factors are increased demand of iron, diminished intake of iron, socio – economic factors, loss of appetite, excessive vomiting in pregnancy, disturbed metabolism, abnormal demands like multiple pregnancy, teenage pregnancies, maternal illiteracy, malnutrition, unemployment, primigravida and multigravida[5].

Global Data epidemiologists obtained data from studies that collected blood samples from the general populations and tested them for hemoglobin levels. Anemia is defined as having a hemoglobin levels below the thresholds set for specific age groups by the WHO. The figure below presents the total prevalence of anemia in the 16MM. India has the highest total prevalence of anemia at 39.86%, while Canada has the lowest at 3%. The US and 5EU (France, Germany, Italy, Spain, and the UK) have total prevalence levels ranging between 5.6–10.74%, making the disease a common occurrence in these markets[6].

Objectives:

1. To assess the hemoglobin level of pregnant women.

2. To assess the factors associated with anemia during pregnancy among pregnant women.

3. To determine the association between extraneous variables and factors associated with anemia among pregnant women.

Hypotheses:

1. **H_1:** There is a significant association between associated factors and level of hemoglobin among pregnant women.

2. **H_2:** There is a significant association between hemoglobin and factors causing Anemia among pregnant women.

Source of Data: Pregnant women from OBG unit of SNMC HSK Hospital Research Centre, Bagalkot.

Research Design: Descriptive cross sectional design was used for this study.

Setting: OBG unit of SNMC HSK Hospital Research Centre, Bagalkot.

Sample: Pregnant women.

Criteria For Selection of Sample:

Inclusive criteria

· Pregnant women who are available at the time of data collection, willing to participate, who know Kannada / English language.

Exclusive criteria

· Pregnant women who are sick and cannot provide data.

Sampling Technique: Convenient sampling technique was used

Sample size: samples Includes 100 pregnant women.

Sample Size Estimation:

The Level of confidence was 95% (a=5%) and za=1.96

The power of test was considered 80%.

The sample size was estimated by statistician was

Considering the attritions of data researcher enrolled 100 subjects.

Method of data collection: Interview schedule was used.

Tools for data collection:

1. Hemoglobin values were taken from the antenatal records of women and structured interview schedule was used to collect data.

Data collection procedure:

Phase I: Formal permission was taken from the principal, BVVS Sajjalashree Institute of Nursing Science Bagalkot, Principal and Dean of S NIjalingappa Medical College, HSK hospital and research centre, Bagalkot to collect the data.

Phase II: Pregnant women were selected on the based on set of inclusion and exclusion criteria and eligible subjects were included in the study.

Phase III: Written informed taken from the subjects.

Phase IV: Modified Tool was administered to the pregnant women by structured interview schedule to assess the factors associated with anemia during pregnancy.

Data management and statistical analysis:

Ø Collected data was managed with MS Excel – 2007 and summarized by descriptive statistics like frequency, percentage, mean, SD. Statistical analysis was done by using SPSS Version 25.

Reuslts

Description of laboratory results

1. Anemic : <10.9gm/dl

2. Non anemic: >10.9 and above

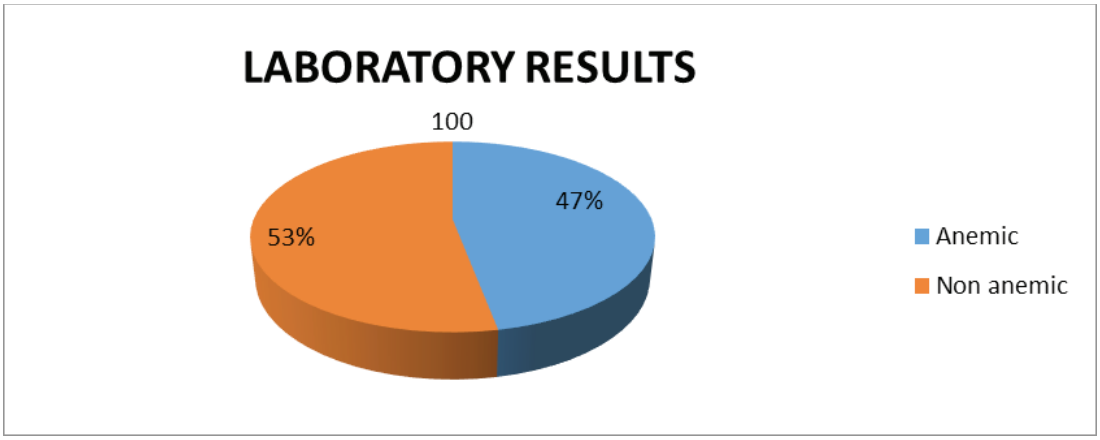

Fig 1: Pie chart showing percentage wise distribution of subjects according to laboratory result of the pregnant women.

Fig 1: Illustrate the percentage wise distribution of samples according to the laboratory results of pregnant women. 47% of pregnant women were anemic and 53% of pregnant women were non anemic in the laboratory results of the present study.

Table No 1. Association between obstetrical factors and anemic status of pregnant women:

N=47+53=100

S. No	Variable	DF	Chi- value	Table value	Remark
1.	Antenatal registration	1	0	3.84	NS
2.	Gravida	3	2.372	7.81	NS
3.	Birth spacing	2	1.81	5.99	NS
4.	Contraceptive use	2	0.0728	3.84	NS

Cont... **Table No 1. Association between obstetrical factors and anemic status of pregnant women:**

5.	Vaginal Bleeding	1	3.96	3.84	Significant
6.	M.C .duration	3	7.023	7.81	NS
7.	Pad changed/day	1	1.47	5.99	NS
8.	H\O Miscarriage	1	5.523	3.84	Significant
9.	Multiple pregnancy	1	0.0036	3.84	NS
10.	H\O Infertility	1	96.028	3.84	Significant
11.	TT injection	1	0.4301	3.84	NS
12.	Gestational age	2	0.3815	5.99	NS

Chi- square was calculated to find out the association between obstetrical factors and anemic status of pregnant women where the Chi- square calculated value is less than table value for **antenatal registration, gravida, birth spacing, contraceptive use, menstrual cycle duration, no of saturated pads changed per day, history of multiple pregnancy, TT injection received and gestational age in weeks** so there is no significant association found between above characteristics. (Table No 4)

Vaginal bleeding during pregnancy: Calculated value is 3.96 (T. value 3.84) more than the table value which shows that there is significant association between Vaginal bleeding during pregnancy with anemic status of pregnant women.

History of miscarriage: Calculated value is 5.523 (T. value 3.84) more than the table value which shows that there is significant association between history of miscarriage with anemic status of pregnant women.

History of infertility: Calculated value is 96.028 (T. value 3.84) more than the table value which shows that there is significant association between history of infertility with anemic status of pregnant women.

Table No: 2. Association between medical factors and anemic status of subjects.

N=47+53=100

SI.No	Variable	DF	Chi- value	Table value	Remark
1.	Previous Medical Illness	1	0.8323	3.84	NS
2.	Malaria during pregnancy	1	3.9066	3.84	Significant
3.	HIV	1	0	3.84	NS
4.	HBSAG	1	0	3.84	NS

Chi- square was calculated to find out the association between medical factors and anemic status of pregnant women where the Chi- square calculated value is less than table value for **Previous Medical Illness, HIV and HBSAG,** so there is no significant association found between above characteristics. (Table no 5)

Malaria during pregnancy:

Calculated value is 3.9066 (T. value 3.84) more than the table value which shows that there is significant

association between malaria during pregnancy with anemic status of pregnant women.

Discussion

The present cross sectional study was conducted with the aim of assessing the hemoglobin level and factors associated with anemia among pregnant women. Study includes 100 subjects, selected by using convenient sampling technique.

Findings of the present study on assessment of hemoglobin values were found that 47% were anemic where similar study was conducted by **Peter Anlaakuu & Francis Anto** in their results (40.8%) were anemic; it was almost similar to the result of our study (47%).

In this study Socio-demographic all the factors did not significant associated with anemia accept type of family the (chi-square value 4.52) it is more than the (table value3.84), which shows there is significant association between type of family with anemia of pregnant women. Our study reports are supported with the similar study conducted by **Adumu Kenea** their values are (AOR=2.97, 95%), CI (1.69, 5.27).

In vaginal bleeding during pregnancy the present study findings were 4 (8.51%) where our study reports are similar to the study conducted **by Fikir Asri** their results were 7 (3.4%).

In the present study **history of miscarriage** the calculated value (chi value-5.523, T value -3.84) during pregnancy were found to be significantly associate with anemia during pregnancy. Our study results are supported with study conducted by **Angsom, Gebrewad and Aster Tesegaya** shown that miscarriage is associated with anemia during pregnancy.

In this study **history of Infertility,** the calculated chi square value 96.028 (Table value 3.84). Our study results are supported with study conducted by **Efrem Negash,** shows that infertility is associated with anemia during pregnancy.

In the present study, Malaria during pregnancy the calculated values (chi value3.966) our study reports are similar to a study conducted by **Peter Anleekuu** and **Francis Anto** in the year 2017 their results (19.6%) of had Malarial infection during the current pregnancy.

Conclusion:

Anemia is a major public health problem affecting the both developed as well as the developing countries. It can be driven by a certain awareness programme from the government and non government agencies, targeting risk factors is essential in decreasing anemia during pregnancy especially focusing on vaginal bleeding in pregnancy, joint family, infertility, miscarriage, and malaria.

Limitations of the study: The study was confined only to exploration of factors associated with anemia during pregnancy among pregnant women attending OBG unit of SNMC HSK hospital and research centre, Bagalkot.

Ethical Clearance: Formal permission was taken from the principal BVVS Sajjalashree Institute of Nursing Science Bagalkot, and SIONS- Institutional ethics committee on human subjects' research.

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Conflict of Interest: None

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