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NON-ADHERENCE TO IRON AND FOLIC ACID SUPPLEMENTATION IFAS AMONG PREGNANT WOMEN IN BUNYALA SUB-COUNTY, WESTERN KENYA

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ABSTRACT

Due to high prevalence of anemia, WHO recommends a daily oral dose of 60 mg of iron and 400ug folic acid supplementation for 6 months to prevent maternal anemia and neonatal neural tube defects. Several countries in sub-Saharan African have implemented the recommendations, however few studies have assessed the accessibility and adherence among pregnant women. A cross sectional study was conducted among 305 women attending ANC services at 8 health facilities in Bunyala, sub-county in western Kenya. A purposive sampling technique was used to select the study participants and semi-structured questionnaire was used to collect data. Descriptive statistics was used for data analyses. The access to IFAS by pregnant women was 92.8% (283). However, adherence of daily oral dose within a month was 47.8% (146). The non-adherence group were irregular takers, 40.7% (124) and those who were not taking at all were 11.5% (35%). Further assesement showed that there were 12.5% (38) reported past miscarriages, abortions and still births as maternal outcomes. The findings of the study show that despite the good accessibility, there is low adherence to IFAS. Consequently, there is a need to promote health education during the ANC visits and strengthen the role of community health volunteers on the improvement of the adherence.

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INTRODUCTION

Iron and Folic acid are micronutrients that are essential in pregnancy because of fetal development (WHO, 2012). In most poor resource settings, the demand for these nutrients are not met because of decreased bioavailability among pregnant women (WHO, 2012). The pregnant women are the risk groups for anemia due to low iron stores in their body and in order to reduce the outcomes such as neural tube defects IFAS is provided throughout the pregnancy (WHO, 2016), These defects affect the brain, spine and spinal cord in embryo and infants (Abdullahi *et al.*, 2014). Spina bifida presents due to the failure of the spinal cord of the fetus to close during development (Gatt, 2016).

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Folate deficiency is a nutritional disorder that affects women of reproductive age globally (WHO, 2012). The consumption of folic acid is affected by loss by heat during cooking and low bioavailability (WHO, 2012). Women of reproductive age are advised to take 400 micrograms of folic acid before conception and continue until the end of the first trimester of pregnancy so as to decrease the chances of the occurrence of neural tube defects (NTD) such as spina bifida in infants and other birth defects associated with folic acid deficiency (García-Fragoso *et al.*, 2008). Deficiencies of iron and folic acid are common place in Kenya especially in women of reproductive age and pregnant women (Kamau *et al.*, 2018).The Ministry of Health has implemented the guideline by WHO which recommends that pregnant and post-partum mothers to be supplemented with iron and folic acid (Abdullahi *et al*., 2014). This is done through the antenatal care initiative with an aim of reducing the prevalence of maternal anemia. In 2009, government of Kenya through the antenatal care (ANC) initiative initiated the

iron and folic acid supplementation to pregnant women with an aim of reducing maternal anemia (Kozuki & Katz, 2011). Iron supplementation in pregnant women is carried out in health facilities managed by the government, church and non-governmental organization. A research study by Haider *et al*., (2013) reported an increase in haemoglobin concentration in women who took iron and folic acid supplements. In Kenya, a pregnant woman is recommended to take at least 90 tablets of iron/folic acid supplements, consisting of 60 mg of iron (*ferrous sulphate*) and 0.4 mg of folic acid, during pregnancy (WHO, 2016). These supplements are provided free of charge for all pregnant women throughout the country (Kenya Ministry of Health, 2013). Although research studies report that supplementation of iron raises the hemoglobin level in pregnant women, iron and folic acid supplementation still faces a number of challenges that leads to low uptake. Despite this recommendation, the uptake of iron and folic acid still remains low especially in developing countries such as Kenya (Maina-Gathigi *et al.*, 2013).

MATERIALS AND METHODS

This study was carried out in Bunyala Sub-County in western region of Kenya. The area lies on Latitude 0.4333 and Longitude 34.1500. It has 18 sub-locations (Bunyala District Report, 2008) and covers 188.3 Km^2. The area is inhabited predominantly by the Bunyala, a sub-tribe of the Luhya, who practice subsistence farming, fishing, and non-farm activities such as petty trade (Bunyala District Report, 2008; KNBS, 2016). The study area has high levels of rural poverty, affecting approximately 46.5% of the population (KNBS, 2008). This was a descriptive cross-sectional study conducted among pregnant women receiving antenatal care at the selected 8 Ministry of Health facilities serving in Bunyala sub -county. The study population comprised of 305 pregnant women aged 15-49 years attending ANC visits in 8 health facilities in Bunyala sub-County. The study participants were purposively selected and excluded were pregnant women who did not consent, and those who were very sick and also demonstrated some mental disorders. The data were collected using structured questionnaire administered to pregnant women. The research assistants were health workers who were trained to familiarize them to the research tools and also carry out the data collection process. Ethical approval for this study was sought from the Institutional Research Ethics Committee (IREC) and administrative approval was sought from the Bunyala Sub-County medical officer of health. In addition, an informed consent was sought from all study participants. Further, assent to mothers who were below 18 years. The study participants were assured of anonymity and confidentiality of the data being collected and that the data collected would be used for the purpose of the study only. To ensure that data collected was valid, data collection tools was pre-tested on 30 individuals (10% of the sample size) in the nearby health facility. The descriptive data analysis was performed using Statistical Package for Social Sciences (SPSS Version. 21.0) and summarized using frequency and percentages and then presented in form of tables and graphs.

RESULTS

Demographic characteristics: There were 305 study participants with 100% response to the questionnaire. Majority of the respondents 45.9% (140) were aged 18-25 years and married 82.3% (251).

Table 1. Demographic characteristics of the study participants

Characteristic	Frequency (305)	Percentage (%)
Age category (Years)		
Below 18	27	8.9
18-25	140	45.9
26-33	120	39.3
>34	18	5.9
Marital status		
Single	49	16.1
Married	251	82.3
Divorced	2	0.6
Separated	3	1
Education level		
Primary	210	68.9
Secondary	79	26.0
College	16	0.52
Occupation		
Employed	25	0.8
Unemployed	280	99.2

Table 2. Monthly adherence

Folic acid supplement	Frequency	Percentage (%)
Taken	146	47.8
Irregularly taken	124	40.7
Not taken	35	11.5
Total	305	100

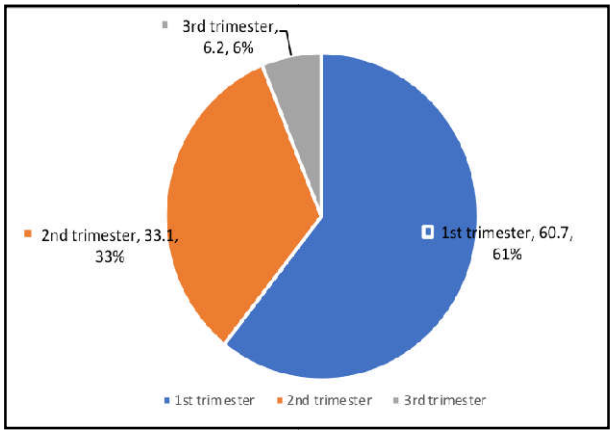

Figure 1. The distribution of women according to trimesters

The number with the primary level of education was the highest 68.9% (210). Most of the study participants were unemployed 99.2% (280). The majority 92.8% (283) had access to iron and folic acid supplements. The respondents noted that IFAS was available in any of the ANC visit to the facility. However, the monthly adherence was 47.8% (146) suggesting that nearly half of the pregnant women did not faithfully take their IFAS within 30 days. Those who did not take were few but those who irregularly took the IFAS were about 40.7% (124). The study further reviewed the distribution of the women who attending ANC services at the health facilities, majority of the pregnant women 60.7% (185) were in their third trimester, 33.1% (101) were in their second trimester and only 6.2% (18) were in their first trimester (Figure 1). The distribution suggests late onset of ANC services. However, only 64.9% (198) knew the date of delivery but 12.5% (38) have either experienced a miscarriage, abortion or had a still birth.

DISCUSSION

Adherence to IFAS is a important in the prevention of the adverse effects associated with maternal anemia (WHO, 2003).

The monthly adherence to IFAS in this study was 47.8% indicating that almost half of the pregnant did not faithfully take their supplements. This finding is similar to a study done in Aykel town in Northwest Ethiopia with an adherence rate of 47.6% (Assefa *et al*., 2019). In addition, the results from this study are in agreement to different study carried out in Northwest Ethiopia reported an adherence to IFAS of 55% (Birhanu *et al*., 2018). The adherence reported in this study is higher than that reported in other studies. A study done in Kiambu County in Kenya reported an adherence of 32.7% (Kamau *et al*., 2018). In addition, another study in Ethiopia reported an adherence of 28.7%. These studies linked the intake of IFAS to education status as women who are knowledgeable IFAS tend to adhere to intake of IFAS as advised by the health care provider (Agegnehu *et al*., 2019). However, the prevalence in this study is lower than that reported in other studies in sub Sahara Africa. The prevalence in studies in Assela town in Ethiopia was 59.8% while in Mizan Aman town in Ethiopia was 70.6%. These differences might be because of the educational levels of the study participants as most of them had attained primary school education. According to research studies, literate women have the ability to read, exhibit good understanding of the health messages and consume the recommended daily intake of IFAS as compared to women with lower or no education (Chourasia *et al*., 2017).

The distribution of pregnant women in this study showed that majority (60.7%) were in their third trimester indicating late onset to ANC clinics. Knowledge on the iron and folic acid supplementation is usually passed to pregnant women during the antenatal clinics. The late onset to antenatal clinic recorded in this current study could have contributed to almost half of the study participants failing to take their supplements on a daily basis. This could be because they did not understand the benefit of consuming the supplements and the bad outcomes of not taking the supplements (Demis *et al*., 2019). Pregnant women are required to consume iron and folic acid supplements on a daily basis from their first trimester through to third trimester. However, research studies report that 70% of pregnant women do not faithfully take their iron and folic acid supplements (Bailey *et al*., 2015).

Taking into consideration the adverse outcomes to poor adherence to IFAS such as anemia, low birth weights and preterm labour, there is need for the government to roll out health education programs geared at sensitizing women on the importance of faithfully taking their IFAS. The iron and folic acid supplementation program is the intervention recommended by the World Health Organization to reduce the prevalence of maternal iron deficiency anemia and neonatal mortality in endemic areas especially sub Saharan Africa (WHO, 2012). Iron and folic acid supplementation is usually achieved through the antenatal care clinics where pregnant women in all gestation stages are provided with the supplements free of charge. The access to folic acid supplements among the study participants was 92.8% with majority of them obtaining the IFAS free of charge from the clinics. Iron and folic acid supplements are provided free of charge to all pregnant women attending antenatal care in public health facilities in Kenya. This study therefore recommends more effort on the promotion of health education during the ANC visits and further recommends search for strategies to strengthen the role of role of community health volunteers on the improvement of the adherence.

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