A Cross Sectional Descriptive Study To Assess The Knowledge And Practice Of Pregnant Women Related TO Anaemia And Its Risk Factors In Tertiary Care Hospital, Faisalabad

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Abstract- Background-- A pregnant women is called anaemic by World Health Organization (WHO) when haemoglobin level less than 11g/dl and divided into three level of severity, mild anaemia (Hb level: 9 – 10.9g/dl), moderate anaemia (Hb level: 7 – 8.9g/dl) and extreme anaemia (Hb level: 7 – 4.5g/dl). Worldwide prevalence of anaemia in pregnant women is 41.8% and about half women suffer with iron deficiency anaemia. In a study of Pakistan, prevalence of anaemia in third trimester was 89.3%, in second trimester was 8% and in first trimester was 27%.

Objective- To assess the knowledge and practice of pregnant women related to anaemia and its risk factors.

Methodology- This descriptive cross sectional study was conducted at Gynae department of Madinah Teaching Hospital Faisalabad from August to December 2019. Data was collected from 49 pregnant women by using self-administered questionnaire and analysed by SPSS version 20.

Results- Out of 49 women, 69.4% had insufficient and 30.6% had sufficient knowledge. 57.1% of women had poor and 42.9% had good practice related to anaemia and its associated risk factors in pregnancy. 28.6% participants did not consume iron supplements during pregnancy.

Conclusion- Low level of education and poor practice was found to be a major drawback for effective control of anaemia because most of the women didn't consume iron supplements from start of the pregnancy. The contributed factors of anaemia were previous history of anaemia and miscarriage, mode of delivery by lower segment caesarean section and multi parity. The main reason of irregular iron consumption was forgetfulness. Women had no knowledge that tea/coffee could inhibits the iron absorption.

Keywords- Madinah Teaching Hospital, Iron Deficiency Anaemia, Haemoglobin, Iron Folic Acid, Attending Antenatal Care

1 Introduction

A condition in which the number and consequently the capacity of red blood cells to carry oxygen is insufficient to meet the body's physiologic needs is called anaemia (WHO, 2011). A pregnant women is called anaemic by WHO when haemoglobin level less than 11g/dl and divided into three level of severity, mild anaemia (Hb level: 9 – 10.9g/dl), moderate anaemia (Hb level: 7 – 8.9g/dl) and extreme anaemia (Hb level: 7 – 4.5g/dl) (Margwe, 2015).

Worldwide prevalence of anaemia in pregnant women is 41.8% and about half women suffer with iron deficiency anaemia. Geographically, people who live in Africa and Asia are at higher risk of anaemia. By estimation in Ethiopia, 62.7% of pregnant women were suffering from anaemia. In developing countries, the major reason of maternal death is iron deficiency anaemia (around 20%). In a study of Pakistan, prevalence of anaemia in third trimester was 89.3%, in second trimester was 8% and in first trimester was 27% (Anjum, M. Manzoor, N. Manzoor, &

Shakir, 2015; Afzal, Gilani, Habib, Hussain, & Parveen, 2018; WHO, 2012).

In developing countries, malarial and parasitic infections are main reasons for the high rate of anaemia. Other reasons are inadequate information about anaemia, reduced iron intake, ante-partum haemorrhage, heavy periods (menorrhagia), gastrointestinal disturbances like diarrhoea, multiple pregnancies, and women of low socio-economic communities with less iron stores, substance abuse, anaemia in previous pregnancy and increase fetal demand of iron (Abriha, Wassieet, & Yesuf, 2014; Anjum et al., 2015; Berhanu, Demisie, & Jayanthigopal, 2018).

The symptoms of anaemia that pregnant women mostly experience are: palpitation, weakness, reduce energy level, fatigue, reduce mental performances, pale look, light headache, low blood pressure and shortness of breath. Symptoms of severe anaemia are: chest pain, rapid heart rate, fainting, change in stool color, heart attack, jaundice and spleen enlargement (WHO, 2001).

Severe anaemia resulted into higher rate of morbidity and mortality (F. Khaskheli, M. Khaskheli, S. Baloch, S. Baloch, & Sheeba, 2016). The impacts of anaemia in pregnancy are; preterm birth, low birth weight infants (<2.5g), increase susceptibility to infection, greater risk of pre-eclampsia and post-partum haemorrhage, delay healing of incision or episiotomy, still birth, neonatal death and severe anaemia may result in to cardiac failure (Abu-Hasira, 2007).

Daily iron requirements increase around 10 fold in pregnancy. So, Ministry of Health recommend iron supplements for management of iron deficiency anaemia. According to Population Action International publication, iron requirements in pregnancy are; 0.8mg, 4-5mg and 6mg daily in first, second and third trimester respectively, to meet the baby's iron demand. A study in Pakistan showed that iron dietary habits were present in only 10 out of 75 anaemic pregnant women while 65 were having poor dietary habits (Anjum et al., 2015; Aqel, K. Srour, M. Srour, Samarah, & Younis, 2018).

A study in Pakistan showed low knowledge of pregnant women about routine antenatal check-up. Women understanding of antenatal health education and use of iron supplement can reduce the frequency of anaemia and prevent the anaemia related mortality and morbidity. Women should encourage increasing iron rich food consumption and limiting the consumption of food that inhibit iron absorption and had adverse effect on fetus like tea and coffee during antenatal check-up (Afzal et al., 2018).

A mark able association of anaemia with educational and socioeconomic status suggested a need to develop strategies for pregnant women education and to improve the socioeconomic status of people through poverty alleviation programs. Antenatal women should be educated regarding importance of diet and implementation of knowledge into practice to prevent and treat anaemia because it is one of the leading causes for maternal and perinatal morbidity and mortality (Raksha & Shameem, 2016).

Research Questions

- What is the knowledge of pregnant women related to anaemia?
- What is the practice of pregnant women related to anaemia?
- What are the risk factors of anaemia in pregnancy?

2 Literature Review

The most common nutritional deficiency disease in the world is anaemia. Its prevalence in the pregnancy varies considerably because of differences in lifestyle, socioeconomic and health seeking behaviors across different cultures (Khan, Singh, & Mittal, 2013). Anaemia during the pregnancy is of great concern because it contributes significantly to increase the risk of pregnancy induced hypertension, haemorrhage, intrauterine growth retardation, maternal death, cardiac failure and placenta praevia (Byaruhanga, Kabahenda, Lubowa, & Mbule, 2013).

Globally anaemia affects half a billion women of reproductive age in which 30.2% of non-pregnant and 41.8% of pregnant women aged 15-49 years are anaemic. A study conducted at Yrga Cheffe health centre in South Ethiopia concluded the highest prevalence of anaemia in second trimester and the awareness of anaemia among uneducated and unemployed women who had only one attending antenatal care (ANC) visit was generally low (Duko, Gebre, Tedesse, & Teshome, 2017).

Similarly, two studies conducted in Nepal and Eastern Nepal to assess the knowledge and practice of mother regarding prevention of anaemia during the pregnancy. The conclusion of these studies showed that majority of women had inadequate knowledge and poor practice regarding prevention of anaemia and sources of iron rich foods while they had satisfactory knowledge related to cause and importance of taking iron during the pregnancy (Ghimire & Pandev, 2013; Jha, Maskey, Poudel, & Yadav, 2014).

Similarly, different cross-sectional and descriptive institutional based studies on same topic were also conducted in medical and tertiary hospitals of India showed that women had lack of knowledge regarding

anaemia, significance of iron supplementation during the pregnancy and factors that influence its outcomes and complications like demographic, socioeconomic and literacy status. These studies concluded that incidence of anaemia can be reduced through counseling and encouragement of pregnant women to consume iron rich foods in pregnancy and taking iron supplements from a first trimester. Mass media, interpersonal communication and home visits played important roles in dissemination of knowledge about anaemia (Akbar, Ara, F. Sultana, & R. Sultana, 2019; Bashir, Nelofar, Mukhtar, Qansur, & Salim, 2016).

In Pakistan, prevalence of anaemia among women aged 15-44 years was 26% in urban and 47% in rural areas. Two descriptive and analytical cross-sectional studies were conducted in Mardan and Hyderabad, Pakistan. Data was collected from pregnant women who had different demographic and socioeconomic backgrounds. These studies showed high prevalence of mild and moderate anaemia in second and third trimester. The contributory factors for it were birth spacing, poor social economic status, lack of education and multi parity. Anaemic pregnant women probably had low iron stores, pre-existing anaemia and dietary habits during pregnancy that affected the occurrence of anaemia like Pica, tea consumption, low intake of red meat and eggs (Baig-Ansari et al., 2008; Ahmad, Shams, & Wadood, 2017).

A study was conducted in two districts Swabi and Islamabad, Pakistan. Data was collected from doctors of tertiary hospital, lady health workers, currently pregnant and non-pregnant women (who were pregnant within 5 years prior to the study) by focus group discussion and in depth interview methods. Study subjects were belonged to the above mentioned rural and urban settings. This study

concluded the lack of awareness about the use of iron folic acid (IFA) supplementation during the pregnancy. According to this study experience of side effects, forgetfulness and inability to buy supplements due to poor financial resources were barriers in the use of IFA supplements. But this study did not focus only on the pregnant women. Therefore, result could not be applied on the pregnant women only (Alam, Aurangzeb, Dibley, & Nisar, 2014).

3 Methodology

A descriptive cross sectional study design was used because it was very suitable and fulfilled the requirements of our study. This study was conducted in Madinah Teaching Hospital, Faisalabad. Total duration was 4 months from August, 2019 to December, 2019. Sample size was calculated with the help of Rao soft calculator by putting confidence level 90%, margin of error 10% and target population 163. Computed sample size was 49. A structured self-administered questionnaire was used to collect data from all pregnant women of first, second and third trimesters who visited the Gynae department on outdoor basis. Which included total 25 items that was categorized as 5 items of demographic data, 7 items of Obstetric history, 6 items of knowledge and 7 items of practice related to anaemia in pregnancy. All pregnant women who visited the hospital with pregnancy complications like; Pre-eclampsia, Eclampsia and Gestational diabetes, were excluded in this study. Data was analyzed by using SPSS version 20 and descriptive statistics like; Mean, Median, Mode and Percentage were calculated.

4 Results

Socio-demographic data of the participants showed that 23 (46.9%) pregnant women was of 18-25 years, 19 (38.8%) pregnant women was of 26-30 years and 7 (14.3%) pregnant women was of 31-35 years. Education of 13 (26.5%) participants was 1-8th class, 4 (8.2%) participants 9-10th class, 23 (46.9%) participants 11th and above, 6 (12.2%) participants illiterate and 3 (6.1%) participants were able to read and write. 22 (44.9%) and 27 (55.1%) participants live in urban and rural areas respectively. 38 (77.6%) participants live in single family and 11 (22.7%) participants live in joint family. Husband of 2 (4.1%) participants are unemployed, 15 (30.6%) daily labour, 6 (12.2%) business man, 16 (32.7%) private and 10 (20.4%) government employee.

Table 1: Average Results of Contributing Factors to Anaemia in pregnancy Relevant to Obstetric History

Variables	Frequency (n)	Percentage (%)
Number of children		
a) 0	21	42.9
b) 1	9	18.4
c) 2	6	12.2
d) 3 or more	13	26.5
Number of current pregnancy	16	32.7
a) Gravida 1	10	20.4
b) Gravida 2	8	16.3
c) Gravida 3	10	20.4
d) Gravida 4	5	10.2
e) More than Gravida 4		
Previous mode of delivery		
a) LSCS	15	30.6
b) NVD with Episiotomy	4	8.2

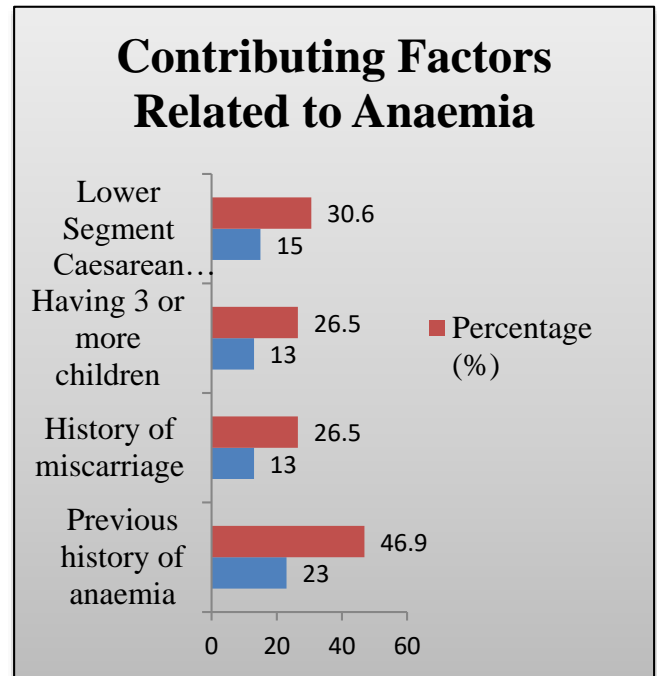|		
c) NVD	11	22.4
d) NVD from Dai	1	2.0
e) None	18	36.7
Previous history of anaemia	23	46.9
a) Yes	26	53.1
b) No		
Duration between each pregnancy		
a) >1 year	8	16.3
b) 1-2 years	11	22.4
c) 3 or <3 years	13	26.5
d) First pregnancy	17	34.7
History of miscarriage		
a) Yes	13	26.5
b) No	36	73.5
Complications during previous pregnancy		
a) GDM	1	2.0
b) Hypertension	3	6.1
c) Eclampsia	2	4.1
d) None	43	87.8

Contributing Factors Related to Anaemia

Lower Segment Caesarean… — 30.6 / 15
Having 3 or more children — 26.5 / 13
History of miscarriage — 26.5 / 13
Previous history of anaemia — 46.9 / 23

■ Percentage (%)

Figure: 1 shows the contributing factors related to anaemia in pregnancy

Table 2: Average of knowledge of the Pregnant Women Related to Anaemia in Pregnancy

Variables	Frequency (n)	Percentage (%)
What is anaemia?		
a) Hb level >11g/dl	15	30.6
b) Iron deficiency	13	26.5
c) Poor nutrition	21	42.9
Symptoms of anaemia		
a) Paleness of face, lips and nail beds	6	12.2
b) Fatigue and weakness	25	51.0
	1	2.0
c) Unable to perform daily activities	17	34.7
d) All of above		
Causes of anaemia in		

pregnancy		
a) Any illness during pregnancy	4	8.2
b) Short birth spacing	4	8.2
c) It is normal in pregnancy	9	18.4
d) Heavy menstrual bleeding	10	20.4
e) Poor nutrition	18	36.7
f) Multiple pregnancies	4	8.2
Impacts of anaemia in pregnancy		
a) Abortion	7	14.3
b) Preterm babies	12	24.5
c) Complication during pregnancy	18	36.7
d) Postpartum anaemia	12	24.5
Major source of iron		
a) Dates/Dry fruits	11	22.4
b) Chicken/Mutton	7	14.3
c) Green leafy vegetables	16	32.7
d) Milk	12	24.5
e) Cereals	3	6.1
Importance/Reasons of taking iron supplements		
a) Prevent and treat anaemia	18	36.7
b) Reduce chance of preterm birth	4	8.2
c) Enhance women health	22	44.9
d) Not know about the reason	5	10.2
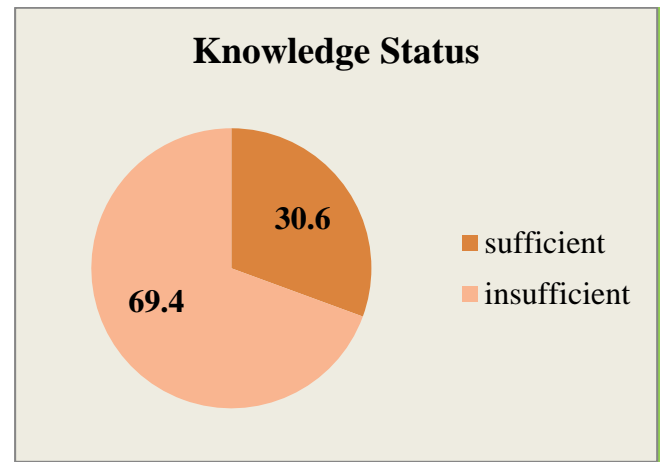
Figure: 2 shows the knowledge status of participants related to anaemia in pregnancy

Table 3: Average Practice of Pregnant Women Related to Anaemia in Pregnancy

Variables	Frequency (n)	Percentage (%)
Preference for treatment of anaemia		
a) Taking iron supplements	9	18.4
b) Blood transfusion	6	12.2
c) Having adequate rest	2	4.1
d) Eat iron rich foods	32	65.3
Use of iron supplements during pregnancy		
a) Yes	32	65.3
b) No	14	28.6
Routine of taking iron supplements		
a) Daily	27	55.1
b) On alternate day	3	6.1
c) Weekly	5	10.2
d) Do not take	14	28.6

| Is tea/coffee cause anaemia		
a) Yes	18	36.7
b) No	20	40.8
c) Don't know	11	22.4
Schedule of taking iron supplements		
a) Before food	4	8.2
b) After food	26	53.1
c) With food	5	10.2
d) Do not take	14	28.6
Reason of irregular iron consumption		
a) Forgetfulness	22	44.9
b) Side effects	10	20.4
c) It is not necessary	12	24.5
d) Cost	5	10.2
Pica (craving of non-food items) in pregnancy		
a) Ice	3	6.1
b) Soil	1	2.0
c) Clay	3	6.1
d) Raw rice	6	12.2
e) Not any of above	36	73.5

Practice Status

good 42.9
poor 57.1

Figure: 3 shows the practice of pregnant women related to anaemia in pregnancy

5 Discussion

The present study showed that only 30.6% participants were aware of and understood the term anaemia and only 36.7% women had awareness that tea and coffee can act as inhibitors of iron absorption. Our results were inconsistent with the study conducted in India that showed when specifically questioned only 39.87% were knew the definition of anaemia and only 33.2% of participants known that tea and coffee cause anaemia (Nivedita & Shanthini, 2016). Similarly, in Bangladesh study 75% anaemic women experienced weakness/fatigue (K. Singal, N. Singal, Setia & Taneja, 2018). While in present study 51% women said that common symptoms of anaemia was fatigue and weakness.

The reasons of irregular iron consumptions in our study were forgetfulness 44.9%, side effects and cost 20.4%, & 10.2% respectively and 24.5% women thought it was not necessary to take iron during pregnancy. According to present study 65.3% women were not consumed iron supplements during pregnancy. In contrast to this a study conducted in rural area of Lahore revealed that 61.1% pregnant women not consumed iron tablets during pregnancy and main reasons for irregular iron consumptions were side effects of iron supplements (29.8%) and forgetfulness (3.1%) (Afzal et al., 2018).

Study conducted in Malaysia also contrast to our results and showed that median of total knowledge and practice score was 84.2 and 69.9 respectively. The subject knowledge was high in women who had birth spacing of 1-2 years and number of children 3 or more. But no significant differences were seen in practice due to
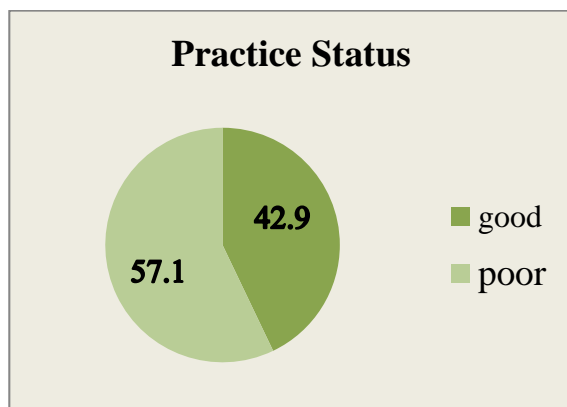
antenatal characteristics and socio-demographic status (Adznam, Kasim, & Sedek, 2018).

Similar findings found in Tanzania and Iran studies that participants had poor knowledge about anaemia, its symptoms and adverse effects on both fetus and maternal health. Women had moderate knowledge related to anaemia causes and preventive measures (Margwe, 2015; Alizadeh & Namazi, 2016). In present study 36.7% respondents knew poor nutrition as causative factor of anaemia.

Present study finding related to risk factors of anaemia matched with the study conducted in Saudi Arabia and Nigera. History of anaemia before pregnancy, short birth spacing and illiteracy were major risk factors according to these studies (Gadzama, Kagu, & Kawuwa, 2007; Umm, 2012). In current study 46.9% women had previous history of anaemia. Others risk factors according to different studies were; low family income, HIV infection positivity, malarial infection, gestational age at first ANC visit and advanced maternal age (Anlaakuu & Anto, 2017; Lubeya & Vwaika, 2017; Umm, 2012).

6 Conclusion

The study revealed that pregnant women had insufficient knowledge and poor practice regarding anaemia and its associated risk factors. Low level of education found to be a major drawback for effective control of anaemia among study participants because most of the women didn't take iron supplements from start of the pregnancy. The reported main reason of irregular iron consumption was forgetfulness. Previous history of anaemia, delivery by lower segment caesarean section, multi parity and history of miscarriage were contributed factors of anaemia. Women

had no knowledge that tea/coffee could inhibits the iron absorption.

7 Recommendations

- Little is known about the effects of maternal iron status during pregnancy on the infant development and different infections that affects the women iron absorptions like malarial infection. These areas warrant detailed research.

- Further study needed to be conducted on a large sample and different geographical settings to generalize the results of the study.

- Only iron supplementations during pregnancy are not sufficient to improve the condition. Therefore, there is need to enhance women knowledge and practice regarding dietary modification (intake iron rich and avoid iron inhibiting food) to improve general health and nutritional status in the pregnancy through counselling.

- Government should conduct awareness session on anaemia prevention, complications and treatment at community level especially in rural communities. Free of cost iron supplements should provide in the health care settings.

Ethical Consideration

Permission was granted from additional medical superintendent of MTH to conduct this research in MTH. Informed consent was also signed from study participants and their confidentiality and dignity was maintained. Study population was free to participate in this research without any external force. Honesty and value was present in our research.

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