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Factors Influencing the Nutritional Practice of Pregnant Women Living in a Semi-Urban Region of Ogun State, Nigeria

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Abstract: Maternal nutrition during pregnancy has been associated with healthy outcomes for both mother and child. This study investigated the factors influencing the nutritional practices of pregnant women attending antenatal clinic at a State Hospital in Ogun State, Nigeria. Study employed a descriptive, non-experimental research design. A non-probability convenience sampling method was used to select 210 pregnant women and questionnaires were administered after obtaining ethical approval and written consent. Data obtained was analyzed using Statistical Package of Social Sciences (SPSS 22.0. version). Inferential statistics of chi-square was used to test the hypothesis at a significant level of 0.05. Findings revealed that the nutritional practice of participants is inadequate. Although more than half of the participants (52.9%) claimed they eat whenever they felt like, only 29.8% respondents eat variety of food in moderation whereas 43.4% respondents eat fruits and vegetable daily. 82.2% respondents confirmed that they forbid the intake of certain food item when pregnant. Factors that hindered women from maintaining adequate nutritional practices in pregnancy includes low socio-economic status (42.4%), inadequate knowledge about the food item (20.4%), ignorance (13.1%), lack of husband support (12.6%) and forgetfulness (11.5%). Provision of health information was identified as a key measure for improving nutritional practices of women during pregnancy. Nutrition education and counselling given during each antenatal visit should be intensified. Special programs which elicit husband support should be organized in order to increase men's knowledge of adequate nutrition intake in pregnancy and also enhance supportive care which would positively affect women's nutritional practice.

Keywords: Nutritional practice, Factors, Pregnant Women, Influence, Semi-Urban Region

INTRODUCTION

Maternal nutrition continues to gain interest in many parts of the world [1]. This could be attributed to the fact that pregnancy is associated with increase in the physiologic, metabolic and nutritional demands placed on the woman by her growing baby [2]. During pregnancy, the body's need for energy, protein, vitamins and minerals increases by 13%, 54% and 50% respectively [3]. Thus the period of pregnancy becomes a critical time to meet these demands for both macro and micronutrients. This in turn places high demands for healthy dietary lifestyle choices as the growing foetus draws a lot of energy and nutrients from the mother in order to enhance physical and psychological development [4, 5]. Healthy eating habit in pregnancy helps to prevent pregnancy complications, aids recovery from childbirth, effectively sustains breastfeeding and also prevents the occurrence of diseases in adulthood [6-8]. However when adequate nutrition is not maintained during pregnancy, malnutrition ensues.

Malnutrition is a serious public health challenge which has been directly associated with increased mortality and morbidity rate especially in many parts of developing countries [3]. According to World Health Organization (WHO), 585,000 deaths resulting from pregnancy and childbirth related complications occur globally with about 1,500 deaths recorded daily, however most of these deaths occur in developing countries [1]. In Nigeria, there still remains dearth in the number of published studies showing the exact number of deaths recorded. However, an incidence rate of 10–40% has been reported in a rural community in the northern part of Nigeria [2]. Also 75% of pregnant women from the western part of Nigeria were reported to have had inadequate dietary energy intake [9]. Nevertheless, Poor nutrition in pregnancy negatively affects the woman's health and that of the unborn child [4]. To the woman, it causes weakness and lethargy, anaemia and loss of life for both the mother and the foetus and also reduces the woman's lactation performance [10]. Furthermore, due to the fact

that there is little amount of nutrients and low energy transferred to the foetus, intrauterine growth restrictions occur and the baby becomes small for his gestational age, may develop some abnormalities and could be born prematurely with a low birth weight and resultant death in some cases [11].

Pregnant women residing in rural and low-income areas have been observed to be mostly affected due to high consumption of inadequate amount of micronutrients as a result of resource limitations [3]. Intake of micronutrients less than the recommended values increase women's risk of micronutrient deficiencies [3]. Therefore, the maintenance of adequate nutrition especially during pregnancy is of utmost importance in order to ensure good health and optimal performance for both mother and her unborn child. Hence this study aimed to investigate factors that influenced the nutritional practice of pregnant women living in a semi-urban area of Ogun State.

METHODS

A descriptive, non-experimental research design was adopted to examine factors that influence the nutritional practices of pregnant women attending antenatal clinic at State Hospital Ijebu-Ode. Convenient sampling method was used to recruit 210 pregnant women who are still within child bearing age of 15-45 years old. Questionnaires that assessed factors influencing nutritional practices during pregnancy were administered after obtaining an ethical approval as well as verbal consent. Content validity was ensured through extensive review of literature while face validity was ensured by presenting questionnaire to experts in the subject area for clarity of sentences. All processes used to carry out this study were accurately documented in order to ensure reliability. Respondents were guided on how to complete the questionnaires. After questionnaires were retrieved, it was code and analyzed using Statistical Package of Social Sciences (SPSS 22.0. version). Descriptive statistics of tables and percentages was used for categorical variables. Inferential statistics of chi-square was used to test the hypothesis at a significant level of 0.05.

RESULTS

Out of 210 questionnaires distributed, only 191 completely filled questionnaires were coded and included in this analysis.

Table-1: Demographic Characteristic of Respondents (n= 191)

Age (Years)	**Frequency(N)**	**Percentage (%)**
15 – 25 years	74	38.7%
26- 35 years	80	41.9%
36 – 45 years	37	19.4%
Marital Status	**Frequency(N)**	**Percentage (%)**
Single	35	18.3%
Married	146	76.4%
Divorced	10	5.3%
Religion	**Frequency(N)**	**Percentage (%)**
Christianity	137	71.7%
Islam	50	26.2%
Traditional	4	2.1%
Education	**Frequency(N)**	**Percentage (%)**
Primary	25	13.1%
Secondary	50	26.9%
Tertiary	116	59.7%
Occupation	**Frequency(N)**	**Percentage (%)**
Civil Servants	74	38.7%
Artisans	80	41.9%
Traders	23	12.0%
House wife	14	7.5%
Monthly Income (in Naira)	**Frequency(N)**	**Percentage (%)**
#10,000-40,000	146	76.4%
# 50,000-80,000	26	13.7%
#80,000 -#150,000	19	9.9%
Number of pregnancy	**Frequency(N)**	**Percentage (%)**
1	75	39.2%
2	39	20.4%
3	31	16.3%
4	32	16.8%
5	14	7.3%

Gestational age	Frequency(N)	Percentage (%)
0 – 9 weeks	15	7.9%
10 – 19 weeks	19	9.9%
20 – 29 weeks	65	34.0%
30 – 40 weeks	92	48.2%
Ethnicity	**Frequency(N)**	**Percentage (%)**
Yoruba	170	89%
Hausa	7	3.7%
Igbo	10	5.2%
Efik	4	2.1%

Table 1 above shows that 38.7% respondents are within the ages of 15-25 years, 41.9% respondents are within 26-35 years, and 19.4% are within the ages of 36-45 years old respectively. 18.3% respondents are single while 76.4% are married. 71.7% respondents are Christians, while 26.2% respondents are Muslims. Majority (89%) of the respondents are Yoruba while 2.1% are Efik. More than half of the respondents (59.7%) have their tertiary education, while 26.9% respondents only have secondary education. 38.7% respondents are civil servants, 41.9% respondents are artisans, 12.0% respondents are traders whereas 7.5% respondents are housewives. Majority (76.4%) of the respondents earn a naira monthly income within the range of #10,000 and #40,000 while 9.9% respondents earn a monthly income within the range of #80,000-#150,000. Also 39.3% respondents are pregnant for the first time while 7.3% respondents are being pregnant for the fifth time. Almost half of the respondents (48.2%) are within the gestational age of 30-40 weeks while 7.9% respondents are within 0-9 weeks of gestational age.

Table-2: Participant's responses on nutritional practices during pregnancy (n= 191)

Questions	Options	Frequency	Percentage (%)
How many times do you eat food in a day?	Once	0	0%
	Twice	6	3.1%
	Thrice	84	44.0%
	When I feel like	101	52.9%
What type of food do you eat most of the time?	Carbohydrate-rich meals	54	28.3%
	Protein-rich meals	80	41.9%
	Variety of foods in moderation	57	29.8%
How often do you eat fruits and vegetables?	Daily	83	43.4%
	Once in a week	28	14.7%
	Twice in a week	43	22.5%
	Occasionally	37	19.4%
Are you presently on any supplement or vitamins?	Yes	168	88%
	No	23	12%
Do you drink alcohol or caffeine beverage when pregnant?	Yes	29	15.2%
	No	162	84.8%
Do you take any kind of herbal concoctions?	Yes	91	47.6%
	No	100	52.4%

Table 2 above shows participants responses on their nutritional practices during pregnancy. More than half (52.9%) of the respondents eat whenever they felt like while 3.1% respondents eat twice a day. 41.9% respondents claimed that they eat protein-rich meal while 28.3% eat mostly carbohydrate-rich meals. 43.3% respondents eat fruits and vegetables daily while 14.7% respondents eat fruits and vegetables once a week. In addition, 88% respondents are presently taking their vitamins. 84.8% respondents claimed they do not take alcoholic drinks or caffeine beverages where as 47.6% respondents does drink herbal concoctions.

Table-3: Participant's responses on factors influencing nutritional practices in pregnancy

Item	Options	Frequency	Percentages (%)
Do you forbid the intake of certain food or items when pregnant?	Yes	**157**	82.2%
	No	34	17.8%
Why do you forbid this food or item?	Cultural belief	**30**	15.7%
	Religious belief	**9**	4.7%
	Fear of death	**3**	1.6%
	Fear of giving birth to a big baby	**21**	11.0%
	Lack of knowledge of food	**12**	6.3%
	Dislike of the food item	**45**	23.6%
	Fear of gaining excessive weight	**39**	20.4%
	Medical conditions/disease	**24**	12.6%
	I am a vegetarian	**8**	4.2%
What are the factors that contribute to your good nutritional practices?	Being educated	**28**	14.7%
	Good Socio-economic status	**35**	18.3%
	Health/nutrition information	**100**	52.4%
	Husband support	**28**	14.6%
What are the factors that hinder you from taking adequate diet in pregnancy?	Inadequate knowledge about the food	**39**	20.4%
	Low socio-economic status	**81**	42.4%
	Lack of husband support	**24**	12.6%
	Forgetfulness	**22**	11.5%
	Ignorance	**25**	13.1%

The results in table 3 above shows that majority (82.2%) of the respondents forbid the intake of certain food items when pregnant. Reasons for forbidding these food items include: dislike for certain food item (23.6%), fear of gaining excessive weight (20.4%), cultural belief (15.7%), medical conditions (12.6%), fear of giving birth to a big baby (11%), lack of knowledge of the food (6.3%), religious beliefs (4.7%), being a vegetarian (4.2%) and fear of death (1.6%). The key factor which contributed to respondent's good nutritional practice in pregnancy is health/nutrition information given during each antenatal visit (52.4%). Other factors include good socio-economic status (18.3%), being educated (14.7%), and husband support (14.6%). Factors that can hinder women from maintaining adequate nutritional practices in pregnancy includes low socio-economic status (42.4%), inadequate knowledge about the food item (20.4%), ignorance (13.1%), lack of husband support (12.6%), forgetfulness (11.5%).

Table-4: participant responses on measures which could be adopted to improve nutritional practices of women when pregnant

Item	SA		A		U		SD		D	
	F	%	F	%	F	%	F	%	F	%
Preconception education should be mandated for all couples.	116	60.7	65	34.0	4	2.1	4	2.1	4	2.1
Women should be placed on prenatal multivitamins and minerals even before conception occurs.	87	45.5	72	37.7	3	1.6	22	11.5	7	3.7
The nutrition education and counselling given during ante-natal clinic should be intensified.	98	51.3	59	30.8	21	11.1	4	2.1	9	4.7
Food or items forbidden should be substituted with those accepted.	52	27.2	64	33.5	34	17.8	17	8.9	24	12.6
Smoking, consumption of alcohol and caffeine should be discontinued before and after conception.	96	50.3	45	23.6	22	11.5	18	9.4	10	5.2
Small but frequent meal servings should be encouraged.	101	52.9	62	32.5	9	4.7	9	4.7	10	5.2
Educative programs aimed at eliciting spousal support during pregnancy should be encouraged.	74	38.7	98	51.3	0	0	12	6.3	7	3.7
Pregnant women should exercise moderately.	92	48.1	77	40.3	12	6.3	7	3.7	3	1.6

Table 4 above shows various measures that could be adopted to improve the nutritional practices of women during pregnancy. Majority (60.7%) of the respondents strongly agreed that preconception education should be mandated for all couples, 52.9% strongly agreed that small but frequent meal servings should be encouraged, 51.3% strongly agreed that the nutrition education and counselling given during each

antenatal visit should be intensified, another 51.3% agreed that educative programs aimed at eliciting spousal support during pregnancy should be encouraged and 50.3% respondents strongly agreed that consumption of alcoholic drinks and caffeinated beverages including smoking should be discontinued before and after conception. Other measures which could be adopted include placing women on prenatal multivitamins and minerals before conception (45.5%), substitution of food items forbidden with culturally accepted ones (33.5%), and moderate exercise (48.1%).

Table-5: Result of chi-square analysis between respondents level of education and nutritional practices when pregnant

Variable	N	Mean	SD	X^2c	X^2t	df	Remark
Nutritional practices of pregnant women	191	3.97	.008	340.56	28.30	12	Significant
Educational level		3.36	1.165				

From the results shown in table 5 above, the chi-square calculated value (X^2c) of 340.56 is greater than the chi-square tabulated value (X^2t) of 28.30 at the level of significance of 0.05. This shows that a significant relationship exists between the nutritional practices of pregnant women and their educational level. The result finding implies that relevant knowledge of food forms the basis for good nutritional practices during pregnancy.

DISCUSSION

The period of pregnancy is marked by tremendous physiological change that demands healthy dietary lifestyle choices in order to enhance the physical and psychological development of the unborn child [4]. The nutritional status of pregnant woman remains critical in determining healthy pregnancy outcomes.

Findings from this study have revealed that the nutritional practice of participants during pregnancy is inadequate. Although more than half of the participants (52.9%) claimed that they eat whenever they felt like, only 29.8% respondents eat variety of food in moderation whereas 43.4% respondents eat fruits and vegetable daily. Intake of moderate amount of food in various varieties including fruits and vegetables ensures healthy weight gain for both mother and child and also reduces the risk of constipation and heartburn [12]. Additionally, majority of the respondents (88%) take their routine vitamins and also abstain from intake of alcoholic drinks or caffeine beverages (84.8%). However, 47.6% respondents do take herbal concoctions. Intake of some herbal mixtures and concoctions during pregnancy has been associated with teratogenic effects resulting to miscarriages, premature birth and birth defects [13]. Also it causes fetal distress leading to an increase in the rate of emergency caesarean sections [14]. Therefore, the need for provision of proper guidance and counselling service on use of herbal concoctions during pregnancy is necessary in order to enable women make wise choices.

Many respondents (82.2%) confirmed that they forbid the intake of certain food item when pregnant due to dislike for the food item, fear of gaining excessive weight, cultural belief, medical conditions, fear of giving birth to a big baby, lack of knowledge of the food, religious beliefs, being a vegetarian and fear of death. The key factor which contributed to respondent's good nutritional practice in pregnancy is health/nutrition information given during each antenatal visit (52.4%). Other factors include good socio-economic status, literacy and husband support. Husband support during pregnancy fosters a sense of shared responsibility [15] and could in turn affect related health habits observed in pregnancy including nutritional habits [16, 17]. Factors that hindered women from maintaining adequate nutritional practices in pregnancy includes low socio-economic status, inadequate knowledge about the food item, ignorance, lack of husband support and forgetfulness.

Provision of health information seems to be a key measure for improving nutritional practices of women during pregnancy. Aside from mandating preconception education for all couple, the nutrition education and counselling given during each antenatal visit should be intensified. Available evidence has demonstrated that nutrition education and counselling rendered during pregnancy supports optimal gestational weight gain, reduces the risk of anemia in late pregnancy, increases birth weight, and lowers the risk of preterm delivery [18, 19]. During these antenatal visits, women should be encouraged to eat small but frequent meals, abstain from smoking and intake of alcoholic drinks, caffeinated beverages and herbal concoctions. They should be encouraged to take their prescribed prenatal multivitamins and minerals, substitute those food items forbidden with culturally accepted ones and participate in mild to moderate range of motion exercise. In the absence of any obstetrical condition, moderate exercise enhances weight control and prevents obesity after child birth and in later adulthood [20]. Additionally, it lowers the risk of gestational diabetes and pregnancy-induced hypertension, decreases symptoms of postpartum depression, preeclampsia and also reduces risk of preterm birth [21]. Educative programs aimed at eliciting spousal support should be organized and

women are to encourage their husband's to attend such programs.

CONCLUSION

This study findings have shown that the nutritional practices of women sampled is inadequate. Aside from previous medical conditions, most women forbid the intake of certain food items due to lack of knowledge of the food item, dislike for the food, fear of gaining excessive weight for mother and unborn child as well as other cultural and religious factors. Low socio-economic status, lack of adequate information on nutritive components of these food items, forgetfulness and lack of husband support were among the factors that hindered their practice of adequate diet intake. Therefore, it is important that the nutrition education and counselling given during each antenatal visit should be intensified, programs eliciting husband support should be organized and the women advised to encourage their husbands to attend such programs. This will enhance a sense of shared responsibility for the health of the woman and her unborn child and positively affect the nutritional practice of women during pregnancy.

Recommendation

Based upon the findings of this study, it is therefore recommended that preconception education should be mandated for all couple. Also the nutrition education and counselling given during each antenatal visit should be intensified. During these visits, women should be taught on how to stay and remain healthy especially during pregnancy. In addition, programs that elicit husband support should be organized and men should be encouraged to attend such programs with their wife. In the future, studies aimed at assessing the role which spousal support plays in enhancing adequate nutritional intake in pregnancy should be carried out.

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