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PREGNANT WOMEN'S NUTRITIONAL AWARENESS, LIFESTYLES AND SATISFACTION ON NUTRITION EDUCATION AT REPRODUCTIVE AND CHILD HEALTH CLINICS IN TEMEKE DISTRICT, TANZANIA

Abela Zakayo Twin'omujuni[1]
[1] Research Officer -Nutrition;
Tanzania Food and Nutrition Centre

Josephine Manase[2]
[2]Research Officer -Sociology;
Tanzania Food and Nutrition Centre

Nyamizi Julius[3]
[3]Research Officer - Dietetics;
Tanzania Food and Nutrition Centre

ABSTRACT

Proper use of nutrition information among pregnant women is essential in escaping them from malnutrition which can contribute to maternal and infant morbidity, mortality and adverse birth outcomes. Awareness of nutrition, proper lifestyle behaviors' and satisfaction among pregnant women are important in making sure that women participate effectively in complying with nutrition necessities in pregnancy. This study assessed pregnant women's nutritional awareness, lifestyle behaviours and satisfaction on nutrition education provided to them at Reproductive and Child Health (RCH) clinics in Temeke District Dar es Salaam Region, Tanzania. A cross-sectional study design was used to collect data from pregnant women at single point in time. The stud used convenient sampling to select 100 pregnant women who attended RCH clinics from twelve randomly selected health facilities. The study used survey and focus Group discussions (FGDs) as methods of data collection. Data analysis was done using SPSS version 16 to reveal descriptive statistics such as frequencies, percentages and standard deviations which presented in tables and figures. Data collected through Focus Group Discussions (FGDs) was analysed by using content analysis to reveal themes and concepts. The study realized that 52% of pregnant women didn't know that pregnant women have different nutritional needs according to gestation age, physical activities levels and pre-conceptual health status; and 63% of pregnant women were not aware that maternal nutrition has influence on birth outcomes. Lifestyle behaviours of pregnant women in the study area include: not smoking cigarettes (100%), not drinking alcohols (98%) and not drinking tea, coffee and coke drinks with food (33%). More results show that 54% of pregnant women were not satisfied with quality of nutrition education provided at RCH clinics due to poor reliability, poor/lack of tangibles (visual aids and supplements), poor assurance and poor responsiveness of RCH Providers. Most pregnant women were not aware of the nutritional needs during pregnancy and the association between maternal dietary intake and birth outcomes which was probably contributed by inadequate nutrition education received during ANC contacts. The study recommends that the health facilities should improve the quality of nutrition education provided to pregnant women when they attend to RCH clinics especially on quality nutrition education services with regard to reliability, tangibles, assurance and responsiveness so as to improve maternal nutritional status which in turn will reduce maternal and infant morbidity and mortality and improve birth outcomes in Temeke District in Dar es Salaam Region, Tanzania.

KEYWORDS: ***pregnant women, awareness, nutrition education, lifestyle, satisfaction***

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1. INTRODUCTION

Adequate nutrition is very important especially during pregnancy when a woman undergoes major biological, physical, psychological and social changes. Good maternal nutrition is also important for the health and reproductive performance of pregnant women and improves the birth outcomes. Adverse health impacts on mothers and foetus are results of poor and inadequate nutritional needs during pregnancy contributing to poor maternal outcomes (anaemia, intrauterine growth retardation, abortion) and infant outcomes (still birth, low birth weight and prematurity). Increase in risk of inappropriate gestation weight gain (GWG) due to inadequate dietary intake during pregnancy is associated with risks of pre-eclampsia, macrosomia and caesarean section (Renault et al., 2015; Longford et al, 2011). High exposure of the infant to risk of childhood obesity and non-communicable diseases (NCDs) later in life is a result of exposure of foetus to maternal obesity, diabetes, and unhealthy GWG (Bookari et al., 2017; Langley-Evans, 2015).Although mothers and their infants need healthy eating, still many women do not consume adequate diet during pregnancy (Malek et al, 2015). Following lack of access to nutritious diets, some women consume food which lack key nutrients such as folate, iron and fibre (Hare et al., 2009). Also, some women fail to meet consumption of some essential food groups such as vegetables, fruits, cereals, animal and animal products like meat, eggs and milk (Malek et al., 2015).

In order for pregnant women manage to afford safe, healthy and balanced diets, identifying factors which influence their dietary behaviours during pregnancy is very essential. There are several factors influencing pregnant women's dietary behaviours including: physical (pre-pregnancy body mass index (BMI), pregnancy induced changes- nausea, and vomiting), cognitive/perceptual (knowledge and attitudes), socio-economic (poor income, food insecurity, and marital status), and institutional and community factors such as gender inequality, food taboos and restriction (Bookari et al., 2017, WHO, 2020). In addition, nutrition knowledge is another factor which can influence pregnant women's dietary behaviours such as dietary practices (Bookari et al., 2017) and dietary choices (Malek et al., 2015). Improvement of maternal nutrition during pregnancy are essential in avoiding multiple risks of Adverse Pregnancy Outcomes (APO) such as restricted foetal growth, maternal underweight and small-for-gestational age births. Furthermore, improvement of maternal nutrition can help to prevent them from micronutrient deficiencies (Islam, 2013; Imdad and Za, 2011). It should be remembered that, lack of relevant nutrition knowledge specifically during pregnancy is an obstacle to consumption of healthy and adequate diet (Bookari et al., 2017) and appropriate use of supplements particularly folic acid and iron among pregnant women given during ANC visits (Popa et al., 2013).

Many African countries including Tanzania are constrained by maternal undernutrition during pregnancy which has both short and long term implications to pregnant women, their newborn, family and community as a whole (Mora and Nestel, 2000; Bhutta et al., 2008). Maternal undernutrition among pregnant women increases the rate of infections due to low immunity, increases rate of miscarriages and intrauterine growth retardation (Shrimpton, 2006). Also, anaemia is reported as a life threatening outcome of maternal undernutrition in majority of pregnant women in Africa. The prevalence of anaemia among pregnant women in Africa ranges from 21% to 80% (Lartey, 2008). In sub-Saharan Africa, the probability of death of pregnant women due to anaemia is very high as it is one in 16 pregnant women compared with one in 4000 pregnant women in developed countries (Lartey, 2008).The above effects led for the rationale of conducting this study. The study assessed the pregnant women's awareness of nutrition, lifestyle behaviours and satisfaction on nutrition education provided at RCH clinics in Temeke District. The district has higher infant mortality rate of 63/1000 than the national goal of 50/1000; higher under fives mortality rate of 181/1000 than the national goal of 70/1000; and higher maternal mortality rate of 643/100 000 than the national goal of 400-600/100000 (TMC, 2006).

Understanding pregnant women's awareness of nutrition information, lifestyle behaviours and their perceived satisfaction on nutrition education provided at Reproductive and Child Health (RCH) clinics are important aspects in identifying gaps in nutrition knowledge among pregnant women and quality of nutrition education provided by RCH providers. The World Health Organization (WHO, 1998) recommends that involving women in making decisions of their health affairs is considered as active women participation to ensure high quality antenatal services such as nutrition knowledge for pregnant women. However, there is scarcity of studies on nutrition knowledge for women in pregnancy (Szwajcer et al., 2012; Bookari et al., 2017; Kamanda et al., 2020) particularly in Temeke District, Tanzania. Furthermore, there is uncertainly of knowledge regarding pregnant women's awareness of nutrition in pregnancy, lifestyle behaviours and satisfaction on nutrition education provided by RCH clinics in Tanzania. This study assessed pregnant women's awareness of nutrition during pregnancy, lifestyle

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behaviours and satisfaction on nutrition education provided at RCH clinics in Temeke District Dar es Salaam Region Tanzania. The five service quality dimensions including reliability, tangibles, responsiveness, assurance and empathy of SERVQUAL model developed by Parasuraman et al. (1985) were used to measure satisfaction of pregnant women on quality of nutrition education provided at RCH clinics in the study area. The knowledge revealed by this study may help the government and private sector to make improvements in provision of quality nutrition education for pregnant women attending RCH clinics during pregnancy in Temeke District and Tanzania as a whole.

2. OBJECTIVES

2.1 Main objective

To assess pregnant women's awareness, lifestyle behaviours and satisfaction on nutrition education provided at Reproductive and Child Health clinics in Temeke District,Tanzania.

2.2 Specific objectives

i. To assess awareness of nutritional needs among pregnant women during pregnancy.
ii. To identify lifestyle behaviours of pregnant women in complying with nutrition.
iii. To assess pregnant women's satisfaction on quality of nutrition education provided at RCH clinics.

3. METHODOLOGY

The survey population comprised of pregnant women attended RCH clinics in health facilities in Temeke District Dar es Salaam Region, Tanzania. A cross-sectional survey was used to collect data from respondents each one at a single time. The cross-sectional design adopted both qualitative and quantitative approaches of data collection. The study used survey and focus Group discussions (FGDs) as methods of data collection. The instruments of data collection used were structured questionnaire and FGD checklist. Data was collected through questionnaire was analysed by using SPSS version 16 to reveal descriptive statistics such as frequencies, percentages and standard deviation which presented in tables and figures regarding pregnant women's awareness of nutrition, lifestyle behaviours and satisfaction on nutrition education provided in RCH clinics. Data collected through FGDs was analysed by using content analysis to reveal themes and concepts regarding service quality dimensions including reliability, tangibles, assurance, empathy and responsiveness of quality of nutrition education provided in RCH clinics of health facilities in Temeke District in Dar es Salaam Region, Tanzania.

4. SAMPLING DESIGN

The sample size of pregnant women attended RCH clinics was estimated by using the formula developed by Fischer et al. (1991). The sample size was determined based on prevalence of low birth weight (the major adverse pregnancy outcome) of 7% for Tanzania (NBS and ICF Macro, 2011) as follows:

$n = Z^2pq/d^2$

Where: n = sample size when population is greater than 10000

Z = standard normal deviation, which is 1.96 set at 95% confidence level.

p = expected prevalence (0.07)

q = 1.0 – p (expected non-prevalence) = 0.93

d = degree of accuracy desired 5% (0.05)

$$n = \frac{(1.96)^2 \times 0.07 \times 0.93}{(0.05)^2}$$

= 100 pregnant women

The sample size of 100 pregnant women was selected by using convenient sampling whereby pregnant women who attended RCH clinics from twelve selected health facilities during the particular day of survey participated in the study.

5. GEOGRAPHICAL AREA

The study was conducted in Temeke District, Tanzania. The rationale of selecting Temeke District was that the district has higher infant mortality rate of 63/1000 than the national goal of 50/1000; higher under fives mortality rate of 181/1000 than the national goal of 70/1000; and higher maternal mortality rate of 643/100 000 than the national goal of 400-600/100000 (TMC, 2006), despite the fact that Reproductive and Child Health (RCH) services being provided in all health facilities in the district.

6. RESULTS

6.1 Demographic characteristics of respondents

The study involved 100 pregnant women who were attending RCH clinics in Temeke District Dar es Salaam Region Tanzania. Based on demographic characteristics, majority of pregnant women were married (88%) while few respondents comprised of women who were not yet married and hence regarded as single women (10%). Small number of respondents comprised of divorce women (2%) (Table 1). With regard to occupation, majority of participants comprised of housewives who had neither wage employment nor business (46%) as shown in Table 1.

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Other participants were engaging in small business (35%) and wage employment (19%).

Table 1: Marital status and occupation of respondents (n=100)

Marital status	Married	88%
	Single	10%
	Divorce	2%
	Total	**100%**
Occupation	Formal employment	19%
	Housewives	46%
	Small business	35%
	Total	**100%**

The mean age of pregnant women participated in the study was 27 years, having standard deviation of 5.34. Their age ranged from 18 to 40 years and this justified that all pregnant women were adults.More results revealed that 56% of respondents completed primary school education. Other participants comprised of women who completed different levels of education including secondary schools (12%), certificate (8%) and degree level of education (2%). Some participants were either never attended school (non-formal education) or dropouts of primary or secondary schools (Figure 1).

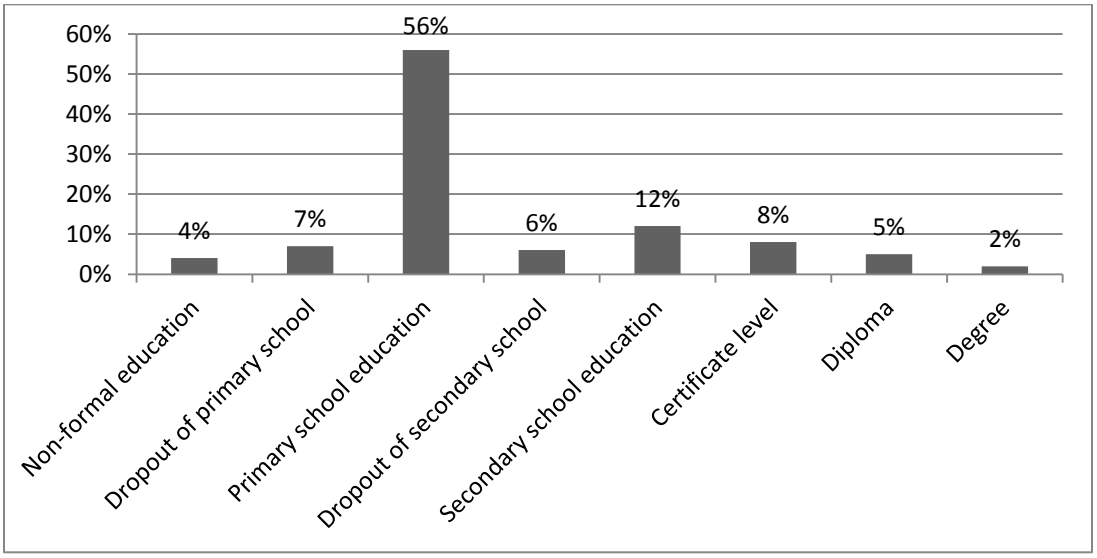

Figure 1: Distribution of respondents based on education levels

6.2 Pregnant women's awareness of nutritional needs

The assessment of pregnant women's awareness of nutrition needs was done using four items of measurement (Table 2). Results showed that 52 % of pregnant women were not sure if women in pregnancy require different nutritional needs according to gestation age, level of physical activities and pre-conceptual health while 48% were aware that women in pregnancy require different nutrition needs. Despite the awareness demonstrated by pregnant women during survey on requirements of different nutrition needs during pregnancy, participants were not able to recognize those differences in nutrition needs and how to meet them so as to improve their nutrition status and hence good birth outcomes. Lack of awareness of nutritional needs among pregnant women during pregnancy increases risks of maternal and infant morbidity, mortality and other adverse birth outcomes. Appropriate dietary behaviours and practices during pregnancy help to improve maternal and infant health while escaping malnutrition. Moreover, this study revealed that most women (63%) were not aware if maternal nutrition has influence on birth adverse outcomes such as still birth and neonatal death; prematurity; neuro tube defects and delivery of underweight child. The study found that only 37% of pregnant women who attended RCH clinics had

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awareness of association between maternal nutrition and birth outcomes.Therefore, most of pregnant women were not aware of association between maternal nutrition and birth outcomes in the study area.

Table 2: Awareness of nutritional needs among pregnant women (n=100)

Pregnant women's awareness of nutritional needs	Percentage
Not sure if pregnant women have different nutritional needs requirements.	33
There are differences in nutrition needs during pregnancy.	48
Nutrition needs during pregnancy are similar regardless of gestation age, level of physical activities and pre-conceptual health.	19
Total	**100**
Maternal nutrition has an influence on birth outcomes.	37

6.3 Lifestyles behaviours of pregnant women attending ANC clinics

The study found that 33% of pregnant women were drinking tea, coffee, Pepsi or Coke drinks together while eating food because they were not aware of adverse effects of these drinks on nutrient bioavailability. In spite of large number of women (67%) being not consuming the above drinks together with food, they lack nutrition knowledge of the effects of these drinks on nutrient bioavailability. Surveyed pregnant women provided some reasons of not using these drinks with food being lack of money to buy the drinks, don't prefer the drinks and avoiding the effects of these drinks especially frequent urination. More results revealed that pregnant women were not smoking cigarettes (100%) and don't drink alcohol (98%) as shown in figure 2. Escaping from drinking alcohol and smoking cigarettes helps pregnant women escape the health risks which can threaten maternal and infant health during pregnancy and after delivery.

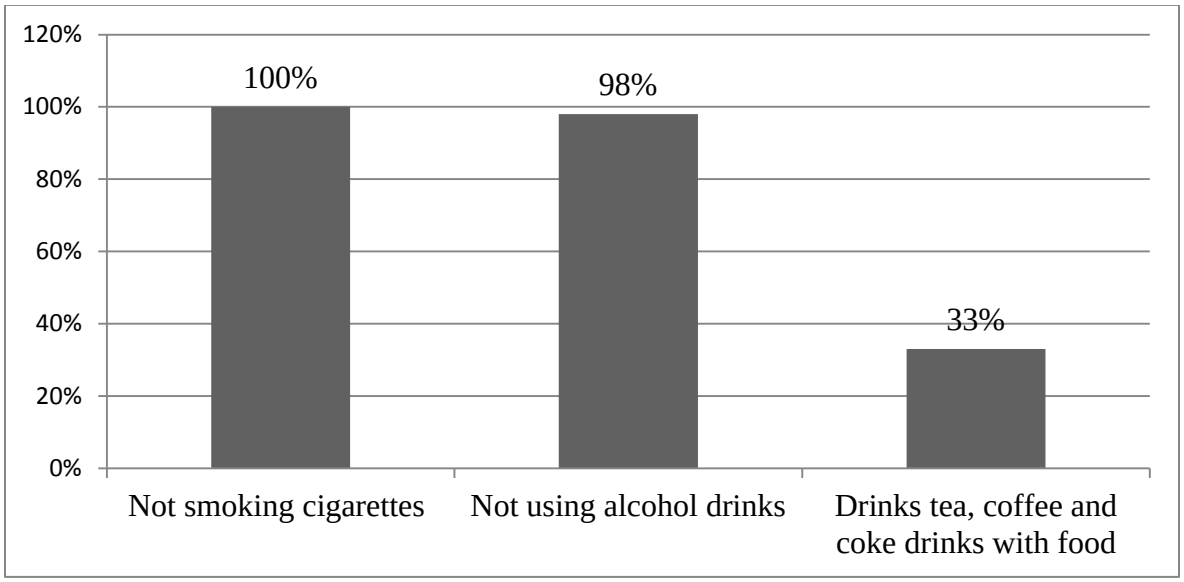

Figure 2: Life style behaviours of pregnant women regarding nutrition

6.4 Pregnant women's satisfaction on nutrition education provided at RCH clinics

The study assessed if pregnant women satisfied on nutrition education offered at RCH clinics in Temeke District Tanzania. The study revealed that pregnant women were not satisfied on nutrition education provided at RCH clinics of private and government health facilities. In particular, 54% of pregnant women were not satisfied with quality of nutrition education provided to them in all ANC visits (Figure 3). Also, pregnant women (46%) were not satisfied with quality of nutrition education provided at RCH clinics in the day of survey.

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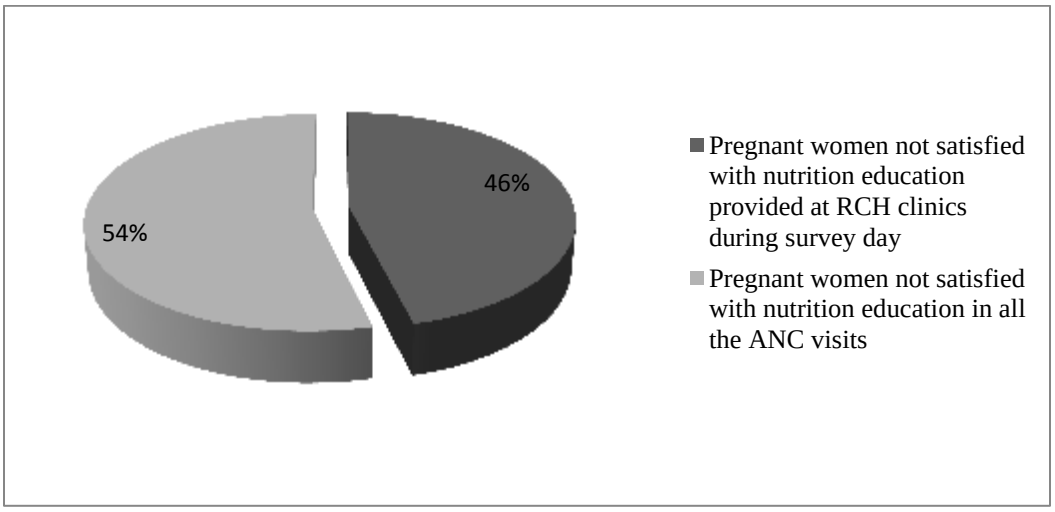

Figure 3: Satisfaction on nutrition education among pregnant women

Results showed that during FGDs with 10 pregnant women attended RCH clinics, participants put forward different reasons for dissatisfaction with quality of nutrition education offered by RCH providers. Pregnant women dissatisfied with quality of nutrition education due to poor reliability of RCH services since nutritional education does not being provided routinely, if any it starts late, sessions take long time and sometimes Providers when asked some nutrition related question they fail to answer them. Also, participants dissatisfied with quality of nutrition education provided at RCH due to poor tangibles associated by inadequate sitting spaces for pregnant women during nutrition education sessions, inadequate/absence of use of visual aids such as brochures or leaflets and absence of extra reading IEC (information, education and communication) materials to remind themselves while at home. Moreover, participants of FGDs said that they dissatisfied with quality of nutrition education due to lack of assurance from RCH providers who offer insufficient or non-offering of nutrition education during routine ANC clinics. Also, through FGDs with pregnant women attended the RCH clinics, pregnant women dissatisfied with poor responsiveness since most of RCH providers were not willing to help clients on nutrition education probably due to heavy work load and provide service not in time (provider's prompt service).

7. SUGGESTIONS

The study suggests that health facilities are advised to improve the quality of nutrition education provided to pregnant women when they attend RCH clinics especially the quality with regard to reliability, tangibles, assurance and responsiveness so as to improve maternal nutrition status hence birth outcomes. This in turn will reduce maternal and infant morbidity, mortality and adverse birth outcomes in the study area. Also this study recommends the use and provision of IEC materials during delivery of nutrition education at RCH clinics in Temeke District in Dar es Salaam Region Tanzania. In addition, the study recommends routine provision of nutrition education among pregnant women attending RCH clinics during their ANC visits which will help to improve maternal nutrition status and birth outcomes hence reduction of adverse health and nutrition outcomes in the study area and the whole country at large.

8. CONCLUSION

Proper use of nutrition information among pregnant women is essential in escaping them from malnutrition which contributes to maternal and infant morbidity and mortality and other adverse effects of pregnancy. Awareness of nutrition, proper lifestyle behaviours and satisfaction among pregnant women are important in making sure that women participate effectively in complying with nutritional requirements in pregnancy. In Temeke district where the study was conducted, most of pregnant women were not aware of nutritional needs during pregnancy. However, few of them were aware of different nutritional needs of pregnancy but they could not clearly explain the difference. This results into the inadequate or absent of compliance to nutritional requirements in pregnancy hence poor maternal nutrition status which results into poor birth outcomes. Furthermore, most of pregnant women were not aware of the relationship between birth outcomes and maternal nutrition. There were kinds of lifestyle behaviours of pregnant women in the

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study area associated by nutrition compliance in pregnancy including not smoking cigarettes, not drinking alcohols and few women have behaviours of drinking tea, coffee and coke drinks with food. In spite of antenatal care clinics provision of reproductive and child health and nutrition education, most of pregnant women attended in RCH clinics were not satisfied with quality of nutrition education provided. They were dissatisfied due to poor reliability, poor tangibles, poor assurance and poor responsiveness in nutrition education service quality.

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