

Knowledge, Attitude, and Practice with Iron Folic Supplementation Among Antenatal Care Attendant Women Debre Tabor, South Gondar Zone

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Abstract

Introduction: Iron deficiency anemia is the most common nutritional disorder affecting two- billion people worldwide. Pregnant women are at high risk of iron deficiency anemia. Because of significantly increased iron requirements during pregnancy, iron supplementation has been major strategy in low and middle-income countries where, micro nutrient deficiencies are common to reduce iron deficiency anemia in pregnancy. This study was aimed to assess the prevalence of knowledge, attitude and practice of iron folic supplementation among ANC attendant mothers in Debre Tabor general hospital in Ethiopia 2020.

Method: An institutional based cross-sectional study was conduct among ANC attendant mothers from April 1 -30. Systematic sampling techniques was used to select the study participants and 357 pregnant women were include in the study and data were entered and analyzed using SPSS version 20. Frequency percentage was used to describe the data using table and figures.

Result: Of the total respondents (290) 81.2% of the study participants had a good knowledge on iron folic supplementation and its benefits. And (303) 84.9 % of the participants had positive attitude. The other finding from this study was (303) 84.9%of the study participants took iron folic supplementation and from those only 48% had taken the medication properly. Finally, (182)54.5% of study participants had good practice of iron folic supplementation.

Conclusion: in this study most of the respondents had good knowledge and attitude. But their practice to wards iron folic supplementation was low.

Keywords: Breastfeeding; Yoga; Self-Efficacy; Maternal; Attachment

Abbreviations and Acronyms: ANC -Ante natal care; DTH- Debre tabor hospital; EDHS-. Ethiopian demographic health survey; EM-DHS-Ethiopia Minimum Development Health survey; IDA -Iron deficiency anemia; IFS-Iron folate supplementation; NNS -National Nutrition Strategy; WHO-world health organization

Introduction

During pregnancy, the requirement for micronutrients increases than that of macronutrients. Inadequate intakes of micro nutrients can have significant consequences for both the mother and the developing fetus. There is an evidence that support the physiologic role played by selected minerals and vitamins [1,2]. Iron is one of the micronutrients which is involved in numerous enzymatic processes that plays essential roles in the transfer of oxygen to tissues. Iron deficiency causes anemia. Anemia is a very common condition worldwide, affecting 22% of women of childbearing age in Europe and as much as 50% in developing countries [3]. Pregnancy is a period of significant increase in iron requirement over and above the non-pregnant state because during pregnancy, maternal iron requirements include 300-350mg for the fetus and the placenta, 500mg for the expansion of the maternal RBC mass, and 250mg associated with blood loss during labor and delivery [4]. The requirement for iron increases gradually from 0.8mg/d in the first trimester to 7.5mg/d in the third trimester [5]. Yet, the average daily absorption of iron from diets is only 1-5mg [6].

Due to increased iron requirement pregnancy is also a period of increased risk for anemia. Thus high proportion of women becomes anemic during pregnancy. Globally 41.8% of all pregnant women are with the highest proportion affected in developing countries. Women in developing countries are always in a state of precarious iron balance during their reproductive years with 30% prevalence anemia [7]. Folic acid play a crucial role in many metabolic reactions such as the biosynthesis of DNA and RNA, methylation of homocysteine to methionine, and amino acid metabolism. In fact, metabolically active forms of folates act as transport co-enzymes facilitating the transfer of carbon units from one compound to another. They are therefore essential for health: inadequate dietary levels can give rise to anemia, leucopenia, and thrombocytopenia. The requirement for folates increases throughout the pre conception Period [8]. Maternal supplementation with folic acid is widely recommended to all women of childbearing age, especially to reduce the risk of neural tube defects [9]. According to recent studies, folic acid supplementation during pregnancy should also reduce the risk of congenital heart disease and support proper development of the placenta [10]. The WHO recommends folate supplementation for pregnant women, 400µg/d from early pregnancy to 3 months postpartum. The U.S. Public Health Service and CDC recommend the same for all women of childbearing age (15-45) to prevent spinalbifida and anencephaly [11]. A higher supplementation dose, 5 mg/day is recommended in women who have increased demands for folate

(multiple pregnancies, hemolytic disorders, folate metabolism disorders) and in women who are at an increased risk of NTDs (personal or family history of NTD, pre-gestationaldiabetes, epilepsy on valproate or carbamazepine).

Methods and Material

Study area and Period

This study conducted in Debre Tabor general hospital which is found in Debre Tabor town. Debre tabor is found in northern Ethiopia in the Amhara region at 667km distance from Addis Ababa city, which is the capital city of Ethiopia towards North West direction of the country and it is located 97km away from Bihar dar towards east direction. The city administration has four urban Keble with the total area of 3187.07 hectare. The southern and south western part of the town are more of higher ground including mount tabor with the highest point of 2795m. The mean annual rainfall is 1553.7mm and temperature of the city is 15 degrees. Based on the 2007 national census the projected population figure for the year 2017 is 68,318 of whom 33,969 are men and 34,349 women. Debre Tabor has one Mosque and more than ten orthodox Christianity church, and it has three health centers, one general hospital. The study was conducted April 1- 30,

Study Design

An institutional based cross-sectional study design.

Source of Population

All pregnant mothers who are registered at Debre Tabor hospital in 2020.

Study Population

All pregnant women who attend ANC follow up in DTH in 2020.

Study Unit

Participants selected by systematic random method.

Inclusion and Exclusion criteria

Inclusion criteria: All pregnant women attending of ANC follow up at the time of data collection

Exclusion criteria: Those who were unable to respond and very sick mothers

Sample size Determination

Total number of representative sample was selected using a single population formula as follows.

Z =standard normal deviation (a constant set at 1.96 on the basis using 95% confidence interval for estimation) P =estimated proportion with good knowledge attitude and practice with IFA. (since there is no prevalence of KAP with IFS in the study area).

I have taken $p=0.64=1-P=0.64$

W = margin of error or 5%

Since our study population is less than 10,000, we can use correction factor

We consider that the non-response rate was 5% of the respondent, then $n_{total}=n+NRR$

$NRR=5/100 * 340=17$ then sampling size= $340+17=357$

Sampling procedure and technique

Consultation with hospital administration was to obtain details of number of pregnant women's who attend ANC follow up. Since there is no sampling frame. We use systematic sampling technique. $K=total\ population/sample\ size=370/357=1$

$K=1$ Every K^{th} value (1^{th}) Then we had started with the first ANC visitor woman by using random

Study variables

Knowledge, Attitude, Practice towards iron folic supplementation

All socio demographic variables (age, educational level, residence, education status, religion, marital status & parity)

Operational Definition

- Iron: Iron is a micro nutrient used for development of fetus and prevention of anemia.
- Folic acid: is a vitamin B9 categories used to prevent neural tube defects or congenital anomalies of the fetus.
- Anemia: the state of being decreased hemoglobin level.
- Knowledge: The awareness that an individual has about what iron folic is, and its advantage, how can take it? What anemia is and its prevention. In this study it was measured based on the ability of the respondent correctly identify & respond to meaning, uses and prevention of anemia and IFS. Over all knowl-

edge is summary of 11-(eleven) questions & each question contain 1-point. The overall knowledge of the study participants was assessed using the sum score of each outcome.

- Good Knowledge: 6-11 points (60-100)
- Poor knowledge: less than 5 points (less than 60)
- Attitude: it assesses the perception of the pregnant women's requiring iron folic supplementations uses. Include total 5 questions. The score was classified into 2 levels positive, neutral, negative attitude.
- Positive attitude- score of attitude between 60-100%
- Negative attitude- score of attitude less than 60%
- Practice: is the overt behavior or the ability of the pregnant women who took IFA supplementation or seeking discussion & action & pregnant women taking IFS for several times & way of taking. Include total 5 questions the score will be classified into 2 levels.
- Good practice - practice score 3-5 score (60-100)
- Poor practice - practice score below 2 (less than 60)

Data collection tool

Data collection tools are structured questionnaires with both open ended and closed ended questions. This is adapted from the study done in Debre Tabor town South East Ethiopia on factors associated with adherence of IFS among pregnant women [17]. The data collection instrument was developed in English language and translated into Amharic. The data collection instrument consists of 4 parts. Part 1: consist of socio demographic data of the pregnant women's (age, sex, educational background, residence, religion, ethnicity) Part 2: consist of knowledge questions with IFS which is measured by eleven questions Part 3: consist of attitude questions with iron folic supplementation which measured by five questions. Part 4: consist of practice questions with iron folic supplementation which measured by five questions.

Data collection and quality control

The quality of data was ensured through proper training of data collector, pretest of questionnaires was done on Debre Tabor hospital and close supervision of data collectors. All collected data was checked for completeness, accuracy and consistency by the principal investigator every day and any think which is unclear was corrected and communicated to the data collector on the time.

Data entry, analysis & process

Data was analyzed using SPSS version 20. The data was double entered to check the consistency, well cleaned & edited before analysis. During the process of analyzing frequency distribution, tables & pie-chart we used to provide on over all presentation. Odds ratio was performed on some selected variable to determine their association.

Results

Socio-demographic characteristics

In this study 357 (100%) of the required sample, pregnant women attending antenatal care were Participated in the

study. The mean age of the respondents was 26.3 years. Majority of the Women interviewed were married (94.3 %) (Table 1).

Respondent's knowledge, on Iron folate and benefit of Iron folate supplement

The study shows (281)84.8% of the study participants knew the drug iron foliate supplementation and (252) 89.7% of them knew the benefits of intend they could try to answer at least one benefits. Finally (290) 81.2% respondents had good knowledge about IFS and (67)18.8% of the respondents had poor knowledge about IFS. Around (225)63% of the respondents got information about IFS from health center.

Table 1: Socio demographic data of respondents in Debere Tabore Hospital 2020.

Socio demographic factors	Category	Frequency	Percent
Age	18-22	95	26.6
	23-27	137	38.4
	28-32	82	23
	33-37	34	9.5
	38-42	9	2.5
Residence	Urban	298	83.5
	Rural	58	16.5
Ethnicity	Amara	351	98.3
	Tigre	6	1.7
	Oromo	0	.00
Marital status	Married	345	96.6
	Single	8	2.2
	Divorced	4	1.1
Number of pregnancies	One	136	38
	More than one	221	62
Religion	Orthodox	274	76.2
	Muslim	72	20.5
	Protestant	9	2.8
	Others	1	0.2
Educational status	Can't read and write	69	19.3
	Can read and write	38	10.6
	Primary school(1-8)	128	34
	secondary school(9-12)	74	13
	Diploma	35	9.8
	Degree	13	3.6

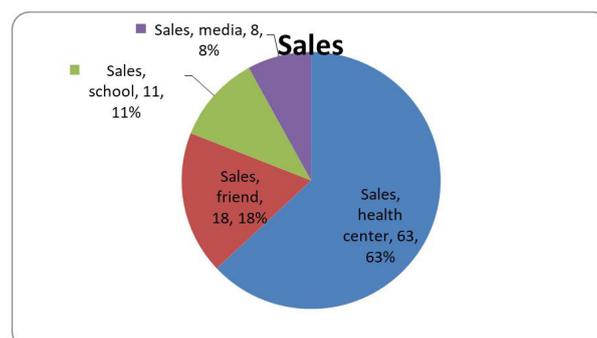


Figure 1: Respondents source of information about iron folic supplementation

Attitude level of women to iron/folate supplementation during pregnancy

Among the study participant (300) 84% of women had agreed that IFS can prevent anemia and (290)81.2% of the participants were interested to take it. But 15(4.2% of the participants agreed with IFS could harm the fetus, 4.5% participants IFS result an overweight of fetus and 7% agreed with IFS affected the mother.(298).84.5 respondents were above 60%.

Table 2: Respondents attitude towards IFS, Debre Tabor general Hospital in 2020

Attitude questions	responses	frequency	percentage
I believe that IFS can prevent anemia during pregnancy	agree	300	78.4
	neutral	44	12.3
	disagree	13	3.6
I am interested to take IFS during pregnancy	agree	290	81.2
	neutral	52	14.78
	disagree	15	4.2
I think that taking IFS results big fetus	agree	16	4.5
	neutral	19	5.3
	disagree	324	90.1
I think that taking IFS affect the mother	agree	25	7.8
	neutral	178	47.8
	disagree	297	88.2
I think that taking IFS harms the fetus	agree	15	4.2
	neutral	17	4.7
	disagree	325	91.1

Respondents practice towards iron folic supplementation

Have you ever had taken IFS during the current pregnancy?

The result shows that (303)84.9% the study participants had taken iron folic supplementation during the current pregnancy. While the rest of (54) 24.9% hadn't supplemented due to fear of side effects (20)5.6% and 9.5% of them never had ANC visit before now). Most of the participants took the medication on daily base (93.9%). Generally, 54.7% of respondents had good practice (Table: 3).

Table 3: Respondents way of taking the supplement IFS in Debre Tabor general Hospital 2020

	Frequency	percentage
On daily base	260	85.8
Weekly	30	9.9
When I feel sick	8	2.6
Other	5	1.7
Total	3003	100

Duration of taking the medication

From this study, 18.2% and 10.6% took the medication for three months and more than three months respectively.

Table 4: How long time the respondents supplemented IF in Debre tabor general Hospital in 2020

	frequency	percentage
For one month	115	38
For two months	101	33.3
For three months	55	18.2
More than three months	32	10.5
Total	3003	100

Have you taken the medication properly?

In this study (303) 84.9% of participants took iron folic supplementation. Only 6% of them took the medication properly. Whereas the rest 42% are missed the tablet due to different reasons (Figure 2).

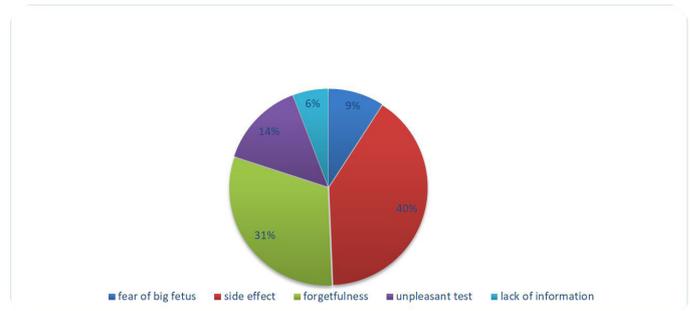


Figure 2: The reason of respondents didn't take the medication properly at Debre tabor general Hospital 2020

Discussion

The study has tried to assess knowledge, attitude and practices of women with iron folic supplementation among ANC attendant mothers in Debre Tabor General Hospital in 2020.

Finally (290) 81.2% respondents had good knowledge about IFS and (67)18.8% of the respondents had poor knowledge about IFS. Around (225)63% of the respondents got information about IFS from health centre. A study done in India showed that the lower knowledge about anaemia in pregnancy mothers increased anaemia risk five times, so, the potential risk factor for that was knowledge and practice about anaemia in pregnant women. The result showed that the mother's knowledge on the importance of iron supplementation is 96.4%. Most of those respondents know it is important to take during pregnancy [18].

On other study done in Moradietaliiran which relevant that 75.9% of pregnant women were aware about the reason of taking iron tablet during pregnancy and it is use. 77.7% of mother knows the use of iron drug prevents from iron deficiency anaemia. 75.6% stated decrease the risk of low birth weight. Likewise, 48.2% answered fulfilling increased iron demand during pregnancy and 47.7% answered intake of iron folic supplementation prevent complication during childbirth [19].

Regarding to respondent attitude about (300) 84% of women had agreed that IFS can prevent anaemia and (290)81.2% of the participants were interested to take it. But 15(4.2% of the participants agreed with IFS could harm the foetus, 4.5% participants IFS result an overweight of fetus and 7% agreed with IFS affected the mother.(298).84.5 respondents were above 60%.

A study done in Ethiopia about compliance of IFS among ANC attendant mother in Micah district south Ethiopia; showed that only 39.2% of pregnant women were compliant to iron folic supplementation. The reason why most of mothers do not have compliance was due to different attitude towards IFS. Such as, 28.45% of participant has believed continuous taking of IFA leads to over weight of babies. 50.6% were because of fear side effects [20].

Generally, 54.7% of respondents had good practice. This study is also higher than the study conducted in rural parts of Oromia (24.7%). This might be due to the present study has been conducted in urban area. Women with low practice towards iron folic supplementation 37.5% reported their reasons; the experience of side effect that they associated with the tablet 39%, lack of information for how long to take 18%, forgetfulness 22.6% and due to un pleasant test 20%. And also this is higher than with the study conducted at mecha district south east Ethiopia with (only 18% practice) .such as 50% due to side effect and 28.5% due to forgetfulness [17].This might be due to better counselling to pregnant women in the present study area.

Conclusion and recommendations

We thank the institutions that contributed to our research. This work was supported by a university scientific research projects grant (TDK-2017/852).

Conclusion

This study tried to assess knowledge; Attitude and practice towards IFS among pregnant women attending ANC follow up in Debre Tabor general hospital. We can conclude that even though the pregnant women had good knowledge & attitude, they had poor practice.

Recommendations

Based on findings, the following recommendations had made.

✓ Health provider should educate pregnant women on the importance of iron/folic acid supplementation during pregnancy to improve their health.

✓ Health bureau should prepare education program to Health extensions workers in regards to nutrition during pregnancy, iron supplementation and duration of it during pregnancy.

Ethical consideration

This proposal was submitted to DTU, college of health sciences. This is approved by institutional review board officials. Letters of cooperation was written to the concerned bodies. At the study was conduct through consenting the participants to answer the interview, individual pregnant women was not subjected to any harm. No personal identification we used on data collection & we kept confidential.

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