

NUTRITIONAL KNOWLEDGE OF PREGNANT WOMEN ATTENDING ANTENATAL CLINIC IN NSUKKA HEALTH DISTRICT, ENUGU STATE

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Abstract

The purpose of the study was to determine the nutritional knowledge of pregnant women attending antenatal clinic in Nsukka Health District (NHD). The study adopted the descriptive survey research design. The population for the study consisted of 3,600 pregnant women attending antenatal clinic while multi-stage sampling procedure was used to draw a sample of 360 pregnant women used for the study. A self developed questionnaire was the instrument used for data collection. Direct approach was used to administer the questionnaire with the help of some research assistants who were thoroughly briefed. The research questions were answered using means and percentages while the null hypotheses were tested using the ANOVA at 0.5 level of significance. The findings revealed that Pregnant women aged 31-40 years, and 21-50 years possessed high and average nutritional knowledge respectively while those aged 15-20 and 41-49 years possessed low knowledge. Pregnant women with tertiary and secondary education had high and average level of nutritional knowledge respectively while those women with non-formal and primary education had low level of nutritional knowledge. There was significant difference in nutritional knowledge of pregnant women according to age and level of education. Based on the findings and conclusions, the researcher recommended among others the improvement of health care delivery system through the strengthening of human resources capacities and qualities of interaction between pregnant women and health care workers by the government.

Keywords: Nutrition, Knowledge, Pregnant Women, Antenatal care, Nsukka Health District

Introduction

Nutrition is an important factor in health maintenance and promotion. It is closely related to health and well-being, academic performance and productivity. Nutrition is very important in both preventive as well as curative health care and as a result there is the need to incorporate all the required nutrients in one's diet. Adequate supply of food and proper nutritional habits are helpful for healthy living, normal growth and development of children, mothers and every other individual. Moronkola (2003) stressed the fact that apart from the importance of food to man, one should be concerned about one's nutritional status because many chronic diseases like hypertension, liver problem, obesity, diabetes, nutritional anaemia are associated with nutritional intake. Many common symptoms and diseases can often be prevented or alleviated with better nutrition. United State Development Agency-USDA (2005) noted that deficiencies, excesses and imbalances in diet can produce negative impacts on health, which can lead to diseases such as scurvy, osteoporosis, obesity as well as psychological and behavioural problems. Moreover, USDA further stated that excessive ingestion of elements that have no apparent role in health may incur toxic and potentially lethal effects, depending on the dose.

Proper nutrition is synonymous to adequate nourishment. It ensures that cells and organisms obtain materials necessary to support life. Anazonwu (1981) described nutrition as the science of right feeding and use of food by the body for growth, maintenance and repair of worn-out tissues. Rickets (1999) described nutrition as the science of food, their nutrients and other substances in relation to health, their action and interaction by which organisms ingest, digest, transport, assimilate, absorb and utilize food substances. Abanobi (2005) described nutrition as the science of foods, the nutrients and other substances therein, their various actions, interactions and balance in relation to health and disease. According to Wardlaw and Smith (2011), nutrition includes the processes by which man ingest, digest, absorb, transports and excretes waste food substances. The present study refers to nutrition as the sum total of the processes by which human organism take in and utilize food substances for growth, repair and maintenance of the body.

Nutrients are substances in food that provide the body with energy for work, materials for growth, repair and maintenance of body tissues as well as for reproduction, protection of the body against diseases and regulation of body processes (Ene-Obong, 2001). Alade (2002) described nutrients as the constituents of food which must be supplied to the body in suitable amounts. He further outlined the nutrients to include carbohydrates, fats and oils, proteins, vitamins, minerals and water. Okoli (2009) also stated that nutrients are chemical components of foods which the body uses to build tissues, produce energy and keep healthy. Nutrients are conceptualized as the chemical components of food which when eaten and absorbed by the body produce energy, promote the growth and proper repair of body tissues and regulate body processes. Akinsola (2006) classified nutrients into five main types or classes as follows: carbohydrates, proteins, fats, minerals and vitamins. He maintained that, the body can only get required nutrients when one eats a diet which contains enough of each kind of these nutrients in adequate proportions. Adequate nutrition intake may be influenced by nutritional knowledge.

Knowledge is paramount to man's quality of life because everything we do depends on what we know before we can practice it. WHO (1996) asserted that knowledge is prerequisite for any health action. Many disease conditions are to a large extent self-influenced by negative health practices due to lack of knowledge. Naumann (1997) defined knowledge as the accumulated facts, truths, principles and information to which the human mind has access. Knowledge is information that changes something or somebody either by becoming ground for actions or by making an individual capable of doing different or more effective action (Stuart & Achterbergh, 2004). Knowledge can be regarded as the information, understanding and skills that one gain through education or experience. In this study, knowledge is conceptualized as accumulated fact or information as well as understanding of person, thing or situation that is gained through experience or education. If knowledge is associated with nutrition, it is referred to as nutritional knowledge.

Nutritional knowledge can be described as a detailed familiarity with one's nutritional requirements or demands which can be acquired through experience or education. Nutritional knowledge refers to the accumulation, understanding of nutritional facts such as concept of nutrition, nutrients, and sources of nutrients and functions of nutrients, how the body processes and uses nutrition for body building, supply of energy and other metabolic activities by pregnant women attending antenatal clinic (ANC) in Nsukka Health District. For instance, during antenatal clinics, nutrition education is given by nurses and midwives which involve listing of nutritious foods that the pregnant women should consume in order to meet up with their nutritional needs as well as that of the foetus.

Pregnant women require special attention especially with regard to nutritional requirements because a baby is developing inside her. The pregnant woman's body is subject to greater demands to ensure foetal development as well as the growth, health and optimal functioning of the uterus, placenta and amniotic fluid. Okereke (2005) stated that there are numerous changes in the nutritional needs of a pregnant woman. The information concerning this nutritional need should be one among the packages made available to pregnant women attending antenatal clinic (ANC) in order to receive antenatal care. Antenatal care according to Akinsola (2006) refers to care given to pregnant women immediately after the pregnancy has been confirmed at about the third months. He further stated that the main aim of antenatal care is to prevent complications which may occur to the mother or the baby such as bleeding, discomfort, pain, anaemia, accident or infection, especially malaria.

According to Okereke (2010), antenatal care is the care given to a pregnant mother starting from the onset of pregnancy (or from the time her pregnancy was confirmed) until the onset of labour. Pregnant women are encouraged at this stage to attend antenatal clinic regularly so as to receive adequate care and also to obtain information on factors which may influence the outcome of their pregnancies. This study is therefore limited to determining the level of nutritional knowledge of pregnant women attending antenatal clinic in Nsukka Health District, Enugu State.

Research Question

Two research questions and two null hypotheses guided this study.

1. What is the level of nutritional knowledge of pregnant women according to age?
2. What is the level of nutritional knowledge of pregnant women according to level of education?

Hypotheses

1. There is no significant difference in the mean nutritional knowledge of pregnant women according to age.
2. There is no significant difference in the mean nutritional knowledge of pregnant women according to level of education.

Methods

The descriptive survey research design was employed in order to accomplish the purpose of this study. It gathers data at a particular point in time with the intention of describing the existing conditions. Frankfort-Nachmias and Nachias (2006) stated that descriptive survey design is a research design used most predominantly as it facilitates the gathering of information about a large population by collecting information from a portion of that very population from where generalization can be inferred. The population for this study consisted of registered pregnant women attending antenatal clinic in different health facilities in Nsukka Health District who booked between August 2013 and April 2014. The total population of these women was three thousand six hundred (3,600). (Nsukka Health District Board, 2014).

The sample for the study consisted of 360 pregnant women statistically determined using Yaro Yamane formula for a finite population. The multi-stage sampling procedure was employed to draw the sample for the study. The procedure involved three stages. In the first stage, stratified random sampling was used to stratify the health facilities located in the three L.G.As (Nsukka, Igbo-Etiti, Uzo-Uwani) that make up Nsukka Health District into predominantly urban and rural health facilities. The second stage involved the use of simple random sampling techniques of balloting without replacement to select four health facilities out of the five functional ones in each of the three Local Government Areas. Two was selected from urban and rural health facilities. This procedure provided a total of 12 health centres out of 15 functional ones located in Nsukka Health District. In another stage, purposive random sampling technique was employed to select 30 pregnant women from each of the 12 health facilities. This resulted in a sample of 360 pregnant women.

The instrument for data collection was the researcher-designed questionnaire which was called Nutritional Knowledge Questionnaire (NUKQ). The questionnaire was divided into two sections, Section A consisted of two items demanding the bio-data (age and level of education) of the respondents. Section B comprised of twenty four multiple choice questions for testing the respondents' knowledge of the concept of balance diet, nutrients and sources of food nutrients, nutritional requirement during pregnancy and consequences of the deficiency of these vital nutrients. Five experts in the Department of Health and Physical Education, University of Nigeria Nsukka validated the instruments. Split-half method using Spearman rank order correlation formula was used to establish the internal consistency of NUKQ. A reliability coefficient index of .68 was obtained. This was considered high enough for the study. The distribution and collection of the questionnaire was facilitated by the assistance of instructed research assistance after permission was obtained from the officers' in-charge of the respective health facilities. The completed copies of the instrument were collected from the respondents on the spot. This approach yielded a high return rate. Mean and percentages were the statistics employed to analyze the two research questions using Ashur's (1977) criteria as modified by Okafor (1997). By this criterion, below 40 per cent score of the respondents was considered low level of knowledge; 40-59 per cent was considered average level, a score of 60-80 per cent was considered high level while above 80 per cent was considered very high level of knowledge. ANOVA statistics was used in testing the two null hypotheses at .05 level of significance.

Results**Table 1****Level of Nutritional Knowledge of Pregnant Women According to Age (n-350)**

Age group	\bar{X} %	SD
15-20 years (n = 45)	33.70	13.981
21-30 years (n = 192)	45.70	22.738
31-40 years (n = 63)	69.71	17.019
41-49 years (n = 50)	34.67	12.862
Grand mean (%)	46.90	22.814

Table 1 shows that the mean score of women aged 31-40 years were 69.71% which falls between 60-80 per cent. This implies that women of this age group possessed high level of nutritional knowledge. The table further shows that the mean score of women aged 21-30 years (45.70%) which falls between 40-59 per cent indicating that women of this age group possessed average level of nutritional knowledge. The Table also shows that the mean score of women aged 41-49 years was 34.6 per cent which falls below 40 per cent and was slightly higher than those aged 15-20 years (\bar{X} =33.70) implying that women of these age groups possessed low level of nutritional knowledge.

Table 2**Level of Nutritional Knowledge of Pregnant Women According Level of Education (n - 350).**

Level of education	\bar{X} %	SD	D
Non-formal education	30.56	17.213	Low
Primary education	29.52	10.700	Low
Secondary education	42.55	18.495	Low
Tertiary education	73.89	13.639	High
Grand mean (%)	46.90	22.814	

Table 2 shows that the mean score of pregnant women with tertiary education (73.89%) falls between 60-80 percent. This implies that women of this age group possessed high level of nutritional knowledge. The table further shows that a mean score of women with secondary education (42.55%) which falls between 40-59 per cent indicating that women of this age group possessed average level of nutritional knowledge. The table also shows that the mean score of women with non-formal education (30.56%) and those with primary education (29.52%) falls below 40 percent. This implies that women of these age groups possessed low nutritional knowledge.

Table 3**Result of One-Way Analysis of Variance (ANOVA) Testing the Null Hypothesis of No Significant Difference in the Mean Nutritional Knowledge of Pregnant Women According to Age (n = 350).**

	Sum of squares	Df	Mean square	F	P-value
Between Groups	48369.922	3	16123.307		
Within Groups	133276.904	346	385.193	41.858	.000

* Significant.

Table 3 shows that the calculated F-value and the corresponding P – value (F – value = 41.858, P – value = .000 < .05) is less than .05 level of significant at 3 and 346 degrees of freedom. The null hypothesis of no significant difference is therefore rejected. This implies that the nutritional knowledge of pregnant women differed according to age.

Table 4
Result of One-Way Analysis of Variance (ANOVA) Testing the Hypothesis of No Significant Difference in the Mean Nutritional Knowledge of Pregnant Women According to Level of Education

	Sum of squares	Df	Mean square	F	P-value
Between Groups	98573.432	3	32857.811		
Within Groups	83073.394	346	240.007	136.853	.000

* Significant.

Table 4 shows that the calculated F-value and the corresponding P – value (F – value = 136.853, P – value = .000 < .05) is less than .05 level of Significant at 3 and 346 degrees of freedom. The null hypothesis of no significant difference is therefore rejected. This implies that the nutritional knowledge of pregnant women differed according to level of education.

Discussion

The findings in Table 1 revealed that the level of knowledge of pregnant women aged 41-49 years was slightly higher than those aged 15-20 years was low while the level of knowledge of those aged 21-30 years and 31-40 years was average and high respectively. The fact that, age group 15-20 years possessed low nutritional knowledge was expected and therefore not surprising, because experience has shown that age plays a significant role in acquisition of facts or knowledge. The women in this age group are vulnerable to eating fast foods so that even though they attend antenatal clinic, they may not be concerned with certain nutritional information and facts. This explains why some of them resorts to junks and non-nutrients foods such as clay. The finding is similar to that of Anderson and Campbell (1995). They reported that it seems unlikely that younger women would have a better knowledge of nutrition because they are less exposed to diet and health concepts which older women are more concerned about. On the other hand, age 41-49 years possessed low nutritional knowledge. It is surprising and not expected. Age groups 41-49 years are expected to demonstrate very high level of knowledge due to the previous experiences gained while receiving antenatal care and feeding their children. This finding disagrees with the finding of Anderson and Campbell (1995) which indicated that older women are more concerned and have better knowledge of nutrition.

The finding in Table 2 revealed that the level of knowledge of pregnant women with non-formal education, and primary education was low. This finding is not surprising but expected. It is an established fact, that education is power. Practically, pregnant women, who were illiterates due to lack of education may not retain adequate nutritional knowledge concerning their nutritional demands. The implication of this finding is that these women might select foods which do not form adequate diet because there may be the temptation of selecting only carbohydrate food, thus not eating right. The finding is in consonance with that of Walraven et al (1997) which reported that low education level has indirect effects on the understanding of nutrition and food aspects as well as improvement of the socio-economic conditions. The result further showed that pregnant women with secondary and tertiary education possessed average and high nutritional knowledge respectively. This finding was not surprising but expected. This is due to the fact that women with high educational attainments are expected to exhibit adequate nutritional knowledge because of their exposure to nutritional information through communication media. This finding agrees with that of Marietta, Welshimer and Anderson (1999) which reported that educated people was more nutrition conscious to get better food choices and healthy eating.

The finding in Table 3 revealed that, there was significant difference in the nutritional knowledge of pregnant women according to age. This implies that pregnant women in the four age groups differed in their nutritional knowledge. This finding was expected and not surprising because these four age groups of pregnant women probably do not seem to have equal exposure and experiences regarding their nutritional demands. Age has been identified as a strong factor that can limit the ability of an individual to acquire nutritional knowledge. This is in line with Ejifugha (2003) who reported that age brings about maturity and maturity puts one in a position to rationalize, concretize, accept or reject concept, information, habit, attitude and practice. This finding conforms to that of Agada-Amade (2004) who maintained that disparity in level of knowledge according to age

could be attributed to the fact that older people give more attention to health and health related matters more than those less than 40 years.

The finding in Table 4 revealed that there was significant difference in the nutritional knowledge of pregnant women according to level of education. This implies that pregnant women in the four educational levels differed in their nutritional knowledge. This finding was expected and not surprising as it agrees with the view of Onyekwere, Samuel and Akwuba (2013) that educational level of a given group of individuals is expected to influence their knowledge of a given health concept or behavior. Sound education has the capacity to stimulate and empower an individual's intellectual capacity to understand and appreciate concepts especially those bothering on their nutrition. This finding is in line with Islam and Ullah (2005) who reported that educational status had significant influence on knowledge and attitude of pregnant woman toward nutrition. However, this finding disagrees with the report that, there is no considerable difference between the nutritional knowledge of women who were illiterate, with those who attended primary and secondary education (Sharma & Sharma, 2012).

Conclusions

Based on the findings and discussion of the study the following conclusions were made:

1. Pregnant women aged 31-40 years and 21 to 30 years possessed high and average level of nutritional knowledge respectively while those aged 15-20 and 41-49 years had low nutritional knowledge.
2. Pregnant women with tertiary and secondary education had high and average level of nutritional knowledge respectively while those with non-formal and primary education had low level of nutritional knowledge

Recommendations

On the basis of the findings of the present study, the discussion and conclusion thereof, the following recommendations were made:

1. The government should intensify efforts to improve health care delivery system through strengthening human resources capacities and qualities of interaction between pregnant women and health care workers using different media.
2. The State Government in conjunction with the Ministry of Health Education information and Women Affairs, school authorities, Non-governmental Organizations (NGOs) and church should embark on sensitization and public enlightenment campaigns in the area of Nutritional education both in schools and the general public.

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