Nutritional Knowledge, Practice and Parity Status of Pregnant Women in Abeokuta Ogun State, Nigeria.

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Abstract
Nutritional knowledge and practices are important factors in alleviating the problems related to pregnancy, its outcome and nutritional status. This study assesses the nutritional status, knowledge, practice and parity status of pregnant women in rural primary health centers in Abeokuta North and South of Ogun State. A cross sectional study involving 200 healthy pregnant women selected using multistage sampling procedure from 5 randomly selected primary health centers. Semi-structured questionnaire was used to collect data on socio-economic, anthropometry, parity status, nutrient intakes, nutritional knowledge and practices of the respondents. Data *obtained were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0. Nutrient intake was evaluated with Total Dietary Assessment (TDA) software while nutritional knowledge, practices and parity status were assessed on tercile scale and scored according to standard. The results showed that 93% were married, majority (83.5%) were within age 21-30years, 61% had secondary education with 31% earning within ₦20000-₦29000 monthly. Over half (54.0%) of them were malnourished as revealed by their current Mid Upper Arm Circumference (MUAC) while Nutritional knowledge score revealed that 50% were having good nutritional knowledge, 46.0% have average knowledge while 4% have poor knowledge of nutrition. Good nutritional practices toward appetite to food, eating varieties of food, consumption of fruit and vegetables was discovered among 57.0% while 43.0% had poor practices in terms of skipping meals (lunch), craving for nonfood like ice-block etc. Significant negative and positive association were found between nutritional knowledge and parity status at (r = -0.61** p=0.047) for poor and (r = 0.68**, p=0.048) for good nutritional knowledge respectively. Poor to average nutritional knowledge had negative influence on parity status and vice-versa. Therefore, adequate nutritional knowledge emphasizing the sources of good nutrition before and during pregnancy should be foster among the respondents to reduce level of miscarriage as revealed by the result.*
Key words: *Nutritional Status, Knowledge, MUAC, Pregnant Women, Parity, Miscarriage.*

Introduction

Pregnancy is the most crucial nutritionally demanding period of every woman's life. Maternal nutrition before and during pregnancy and health of the off-spring depend on the ability of the mother to provide nutrients and oxygen for her baby which is based on amount of nutritional knowledge of the mother which is a critical factor for fetal health and its survival (Sakhile and Shu-Jan, 2014). Adequate maternal nutritional knowledge and dietary practice during pregnancy is necessary to ensure positive pregnancy and delivery outcomes in any setting. Maternal under nutrition, including macro- and micronutrient deficiencies, is a significant public health problem in many developing countries; an estimated 32 million pregnant women (38%) globally are anemic (WHO, 2013). A new maternal mortality working group – which included WHO, UNICEF, UNFPA, The World Bank, and the United Nations Population Division (UNPD), pointed out that about 500,000 women die from pregnancy related causes each year (WHO, 2013). It is surprising and not encouraging that in this present age, women are still not knowledgeable on the factors that could affect them and their unborn children negatively which might lead to maternal and infant mortality (ToluEni-Olorunda *et al.,* 2015)**.** However, the incidence of dietary inadequacies as a result of poor or inadequate nutritional knowledge, habit and patterns are higher during pregnancy when compare to any other stage of the life cycle due to physiological demand (Haque *et al.,* 2014). Despite improvements in several health and development indicators in recent years, Nigeria remains one of the countries with the highest prevalence of maternal under-nutrition with women's nutrition facing the double burden of malnutrition with prevalence of under nutrition and overweight/obesity to be 11% and 25%respectively (NPC and ICF International, 2014). Poor dietary practices have been observed among rural dwellers due to workload and lack of knowledge (Abenwie-Suh *et al.,* 2016). Therefore, dietary practices due to level of nutritional knowledge and level of parity in developing countries especially in rural areas worth studying and reviewing to reduce the problem.

Methodology

Background of Study Area and Location
Abeokuta south and north are local government areas in Ogun state, Nigeria. South has an area of 71km2 with 25 maternity health centers, 15 government hospitals and 30 registered private hospitals (www.ogun.gov.ng). The headquarters of Abeokuta South and North are in the town of Ake and Akomoje respectively. North has area of 808km² and a population of 201, 329 at the 2006 census. It has 23 primary health centers with 11 out of the Primary Health Centre located in the rural area. (www.ogun.gov.ng).

Study population and Design:
The study population included pregnant women that were attending ante-natal clinic of selected rural health facilities within Abeokuta South and North Local Government area of Ogun State. A cross sectional descriptive study was conducted among the respondents with varying gestational ages receiving Ante-natal clinic at the selected primary health facilities.

Eligibility Criteria:

All healthy pregnant women attending ante-natal clinics in these health facilities without diseases like HIV/AID, diabetes mellitus, cardiovascular disease and do not declined consent to participate were included in the study.

Ethical Approval:

Ethical clearance for the use of human subject was obtained from the Ethical Review Board of State Hospital, Ijaye, Ogun State while confidentiality was also maintained for individual information.

Sample Size Determination:

By the assumption that 95% of the pregnant mothers were knowledgeable on maternal nutrition during pregnancy with 5% marginal error (Gibson, 2004). A non-response rate of 20% was estimated, based on these assumptions, the actual sample size for the study was determined using the formula for single population proportion.

$$N = \frac{t^2 \, X \, P \, (1 - P)}{e^2}$$

N = 160 ≈200 None response rate = 20%

Sampling Technique:

The total number of rural primary health facilities in both local governments are eleven (11) where the respondent can be assessed.

1st Stage: 5 out of 11 rural health centers in Abeokuta North was selected using simple random selection (balloting by replacement) while 2 primary health centers was selected in Abeokuta south due to the fact that almost all health centers in south were not rural.
2nd Stage: To select study subjects from the study populations, all qualified mothers coming for routine consultations and prenatal care at the selected health facilities was numbered serially in order of arrival in a client's registration book. Then from the numbers, at each facility, the subjects were selected using the formula N/n to determine the sampling fraction for selecting study participants, where N= Total number of women attending booking clinics on the day of sampling, n= the number of women required at that facility. The sampling fraction was used to select study participants included in the sample as they registered until the required sample per facility were reached. **3rd State:** 40 respondents were selected from each health centers by systematic sampling method as described above.

Method of Data Collection

A semi-structured questionnaire was used to obtain information from the respondent. It was pre-tested on 5% of the total sample size to assess for clarity, length and completeness. The questionnaire was administered by three (3) semi trained interviewers with assistance of nurses on duty. The questionnaire comprises of five sections which are aimed at eliciting data on socio-demographical and economic status, nutritional status, maternal knowledge on adequate maternal nutrition before and during pregnancy, actual dietary practices including their likes and dislikes, beliefs and cultural values related to pregnancy nutrition, nutrient intake and parity level.

Anthropometry Data Collection:

All anthropometric measurements were taken according to the standard method as described by FANTA (2016). Calibrated bathroom weighing scale was used to measure weight of the respondents with minimal clothing to the nearest 0.1kg. Heightometer was used to measure the height. The headpiece was lowered as the respondents stand right until it firmly touches the crown of the head. The measurement was taken to the nearest 0.5cm. Non stretchable measuring tape was used to measure the mid-upper-arm-circumference (MUAC) of the respondents as the midway between the acronium and olecranon process (i.e. tip of the shoulder to the elbow) of the left arm without indenting the soft tissue and classified as MUAC<23 cm (malnutrition), 23cm - 33cm (normal), MUAC > 33 cm (obesity).

Nutrient Intake Assessment:

24hr dietary recall form in the questionnaire was used to assess the dietary intake within the last 24hr period and the actual weight of food was obtained by use of food model then finally converted to nutrient intake using total dietary assessment software (TDA). The values of nutrients obtained were compared with recommended dietary allowance (RDA) for pregnant women (Rush, 2014).

Assessment of Knowledge and Practices:

The respondents were investigated on 19 point questions modified from standard questionnaire used by Ochogu, (2014) for assessment of nutritional knowledge and practices of mothers in Abeokuta South and North Local Government Area of Ogun State. The questionnaire responses on knowledge and practices were two-point scale of Yes/No and "Practice always"/"Do not practice" respectively. The responses were graded by answering correctly and nutritional knowledge was classified as "knowledgeable" if a subject were able to score >75% and average/moderate knowledge if score 50% -<75% and referred to having "poor knowledge" if score between <25% - <50%. Nutritional practices were also graded based on the above scale and classified as having poor or good practices Ochogu, (2014)

Assessment of Parity Status

The 7-point question on number of pregnancies, miscarriages and still birth were designed by the researcher and subjects were classified into 3 groups according to parity: nulliparity, low multiparity (parity 1, 2, and 3), and grand multipara (parity 4 to 8) based on proportion and percentages of responses (Bai *et al.*, 2012). Relationship with other variables were drowned based on statistical tool.

Data Analysis:

The data obtained were analyzed using the Statistical Package for Social Sciences (SPSS) version 20.0 while descriptive statistics was use to present socio-demographic characteristics, parity status, knowledge and practices. Dietary intake was converted to nutrients using Total Dietary Assessment Software, and then compared with the recommended Dietary Allowance. MUAC data were also compared to UNICEF/WHO standards and inferential statistics was used to determine significant association among variables at $P < 0.05$

Result

Table 1: Socio-demographic characteristics of the Respondents

Variables	Frequency	Frequency (%)
Marital		
Single	6	3.0
Married	186	93.0
Divorced	8	4.0
Age (years)		

20 years and below	32	16.5
21-30 years	168	83.5
Mother's educational background		
Informal	20	10.2
Primary	26	13.3
Secondary	102	50
Tertiary	28	14.3
Petty trader	24	12.0
Monthly income (₦)		
5,000	18	9.0
5,000 - 9,999	14	7.0
10,000 -19,999	48	24.0
20,000 - 29,999	62	31.0
30,000-39,999	48	24.0
40,000-49,999	04	2.0
greater 50,000	06	3.0

Table II Nutritional status and parity Status of the Respondents.

Variables	**Frequency**	**Percentage** (%)
MUAC		
Malnutrition	108	54.0
Normal MUAC	92	46.0
No pregnancies		
1-3 pregnancies	162	81.0
4 and above pregnancies	38	19.0
Experience on miscarriage		
Yes	56	28.0
No	144	72.0
No of miscarriage experienced		
One	46	79.3
Three	6	10.3
Four	4	10.2
Age at which the pregnancy was miscarriage		
less than 1 month	19	34.3
1-3months	21	37.1
greater than 4-6 months	16	28.6
Still birth		
Yes	48	24.0
No	152	76.0
Number of still birth experienced		
One	33	69.2
Two	15	30.8
Age of the last child		
Less than 18 years	178	91.2
18-25 years	17	8.8
Number of children excluding miscarriage		
1-3 children	144	100.0

Table III: Mean Nutrient Intake of the Respondents.

Nutrient parameters	Mean ± Std. Deviation	RDA	%RDA
Calorie	1695.02±4.79	2200 Kcal	77.04
Carbohydrate	124.55±10.86	175 g	71.17
Protein	38.10±8.19	71 g	53.66
Fat	44.04± 5.82	56 g	78.64
Calcium	112.50±13.05	1000 mg	11.25
Magnesium	70.47±7.99	360 mg	19.58
Sodium	558.52±7.10	1500 mg	37.23
Potassium	413.62±5.23	4700 mg	8.80
Zinc	5.57±2.44	11 mg	50.64
Iron	11.69±2.75	27 mg	43.30
Vitamin A	153.46±40.59	770 mg	19.93
Vitamin C	50.21±12.47	85 mg	59.07

Figure 1: Nutritional Knowledge of Respondents on Maternal Nutrition during Pregnancy.

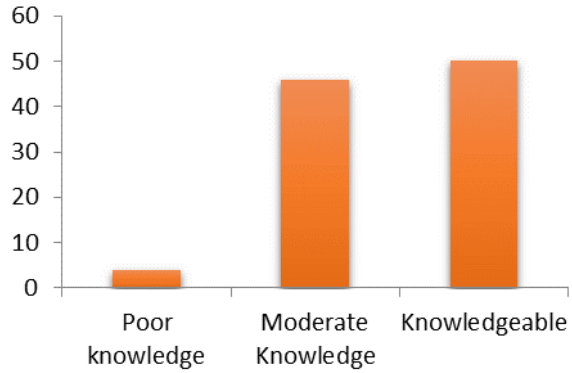

Figure II: Nutritional Practice of Pregnant Women in Abeokuta.

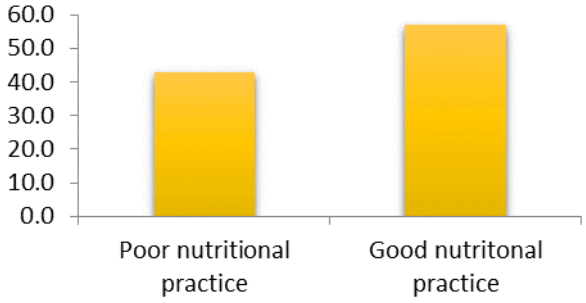

Table IV: Chi-Square Indicating Relationship between Nutrient Intake and Anthropometric and Nutritional Knowledge Information of Respondents.

	MUAC			Nutritional Knowledge		
Nutrients	**Df**	**p (0.05)**	**Decision**	**Df**	**p (0.05)**	**Decision**
Calorie	9306	0.024	S	1316	0.043	S
Carbohydrate	6732	0.027	S	952	0.0348	S
Protein	2871	0.034	S	406	0.044	S
Fat	4653	0.031	S	658	0.039	S
Calcium	4554	0.313	NS	644	0.837	NS
Magnesium	2970	0.346	NS	420	0.507	NS
Sodium	5247	0.301	NS	742	0.431	NS
Potassium	5148	0.302	NS	728	0.563	NS
Vitamin A	6831	0.027	S	966	0.013	S
Vitamin C	4059	0.322	NS	574	0.325	NS
Zinc	1089	0.402	NS	154	0.974	NS
Iron	1386	0.039	S	196	0.039	S

NS =Non significant (p > 0.05), S = significant (p < 0.05)

Table V: Relationship between Parity status and Nutritional Practice and Knowledge of the Respondents

Parity Status	Practice			Knowledge		
	r value	p(0.05)	Decision	Chi (χ)	p (0.05)	Decision
Total no pregnancy	0.097	0.346	NS	77.658	0.674	NS
Miscarriage	0.091	0.366	NS	51.472	0.004	S
No of miscarriage	0.021	0.913	NS	16.527	0.556	NS
Age of pregnancy before miscarriage	0.001	0.994	NS	28.712	0.094	NS
Still birth or neonatal death	0.157	0.119	NS	20.152	0.125	NS
No. of still birth	-0.029	0.889	NS	10.352	0.323	NS
Age of last child	0.290**	0.009	S			

S =Non significant (p > 0.05), S = significant (p < 0.05)

Table VI: Association between nutritional knowledge and parity Status Respondents

Nutritional knowledge	Correlation confident	Level of significant (p<0.05)	Decision
Poor knowledge	-0.61**	0.047	S
Moderate	0.17	0.907	NS
Knowledgeable	0.68**	0.048	S

**** Correlation is significant at the 0.01 level (2-tailed)**

Discussion

It is believe that hospitals and health centers in the urban centers are adequately equipped with personnel that provided appropriate information to pregnant women which prepared them on knowledge of nutrition during pregnancy, but less information is available as to whether the rural antenatal clinics are also fed with such information and how this affect their nutritional practices. Several studies have indicated socio-economic status as a major confounder of good nutritional practices (Nabhani-Zeidan 2011).

The result showed that majority of the expectant mothers interviewed were between age of 21 – 30years which is child bearing age and married but had secondary education. This may be due to the fact that most of primary health centers visited/where the data were collected are mixed rural and urban most especially in Abeokuta South as urban has spread to the areas which has influence on their education. It was also in accordance with findings of Sakhile *et al.,* (2014) who studied nutritional knowledge attitude and practices among HIV pregnant and lactating mothers in Manzini Swaziland. Majority were petty trader with maximum of N20000 – 29,000 monthly. Only 14% having tertiary education as inability of the majority to get highly paid job coupled with their rural location.

The mid-upper arm circumference indicated that half of the respondents were malnourished (54.0%) while less than half were having normal nourishment when compared to FANTA, USAID 2016 standard for their physiological state. This may be due to their low socio-economic level as seen that majority of the mothers were low income earners as this can limit their purchasing power. Association between the variables understudy revealed that there was significant relationship between macro nutrients, vitamin A and iron consumption of the expectant mothers at P < 0.05 with their anthropometric information this is in agreement with studies of Anahita and Maryam, (2018), who studied dietary intake, anthropometry and birth outcome among pregnant women in two rural districts in Iran and concluded that there is significant difference between anthropometric measurement of expectant mothers and their dietary intake at (p<0.05). This means increase or decrease in intake of these nutrients significantly affect their anthropometric measurement and do not occur by chance as macro nutrients are the chief body building and weight gain factor. This is in agreement with Sholeye, (2014). Majority of them fall under nulliparous and low multiparous with 1 – 3 pregnancies, while few of them were grand multiparous (4 – 8 pregnancies). This correlated with the study of Bai *et al.,* (2012) who studies parity and risk of pregnancy outcome and was able to clarify the basis of the classification of risk based on parity in New South Wales, Australia where pregnancy outcomes were compared among parity groups. Majority of the respondent (72%) had no miscarriage and (28%) had it, while larger percentage

of those indicated they have, had it once within < 1 – 3 months, this may be as a result of sensitivity and vulnerability of early stage of pregnancy due to many factors such as stress, nutrients intake, drug etc while few (26%) had it when the pregnancies were < 4 – 6 months. Most of the respondents do not experience still birth but out of those who reported still birth had it only once this is in agreement with the studies of Robert, (2011) who studied placental, pregnancy conditions account for most still birth to be infections, umbilical cord abnormalities etc. Half of the respondents have good knowledge of the maternal nutrition for pregnant women before and during pregnancy, about half (46.0%) were moderately knowledgeable while few (4.0%) of them have poor knowledge about the subject matter. Unsatisfactory mean scores for good Nutritional knowledge of (50%) and practice of (57%) in terms of this values are comparatively lower than the scores observed in women of child bearing age in Uganda who had nutritional knowledge and practice score of 88% and 75% respectively. It was also lower for knowledge and but higher for practice in a study conducted by Sakhile *et al.,* (2014) among pregnant and lactating women in the Manzini region of Swaziland who had 67% and practices of 51% respectively. The difference could be due to training of Uganda women as reported by 81% of the women in the study.

Maternal intakes which also directly influence what the developing baby feeds on goes a long way in determining its state of health at birth, for a pregnant mother to eat healthfully, she needs to have adequate knowledge of the different components of food, but if the knowledge is not put in practice, it becomes meaningless. Over half of the respondent (69%) as observed in this research supported the opinion of increasing dietary intake during pregnancy but do not know by how much per month/trimester. Appreciable percentages (81%) of the respondent as discovered in this study claimed knowledge on effect of adequate diet on the growing fetus but are skeptical whether pregnant woman can possibly be overfed. Almost half of the respondents were aware of sugary foods has being harmful to pregnancy but do not have knowledge of salty food (2%) and eating without balance diet as harmful.

As revealed by this study most of the respondents (89%) claimed to be knowledgeable on the main food nutrients (i.e macronutrients) that pregnant women should consume daily and 87% supported that main meal should be taken daily, this is in agreement with studies of Anahita and Maryam, (2018), who studied dietary intake, anthropometry and birth outcome among pregnant women in two rural districts in Iran and concluded that there is significant difference between anthropometric measurement of expectant mothers and their dietary intake/mean intake of iron, zinc and calcium were inadequate (<75% of RDA). Almost all the respondents were knowledgeable about constituent and functions of carbohydrates and fats (84%), protein 93%, fruits and vegetables (94%) and demonstrated knowledge of dietary diversity as claimed by the respondents that adequate nutrients cannot be provided by one kind of food. About half of the respondents have poor knowledge of food rich in iodine, fiber, foliate (folic acid), antioxidants and major constituents of water and functions of these nutrients as shown in their responses that fiber, antioxidant rich food are not good for pregnant women and also that water is not needed in the body during pregnancy.

Only few (28%) have knowledge of possibility of pregnant women being over-weight. Overall knowledge showed that majority of the respondents had moderate to adequate knowledge of maternal nutrition before and during pregnancy. Importance of good nutritional practices during pregnancy cannot be over emphasized; from the study majority of the respondent (77%) have good appetite to food and take complete meals per day. It was observed that out of total 60% of the respondents that crave for non-food, (31%) crave for ice-block, this was supported by the study of Nicolas, (2016) who studied why pregnancy can make pregnant woman crave which ranges from hormonal imbalance, loss of appetite etc while over half of the respondents have no food alleges but few ones were allergic to noodles which normally gives them heartburn. Although larger proportion (71%) of the respondents forbids no food due to cultural believe but it was observed that few (15%) of the respondent still avoid fruit and vegetables due to their pregnancy state, as a result of cultural believe. This is in accordance to the study of Ugwa, (2016) who studied nutritional practices and taboos among pregnant women attending antenatal care at general hospital in Kano, Northwest Nigeria. Most of the expectant mothers have good fruits and vegetables practice, fish/meat and other sources of protein on the daily bases at least once.

The only source of iodine claimed to consume was table salt or iodized salt without knowledge and practice from other sources, this is in accordance with Zelalem *et al.,* (2017) who also claimed that pregnant women uses only iodized salt (90.7%) as source of iodine. Higher percentages of the respondents takes fruit and vegetables as in between meal and followed by breakfast (36.4%), majority of them prepared their meals rather than buying, most of the subjects were not allergic to most food or on any special therapeutic diet to cure any ailment. On the average, the

nutritional knowledge and practices in this study is higher than the one reported by Zelalem *et al.,* (2017) (27%) and (34.5%) respectively who investigated nutritional knowledge, attitude and practices among pregnant women in Addis Ababa, Ethiopia.

From the nutrient intake of the respondent through 24hr recall investigated, revealed that majority of the respondent have their carbohydrate and total calorie intake adequately high in their state of pregnancy which is higher than that reported by Zelalem *et al.,* (2017) who investigated nutritional knowledge, attitude and practices among pregnant women in Addis Ababa, Ethiopia and also higher than study conducted in East Wollega (33.9%) by Berg *et al.*, (2011) but do not pay cognizance and adequate attention to protein, iron, vitamin A and most importantly calcium (<20% of RDA), potassium and magnesium sources where less than 50% of the RDA of these nutrient were met as the importance of these nutrients cannot be over emphasized in both development of fetus and the well-being of the mother e.g calcium potassium and magnesium in the formation of bones and teeth of the fetus, vitamin A, Iron and Protein in the synthesis of blood for both fetus and the mother, repair of worn-out tissues, leading to wounds after delivery and participation in millions of pathway and neuron in the body. The low level of most of these nutrients were also reported by Sholeye, (2014) who also reported less than 50% for most of these nutrients recorded including zinc and folate on the dietary habit of pregnant women in Ogun-East and also this is in agreement with studies of Anahita and Maryam, (2018) who studied dietary intake, anthropometry and birth outcome among pregnant women in two rural districts in Iran and concluded that their dietary intake/mean intake of iron, zinc and calcium were inadequate (<75% of RDA). This could be attributed to poor socio economic status and poor nutritional practice.

Association between the variables understudy revealed that there was significant relationship between macro nutrients, vitamin A and iron consumption of the expectant mothers at $P < 0.05$ with their MUAC this is in agreement with studies of Anahita and Maryam, (2018), who studied dietary intake, anthropometry and birth outcome among pregnant women in two rural districts in Iran and concluded that there is significant difference between anthropometric measurement of expectant mothers and their dietary intake at ($p<0.05$). This means increase or decrease in intake of these nutrients significantly affect their anthropometric measurement and do not occur by chance as macro nutrients are the chief body building and weight gain factor. This is in agreement with Sholeye, (2014). Same association was observed between nutritional intake and parity levels but include calcium in addition to above stated nutrients. Also the same trend was observed in the relationship between nutritional status and nutritional knowledge of the expectant mothers at ($P<0.05$), this is in agreement with Zelalem *et al.,* (2017) who investigated nutritional knowledge, attitude and practices among pregnant women in Addis Ababa, Ethiopia

When further enquiry was made on the study variables, it exposed that there were no significant relationship between parity status and their nutritional knowledge at ($P>0.05$) except for miscarriages that showed significant difference at ($P<0.05$) which means nutritional knowledge has direct influence on miscarriages. There was no significant association between nutritional practice and total number of pregnancies and still birth but relationship exist between nutritional practice, miscarriages at $p<0.021$, and age of pregnancies at $p<0.001$ while negative correlation was observed between nutritional practices and number of still birth experienced (-0.029). This relationship was in accordance with the study of Nicolas, (2016) who studied why pregnancy can make pregnant woman crave which ranges from hormonal imbalance, loss of appetite etc. Correlations between variables also revealed that there were no significant association between nutritional practice and parity status except for the last child meaning that nutritional practice has significant effect on survival or well-being of the last child given birth to while both negative and positive relationship exist between nutrient intake and nutritional practices. Negative association were observed among these variables for calories, fat, and iron while positive association were found between them for protein, and vitamin C ($p<0.05$). In term of nutritional knowledge against parity status, negative correlations was observed for poor knowledge while positive correlation was found for good nutritional knowledge at $p<0.01$. These indicated that when there are poor nutritional knowledge parity tend to be high from miscarriages as revealed earlier in table 9 and vice-versa.

Conclusions

Good nutritional knowledge do not connote good nutritional practice. The macronutrient intake was well above average and over half of the expectant mothers in the study areas were malnourished as indicated by their MUAC with very low percentage of RDA met in terms of vitamin A, Iron and Calcium. Half of the pregnant women have

adequate knowledge on maternal nutrition and practice good nutrition. Majority of the respondent fell within nulliparous and low multiparous with maximum of 1 – 3 pregnancies. There exist significant difference between nutritional intake, knowledge and practices, there were no significant different between nutrient intake and parity status except for miscarriages and number of still birth.

Recommendation:

Nutritionists should be invited to give health talks to pregnant women during antenatal clinics at rural primary health facilities rather than health officers in order to be well informed about sources and functions of food rich in foliate, iodine, Calcium, Magnesium, Potassium, Phosphorous as revealed by the result. Multiparous mothers should be encouraged to increase their micronutrient intake in order to reduce rate of miscarriages as revealed by the result. Implication of nutritional knowledge without practice should be explained to the expectant mothers as revealed that many of the expectant mothers have nutritional knowledge with about half of them having good nutritional practice.

Contribution to Knowledge:

Poor nutrient intake can lead to high level of parity due to miscarriages as revealed by the relationships in the study. Few rural people still forbid fruit and vegetables due to their cultural believe. Sources and functions of food rich in Folate, iodine and vitamin A, magnesium, potassium, phosphorous were not known by pregnant women in Abeokuta North and South.

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