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Determinants of Nutritional Practice among Expectant Mothers Attending Antenatal Clinic in Selected Hospitals in Abeokuta, Ogun State

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Abstract

Objective: *This study sort to determine the knowledge, attitude, environmental factors and nutritional practice among expectant mothers attending antenatal clinics in selected hospital in Abeokuta, Ogun state.*

Methodology: *This study was a cross sectional survey design guided by behavioral theory that employed quantitative method of data collection. Multistage sampling was employed in this study. A 36 item semi-structured questionnaire validated at 0.75 Cronbach alpha was used. A total of 295 patients responded to the questionnaire. Data were analyzed using descriptive and inferential statistics at p< 0.05.*

Results: *Majority were married 217 (73.6%) and 90 (30.5%) of the respondents falls between age 30-34 years. The study revealed that many 167 (56.6%) of the respondents had fair knowledge of diet (13.64 ± 2.65), majority 219 (74.2%) had positive attitude towards nutritional practice (13.57 ± 3.97) and more than half 157 (53.2%) of the respondents were negatively influenced by environmental factors (14.22 ± 4.65). Also, 148 (50.2%) had good nutritional practice (14.09 ± 2.48). There was no significant relationship between knowledge and nutritional practice (r=0.107; p= 0.066) whereas there was a significant relationship between attitude and environmental factors (r=0.359; p=0.000) and (r=0.282; p=0.000) respectively.*

Conclusion: *Pregnancy is the most crucial nutritionally demanding period of every woman's life. It is important for expectant mothers to maintain good nutritional practice so as to achieve optimal birth outcome. Therefore, appropriate health promotional intervention is highly recommended to modify expectant mothers' attitude and environmental factors so as to achieve good nutritional practice.*

Keywords: *Expectant mothers, Pregnancy, Nutritional practice, Knowledge, Attitude, Environmental factors.*

Introduction

The period of pregnancy is a time that is accompanied with rapid physiological changes from the time of conception until delivery. The demand for adequate nutrition increases during this period so as to maintain metabolism and tissue accretion while supporting foetal development. However, despite numerous research that supports the importance of adequate nutrition in pregnancy, about 20% to 30% of expectant mothers worldwide suffer from some vitamin deficiency [1].

Maternal under nutrition remains a persistent problem in developing countries, where women usually fall behind men in having access to food, health care, and education [2]. A study conducted by Sholeye, Catherine and Olubukunola on pregnant women from rural and urban communities in Ogun state, south western Nigeria indicated that the mean energy, vitamin A, folic acid, calcium, iron and sodium intake of both rural and urban respondents were below the recommended nutrient intake values [3]. Poor maternal and child health indices in developing countries have been linked, among other factors to poor nutrition arising from dietary factors, including food restrictions, dietary indiscretion, quality of diet, poor feeding habit, and ignorance of nutrition [4].

According to Flick et al., pregnancy places a lot of physiologic, metabolic, and nutritional

demands on women. Consequently, if optimal nutritional needs are not met, morbidity and even mortality could occur for both the mother and her fetus. Although most women are aware of the importance of healthy eating during pregnancy, women may have lack of knowledge of the specific dietary recommendations or may not have the skills required to improve their dietary habits [5].

In Nigeria, there is a high prevalence of adverse outcomes of pregnancy, which can be life threatening for both the mother and her baby. One of such outcomes is low birth weight (LBW). Furthermore, the researcher also pointed out that inadequate intake of folate and vitamin B12 increases the risk of LBW and preterm delivery [6]. In Nigeria, LBW affects about 5-6 million children every year, the incidence was reported to be 11.4% in Ogun state. The study revealed that maternal under and over-nutrition and deficiency of micronutrient such as iron, folate, calcium vitamin D and vitamin K has a major role in the development of nutritional problem [7].

Under-nutrition has been reported by many researchers in the country. Ugwu reported an incidence of 10–40% in the Eastern part of Nigeria. Additionally, 75% of pregnant women from the western part of Nigeria were mentioned to have had inadequate dietary despite the fact that, terrible nutrition in pregnancy negatively influences the mother's health and that of the unborn infant [8].

Nana and Zema identified Socio-demographic factors, obstetric factors and dietary knowledge as the major determinants of nutritional practice [9]. Based on the reviewed literatures, level of education, cultural beliefs, occupation and knowledge of diet in pregnancy are major determinants affecting nutritional practice among expectant mothers. There is paucity of research that studied the attitude of expectant mothers and how environmental factors influence their nutritional practice. This study seeks to determine the knowledge, attitude, environmental factors and nutritional practice among expectant mothers attending antenatal clinic in selected hospitals in Abeokuta, Ogun state. This study was further guided by the social cognitive theory.

Therefore, the study proposes three hypotheses
1. There is a significant relationship between knowledge of diet during pregnancy and nutritional practice among expectant mothers in Abeokuta, Ogun state.
2. There is a significant relationship between attitude of expectant mothers and nutritional practice among expectant mothers in Abeokuta, Ogun state.
3. There is a significant relationship between environmental factors and nutritional practice among expectant mothers in Abeokuta, Ogun state.

Materials and Methods

Study Design, Population, and Location

The study adopted a cross-sectional design that employed quantitative methods of data collection. The study was conducted in Abeokuta, the state capital of Ogun state from February to March 2020. A 36-items semi-structured questionnaire validated at 0.75 Cronbach alpha was used to obtain information from 295 patients. Multistage sampling technique was adopted in this study. Purposive sampling technique was used to select Federal Medical Center, Abeokuta and Sacred Heart Hospital, Abeokuta and simple random sampling technique was used to select respondents to the study. Participants eligible for this study were consenting expectant mothers attending antenatal care (ANC).

Inclusion Criteria/ Exclusion Criteria

Consenting expectant mothers attending ANC at the selected hospitals were included in the study while expectant mothers that did not give their consent were excluded.

Instrument for the Study

A 36-items semi-structured questionnaire was used to collect information formation from the respondents. The questionnaire was divided into four sections: Section A addressed Socio-demographics of respondents such as age, marital status, ethnic origin, level of educational, occupation and income, section B measured the level of knowledge of diet among expectant mothers, section C assessed the behavior of expectant mothers towards nutritional practice, section D collected information on the environmental factors associated with nutritional practice among expectant mothers and section E assessed the nutritional practice among expectant mothers.

Measures of variables

The Socio-demographic characteristics of participants were determined using 7-items with options to be chosen. In Section B, nine questions having dichotomous answers (yes or no) were used to measure the level of knowledge of diet among expectant mothers measured on an 18-point rating scale. The answer "yes" was coded as one (1) while the answer "no" was coded as zero (0).

In section C, seven questions were used to collect information on the behavior of expectant mothers towards nutritional practice measured on a 21-point rating scale. Likert scale was used with responses ranging from Strongly Agree, Agree, Disagree and Strongly Disagree coded from 0, 1, 2, and 3 respectively depending on the correctness of the question.

In section D, eight questions were used to collect information on the environmental factors associated with nutritional practice among expectant mothers measured on a 24-point rating scale. Likert scale was used with responses ranging from Strongly Agree, Agree, Disagree and Strongly Disagree coded from 0, 1, 2, and 3 respectively depending on the correctness of the question.

In section E, six questions were used to collect information on nutritional practice among expectant mothers measured on an 18-point rating scale. Likert scale was used with responses ranging from Never, Rarely, Sometimes and Often coded from 0, 1, 2, and 3 respectively depending on the correctness of the question.

Data analysis

The data obtained were coded, analyzed and interpreted using statistical package for Social Science (SPSS) version 23.0. Summaries of descriptive statistics (frequency, mean and standard deviation) and inferential statistics were derived and presented using tables.

Ethical considerations

Ethical clearance was sought and obtained from the Babcock University Health Research Ethics Committee (BUHREC), Federal Medical Center, Abeokuta and Sacred Heart Hospital, Abeokuta. Confidentiality, anonymity and right to withdraw from the study was also be stated to the respondents.

Results

Socio-demographic characteristics of respondents

The socio demographic characteristics of the respondents showed that Less than half 90 (30.5%) of the respondent falls between 30 – 34 years and most 217 (73.6%) of the respondents were married. Most 230 (78.0%) of the respondents were Yoruba, more than half 160 (54.2%) of the respondents had studied up to tertiary level while two-third 103 (34.9%) of the respondents were traders. Few 69 (23.4%) of the respondent's income falls between 30,000–40,000 (Table 1).

Knowledge of diet among expectant mothers

The level of knowledge of diet among expectant mothers' pregnancy was measured on an 18-point rating scale with mean score 13.64±2.65 valid for 295 respondents (n=295). The score translates to the fact that many 167 (56.6%) of the respondents had fair knowledge of diet during pregnancy, 107 (36.3%) had good knowledge while very few 21 (7.1%) of the respondents had poor knowledge of diet during pregnancy. Furthermore, this also translates to a knowledge prevalence of 75.78%.

Almost all 288 (97.6%) of the respondents agreed that the main function of protein is to build body tissues while most 219 (74.2%) of the respondents agreed that carbohydrates dissolve, carries nutrients and regulates body temperature. However, some 126 (42.7%) of the respondents agreed that taking food like fish, milk, and egg is not good for a pregnant woman (Table 2).

Attitude of expectant mothers towards nutritional practice

The attitude of respondents was measured on a 21-point rating scale with mean score 13.57±3.97 valid for 295 respondents (n=295). This can be interpreted that most 219 (74.2%) of the respondent had positive attitude towards nutritional practice while 76 (25.8%) had negative attitude towards nutritional practice. Despite the percentage of respondents with positive attitude, few 72 (24.4%) of the respondents strongly agreed that it is not necessary to eat three times a day during pregnancy and 8 (2.7%) of the respondents

strongly disagreed that they make sure they take balanced diet during pregnancy. Some 78 (26.4%) of the respondents agreed with the statement I can take coffee early in the morning to ease stress and few 29 (9.8%) of the respondents strongly agreed that vegetables can be cooked for a long time to make it sweeter. Few 49 (16.6%) of the respondents agreed that meat, fish and egg is not necessary as long as they feel good (Table 3).

Roles of environmental factors in nutritional practice of expectant mothers

Environmental factors associated with nutritional practice was measured on a 24-point rating scale with mean score 14.22±4.65 valid for 295 respondents (n=295). The score translates to the fact that many 157 (53.2%) of the respondents were negatively influenced by environmental factors while less than half 138 (46.8%) of the respondents were positively influenced by environmental factors.

The result showed that, some 89 (30.2%) of the respondents strongly agreed with the statement in my culture, eating snail during pregnancy is forbidden, few 26 (8.8%) of the respondents strongly agreed that pregnant women are not allowed to take banana during pregnancy according to my culture while and 37 (12.5%) of the respondents agreed that in their culture the best quality and quantity of food is served to their husband and adult male only. Few 43 (14.6%) of the respondents strongly agreed that okro is a taboo for a pregnant woman and 54 (18.3%) of the respondents strongly agreed that the food they consume is not always enough because they can't afford adequate diet (Table 4).

Nutritional practice among expectant mothers

The nutritional practice of respondents was measured on an 18-point rating scale with mean score 14.09±2.48 valid for 295 respondents (n=295). A little above average of the respondents had good nutritional practice 148 (50.2%) while some 147 (49.8%) of the respondent had poor nutritional practice.

The result showed that few 32 (10.8%) of the respondents rarely take vegetable while some 102 (34.6%) of the respondents often take fruits in their pregnancy. Few 18 (6.1%) of the respondents never take snacks in their current pregnancy while some 88 (29.8%) of the respondents often take snacks during their current pregnancy. Few 30 (10.2%) of the respondents sometimes take food like fish, meat and eggs while most 236 (80.0%) of the respondents often take food like fish, meat and eggs (Table 5).

Three hypotheses were tested in this study, when tested at 5% level of significance, the study showed no statistically significant relationship between knowledge of diet and nutritional practice among expectant mothers (r=0.107; p=0.066). There was a statistically significant relationship between attitude and nutritional practice among expectant mothers (r=0.359; p=0.000). Also, there was a statistically significant relationship between environmental factors and nutritional practice among expectant mothers (r=0.282; p=0.000).

Discussion

In this study, less than half 90 (30.5%) of the respondents' age ranged between 30 – 34 years and many 217 (73.6%) were married as expected but lower than what was recorded in study by Nana and Zema where majority were married. Many were Yoruba as expected and this is supported by the fact that it is the major ethnic group in south-western region of the country where the study was conducted. More than half of the respondents went to tertiary institution and just few had no education which shows that majority of the respondents were literate and majority were income earners except the housewives who rely on their husband [9].

The result of this study revealed that many 167 (56.6%) of the respondents had fair knowledge of diet during pregnancy and only few 21 (7.1%) had poor knowledge on the dietary practice during pregnancy similar to the study by Lim et al [10]. which could be a reflection of their educational level. Almost all of the respondents agreed that the main function of protein is to build body tissues which was quite higher than what was reported by Masuku and Lan [11]. Most of the respondents agreed that carbohydrates dissolve, carries nutrients and regulates body temperature and that fats are good for protection and they provide long term energy for the body. However, this was quite different from what was reported by other studies [11].

Majority of the respondents in this study agreed that vitamins helps the development of the baby during pregnancy, that minerals are essential nutrients during pregnancy and that water helps to remove waste from the body

during pregnancy which is the fundamental knowledge acquired in school as benefits of classes of food. This could be as a result of the level of education of respondents where majority had attained up to tertiary level. Also, some of the respondents agreed that taking food like fish, milk, and egg is not good for a pregnant woman which is a form of misconception among the Yorubas. Most of the respondents agreed that vegetable is an essential diet for a pregnant woman. This result correlates with a study carried out by Fasola et al where majority knew that a pregnant woman should increase fruits and vegetables intake [12].

In our study, attitude showed a statistically significant relationship with nutritional practice among expectant mothers. Also, majority 219 (74.2%) of the respondents had positive attitude towards nutritional practice. However, more than half disagreed that it is not necessary to eat three times a day which is similar to a study conducted by Masuku and Lan [11]. However, their respondents knew the benefits of eating well during this period. Almost half of the respondents in our study takes balanced diet. This result is lower than that of a study conducted by Lim et al, [10].

Few of the respondents strongly agreed with the statement; vegetable can be cooked for a long time to make it sweeter while some 110 (37.3%) of the respondents strongly disagreed with the statement. This result is in contrast to a study conducted by Fasola et al where more than half of the respondents said vegetables did not have to be overcooked but similar to a study conducted by Masuku and Lan [11,12].

The result of this study further revealed that 157 (53.2%) of the respondents were negatively influenced by environmental factors and environmental factors showed a statistically significant relationship with nutritional practice among expectant mothers. Some of the respondents strongly agreed that in their culture, eating snail during pregnancy is forbidden because the belief that such food could cause abortion, placental disruption, difficult labour and many others which was also reported by Parmar [13]. Few of the respondents strongly agreed that pregnant women are not allowed to take banana during pregnancy according to their culture while some disagreed with the statement. However, it was reported by Otoo et al that many fears for complications during pregnancy and child birth with intake of such fruits like banana [14].

Few of the respondents strongly agreed that Okro is a taboo for a pregnant woman. This could be as a result of a misconception among the culture. This misconception was also reported in other studies where it was said that Okra was perceived to cause burning sensation of the waist and painful labour [15]. Some of the respondents strongly agreed that family income is enough to feed them adequately because some earn enough to feed and the few that disagreed could be those that are not earning at all that needed to rely on their husband. Few of the respondents strongly agreed that they watch their spending when it comes to food because of its expenses this may be due to the fact that it's only few that earns above eighty thousand naira.

This study revealed that a little above average of the respondents had good nutritional practice 148 (50.2%). Some of the respondents sometimes take vegetables per day similar to a study by Wen et al where it was reported that some had less than two serves of vegetables per day [16], however daily intake of 300 g of vegetables is important during pregnancy because these are foods with high nutrients density (especially folic acid) [17]. Also, some of the respondents often take fruits in their pregnancy which is equally important as it has high nutrients density. Only few of the respondents never take snacks in their current pregnancy which is supported by study by Aktaç et al where majority consume snacks to avoid starving for a long time in pregnancy [18]. Few of the respondents rarely drink water in this their current pregnancy while majority of the respondents often drink water in their current pregnancy. This which could be influence by knowledge of respondents about water that it helps to remove waste from the body during pregnancy.

Table 1. Respondents socio-demographic characteristics

Variables	**Respondents in the study N=295**	
	Frequency (n)	**Percentage (%)**
Age		
• 19 years and below	12	4.1
• 20 -24 years	75	25.4
• 25 – 29 years	51	17.3
• 30 – 34 years	90	30.5
• 35 – 39 years	45	15.3
• 40 years and above	22	7.5
Marital status		
• Single	37	12.5
• Married	217	73.6
• Separated	13	4.4
• Divorced	20	6.8
• Widow	8	2.7
Ethnicity		
• Yoruba	230	78.0
• Igbo	42	14.2
• Hausa	10	3.4
• Others	13	4.4
Level of Education		
• None	23	7.8
• Primary	42	14.2
• Secondary	70	23.7
• Tertiary	160	54.2
Occupation		
• Farmer	26	8.8
• Trader	103	34.9
• Civil servant	97	32.9
• House-wife	40	13.6
• Artisan	14	4.7
• Student	5	1.7
• Private worker	10	3.4
Income		
• None	39	13.2
• Less than 10,000	59	20.0
• 10,000 – 20,000	51	17.3
• 30,000 – 40,000	69	23.4
• 50,000 – 70,000	56	19.0
• 80,000 – 100,000	21	7.1

Table 2. Knowledge of diet among respondents

S/N	Knowledge of diet among expectant mothers	YES	%	NO	%
1	The main function of protein is to build body tissue	288	97.6	7	2.4
2	Carbohydrate dissolve, carries nutrients and regulates body temperature	219	74.2	76	25.8
3	Fats are good for protection and they provide long term energy for the body	201	68.1	94	31.9
4	Vitamins helps the development of the baby during pregnancy	270	91.5	250	8.5
5	Minerals are essential nutrients	261	88.5	34	11.5
6	Water helps to remove waste from the body during pregnancy	264	89.5	31	10.5
7	Taking food like fish, milk, and egg is not good for a pregnant woman	126	42.7	169	57.3
8	Does consumption of adequate diet in pregnancy prevent ill health	233	79.0	62	21.0
9	Vegetable are essential diet for a pregnant woman	250	84.7	45	15.3

Table 3. Respondents' attitude towards nutritional practice

S/N	Attitude of Expectant mothers toward Diet	SA	%	A	%	D	%	SD	%
1	It is not necessary to eat three times a day during pregnancy	72	24.4	60	20.3	72	24.4	91	30.8
2	I make sure I take balanced diet during pregnancy	137	46.4	124	42.0	26	8.8	8	2.7
3	I can take coffee early in the morning to ease stress	33	11.2	78	26.4	128	43.4	56	19.0
4	Vegetable can be cooked for a long time to make it sweeter	29	9.8	45	15.3	111	37.6	110	37.3
5	Meat, fish and egg is not necessary as long as I feel good	41	13.9	49	16.6	101	34.2	104	35.3
6	Consuming vitamin fortified food is important for me	104	35.3	136	46.1	33	11.2	22	7.5
7	It doesn't matter what I eat, I just need to be satisfied	41	13.9	58	19.7	85	28.8	111	37.6

[a.] Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

Table 4. Respondents' environmental factors associated with nutritional practice

S/N	Environmental factors associated with nutritional practice	SA	%	A	%	D	%	SD	%
1	In my culture, eating snail during pregnancy is forbidden	89	30.2	55	18.6	83	28.1	68	23.1
2	Pregnant women are not allowed to take banana during pregnancy according to my culture	26	8.8	44	14.9	134	45.4	91	30.8
3	In my culture, the best quality and quantity of food is served to my husband and adult male only	26	8.8	37	12.5	140	47.5	92	31.2
4	Okro is a taboo for a pregnant woman	43	14.6	52	17.6	108	36.6	92	31.2
5	In my culture, pregnant women are not	52	17.6	68	23.1	106	35.9	69	23.4

	allowed to eat grass cutter								
6	The food I consume is not always enough because I can't afford adequate diet	54	18.3	58	19.7	121	41.0	62	21.0
7	My family income is enough to feed me adequately	108	36.6	117	39.7	43	14.6	27	9.2
8	I watch my spending when it comes to food because of its expenses	60	20.3	71	24.1	90	30.5	74	25.1

[a.] Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

Table 5. Respondents' Nutritional Practice

SN	**Nutritional practice among expectant mothers**	**N**	**%**	**R**	**%**	**S**	**%**	**O**	**%**
1	How many times do you eat in a day	3	1.0	24	8.1	39	13.2	229	77.6
2	How often do you take fruit in this pregnancy	3	1.0	31	10.5	101	34.2	160	54.2
3	How often do you take vegetable in this pregnancy	4	1.4	32	10.8	102	34.6	157	53.2
4	How often do you take snacks in this pregnancy	18	6.1	99	33.6	90	30.5	88	29.8
5	How often do you drink water in this pregnancy	1	0.3	18	6.1	34	11.5	242	82.0
6	How often do you take food like fish, meat and eggs	3	1.0	26	8.8	30	10.2	236	80.0

[a.] Strongly Agree (SA), Agree (A), Disagree (D), Strongly Disagree (SD)

Conclusion

The study revealed the nutritional practice among expectant mothers attending antenatal clinic in selected hospital in Abeokuta, Ogun state**.** The study was carried out among consenting expectant mothers attending antenatal care in Federal Medical Center Abeokuta and Sacred Heart Hospital, Abeokuta. The knowledge of diet during pregnancy among some of the expectant mothers was fair. Most of the expectant mothers had positive attitude towards nutritional practice while many of the expectant mothers were negatively influenced by environmental factors associated with nutritional practice. The study further revealed that more than half of the expectant mothers had good nutritional practice. In this study, only attitude and environmental factors showed statistically significant relationship with nutritional practice among expectant mothers. A health promotion intervention to modify expectant mothers' attitude and environmental factors in therefore recommended.

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