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Original Research Article

Nutrition counselling and knowledge on iron and folic acid supplementation among pregnant women in Nyeri County, Kenya

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ABSTRACT

Background: In the world, a deficiency of iron is the most common nutrition disorder affecting more than 30% of the global populace more so children and women. Countries in the developing world are working in programs on implementing the iron and folic acid supplementation (IFAS) although the effectiveness of curbing anemia is usually affected by non-compliance to iron and folic acid supplements by women who are pregnant. The government of Kenya has come up with strategies to deal with anemia which include supplementation of iron and folic acid, implementation of focused antenatal care even though they have encountered a few hurdles resulting to sub optimal coverage and low levels of compliance.
Methods: This was a mixed method study whereby both qualitative and quantitative data was analysed. A sample size of 385 pregnant women were interviewed. Data was collected using questionnaires. Descriptive statistics were used to analyze the quantitative data which was presented in form of frequency and percentage tables, bar graphs and pie charts.
Results: Results show that 96% of the expectant women indicated that they were advised to take fruits while 86% indicated that they were advised to take green vegetables. This shows that pregnant women in the study had good knowledge of their dietary needs.
Conclusions: The study concludes that expectant women had high nutrition knowledge on foods that raise the haemoglobin levels during gravidity.

Keywords: Iron, Folic acid, IFAS, Expectant women, Anemia, Gravidity

INTRODUCTION

Anemia related to pregnancy prevalence globally extents from 41.8 to 43.8% making it to about 59 million expectant mothers. Africa has the highest burden (61.3%)) closely followed by south east Asia (52.5%). This translates to every second expectant woman being anemic in the developing countries.[4] In 2013, 3.0 million neonatal and maternal deaths in the developing countries occurred. This was an important contributor to overall deaths globally. Further, it is projected that 90,000 fatalities in both male and female and all age groups are as a result of a deficiency of iron alone.[5]

A deficiency of iron in expectant women is linked to perinatal blood losses, high risk in blood transfusion, increased risk for caesarean section, pre-eclampsia, impaired wound healing, abruption of the placenta, maternal thyroid status which are abnormal and heart failure and mortality.[6] Consumption of Iron and folic acid supplements in expectancy upsurges the hemoglobin concentration but most expectant mothers continue being anemic, this could be attributed to issues of compliance and irregular intake of IFA supplements.[7]

A deficiency of folate has been noted in about 5% of all anemia cases, a recommended dose of 5 mg oral folic

acid should be given to correct anemia. If a patient present with cobalamin deficiency, 250 ug cyanocobalamin is administered parenterally every week is recommended. In the event there is severe anemia near term a daily cobalamin dose of 100 ug should be given for a week.[8] Giving information to pregnant women on diet, healthy living, IFA supplements adherence and compliance is an important strategy in effective communication.[9] An important way to deal with folic acid intake is to promote the intake of foods that are high in the micronutrient, advocating on programs that promote the consumption of such foods and identification of local food sources encourage their use.[10]

The ministry of health in Kenya embraced the world health organization guidelines on iron and folic acid supplements to expectant mothers. IFA supplements are given country wide in all health facilities operated by the national government, county governments, non-governmental organizations, church, mission, private sector and community-based organizations.[11] The ministry has also employed other approaches to deal with anemia in pregnancy and these include nutrition education to focus on intake of diets that are rich in bioavailable iron and control of helminths.[12]

Folic acid deficiency in expectancy is linked to macrocytic anemia, congenital malformations and birth of low weight neonates of less than 2500 gm these occurs during embryogenesis as a result of a defect in neurulation a process 31 that takes place in 21st to 28th day after conception, before the woman even realizing she is pregnant.[13,14] Studies have suggested that intake of folic acid supplements or iron and folic acid supplements three months before neurulation can reduce the threat of neural tube defects by 75%.[13]

Iron deficiency anemia is linked adversely to pregnancy outcomes more so with an increased risk of placenta Previa, premature rapture of membrane, maternal low weight gain, premature labor, cardiac arrhythmia, blood losses, reduced immunity to disease, reduced mental development and work capacity is reduced.[5,15] Likewise, anemia of iron deficiency on the foetus and neonates are aggravating a of risk of births prematurely, fetal impairment, low APGAR score, low birth weight, intra 28 uterine growth restriction, fetal distress which could consequently bring about the perinatal morbidity and deaths.[8,16]

The objectives of the study were to understand the nutrition counselling and knowledge on iron and folic acid supplements among pregnant women in Nyeri County.

METHODS

This was a mixed method study. The study was conducted in Nyeri County in October 2018; the County covers an area of 2,361 km² and is located in the central region of Kenya. Expectant women aged between 18-49 years visiting the antenatal clinics in both the level 4 and 5 health facilities were selected. The sample was randomized relative to the average ANC attendance of the facility.

A total number of 385 pregnant mothers was calculated using the Fisher modified formula. The study employed the use of a structured researcher administered questionnaire. Questionnaires were used to collect information form the expectant mothers. A sample of the questionnaire was submitted to researcher's supervisor for review. This was to ensure the validity of the data collection instrument.

In this study, dichotomization enabled chi-square analysis for both continuous and categorical data. SPSS version 20 for windows was employed for data analysis.

Inclusion criteria

The study selected participants based on these criteria: Expectant women aged 18 years and above and expectant women willing to participate in the study.

Exclusion criteria

Participants who met the below criteria were not included in the study: Expectant women below the age of 18 years because consent from parent or guardian was required and they (parent or guardian) could not be available and expectant women unwilling to participate in the study

RESULTS

Mothers understanding on benefits of IFAs

Mother counselled on IFAS

Findings in Figure 1 show that majority (53%) of the respondents indicated that they were not explained to the benefits of IFAS. This shows gaps in counselling of pregnant women on iron and folic acid supplements. This is consistent with findings of a Kenyan study.[4]

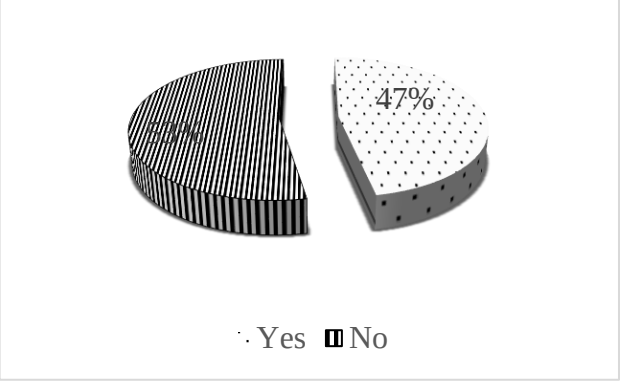

Figure 1: Mother counselled on IFAS.

Knowledge on benefits of IFAS

Results in Table 1 show that 34% indicated that IFAS promotes health of the baby while 26% indicated that IFAS Increases blood volume. The results also show that 27% did not know any benefit of IFAS. This shows that knowledge on benefits of IFAS was poor. a comparable study also found that the understanding on the importance of iron and folic acid supplementation among expectant mothers was inadequate.[17] Similar results were found in studies by conducted in Vietnam Ethiopia and Zimbabwe respectively.[15,18-20]

Table 1. Respondents knowledge about the benefits of IFAS.

Benefit*	N (%)
Increases blood volume	100 (26)
Promotes health of baby	131 (34)
Promotes health of mother	131 (34)
Increases weight	65 (17)
Reduces complications	54 (14)
Others	23 (6)
Don't know	104 (27)

*Multiple responses (n=385)

In Figure 2, majority (56%) of the respondents showed that they had not been counselled on the dietary sources of iron and folic acid while 44% had not been counselled.

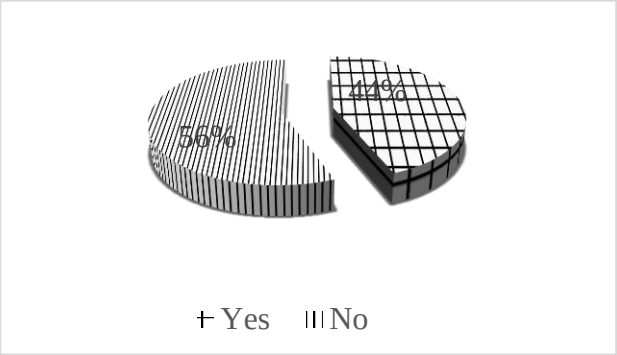

Figure 2: Mother counselled on dietary sources of iron and folic acid.

Foods mothers advised to take

Results show that 96% indicated that they were advised to take fruits while 86% indicated that they were advised to take green vegetables. This shows that pregnant women in the study had good knowledge of their dietary needs. This result is similar to that of a Nigerian study who found that overall, respondents were knowledgeable about dietary intake.[21] This result differs with findings of a Nepalese study that although every expectant mother had little knowledge on nutrition, still there is lack of adequate knowledge on dietary patterns during expectancy and some wrong perceptions following diet consumption during gravidity was found.[22] The result also differs with another study that found out that knowledge regarding sources of carbohydrates/proteins, iron, zinc, vitamin A and iodine was low in Yemen.[23]

Table 2: Foods mothers advised to take.

Food	Frequency (%)
Fruits	162 (96)
Green vegetables	145 (86)
Water	91 (54)
Others	22 (13)

*Multiple responses (n=215)

DISCUSSION

In spite of the universal provision of IFA pills to all pregnant women, they were not informed about the causes, features or consequences of anaemia. Furthermore, counselling the mothers on; the enhancers and inhibitors of folate and iron assimilation, and the fact that there is augmented nutritional needs during gravidity, was not provided in any of the health facilities. Similar findings were found in studies conducted in Nepal and India.[24-26]

Majority (56%) of the respondents showed that they had not been counselled on the dietary sources of iron and folic acid. This is consistent with findings of a Norwegian study that showed that mothers experienced that they were inadequately enlightened with nutrition-related information in antenatal care.[27] The information was perceived as presented in very general terms and focused on food safety. This finding is however in contrast to another study findings that for most Australian pregnant women, health care providers are at the top of the dependability hierarchy, which suggests a considerable potential for their promotion of healthy dietary behavior among pregnant women.[28]

Majority (55%) of the mothers had haemoglobin levels of between 121 g/l and 150 g/l. Only 11% of respondents had ever lost a pregnancy. There was a significant relationship (p=0.018) between compliance to IFAS and prevalence of IFAS. However, there was no significant relationship (p=0.873) between compliance to IFAS and child mortality. Majority of mothers knew that IFAS promotes the health of the mother and the bay but they could not name how or other benefits. A fair number of women could not name any benefit and others erroneously believed that consumption of IFAS adds weight. This can be attributed to poor counselling of pregnant women by health workers on the need and benefits of IFAS supplementation.

CONCLUSION

A huge number of the pregnant women had information that IFAS supports the wellbeing of the mother and the infant. However, they could not identify the benefits. Some of them believed that the supplements add the

weight of the infant. This is as a result of poor nutrition counselling by health workers to pregnant women. Incorporating counselling on the benefits of IFAS in the comprehensive care of antenatal would really be of benefit to the mothers.

Ensuring that the mothers get a session with Nutritionists during the antenatal visit would be very important to ensure that they are able to be counselled on the importance of IFAs and dietary sources of iron and folic acid not forgetting the foods that inhibit/increase bio absorption of the two micronutrients.

Further research should be conducted to assess how health workers counsel pregnant women on IFAS since majority of women were found to have little knowledge on benefits of IFAS.

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