

Consumption Pattern and Dietary Practices of Pregnant Women in Odeda Local Government Area of Ogun State

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Abstract—The importance of maternal nutritional practices during pregnancy cannot be overemphasized. This paper assessed the consumption pattern and dietary practices of 50 pregnant women selected using purposive sampling technique from three health care centres (Primary Health Care Centre, Obantoko; Primary Health Care Centre Alabata; and the General Hospital, Odeda) in Odeda Local Government Area of Ogun State, Nigeria. Structured questionnaire was used to elicit information on socioeconomic status, consumption pattern and dietary practices. Data were analyzed using the Statistical Package for Social Sciences (SPSS, 17). The results indicated that about 58% of the pregnant women were below the age of 30 while 42% were ages 28-40 years. Only 16% had tertiary education while (38%) had secondary education, 52% earn income through petty trading. On food intake, 52% got their energy source from rice on a daily basis, followed by pap (38%) and eko (34%). For protein intake, 36% consumed bean cake on a daily basis while 66% consumed *moinmoin* 2-3 times a week. Orange (48%) and Green Leafy vegetable (40%) accounted for the mostly consumed fruit and vegetable on daily basis. In terms of animal origin, fish (76%), meat (58%) and eggs (30%) were consumed daily, while chicken and snail were consumed occasionally by 54% and 42%, respectively. Forty-six percent (46%) of the pregnant women eat more than three times daily; while 60% of the women eat outside their homes with 42% respondents eat out lunch and only two percent least eaten out dinner. It is important to increase in awareness campaign to sensitize the pregnant women on the importance of good nutrition especially fruits, vegetables and dairy products.

Keywords—Consumption Pattern, Dietary Practices, Pregnant, Women, Nigeria.

I. INTRODUCTION

PREGNANCY is one of the most critical and unique period in a woman's life cycle. It is regarded as a "welcome event" for successful womanhood. A woman's body changes dramatically during pregnancy; hence there is a strong need to balance these changes with an adequate and nutritious diet. Pregnancy is often accompanied by a variety of nutritionally linked problems with symptoms that are sometimes very unpleasant and difficult to tolerate [1]. Cravings and aversions, which refer to a strong desire and strong dislike for certain food respectively, are common during pregnancy with complications such as nausea and vomiting [2], [3]. These complications may cause not only discomfort during pregnancy but also interfere with the dietary intake of the

pregnant woman and sometimes causing serious problems [3]. Also, unsatisfactory maternal nutrition has been reported to result from inadequate dietary intakes during pregnancy which have been attributed to ignorance and superstition.

The well-being of mother and the newborn infant is greatly determined by the nutrition of the expectant mother during pregnancy and it further influences health of the child during childhood and adulthood. According to [4], spontaneous abortion, impaired fetal growth, poor pregnancy weight gain, learning impairment and behavioral problems of the offspring are caused by inadequate nutrition during pregnancy. The majority of low birth weight (LBW) infants in developing countries are due to intrauterine growth retardation (IUGR i.e. less than the 10th percentile weight for gestational age), while most LBW infants in developed countries are due to preterm birth [5]. In developing countries, the most important determinants of IUGR stem primarily from the mother's poor health and nutritional status [6].

Thus, in the course of pregnancy, the quantity and quality of nourishment is of particular importance. Maternal malnutrition and other health hazards are serious problems facing developing nations including Nigeria. In Nigeria, malnutrition is prevalent, fertility rates are high and women enter into child bearing at an early age, therefore giving birth to many off springs. Dietary practices play a significant role in determining the long-term health status of both the expectant mother and the growing fetus. Improper dietary practices of pregnant women have apparently led to increased rates of stillbirths, premature birth, low birth weight, maternal and prenatal death. Pattern of food consumption varies invariably among pregnant women residing in urban and rural areas. Some primary health care physicians and obstetricians are not aware of the dietary and over-the-counter medication intake practices of their patients and thus lack the information needed to help guide them. Some nutrient deficiencies can be dealt with by strengthening the training and practice of antenatal care providers, enabling them to dispense supplementation such as folic acid, calcium and vitamin tablets. Assessment of common practices of food, drink, and medication intake during pregnancy and the associated effects will inform the direction of preventative practice and interventions that will benefit populations of pregnant women and their offspring.

This study was therefore carried out to generate information on the consumption pattern and dietary practices of pregnant women in Odeda local Government area of Ogun State and provide basic information that would assist nutrition/health

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workers to help pregnant women make a better choice of food during pregnancy and other helpful intervention.

II. MATERIALS AND METHODS

The study was conducted in Odeda Local Government, Ogun State, Nigeria. Ogun State was created in 1976 and is in South-Western Nigeria. The State is named after the Ogun River which runs right across it from north to south and is strategically located; bordered to the east by Ondo State and to the north by Oyo and Osun States. Its border with the Republic of Benin, to the west, makes it an access route to the expansive market of the Economic Community of West African States (ECOWAS), to the south by Lagos, the former Capital of Nigeria, and which still remains the commercial nerve centre of the country and indeed the West Africa Sub-region and also by the Atlantic Ocean. Odeda Local Government Area is one of the twenty Local Government Areas in Ogun State. The headquarters is in Odeda village, a place situated along Abeokuta-Ibadan road. The Local Government area occupies an area of 1263.43m² with an estimated population of 217,000 according to the 1991 population census. The local government shares boundary with Ibarapa and Iddo local government areas of Oyo state in the north and east, while in the south west with Abeokuta south and Obafemi Owode local government residents. The people of the local government are predominantly *Egbas*. Odeda local government is made up of 860 villages and hamlets and urban areas. The main language of the people is Yoruba while there are few non-Yorubas. Some tribes in the village include: Kotonou from Benin republic; Togo and Egede.

The study was carried out at the Primary Health Care Centre, Obantoko, Alabata and the General Hospital, Odeda, located in Odeda Local Government area of Ogun State. A total of 50 pregnant women were used for the study. They were selected by random sampling from the three health centres. The subjects were interviewed by trained interviewers privately in English language and the local language (*Yoruba*) at the health facilities during the antenatal care. Pre tested questionnaire was used to collect data such as socio demographic, age, ethnic group, tribe, religion, etc. Dietary intake of the subjects was assessed using the 24 hour dietary. Food models such as household measures like tin, bowl and cup were used to assist memory and portion size of foods taken. Data of frequency of consumption of food items were estimated, using the food frequency questionnaire, containing the list of food items and the frequency of consumption.

Processed data was analyzed using Statistical Package for Social Sciences (SPSS) version 17. Descriptive statistics were used to get the percentages and frequencies of variables used in this study.

III. RESULTS AND DISCUSSION

Table I shows the demographic characteristics of the studied women. Majority (58%) of the women were between the age range of 18 and 27 years while 42% were between

ages 28 and 40. Virtually all (98%) of the women were Nigerian while just 2% were Ghanaian. The subjects population was predominantly Yoruba (72%), 6% were Igbo, 2% were Hausa, while the rest (20%) were from other tribes.

In terms of religion, 78% were Christian of various denominations while 22% practiced Islam, similar result was also reported by [7] and [8]. The study revealed that the respondents belonged to the two major family structures in Nigeria – Polygamy and monogamy. Majority of them belonged to the latter while the rest belonged to the former. For educational background, 42% had only primary education, 38% completed secondary education, and 16% had their tertiary education while 4% had other forms of education. Majority of the women were traders (52%), also in accordance with the report of [8], 8% were farmers, 6% were teachers, 4% were civil servants while 30% practiced other forms of occupation. Half of the women (52%) earn daily income, 18% were weekly income earners, 14% earn monthly income and 16% earn no income.

Pattern of consumption of cereals & grains, roots & tubers, legumes & pulses and oil seeds by the pregnant women is presented in Table II. For the category of foods under root and tuber crops, the table shows that high percentage of the respondents consume Rice daily. This could be because rice is a major staple in Nigeria. However, high rate of rice consumption by pregnant women in Nigeria in this study is contrary to the findings of [9], who reported this food commodity to be one of the most avoided foods of selected studied pregnant women in Dar es Salaam City, Tanzania. Also, in this food category, part of the daily consumed foods is Pap (38%) and *Eko* (34%).

The table also revealed that higher percentage (56%) of the studied pregnant women never consumed wheat. The reason for this could be attributed to the lack of awareness on the nutritional benefits of wheat consumption to the pregnant women. On a daily basis, bean cake is largely consumed by the respondents more than the rest food in the category of legumes, pulses and oil seeds. The reason given was because of the ease of preparation of the food and because its consumption goes well with pap or *Eko*. *Moinmoin* is another food in this category that the pregnant women (66%) consumed 2-3 times per week. Although, its production has a similar process as bean cake but it takes longer time and not as easy as bean bake. One major preference they have for *moinmoin* over bean cake was that it can be stored in the refrigerator after production and eaten few days after. But this cannot be done with bean cake as it has to be consumed the same day of preparation. The table shows that higher percent (68%) of the respondents never consume *Gbegiri*, a soup prepared from beans. The reason given being that it is not a menu native to the people in the study area.

Table III gives the consumption pattern of fruits and vegetables. All the studied pregnant women reported eating fresh fruits and vegetables every day. From the table, it is obvious that on a daily basis, green leafy vegetables and orange were the most consumed. The study of [10] on the consumption habits of pregnant women in California showed

that orange, is the second most commonly consumed fruit, is in accordance with the findings of this work. According to some of the respondents, orange is consumed daily because of its high vitamin C content, availability almost all year round and affordability. Green leafy vegetables are rich in vitamins and minerals. The least consumed of the fruits and vegetables on a daily basis were cherry (4%) and cucumber (4%). The reason given by some of the pregnant women studied was that cherry consumption gives them severe nausea and vomiting while some of them lack the basic nutritional importance of cucumber and see leafy vegetables as a better alternative to it. The reason stated above for low daily consumption of cucumber could also be responsible for the high percent (56%) of the respondents to have never consumed it.

Pattern of consumption of beverages and foods of animal origin is shown in Table IV. According to [9], milk and milk products are an important part of the diet because of their excellent balance of nutrients, and particularly the calcium and riboflavin content. Also, they provide some of or practically all other essential nutrients in well-balanced amounts and in easily assimilated forms. Of the beverage listed in this study, milk is the one that has higher percent (32%) of daily consumption. Fifty percent of the respondent reported its consumption 2-3 times per week. For the consumption of Milo and Bournvita, 44% and 30% of the respondents consumed them 2-3 times daily, respectively. Only 2% consumed Bournvita on a daily basis and 16% for Milo. The reason for the avoidance of consuming these two beverages on a daily basis by some of the respondents was for the fear of big size fetus which could result in difficult labour at child birth.

Of the foods of animal origin, higher percent of the respondents consumed fish (76%) and meat (58%) on a daily basis and none of them reported never consuming the two during pregnancy. The reason given for these choices was because they are both good sources of protein and some other vital nutrients required for healthy pregnancy and successful suckle of infant. This is however contrary to the findings reported by [9] and [11], who reported meat and fish as part of the commonly avoided foods by larger percent of the respondents in their studies. Consumption of meat organs, chicken, turkey and prawn on a daily basis is low compared to their consumption monthly and occasionally. As shown in the table, none of the pregnant women consumed snail daily, about half (42%) consumed it occasionally and 32% never consumed it.

A dietary practice in terms of meal frequency and snacking pattern of the respondents is presented in Table V. Majority (46%) ate more than three times a day, 38% ate just three times while the rest respondents ate once or twice daily. The meal frequency of the pregnant women during pregnancy was different from their practice before pregnancy, as about 54% reported eating three times daily and just 28% ate more than three times daily (data not show). This finding is in accordance with those of [11] and [12] who also reported difference in frequency of meal consumption before and during pregnancy of women in Accra and Kumasi, both in Ghana, respectively.

More than half (60%) of the women eat out during pregnancy and this was attributed to the fact that more than half of them are traders, with their trading centre away from their homes. From the table, on a weekly basis, very few ate out daily (2%) and twice in a week (6%). Forty percent responded to eating out three times in a week and 42% ate out occasionally. The meal ate out by larger percent (42%) of the women is Lunch, followed by Breakfast (16%). Very few (2%) ate dinner outside their home. A similar finding was reported by [12]. The reason for this was not unconnected from the same reason stated above.

Fast foods are foods that usually contain high levels of fat and salt. A prenatal diet high in this kind of food could pose danger to the developing fetus. Maternal diets high in fat have been associated with increased likelihoods of postnatal diet-induced obesity in offspring, and have the potential to influence epigenetic markers leading to altered postnatal gene expression and eating behavior [13], [14]. This study revealed that most of the respondents do not take snacks after breakfast (70%), lunch (82%) and dinner (94%). However, of the frequency of responses to taking snacks after the three meals, higher frequency was recorded for "after breakfast" among the women.

IV. CONCLUSION

The present study shows the influence of low level of education and the type of job for income earning on the food consumption pattern and dietary practices of the respondents. It was obvious that most of the women avoided the consumption of some fruits and vegetables because of the lack of basic information on the nutritional benefits of such commodities. Some of the foods, such as rice, meat, fish) avoided (aversion) by some studied pregnant women from literatures were not however avoided by the women in this study. Eating out among the respondents is quite high as data shows that about half of the women ate out more than 3 times a day and the meal mostly eaten out was lunch and this is attributed to the type of job they do. This practice could have a consequent effect on the pregnant woman and the fetus as the hygienic status of the food eaten out could not be ascertained.

In conclusion, the importance of eating a healthy diet low in energy-dense and nutrient low foods so as to lower future generations' risk of obesity and stress conditions should be stressed to pregnant women in the course of antenatal care.

TABLE I
SOCIO-DEMOGRAPHIC CHARACTERISTICS OF THE RESPONDENTS (N=50)

| Variables | Frequency | Percentage (%) |
|--------------------------|-----------|----------------|
| Age (years) | | |
| 18-27 | 29 | 58.0 |
| 28-40 | 21 | 42.0 |
| Nationality | | |
| Nigerian | 49 | 98.0 |
| Ghanaian | 1 | 2.0 |
| Ethnic group | | |
| Yoruba | 36 | 72.0 |
| Igbo | 3 | 6.0 |
| Hausa | 1 | 2.0 |
| Others | 10 | 20.0 |
| Religion | | |
| Christianity | 39 | 78.0 |
| Islam | 11 | 22.0 |
| Family structure | | |
| Monogamy | 44 | 88.0 |
| Polygamy | 6 | 12.0 |
| Educational level | | |
| Primary | 21 | 42.0 |
| Secondary | 19 | 38.0 |
| Tertiary | 8 | 16.9 |
| Others | 2 | 4.0 |
| Occupation | | |
| Civil servant | 3 | 4.0 |
| Trading | 26 | 52.0 |
| Farming | 4 | 8.0 |
| Teaching | 3 | 6.0 |
| Others | 15 | 30.0 |
| Income | | |
| Monthly | 7 | 14.0 |
| Weekly | 9 | 18.0 |
| Daily | 26 | 52.0 |
| None | 8 | 16.0 |

TABLE II
PATTERN OF CONSUMPTION OF CEREALS & GRAINS, ROOTS & TUBERS, LEGUMES & PULSES AND OIL SEEDS (N=50)

| Variables | 2-3 | | | | |
|--------------------------------------|-------|--------------|---------|--------------|-------|
| | Daily | times a week | Monthly | Occasionally | Never |
| Cereals and grains | | | | | |
| Rice | 52 | 42 | - | 6 | - |
| Wheat | 18 | 8 | - | 18 | 56 |
| Bread | 26 | 48 | 2 | 22 | 2 |
| Maize | 14 | 20 | 26 | 32 | 8 |
| Eko | 34 | 36 | 2 | 16 | 4 |
| Semolina | 6 | 34 | 8 | 36 | 16 |
| Pap | 38 | 30 | 4 | 22 | 6 |
| Roots and Tubers | | | | | |
| Yam | 8 | 64 | 2 | 24 | 2 |
| Cocoyam | - | 14 | - | 26 | 60 |
| Porridge | 6 | 22 | 8 | 34 | 30 |
| Fufu | 14 | 42 | 4 | 28 | 12 |
| Amala | 22 | 48 | 6 | 18 | 8 |
| Lafun | 22 | 30 | 6 | 14 | 29 |
| Eba | 30 | 44 | 6 | 18 | 2 |
| Gari | 28 | 28 | - | 24 | 20 |
| Legumes, pulses and oil seeds | | | | | |
| Adalu | - | 2 | 26 | 38 | 34 |
| Bean cake | 36 | 46 | - | 28 | 10 |
| Moin-moin | 10 | 66 | 4 | 16 | 4 |
| Gbegiri | - | 6 | - | 26 | 68 |
| Melon | 10 | 70 | 2 | 8 | 10 |
| Apon | 4 | 22 | 6 | 22 | 46 |

TABLE III
PATTERN OF CONSUMPTION OF VEGETABLES AND FRUITS (N=50)

| Variables | 2-3 | | | | |
|-----------------------|-------|--------------|---------|--------------|-------|
| | Daily | times a week | Monthly | Occasionally | Never |
| Green leafy vegetable | 40 | 52 | - | 6 | 2 |
| Okra | 8 | 58 | 2 | 12 | 20 |
| Ewedu | 22 | 50 | - | 8 | 20 |
| Orange | 48 | 22 | - | 22 | 8 |
| Banana | 14 | 18 | 2 | 10 | 6 |
| Pineapple | 6 | 19 | 1 | 15 | 9 |
| Water melon | 9 | 19 | 1 | 14 | 7 |
| Cashew | 1 | 8 | 1 | 27 | 13 |
| Cherry | 2 | 4 | 1 | 29 | 14 |
| Pawpaw | 8 | 9 | - | 26 | 7 |
| Apple | 3 | 19 | 1 | 17 | 10 |
| Cucumber | 2 | 9 | 1 | 10 | 28 |
| Garden egg | 8 | 22 | 3 | 9 | 8 |
| Carrot | 3 | 19 | 3 | 12 | 13 |

TABLE IV
PATTERN OF CONSUMPTION OF BEVERAGES AND FOODS OF ANIMAL ORIGIN
(N=50)

| Variables | Daily | 2-3 times a week | Monthly | Occasionally | Never |
|-------------|-------|------------------|---------|--------------|-------|
| Milk | 32 | 50 | 2 | 8 | 8 |
| Milo | 16 | 44 | - | 22 | 18 |
| Bournvita | 2 | 30 | 6 | 36 | 26 |
| Teabags | 8 | 22 | 2 | 40 | 28 |
| Fish | 76 | 24 | - | - | - |
| Meat | 58 | 36 | - | 6 | - |
| Meat organs | 22 | 32 | 2 | 26 | 18 |
| Chicken | 12 | 20 | 2 | 54 | 12 |
| Turkey | 12 | 16 | 4 | 38 | 30 |
| Egg | 30 | 50 | 2 | 18 | - |
| Snail | - | 20 | 6 | 42 | 32 |
| Prawn | 8 | 32 | 12 | 28 | 20 |

TABLE V
DIETARY PRACTICES OF RESPONDENTS (N=50)

| No of times they eat in a day | Percentage (%) | |
|--------------------------------------|----------------|----|
| Once | 2 | |
| Twice | 14 | |
| Thrice | 38 | |
| More than thrice | 46 | |
| Eat out | | |
| Yes | 60 | |
| No | 40 | |
| Times they eat out | | |
| Daily | 2 | |
| Twice a week | 6 | |
| More than twice a week | 40 | |
| Occasionally | 42 | |
| Meals they eat out | | |
| Breakfast | 16 | |
| Lunch | 42 | |
| Dinner | 2 | |
| Snacks consumption after meal | Yes | No |
| After breakfast | 30 | 70 |
| After Lunch | 18 | 82 |
| After dinner | 6 | 94 |

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