

Assessment of Knowledge and Attitude towards Adequate Diet Practices of Pregnant Women Attending Ante-natal Clinic at University College and Adeoyo Maternity Hospitals, Oyo State, Nigeria

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Abstract Adequate knowledge of nutritional status and health of pregnant women is very important because it determines the health of the developing foetus due to the connection between the mother and child. This study was carried out to assess the knowledge and attitude towards adequate diet practices of pregnant women attending ante-natal clinic at University College Hospital and Adeoyo Maternity Hospital. A total of 386 pregnant women were randomly selected from the two (2) hospitals and a well-structured questionnaire was used for collection of data. Descriptive statistics was used for data analysis. More than half (58.8%) of the respondents were within the age group 26-30 years old. Results revealed that 65% of the respondents have fair knowledge of nutritional diet during pregnancy while 35% of them have good knowledge of nutritional diet during pregnancy respectively. Furthermore, most (66.7%) of the respondents have positive attitude towards adequate diet during pregnancy while 33.3% have negative attitude towards adequate diet during pregnancy respectively. The pregnant women were not eating more quantity and variety of foods more than what they normally consume before pregnancy nor took dairy products daily in their meal and also claimed inability to afford sufficient quantity and quality of adequate diet recommended for them. Based on respondents lifestyle, results indicated that majority (69.9%) of the respondents engaged in physical exercise in form of brisk walking and dancing. This study suggest that pregnant women needs to be educated on nutrition and practices of adequate diet during pregnancy.

Keywords: pregnant women, nutritional knowledge, attitude, diet practices

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1. Introduction

In a women's life, pregnancy is one of the greatest nutritionally demanding periods. Pregnancy is the state at which female carry a developing embryo or foetus within their body. During pregnancy, suitable dietary balance is important to make sure that appropriate energy intake is available for sufficient foetus development without consuming on the mother's tissues to sustain her pregnancy [1]. Pregnancy condition can be confirmed through blood test, ultrasound, detection of foetal heartbeat or an X-ray and positive results on an over-the-counter urine test. Pregnancy period lasts for about nine months which is calculated starting from the date of the woman's last menstrual period (LMP). State of pregnancy is usually divided into three (3) trimesters, comprises of roughly three months long each [2]. During pregnancy, suitable

nutritional intake has been identified as a vital factor for strong pregnancy and anticipated birth outcomes [3,4].

Maternal nutrition during pregnancy has been recognized as an essential element of birth weight. According to [5], in developing countries, high rate of Low Birth Weight (LBW) has been ascribed to deprived maternal nutrition. Developing foetus consumes a lot of nutrients from the mother to improve psychological growth. Similarly, there is high demand for nutrient by the mother due to developing foetus [6]. Previous studies shows that individual nutritional knowledge affects food quality intake and choice of healthy food purchased [4,7].

Furthermore, pregnant women's food habits are extremely influenced by their occupation and culture. The beliefs concerning food consumption during pregnancy are another reason that determines the nutritional status of pregnant women [8]. Pregnant women need to be educated on the food consumption and attitude towards food choice during pregnancy. Adequate nutrition knowledge is very

vital during pregnancy and good attitude towards the information acquired is essential [4]. Studies regarding pregnant women's knowledge towards dietary intake are scanty and more research needs to be carried out to address the issue. Therefore, the objective of this study is to assess the knowledge and attitude towards adequate diet practices of pregnant women attending antenatal clinic in University College Hospital and Adeoyo Maternity Hospital, Ibadan, Oyo State, Nigeria.

2. Materials and Methods

2.1. Study Area

The study was conducted among pregnant women attending ante-natal clinic in University College Hospital and Adeoyo Maternity Hospital, Ibadan, Oyo State. These hospitals were selected because they are the biggest and well-known hospitals in Ibadan. Pregnant women were selected from these hospitals in order to assess their knowledge and attitude towards adequate dietary intake. Pregnant women were identified through positive pregnancy laboratory test in the hospitals. Also, additional selection principles involve women within the range of child bearing age (15-39 years) that were confirmed as pregnant women by the gynaecologist.

2.2. Sampling Procedure and Data Collection Technique

Written approval was gotten from the management in-charge of the ante-natal clinics of the two hospitals. Sampling frame of pregnant women in their first, second and third trimesters was collected from the ante-natal clinic. Random sampling was used to select 420 pregnant women that gave their consent to participate in the research but due to incomplete response from the respondents, 386 questionnaires were used for the purpose of this study. For the purpose of adequate data collection, ante-natal clinic was visited on the ante-natal days in order to meet the respondents. Questionnaire was validated first through pilot study by selecting 30 respondents from the list provided from the hospital. The purpose of validation is to be sure that respondents understand the content of the question and to ensure that the items explains the construct. After the validity test, questionnaire was used for data collection from the pregnant women for a period of three (3) months. The questionnaire used was divided into four sections; demographic factors, lifestyle of respondents, 24-hour dietary recall to assess food quality intakes and practice of adequate diet during pregnancy.

2.3. Data Analysis

Data collected was analyzed using Statistical Package for Social Sciences (SPSS) version 24.0 software. Descriptive statistics such as mean, standard deviation, frequency and percentage was used to examine demographic factors of respondents, knowledge of pregnant women towards adequate diet intake during pregnancy, attitude of pregnant women towards adequate diet during pregnancy and practice of adequate diet during pregnancy.

3. Results

3.1. Demographic Factors of respondents

Table 1 shows the demographic factors of respondents. Almost 60% of the respondents were within the age group of 26-30 years old, followed by 32.9% respondents between ages 21-25 years and 1.6% of respondents were above 35 years respectively. Majority (98.4%) of the respondents were married and few (0.8%) of them were single and widowed respectively. Most of the respondents' occupation was artisan (46.9%) and civil servant (46.6%) respectively.

Table 1. Demographic factors of the Respondents

Characteristics	Freq.	Percentage
Age		
Less than 20 years	21	5.4
21-25 years	127	32.9
26-30 years	223	58.8
31-35 years	9	2.3
Above 35 years	6	1.6
Marital status		
Single	3	0.8
Married	380	98.4
Widowed	3	0.8
Occupation		
Housewife	3	0.8
Petty trader	22	5.7
Civil servant	180	46.6
Artisan	181	46.9
Income		
Less than ₦5000	9	2.3
₦5000- ₦10,000	13	3.4
₦10,000 and above	364	94.3
Education		
Primary Education	111	28.8
Secondary Education	92	23.8
Tertiary Education	183	47.4

Source: Field data survey, 2018.

3.2. Lifestyle of Respondents

Descriptive statistics of lifestyle of respondents is shown in Table 2. Majority (61.7%) of the respondents were moderately active, 21.2% were sedentary and 17.1% were active respectively. Furthermore, 69.9% of the respondents were engaged in physical exercise band while 30.1% do not participate in physical exercise. Results revealed that out of 69.9% that engage in physical exercise, most (56.9%) of them engaged in daily exercise while 38.7% engaged in exercise once a week respectively. Majority (71.2%) of the respondents do not take alcoholic beverage and 100% of them do not smoke cigarettes respectively.

Table 2. Lifestyle of the respondents

Variables	Freq.	Percentage
Activity		
Sedentary (25 -30)	82	21.2
Moderately active (30-35)	238	61.7
Active (35-40)	66	17.1
Engaged in physical exercise		
Yes	270	69.9
No	116	30.1
If yes, what type of Exercise?		
Brisk walking	186	48.2
Dancing	84	21.8
Frequency of exercise		
Daily	106	56.9
Once a week	72	38.7
Previous intake of alcohol/alcoholic beverage		
Yes	111	28.8
No	275	71.2
Frequency of consumption of alcohol		
Daily	5	1.3
Once a week	40	36.0
Occasionally	66	59.5
Smoke cigarettes		
Yes	0	0.0
No	368	100.0

Source: Field data survey, 2018.

3.3. Knowledge of Pregnant Women towards Adequate Diet Intake During Pregnancy

Table 3 shows the descriptive statistics of knowledge of pregnant women towards adequate diet intake during pregnancy. Majority (94.5%) of the respondents claimed that nutrients intakes increased during pregnancy; 100% claimed that adequate diet is important during pregnancy; adequate diet include proteinous food during pregnancy; adequate diet include minerals, milk and green leafy vegetable; adequate diet include vitamins, fruits and green leafy vegetable; during pregnancy green leafy vegetables and fruits should be taken regularly; eating well will make mother and baby healthy; eat clean and safe foods; wash fruits and vegetables before eating and fish, poultry, egg and meat will make baby grow well respectively. Furthermore, majority (85.6%) of the respondents claimed that adequate diet should include energy rich food during pregnancy; adequate diet should include palm oil and vegetable oil during pregnancy; 95.2% stated that eating of variety of food is important during pregnancy; 93.8% claimed that pregnant women should consume more of animal protein than plant protein; 71.9% claimed that pregnant women should take prenatal vitamins and minerals as prescribed; 82.2% claimed that food eaten during pregnancy should be eaten; 91.8% claimed that pregnant women needs to eat well so as not to fall sick; 98.6% claimed that nutrition is crucial for the growth of the baby; 99.3% claimed that pregnant women should

wash cooking utensils before cooking; 76.7% claimed that pregnant women should boil water before drinking during pregnancy; 64.4% claimed that pregnant women should eat at least two pieces of meat daily during pregnancy; 83.6% claimed that pregnant women should take at least 5-8 dessert spoons of green leafy vegetables daily; 93.8% claimed that pregnant women should take 2 pieces of yellow fruits daily to keep healthy respectively. However, 94.5% claimed that it is not important to take some milk in daily meals.

Table 3. Descriptive statistics of knowledge of pregnant women towards adequate diet intake during pregnancy

Variable	Yes		No	
	Freq.	%	Freq.	%
1. Nutrients intakes increased during pregnancy	365	94.5	21	5.5
2. Adequate diet is important during pregnancy	386	100.0	0	0.0
3a. Include proteinous food during pregnancy	386	100.0	0	0.0
b. Include energy rich food during pregnancy	330	85.6	56	14.4
c. Include palm oil and vegetable oil during pregnancy	330	85.6	56	14.4
d. Include minerals, milk and green leafy vegetable	386	100.0	0	0.0
e. Include vitamins, fruits and green leafy vegetable	386	100.0	0	0.0
4. Eat variety of food during pregnancy	367	95.2	19	4.8
5. Take animal protein than plant protein	362	93.8	24	6.2
6. Take green leafy vegetables and fruits regularly	386	100.0	0	0.0
7. Take prenatal vitamins and minerals as prescribed	278	71.9	108	28.1
8. Food eaten during pregnancy should be increased	317	82.2	69	17.8
9. Eat well during pregnancy, so not to fall sick	354	91.8	32	8.2
10. Nutrition is crucial for the growth of the baby	381	98.6	5	1.4
11. Eating well will make mother and baby healthy	386	100.0	0	0.0
12. Wash cooking utensils before cooking	383	99.3	3	0.7
13. Eat clean and safe foods	386	100.0	0	0.0
14. Wash fruits and vegetables before eating	386	100.0	0	0.0
15. Boil water before drinking	296	76.7	90	23.3
16. Eat at least two pieces of meat daily	249	64.4	137	35.6
17. Take at least 5-8 dessert spoons of green leafy vegetables daily	323	83.6	63	16.4
18. It is not important to take some milk in daily meals	21	5.5	365	94.5
19. Fish, poultry, egg, meat, will make baby grow well	386	100.0	0	0.0
20. Take 2 pieces of yellow fruits daily to keep healthy	362	93.8	24	6.2
21. Avoid alcohol during pregnancy	381	98.6	5	1.4
22. Caffeine has effect on mother and baby	249	64.4	137	35.6
23. Don't add artificial sweeteners as you want to meals	296	76.7	90	23.3
24. Saccharin has effect on pregnancy	317	82.2	69	17.8
25. Taking much salt has effect in my body system	249	64.4	137	35.6
26. Pregnant woman should be on a special diet	296	76.7	90	23.3

Source: Field survey data, 2018.

Table 4. Likert scale showing attitude of pregnant women towards adequate diet during pregnancy

Variables	SA	A	ID	D	SD
	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
1 My nutrients intakes need to be increased during pregnancy	259(67.1)	108(28)	8(2.1)	11(2.8)	259(67.1)
2 Eating an adequate diet is important during pregnancy	175(45.3)	194(50.3)	10(2.6)	7(1.8)	175(45.3)
3 It is important I include the following in my diet					
a Protein	176(45.6)	201(52.1)	2(0.5)	7(1.8)	0(0.0)
b Carbohydrate	176(45.6)	201(52.1)	5(1.3)	4(1)	0(0.0)
c Fat	264(68.4)	107(27.7)	8(2.1)	7(1.8)	0(0.0)
d Minerals	259(67.1)	105(27.2)	16(4.1)	6(1.6)	0(0.0)
e Vitamins	264(68.4)	108(28.0)	6(1.6)	8(2.1)	0(0.0)
4 I need to eat variety of food during pregnancy	175(45.3)	198(51.3)	6(1.6)	7(1.8)	0(0.0)
5 Animal protein is as good as plant protein	176(45.6)	201(52.1)	6(1.6)	3(0.8)	0(0.0)
6 Green leafy vegetables and fruits should be taken regularly during pregnancy	176(45.6)	198(51.3)	5(1.3)	7(1.8)	0(0.0)
7 I should take my prenatal vitamins and minerals as prescribed daily	178(46.1)	110(28.5)	95(24.6)	3(0.8)	0(0.0)
8 The food eaten during pregnancy should be increased to feed the mother and the baby	177(45.9)	109(28.2)	5(1.3)	95(24.6)	0(0.0)
9 If one eats well during pregnancy, one will not fall sick	255(66.1)	103(26.7)	15(3.9)	13(3.4)	0(0.0)
10 Nutrition is crucial for the growth of the baby	171(44.3)	18(4.7)	97(25.1)	100(25.9)	0(0.0)
11 A pregnant woman should eat very well to feed herself and her baby	259(67.1)	105(27.2)	16(4.1)	6(1.6)	0(0.0)
12 Intake of fibre rich foods improves my health and the growth of the baby.	264(68.4)	108(28.0)	6(1.6)	8(2.1)	0(0.0)
13 The quality of food I take as a great effect on my baby.	256(66.3)	105(27.2)	14(3.6)	11(2.8)	0(0.0)
14 It is important to eat clean and safe foods in pregnancy.	264(68.4)	105(27.2)	8(2.1)	9(2.3)	0(0.0)
15 Eat at least two pieces of meat / poultry/egg/fish daily?	179(46.4)	198(51.3)	1(0.3)	8(2.1)	0(0.0)
16 Take at least 5-8 dessert spoons of green leafy vegetable daily.	183(47.4)	184(47.7)	19(4.9)	0(0.0)	0(0.0)
17 It is not important to take some milk in my daily meals.	178(46.1)	195(50.5)	13(3.4)	0(0.0)	0(0.0)
18 Fish, poultry, egg, meat, will make my baby grow well.	176(45.6)	198(51.3)	7(1.8)	5(1.3)	0(0.0)
19 Take at least 2 pieces of fruits daily.	183(47.4)	92(23.8)	111(28.8)	0(0.0)	0(0.0)
20 It is important to avoid alcohol during pregnancy?	275(71.2)	19(4.9)	0(0.0)	0(0.0)	92(23.8)
21 Caffeine such as coffee has no effect on me and my baby.	175(45.3)	197(51.0)	11(2.8)	3(0.8)	0(0.0)
22 I can add artificial sweeteners (magi, knorr, vedan) to my meals as I want.	264(68.4)	107(27.7)	8(2.1)	7(1.8)	0(0.0)
23 Saccharin has effect on my pregnancy.	173(44.8)	18(4.7)	14(3.6)	181(46.9)	0(0.0)
24 Do not take much salt during pregnancy.	91(23.6)	19(4.9)	0(0.0)	184(47.7)	92(23.8)
25 A pregnant woman should be on a special diet.	183(47.4)	111(28.8)	0(0.0)	0(0.0)	92(23.8)
26 Engage in moderate aerobic exercise, it reduces the risk of low birth weight and maternal preeclampsia.	176(45.6)	201(52.1)	2(0.5)	7(1.8)	0(0.0)

Source: Field survey data, 2018.

Table 5. Summary of pregnant women's attitude towards adequate diet during pregnancy

Response	Frequency	Percent (%)
Positive	258	66.7
Negative	128	33.3

Source: Field survey data, 2018.

3.4. Attitude of Pregnant Women towards Adequate Diet during Pregnancy

Table 4 and Table 5 shows the respondents attitude towards adequate diet during pregnancy. Respondents attitude was classified as positive and negative response in Table 5. Most (67%) of the respondents has positive attitude towards adequate diet during pregnancy while 33.3% has negative attitude.

3.5. Practice of Adequate Diet during Pregnancy

Table 6 shows the descriptive statistics of respondents practice of adequate diet during pregnancy. From the findings of the result, most (52.6%) of the respondents cannot afford sufficient quality of food daily. Also, majority (93.0%) of the respondents do not eat more than the normal food when they are not pregnant while 73.8% of them take green leafy vegetables as a source of fibre.

Most (69.7%) of them include fruits in their meals daily while 30.3% do not include fruits in their meals daily. Furthermore, 76.2% of the respondents take dairy products (milk) in their meal daily and 28.8% do not take dairy products in their meal daily. Almost (97.9%) all of the respondents increase food intake during pregnancy per meal daily while 92.7% of them take at least two pieces of

carrot, orange or water melon daily. Almost all (98.3%) of the respondents do not reduce their food intake during pregnancy and do not follow weight reduction therapy respectively.

Table 6. Descriptive statistics of practice of adequate diet by the respondents during pregnancy

Variables	Yes		No	
	Freq.	%	Freq.	%
Cannot afford sufficient quality of food daily	183	47.4	203	52.6
Have enough food available always	203	52.6	183	47.4
Don't eat more than the food normally eat when not pregnant	27	7.0	359	93.0
Take green leafy vegetables as a source of fibre	285	73.8	101	26.2
Include fruits in my meals daily	269	69.7	117	30.3
Take dairy products (milk) in my meal daily	294	76.2	92	28.8
Eat at least one piece of meat, poultry, fish or egg	181	46.9	205	53.1
Increase food intake during pregnancy per meal daily	328	97.9	9.0	2.1
Take at least two pieces of carrot, orange or water melon daily	358	92.7	28	7.3
Take at least one-third of evaporated milk daily	183	47.4	203	52.6
Use artificial sweetener (magi, vedan, knor) in my meal	366	94.8	20	5.2
Reduce salt intake in my meal	370	95.9	16	4.1
Eat clean and safe food	291	75.4	95	24.6
Take prenatal vitamins or mineral as prescribed daily	374	96.9	12	3.1
Boil my water before drinking	295	76.4	91	23.6
Wash my fruits and vegetables before eating	386	100	0	0.0
Wash all my cooking utensil	294	76.2	92	23.8
Eat variety of foods	275	71.2	111	28.8
Limit my caffeine intake (coffee, lipton) to a mug per day	268	95.3	118	30.5
Don't reduce my food intake during pregnancy	368	98.3	18	1.7
Don't follow weight reduction therapy	368	98.3	18	1.7
Took alcohol	181	46.9	205	53.1

Source: Field data survey, 2018.

4. Discussions

The results of this study shows that majority (58.8%) of the respondents fall within the age group of 26-30 years. This age group is within the child bearing age with less complication and is in accordance with [6] work where respondents falls within age group of 15-20 years. Majority (98.4%) of the respondents were married while most (46.9%, 46.6%) of the respondents were artisan and civil servant by occupation. This findings is not in accordance with [6,9] studies. Their studies shows that 62.6% and 67.3% of the respondents were housewives respectively. Based on the income level, 94.3% of the respondents earn above ₦10,000. Results indicated that most (47.4%) of the respondents have tertiary education, 28.8% have primary education while 23.8% have secondary education respectively.

Despite high level of education among the respondents, results revealed that 65% of the respondents have fair knowledge of nutritional diet during pregnancy and 35% of them have good knowledge of nutritional diet during pregnancy respectively. According to [6] studies, 65.4% of the respondents showed high knowledge of dietary practices during pregnancy while 34.6% indicated low knowledge of dietary practices during pregnancy. Adequate knowledge is the most important factor which determine the nutritional habits of pregnant women. According to [7], knowledge during pregnancy period is enough to encourage pregnant women to practice healthy dietary behaviour.

Findings revealed that majority (67.1%) of the respondents strongly agree that nutrients intakes need to be increased during pregnancy. However, majority (66.7%) of the respondents have positive attitude towards adequate diet during pregnancy while 33.3% have negative attitude towards adequate diet during pregnancy respectively. Studies from [10] suggested that knowledge, attitude and belief are related to healthy eating, health maintenance and nutritional behavioural change. The knowledge and positive attitude change must mediate adequate dietary process. In this study, a high proportion of the respondents claimed to have some knowledge of what they should eat during pregnancy. However, their knowledge and attitude to the recommended diet was generally assessed as being fair.

The pregnant women were not eating more quantity and variety of foods more than what they normally eats before pregnancy nor consume dairy products in their meal daily and also claimed inability to afford sufficient quantity and quality of adequate diet recommended for them. Based on respondents lifestyle, results indicated that majority (69.9%) of the respondents engaged in physical exercise in form of brisk walking and dancing. Most (56.9%) of them engaged in daily exercise while 38.7% engaged in exercise once a week respectively. This findings is in line with [11] who stated that physical exercise is helpful for pregnant women because it reduces risks during delivery. However, findings revealed that knowledge of adequate nutrition and practices of adequate diet during pregnancy is significantly related.

5. Conclusion

Pregnancy is a period of remarkable physiological changes that require healthy dietary intake and lifestyle choices. During pregnancy, demand for nutrient increase by the mother due to growing foetus. The results indicated that majority of the pregnant women attending UCH and Adeoyo ante-natal clinics were artisan and civil servant. It was observed that most of them have tertiary education which implies that they are literate. Most of the pregnant women engaged in physical exercise to make them fit during pregnancy. This study revealed that pregnant women should consume adequate diet with essential micronutrients especially in calcium, zinc, folate, iron and vitamin B12. The pregnant women's knowledge and attitude towards adequate diet during pregnancy was rated fair while their practices of adequate diet was poor. Therefore, there is need to educate the pregnant women at

the community level on attitude towards adequate diet during pregnancy period and benefit attached to practices of adequate diet.

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