

A Cross-Sectional Study to Assess the Dietary Intake and Habits of Expecting Women with Anemia

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ABSTRACT

Background: Anemia is a condition categorized by low hemoglobin level. Worldwide communities bear heavy burden especially of pregnant particularly in multigravida females. Among many other factors, dietary intake habits of expecting women contribute mainly to the anemia in such patients. So, a study to probe association of dietary intake and habits with anemia will be helpful for community. **Objective:** To access the dietary habits of a multigravida pregnant female with anemia in patients of DHQ hospital, Faisalabad. **Study Design:** Cross-sectional Study. **Settings:** District Head Quarter Hospital, Faisalabad-Pakistan. **Duration:** July 2017 to August 2017 in a period of six weeks. **Methodology:** The research was carried out at hospitalized patients in Gynecology Unit 2. 120 patients were included after non-probability consecutive sampling and a questionnaire was filled after an interview by the primary investigator. **Results:** A total of 120 female were interviewed using a predefined questionnaire during this study. Among them, 63% of women were anemic and 37% of women were non-anemic. Among anemic women 13% were in their first trimester, 23% are in their second trimester and 27% are in their third trimester. About 92% of patients were taking normal 3 meals in a day while the rest of 23% patients had poor dietary habits with less than 3 meals in a day. 76% of women take chicken once a week. Out of 120 women, only 20% were consuming red meat twice a week while majority. 58% of women were taking citrus fruits daily as a source of vitamin C. Green vegetables were consumed by 102 women out of 120. 86% of women were taking beans and nuts as a part of their daily dietary intake. **Conclusion:** This study clearly shows that dietary intake and habits of pregnant female directly contributes towards development of anemia.

Keywords: Anemia, Multigravida, Habits, Diet, Pregnancy.

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INTRODUCTION

Anemia is a condition that develops when blood lacks enough healthy red blood cells or haemoglobin. Haemoglobin is an important part of red blood cells and binds oxygen. If the body has very few or abnormal RBCs or the haemoglobin is abnormal or low, the cells will not get enough oxygen.¹ Symptoms of anemia, like fatigue, occur because organs are not getting what they need to function properly. Anemia is defined by the World Health Organization as haemoglobin level < 11.0 g/dL.¹ Anemia is the most common blood condition in the united states. It affects about 3.5 million of its population. Women, young children, and people with chronic diseases are at increased risk of anemia. Women in the childbearing years are particularly prone to develop iron-deficiency anemia because, during pregnancy, the body produces an increased amount of blood to support the development of the baby. If the mother is not getting enough iron or certain other nutrients due to a certain reason, the body might not be able to produce the required amount of red blood cells to make this additional blood. Older people also may have a greater risk of developing anemia because of diet deficiencies and other medical conditions.²

There are many types of anemia. All are different in their causes and treatments. Iron-deficiency anemia, the most common type, is easily treatable with diet changes and iron supplements. Some grades of anemia like the mild anemia (10.0-10.9 g/dl)

that develops during pregnancy are considered normal. However, some anemias may present lifelong health problems.³ The overall prevalence of anemia among the pregnant women was found to be 87.21%.⁴ Factors such as religion, level of education of women and of their husbands and socioeconomic status were found to be significantly associated with the prevalence of anemia in pregnancy ($P < 0.5$ only 0.7% were severely anemic (haemoglobin < 7.0 g/dL). Non-anemic women were significantly taller, weighed more, and had a higher body mass index.⁴

The survey data showed that 84.9% of pregnant women ($n = 6,923$) were anemic (hemoglobin < 110 g/L); 13.1% had severe anemia (hemoglobin < 70 g/L), and 60.1% had moderate anemia (hemoglobin ≥ 70 to 100 g/L).² Among adolescent girls ($n = 4,337$) from 16 districts, the overall prevalence of anemia (defined as hemoglobin < 120 g/L) was 90.1%, with 7.1% having severe anemia (hemoglobin < 70 g/L).² Unfortunately, very little efforts have been done in past in our country to find out relationship between development of anemia and dietary habits in pregnant females. This study aims to find out the nutritional deficits that are the culprits behind anemia in pregnancy. So that we can take prompt action to eliminate these causative factors and hence save the child and mother from long-term cardiovascular, muscular and other defects.

OBJECTIVE

To determine the dietary habits of multigravida pregnant females having anemia presenting in Gynecology department, DHQ hospital, University of Faisalabad.

OPERATIONAL DEFINATION

ANEMIA

Any patient having haemoglobin concentration of less than 110 g/L (less than 11 g/dl) in venous blood was labeled as having anemia.

METHODOLOGY

Study Design: Cross-sectional Study.

Settings: Gynecology Ward No 2 of DHQ, Hospital, University of Faisalabad-Pakistan.

Duration: July 2017 to August 2017 in a period of six weeks.

Sample Technique: Non-probability sampling technique.

Inclusion Criteria: 120 pregnant women of either trimester of age 20 to 30 having anemia as per operational definition were included in the study. Anemia in pregnancy was defined as a haemoglobin concentration of less than 110 g/L (less than 11 g/dl) in venous blood. Other variables like nutritional status, various dietary habits as mentioned in the predefined questionnaire and socio-economic status were also noted.

Exclusion Criteria: Patients with diagnosed hemolytic anemia like thalassemia, those with twin pregnancy or having chronic renal failure were excluded from the study. Data collected through questionnaire with interviews had close-ended questions. Study was performed after taking informed consents individually from patients before filling the questionnaire.

Data Analysis: Data was entered and later analyzed using SPSS 20.0 version. Frequency and percentages were calculated for qualitative variables and mean with standard deviation was calculated for quantitative variables. Effect modifiers like age, number of pregnancies and socioeconomic status, were stratified and post-stratification chi-square was applied. Percentages were calculated and data were presented in the form of tables.

RESULTS

A total of 120 female were interviewed over the questionnaire during this study. Pie charts were then drawn according to the results. The total sample size was 120 among them 76 (63%) of women were anemic and 44 (37%) of women were non-anemic. Among anemic women 15 (13%) were in their first trimester, 28 (23%) were in their second trimester and 33% were in their third trimester.

Figure 1 is showing the number and percentage of patients having various dietary habits under our study related to anemia. Table – I: is showing various dietary habits under study among the pregnant anemic patients.

Majority of women i.e 77% of women said that they take chicken once a week. Out of 120 women, only 6% were consuming red meat twice a week while majority i.e 94% were not taking it. 20% of women were taking citrus fruits daily as a source of vitamin C. Green vegetables were consumed by 70 women out of 120.

85% of women were taking beans and nuts as a part of their daily dietary intake. 72% of the patients were taking soft drinks daily. Out of 120, 13% of women were taking caffeine daily. Only 42% of the women were taking 2 eggs as a part of their daily routine. Only 35% of women were taking iron supplements to meet their increased demands of iron.

When women were asked about pica, 13% have craving for clay, 7% said they consume chalk, 10% said they consume ice, 33% were habitual of eating other items while 30% said that they don't crave for anything like this during pregnancy. 44% of women had a habit of eating raw uncooked rice. The inter-pregnancy difference was found to be >2yr in 37% of people while it was <2yr in 63%.

None of them was having a family history of blood disorder like thalassemia or sickle cell anemia. Only 18% had a history of menorrhagia. 23% of women were having twin pregnancies. 42% of women were taking calcium supplements to fulfill the increased need during pregnancy.

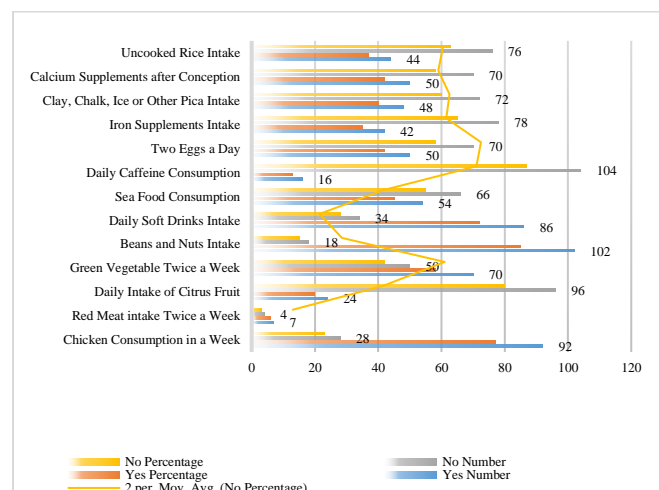


Figure 1: Showing the number and percentage of patients having various dietary habits under our study related to anemia

Table 1: Various dietary habits of pregnant anemic patients

Dietary Routine	Status in pregnant females with anemia (n =76)	
	n	%
Chicken Consumption in a Week	56	73
Red Meat intake Twice a Week	2	2.6
Daily Intake of Citrus Fruit	8	10.5
Green Vegetable Twice a Week	42	55
Beans and Nuts Intake	60	78
Daily Soft Drinks Intake	54	71
Sea Food Consumption	32	42
Daily Caffeine Consumption	16	21
Two Eggs a Day	24	31
Iron Supplements Intake	27	35

DISCUSSION

Our research based on the effect of dietary habits on the prevalence of anemia. Anemia is one of the major health issues

that affect the pregnant women and which ultimately has some effect on fetus like IUGR, stillbirth as well as in pregnant women like fatigue and shortness of breath. Anemia can also increase the risk of Caesarian -section and preterm delivery. There are multiple causes of anemia like iron deficiency, folate deficiency, malaria, hookworm infestation. Among these causes, nutritional iron deficiency anemia (IDA) is the commonest (90%) cause of anemia in pregnancy.⁹ Therefore, anemia in a normal pregnant woman in this environment is usually attributed to iron deficiency, and successful treatment is often achieved with iron and folic acid without further investigations.¹⁰ Hb level is indicative of anemia. The normal level of Hb is (12 to 16 g/dl). During pregnancy, this level falls (11.5 to 15 g/dl). This is because the blood volume increases by 50% in the course of pregnancy for providing essential nutrients for the developing baby.¹¹ The level of haemoglobin falls to 10.5 g/dl is quite normal in pregnancy. When it goes below 10g/dl, then it can cause health issues that affect the mother and child and the normal progression of the pregnancy. On the basis of Hb level anemia can be mild, moderate and severe.

Based on WHO study 42% of pregnant women have anemia. Dietary habits have a great effect on the prevalence of anemia.¹ Our study found that 63% of multigravida are anemic.

In the present study, the prevalence of anemia was higher among pregnant women having a meal frequency of fewer than 3 times a day as compared to pregnant women who had a meal frequency of more than 2 times a day. This might be due to the reason that pregnancy is a critical period with increased energy and nutrient demand for the mother which should be fulfilled with increased meal frequency per day. This result is consistent with other studies conducted in North Western Zone of Tigray, Northern Ethiopia.^{3,5} In this study, the consumption of fruit daily was associated with a decreased risk of anemia. This is because fruits are a rich source of non-heme iron. Fruits are also a rich source of vitamin C which enhances the absorption of iron in the body. And this result is consistent with the study conducted in Pakistan.

In our study women taking red meat twice a week have a high concentration of hemoglobin. Meat is a rich source of iron. This result is the same as a study conducted in Pakistan and Ethiopia. In our study, the prevalence of anemia was higher among pregnant women who did not take iron and folate supplement during pregnancy as compared to those pregnant women who took their iron and folic acid supplementation. This result is the same as a study conducted in Ethiopia⁵ and West Bengal. In our research, women having short inter pregnancy difference are anemic as compared to other women. This is consistent as a study conducted in Pakistan and Ethiopia.

In this study prevalence of anemia was higher in pregnant women in their second (23% out of 63%) and third (27% out of 63%) trimesters This is because during pregnancy the need for calorie and nutrients are increased to support increased maternal metabolism, blood volume and nutrients to fetus and this demand increases during the second and third trimester. In the first trimester, there is a marked decrease in the absorption of iron probably because of lower iron requirements and

menstruation stops, saving a median of 0.56 mg Fe/day (160 mg/pregnancy).¹² However, in the second-trimester iron absorption from a diet of very high iron bioavailability increases by 1.9mg/day and in the last trimester it increases by up to 5.0 mg/day.¹³ In this study soft drinks, caffeine, pica has a negative impact on the Hb level and increases the risk of anemia. In this study green vegetables, beans and nuts and seafood all have a positive impact on the Hb level. The rate of low birth weight babies was high in mothers who were anemic in their third trimester. Preterm deliveries occurred highly in mothers who were anemic in their second and third trimesters.¹⁴⁻¹⁶ Therefore, the efforts should be made to improve the quality of education related to pregnancy and socioeconomic status of females.

CONCLUSION

This study clearly shows that dietary intake and habits of pregnant female directly contributes towards development of anemia. Patients with anemia also have significant habit of pica. Females with more caffeine intake, short inter-pregnancy period and no iron supplement intake are more prone to have anemia in subsequent pregnancies.

LIMITATION OF THE STUDY:

This study was done on a small number of females because of non-availability of resources and man-power and various effect modifiers were ignored initially. We need to extend this study on a bigger population involving various other hospitals as well.

CONFLICT OF INTEREST:




Authors declare no conflict of interest

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AUTHORSHIP AND CONTRIBUTION DECLARATION

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