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Assessment of Prenatal Iron + Folic Acid Supplementation and Utilization among Pregnant Women at Anc Clinic in Kirkose Subcity Health Center Addis Ababa, Ethiopia

Haymanot Jenberu^{1*} and Cheru Kore²¹ School of Public Health, Rift Valley University, Addis Ababa, Ethiopia² School of Public Health, Rift Valley University, Addis Ababa, Ethiopia

Abstract

Background: Globally 41.8% of pregnant women are anemic with the highest proportion affected in developing countries. Nationally only 0.4% of the pregnant women take Iron supplements quite 90 days of the recommended 180 days. In oromiya region 75.3% of pregnant women don't take any iron tablets or syrup during their last pregnancy, while 10.8% deem but 60 days, 0.4% takes for 60-89 days and only 0.3% takes for 90 days or more.

Objective: To Assess prenatal Iron + folic acid supplementation and utilization among pregnant women attending ANC clinic in Kirkose Sub city, Addis Ababa, Ethiopia.

Methods: Institution based cross-sectional quantitative study design was conducted in Kirkose Sub city from June 2021 to July, 2021. There were seven health centers selected for this study. The sample size 317 was selected with systematic sampling method. Five percent of the sample size was pre-tested in one institution which was not included for data collection. Data was collected using structured pre-tested questionnaire. Before data collection verbal consent was obtained. The collected data was analyzed SPSS version 20.0 packages to show the magnitude of prenatal folic acid utilization and supplementation.

Result: A total of eligible 317 study population, 287 were successfully participated with a response rate of approximately 90.5%. The study participants had a mean age of 27.4 years. The magnitude of iron-folic acid supplementation was found to be 231(80.5%). Among the respondents who took IFA they replied 20(8.65%) took for a month duration, 62(26.8%) took for two months, 84(36.3%) of them took for three months and the rest 65(28.1%) took for more than three months.

Conclusion: Even if the magnitude iron-folic acid supplementation was high in this study, there was still low utilization among pregnant women.

Keywords: Iron/folic acid; Pregnant women; Anc clinic; Kirkose subcity health center; Ethiopia

***Corresponding author:**
Haymanot Jenberu

✉ jenberu1981@gmail.com

Tel: 0910508006

School of Public Health, Rift Valley University, Addis Ababa, Ethiopia

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Introduction

The World Health Organization (WHO) defines anemia among women of travail age as the condition of having a hemoglobin attention of <12.0 g/dl at ocean position; among pregnant women it's defined as <11.0 g/dl. The hemoglobin attention arrestment position that defines anemia varies by age, gender, physiological status, smoking status, and the altitude at which the assessed population lives. The primary cause of anemia is iron insufficiency, a condition caused by shy input or low immersion of iron, the increased demands of repeated gravidity particularly if

not well spaced (e.g., smaller than 36 months between gravidity) and loss of iron through period. Other causes of anemia include vitamin scarcities (similar as a insufficiency of folic acid or vitamin A), inheritable diseases, malaria, parasitic infections, HIV, tuberculosis, common infections, and other seditious conditions. While iron insufficiency anemia (IDA) accounts for about one half of all anemia cases, it frequently coexists with these other causes. Iron insufficiency anemia is most common during gestation and in immaturity, when physiological iron conditions are the loftiest and the quantum of iron absorbed from the diet isn't sufficient to meet numerous individualities' conditions [1].

Anemia's goods include increased threat of unseasonable delivery, increased threat of motherly and child mortality, negative impacts on the cognitive and physical development of children and reduced physical stamina and productivity of people of all periods [2]. Encyclopedically, IDA annually contributes to over motherly deaths (22 percent of all motherly deaths) and over antenatal deaths [3]. Crucial anemia control interventions include promoting a diversified diet; iron-folic acid (IFA) supplementation during gestation, iron bastion of staple foods, forestallment and treatment of malaria, use of germicide-treated bed nets, helminthes forestallment and control, delayed cord setting, and increased birth distance [1].

The frequency of anemia among pregnant women in Ethiopia is 22 percent, making it a moderate public health problem as defined by WHO norms [4].

Regarding anemia inflexibility, the maturity of cases among pregnant and breastfeeding or non-pregnant women reported in the 2011 Ethiopia Demographic and Health Survey (EDHS) are classified as mild or moderate [5].

Only 1.2 percent of anemia cases in pregnant women and lower than one percent in breastfeeding or non-pregnant women are diagnosed as severe. Hookworm infection and short birth intervals may put pregnant women at increased threat of anemia.

In a study carried out at a prenatal clinic in southwest Ethiopia, pregnant women who were anemic were doubly as likely to have hookworm infection and three times more likely to have given birth lower than 24 months before their current gestation [1].

Statement of the problem

Anemia is a global public health problem affecting two billion people worldwide. Nearly half of all preschool children, pregnant women, and close to one-third of non-pregnant women are anemic Worldwide. Africa has the largest number of women with anemia next to South and Southeast Asia [6]. According to 2011 report of Ethiopian Demographic and Health Survey, moderate and mild types of anemia are abundant among the pregnant and non-pregnant maters in the country, where 1.2 of the cases are severe [7]. Both Folic Acid and Iron insufficiency during gestation are threat factors for anemia, preterm delivery, low birth weight, and this contributes to the poor neonatal health and increased motherly mortality [8].

Studies indicate that maters who admit prenatal care service will have babies with a reduced threat of neonatal deaths [9]. One of the major interventions to help anemia and folic acid insufficiency is Forceful Folic acid (IFA) supplementation. World Health Organization (WHO) recommends that all pregnant women should admit a standard cure of 30-60 mg Iron and 400 µg Folic acid during gravidity as part of their ANC follow up [10]. Numerous countries aim for women to admit 90 or further tablets during gestation. Still, in areas where the frequency of anemia is high (>40), the supplementation should continue for three months in the postpartum period. Other interventions similar as food, water bastion, and anti-parasitic treatment is also suggested though their effectiveness isn't clear [11]. The public guideline for control and forestallment of micronutrient

scarcities stated daily iron/folic acid supplementation for at least 6 months during gestation and 3 months postpartum have a significant significance. The National Nutrition Strategy (NNS) also stated a thing to enrich the number of women entering Iron/Folic supplementation for further than 90 days during gestation and postpartum by 50 [12].

Many studies have been done at installation position, but we can't get in Addis Ababa at Kirkose sub megacity. So, this study is aimed to fill the gap by assessing the magnitude of Assessment of antenatal Forceful folic acid supplementation and application among pregnant women at ANC in Kirkose sub megacity Addis Ababa, Ethiopia.

Significance of the study

The consequences of iron insufficiency and anemia are increased motherly and antenatal mortality, increased figures of preterm births and low birth weight babies, bloodied cognitive development, and reduced work productivity. As one title II program reported, anemia drained women's energy, discouraging them from sharing in design conditioning for their commission and advancement. Therefore, anemia exacerbates the problem of heavy workloads for women. Recent DHS data for 10 of the USAID/FFP precedence countries show that 21–69 percent of women of reproductive age are anemic, a medium to high public health trouble according to WHO [13].

Thus, this study attempts to explore the extent of antenatal Forceful folic acid supplementation and application among pregnant women at ANC attending in public health centers.

In addition to this it can be used as an input for policy makers, program inventors and device as well as health care authorities to make informed decision towards forestallment of this major reproductive health problem.

Objective

General objective

To assess prenatal iron + folic acid supplementation and utilization among pregnant women at ANC in Kirkose Sub city health center Addis Ababa, Ethiopia.

Specific objective

- To determine the magnitude of prenatal Iron + folic acid utilization
- To describe iron and folic acid supplementation among pregnant women at ANC in Kirkose sub city health center Addis Ababa, Ethiopia.

Method

Study area

The study was conducted in Kirkose sub megacity which is one of the eleven sub metropolises in Addis Ababa, the capital megacity of Ethiopia. In 2017 censuses its population was of with a population viscosity. The quarter is located in the central area of the megacity. It borders with the sections of Arada in the northern,

Yeka and Bole in the east, Nifas Silk-Lafto in the south and Lideta in the west. There are eight public Health centers, except one which was a COVID-19 centre; Sevens were completely functional for colorful health services including ANC [14]. All named health centers in the named sub megacity furnishing the service was included in the study and the number of repliers for each health centre determined proportionally depending on the sample size and number of guests entering the service. Study design and period Installation grounded cross-sectional study design was conducted from June, 2021 to July, 2021. Source population. The source population was all pregnant women attending Anti Natal Care (ANC) clinic on Kirkose sub megacity Health Centres. Study population. The study population was those pregnant women who are present at the time of data collection period. Study criteria Addition Criteria All pregnant women who visit ANC clinic by the time of data collection were included in the study. Rejection criteria Pregnant women who was unfit to communicate, seriously ill and mentally impaired was barred. Variables Dependent variables Utilization and supplementation of iron folic acid Independent variables Mindfulness about anaemia and iron folic acid Socio demographic characteristics Health service factor like health education Physical trait and affiliated factor like side effect Sample size determination The sample size of this study was calculated by using single Population proportions formula $n = (Z_{\alpha/2})^2 p (1-p) / d^2$ n =sample size, $Z_{\alpha/2}$ =significance position at $\alpha=0.05$, P =established frequency from former studies of the content of interest (adherence rate) in eight pastoral quarter in Ethiopia ($p=74.9$) [15,16]. d =periphery of error = 0.05 Thus, grounded on using the below single population proportion formula the sample size could be calculated as $n = (1.96)^2 (0.251) (0.05) / 0.05^2 = 288$ with the hypo the ticals of 10non-response rate the total Sample size was 317. Testing procedure and fashion All seven institutions in Kirkose Sub megacity were included in order to make the data representative and a total sample size of 317 pregnant women were named using methodical arbitrary slice. The total estimated number of pregnant women attending prenatal clinic in each institution for a single month was taken and commensurable sample size was calculated for each institution so as to give the total sample size by using the following formula.

$$n_i = n \cdot N_i / N;$$

Where n_i =sample size of the i th institution

N_i =total population size of i th institutions

n =number of repliers to be named from each institution

N =Total number of pregnant women in named institution (370).

For Meshulekia HC= $317 \cdot 73 / 370 = 62$

For Kasanchis HC= $317 \cdot 55 / 370 = 47$

For Efoyta HC= $317 \cdot 42 / 370 = 36$

For Goteramasalecha HC= $317 \cdot 30 / 370 = 26$

For Feresmeda HC= $317 \cdot 57 / 370 = 49$

For Hiwot Amba HC= $317 \cdot 49 / 370 = 42$

For Kirkose HC= $317 \cdot 64 / 370 = 55$

Total sample size=317

Data collection system and Quality assurance Data collection Data was collected using structured questionnaire and conducted by face-to-face interview system. The questionnaires were originally prepared in English and also restate into Amharic. Two professional nursers who could speak Amharic were hired for the data collection. Star Investigators had the liabilities to supervise the data collector's and to cheque whether the questionnaires were complete or not. The enumerators were given training for one day on procedures, ways and ways of collecting the data. Data Quality assurance Data collection instruments were going to be pretested before being used in other health centre with the same setup, and around 5 of the study party which was 16 individualities involved. Data was checked for thickness and absoluteness. Eventually the collected data was going to be sanctified in order to produce valid data. Functional delineations Anaemia Pregnant mama haemoglobin (Hgb) position in the blood is lower than 11 g/dl which depicts dropped oxygen-carrying capacity for pregnant women. Pregnant maters Knowledge about anaemia Those who score mean value (12.87) and above of correct response about cause, consequence, threat group and system of forestallment of anaemia are considered as they're knowledgeable about anaemia while those who score lower than mean value (12.87) of correct response considered as they aren't knowledgeable about anaemia. Pregnant maters Knowledge about benefits of Iron/folic acid Those who score mean (1.24) value and above of correct response about benefits of iron/folic acid considered as they're knowledgeable about benefits of iron folic acid while those who score lower than 20 mean value (1.24) of correct response considered as they aren't knowledgeable about benefits of iron folic acid. Prenatal care clinic (ANC) A section in the health institution where a pregnant woman receives regular cheque-ups, nutritive supplements (iron/ foliate), and medical and nutritive information throughout her gestation. Iron insufficiency (ID) A situation in which iron position plant in the body of pregnant women recorded lower than 3g. Prenatal visit The pregnant woman optimally begins within 16 weeks of gravidity and has four successive follow up at least each visit one month piecemeal throughout the figure partum period. Iron/folic acid supplement Fresh combined nutrient to be taken by pregnant women in order to make up for iron/ folic acid insufficiency. Data recycling and analysis Checking of thickness and absoluteness is performed on diurnal base up to the final data collection day. Also, collected data was gutted completely and analyses were carried out using SPSS v. 20 software for different variables. Ethical consideration Ethical concurrence letter was attained from Addis Ababa Public Health Research and Emergency Management. Also, formal authorization letter was requested and attained from Kirkose Sub-city Health Office. Next the written co-operation letter was submitted to all concerned bodies previous departing to data collection. After explaining and briefing about the purpose, procedures and pitfalls of the study to individual study subjects, verbal informed concurrence was attained previous to the interviews. Also, the sequestration of actors and confidentiality of the information gathered was maintained and assured.

Result

Socio-demographic characteristics

An aggregate of 317 pregnant women attending prenatal care in Kirkos sub megacity, Addis Ababa were included. Out of these eligible pregnant women 287 (90.5) responded to the questionnaire. The study actors had a mean age of 27.4 times. Seventeen (5.9) were between 15-19 times, 176 (61.3) were between 20-29 times, 90 (31.4) were between 30-39 times, 4 (1.4) were between 40-49 times of age. Majority of the repliers were wedded account 208 (72.5) followed by single 48 (16.7) and divorce 22 (7.7). The rest widowed were plant to be the least account 9 (3.1) independently. Concerning the educational status of the repliers, 16 (5.6) were unfit to read and write, 17 (5.9) were can read and write, 42 (17.6) at primary position and 114 (39.7) attended secondary position while 90 (34.1) had over secondary. Regarding the educational position of the repliers' hubby, the maturity 179 (62.4) attended at over secondary position, 52 (18.1) were secondary position followed by those who had primary education position account 21 (7.3). The rest were unfit to read and write & can read and write 6 (2.1) & 8 (2.8) independently. Two hundred eighteen 280 (97.6) of women were from civic area while the rest 7 (2.4) repliers were from pastoral area. Concerning their profitable status, nearly half of the repliers 139 (48.4) reported in between 500-2500 ETB while 126 (43.9) reported 2501-5000 ETB followed by 18 (6.3) were 5001-7500 ETB. The rest 4 (1.4) reported 7501-10000 ETB.

Obstetric characteristics

A high chance of the pregnant women canvassed was in their alternate trimester (58.5), (33.4) in their first trimester and (8.1) were in third trimester. Of the 287 pregnant women canvassed, 65.5 and 23.34 were multi gravid as and multiparous while 34.5 and 35.5 were primigravidae and primiparous. Seventy-four (25.8) reported that they've had one revocation and the other one replier 7 (2.4) have had revocation doubly in their lifetime. Regarding the medicine iron/folate 231 (80.5) repliers admit these drugs during their current gestation while the rest 56 (19.5) did not admit the medication. Among repliers 68 (23.7) do not know about anemia while the rest 219 (76.3) reported they heard about anemia. Among the repliers who took IFA they replied 20 (8.65) took for a month duration, 62 (26.8) took for two months, 84 (36.3) of them took for three months and the rest 65 (28.1) took for further than three months.

Discussion

In this study the frequencies of iron and folic acid supplementation was plant to be (80.5) those women who used iron-folic acid were at lower threat for anemia and babies with low birth

weight the rate of using iron-folic acid in this study (80.5) which was analogous with the rate reported among pregnant women in eastern Sudan (81.5) [17]. or other African countries e.g. Nigeria, Tanzania and Kenya. but the rate of using iron-folic acid in this study (80.5) was lower the rate reported among pregnant women in karthum Sudan (92.1) the low rate of iron-folic acid use in the current study compared with in karthum Sudan may be because the study done in karthum Sudan was carried out in a tertiary sanitarium [18]. The study revealed that 90.1 of the repliers entered at least two or three ANC visits in Kirkose sub megacity health centers which is close to the study done in India, Anumanthai PHC of Villupuram, Tamil Nadu, counting 99.3 of the study actors entered at least three ANC visits. This implies that there's an increase health seeking geste in the community. Regarding on the application of iron folic acid, the current study showed that 8.65 of the study actors consumed IFA at least for one month, 26.8 consumed for two months, 36.3 for three-month and 28.1 consumed for further than three months. In discrepancy to this study, a study done in India was veritably low account 18.5 of the repliers consumed at least 30 IFA tablets and 25.9 consumed at least 90 IFA tablets. Only 5.9 consumed 100 IFA tablets [19-21]. The reason might be that the involvement of health extension workers could help the pregnant women during home-to-home visits by encouraging them to take the tablet as specified and educating them on health benefit of taking IFA supplement and thus, it's apparent that consumption of IFA tablets will surely be enhanced if proper social rallying is accepted.

Conclusion

In this study the magnitude of iron-folic acid supplementation was high. Still, there's still low application among pregnant women. A high chance of the pregnant women canvassed was in their alternate trimester followed by with those pregnant women who were in their first trimester, and many were in their third trimester.

Recommendations

Recommendation encouraged to Health extension workers to give health education for pregnant mama to help them in sticking to the supplement ordered by the health worker. And also, Health care provider in different position give health education to pregnant women on the significance of iron/folic acid early supplementation, significance of application of iron folic acid during gestation and to attend the ANC visit.

Conflict of Authors

There's no conflict of interest between the authors on the publication of this exploration work.

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