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Association between Socio-demographic and Economic characteristics and Packed Cell Volume of the Expectant Mothers Attending Antenatal Clinic in FMC, Abuja

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Abstract

The study aimed to assess the nutritional knowledge, practices and packed cell volume of expectant mothers attending antenatal clinic in FMC Abuja. A structured interviewer-administered questionnaire was used. The questionnaire was adequately checked and validated. It was also pretested for sensitivity of questions, ambiguity and suitability of language. A systematic random sampling technique was used to select two hundred and fifty-six (256) pregnant women attending antenatal clinic at FMC Abuja. None of the women was interviewed more than once. Ethical approval was gotten from the Health Research Ethics Committee (HREC) of FMC Abuja. The IBM SPSS statistics version 23 was used for the statistical analysis. Results were presented in tables using frequencies and simple percentages. Chi square statistics was used to determine associations between variables and significance was taken at P< 0.05%. There was a significant association between marital status (P-value= 0.021), occupation (P-value= 0.026), monthly income (P-value= 0.003), and packed cell volume of the expectant mothers. Whereas age, religion, and educational status were not statistically significant (P > 0.05) with the packed cell volume of the expectant mothers. Packed cell volume of expectant mothers is affected by occupation, income and nutritional practices. A targeted nutrition education program should be introduced to improve the practices of already acquired knowledge of nutrition amongst the expectant mothers to ensure optimal maternal and fetal wellbeing.

Keywords*: socio-demographic, economic characteristics, packed cell volume, expectant mothers*

Introduction

Pregnancy is a demanding period of varying physiological changes. Optimal nutrition during pregnancy has a major impact on the outcome of pregnancy and accredited as an important determinant for a healthy and successful pregnancy including life-long health of future generation.[1-8]

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Appropriate nutritional practice plays a pivotal role in determining optimal health and development of infants.[9-10] There is abundant epidemiological evidence that poor prenatal nutrition predisposes the offspring to diseases in its later life. Inadequate nutrition is the predominant factor leading to malnutrition, which can be expressed as either under nutrition or over nutrition. Under nutrition occurs when there is not only inadequate energy but also a lack or imbalance of specific food components and nutrients. There have been considerable changes in human lifestyle all over the world in the recent decades. Recent decades have marked significant global shifts in lifestyle patterns, characterized by notable changes in dietary preferences, available food choices, meal preparation techniques, and various other facets of daily life.[11] Nowadays processed foods are rapidly replacing organic food. Another change is the rapid increase in the number of restaurants and in people's tendency to eat fast food. Proper nutrition is one of the most important aspects of lifestyle.[12] Epidemiological evidence shows that there is an increased incidence of diseases such as (cardiovascular diseases, obesity, high blood pressure and cancer), which can be attributed to changes in lifestyle as well as changes in nutritional habits. Nutrition education is also one of the important aspects that play a big role in nutritional knowledge by raising awareness and ultimately the health of the society.[13]

Research Methodology

Study Area

The study was done in The Federal Medical Centre, Abuja.

Research Design

The researcher used a cross sectional research survey design in building up this project work.

Population of the Study

The study population is all pregnant women attending antenatal clinic in Federal Medical Centre Abuja on a monthly basis.

The number of pregnant women who attend clinic in the hospital is being regulated so as to make room for other clinics and that accounts for the two hundred and fifty (1000) woman who attend antenatal clinic in Federal Medical Center Abuja on monthly bases, thus our population.

Sample size determination

Sample is the set people or items which constitute part of a given population sampling. Due to large size of the target population, the researcher used the Taro Yamani formula to arrive at the sample size of the study, thus;

$$n = \frac{N}{1+N(e)^2}$$

Where,

n = sample size

N = population size

e = level of precision or sample of error which is placed at + 5%.

Working;

n = unknown

N = 711

e = 5% which is equal to 0.05.

$$n = \frac{711}{1+711(0.05)^2}$$

$$= \frac{711}{}$$

$$= \frac{711}{1+711(0.0025)}$$
$$= \frac{711}{1+1.775}$$
= 711/2.7775 = 255.98 ~ 256. Therefore, n= 256
This value determines the number of questionnaires that was distributed to the respondents.

Research instrument

The questionnaire used as the research instrument was subjected to face validation. This research instrument (questionnaire) adopted was adequately checked and validated by the supervisor and other professionals in public health. Their contributions and suggestions were included into the final draft of the research instrument used.

Sampling Procedure

Systematic random sampling technique was used to select two hundred and fifty-six pregnant women attending antenatal care clinic in FMC, Abuja. The list of pregnant women attending antenatal care clinic was used to systematically select two hundred and fifty-six pregnant women from the Antenatal Care Unit of FMC Abuja, according to random starting point and a fixed periodic interval. This interval called the sampling interval was calculated by dividing the population size of the pregnant women in antenatal care clinic by the desired sample size and a starting number or integer was chosen and an interval was taken of every number, to give a sample size of respondents that were used for the study. The study was conducted within 2months and participation was voluntary and anonymous.

Data Collection

The major research instrument used in this research work was the questionnaires. This was appropriately moderated. Expectant mothers attending antenatal clinic in FMC Abuja were administered with the questionnaires to complete, without disclosing their identities. The questionnaire was designed to obtain sufficient and relevant information from the respondents. The primary data contained information extracted from the questionnaires in which the respondents were required to give specific answer to a question by ticking in front of an appropriate answer. The questionnaires contained about 71 structured questions which were divided into sections A to E.

Data Analysis

The data being collected is not an end in itself, rather, it served as a means to an end. The ultimate goal is to utilize the gathered data to comprehend various situations, aiming to provide valuable recommendations and contributions. Thus, the collected data was cleaned to remove invalid data. The correctly completed questionnaires were coded and processed with Microsoft excel 2021 and later transferred to IBM SPSS version 23 for descriptive and inferential statistical analysis, while Microsoft word 2021 was used for the writing and interpretation. To ensure a comprehensive analysis of the collected data, we placed emphasis on utilizing absolute numbers, response frequencies, and percentages. We obtained answers to the research questions by comparing the percentage of responses from mothers to each statement in the questionnaire related to the specific question being considered.

In this study, "frequency" refers to arranging responses based on magnitude or occurrence, while "percentage" refers to arranging responses based on their proportions. The simple percentage

method is being chosen due to its straightforwardness and ease of interpretation. The researcher opted for the simple percentage as the preferred analysis method.
The formula for calculating the percentage is as follows:

$$\frac{f}{N} \times \frac{100}{1}$$

Where:
f = Frequency of respondents' responses
N = Total number of responses in the sample
100 = Standardized percentage for each item in the questions

Ethical Approval

In compliance with Helsinki Declaration for investigation of human subjects ("World Medical Association Declaration of Helsinki: Ethical principles for medical research involving human subject," 2013) ethical approval was obtained from Federal Medical Centre, Abuja, Health Research Ethics Committee (HREC). Permission was also taken from the participants themselves and participants who were unwilling to continue were allowed to opt out.

RESULTS

4.7 Association between Nutritional Knowledge, Practices and Packed Cell Volume of the Expectant Mothers

Table 5 shows no statistically significant association ($P > 0.05$) was observed between the expectant mothers' overall nutritional knowledge, practices, and packed cell volume.
However, a statistically significant association ($P < 0.05$) was observed between some components of the nutritional-related practices of the expectant mothers, such as eating plenty of fruits and vegetables (P-value= 0.003) and those who generally try to have a healthy diet (P-value= 0.002) and their packed cell volume.

Table 5: Association between Nutritional Knowledge, Practices, and Packed Cell Volume of the Expectant Mothers

	Packed Cell Volume				χ^2	
Variables	**Mild F (%)**	**Moderate F (%)**	**Normal F (%)**	**Total F (%)**		**P-value**
Knowledge						
Good	0 (0.0)	4 (1.6)	8 (3.1)	12 (4.7)		
Excellent	3 (1.2)	58 (22.7)	183 (71.5)	244 (95.3)	0.686	0.710
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Practices						
Poor	0 (0.0)	5 (2.0)	9 (3.5)	14 (5.5)		
Good	1 (0.4)	21 (8.2)	68 (26.6)	90 (35.2)	1.294	0.862
Excellent	2 (0.8)	36 (14.1)	114 (44.5)	152 (59.4)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Number of times eaten in a day						
Once	0 (0.0)	2 (0.8)	1 (0.4)	3 (1.2)		
Twice	0 (0.0)	5 (2.0)	12 (4.7)	17 (6.6)		
Thrice	3 (1.2)	33 (12.9)	110 (43.0)	146 (57.0)	5.584	0.471
Four&>	0 (0.0)	22 (8.6)	68 (26.6)	90 (35.2)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Ate plenty fruits & vegetables						
True	1 (0.4)	54 (21.1)	175 (68.4)	230 (89.8)		
False	2 (0.8)	8 (3.1)	16 (6.3)	26 (10.2)	11.675	0.003*
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Generally try to have a healthy diet						
True	1 (0.4)	56 (21.9)	176 (68.8)	233 (91.0)		
False	2 (0.8)	6 (2.3)	15 (5.9)	23 (9.0)	12.542	0.002*
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		

Table 6: Association between Socio-demographic and Economic characteristics and Packed Cell Volume of the Expectant Mothers

	Packed Cell Volume				χ^2
	Mild	**Moderate**	**Normal**	**Total**	

Variables	F (%)	F (%)	F (%)	F (%)		P-value
Age						
18-24 Years	0 (0.0)	9 (3.5)	20 (7.8)	29 (11.3)		
25-30 Years	2 (0.8)	25 (9.8)	73 (228.5)	100 (39.1)		
31-35 Years	1 (0.4)	12 (4.7)	50 (19.5)	63 (24.6)		
36-40 Years	0 (0.0)	9 (3.5)	33 (12.9)	42 (16.4)	9.858	0.453
41-45 Years	0 (0.0)	5 (2.0)	15 (5.9)	20 (7.8)		
46-50 Years	0 (0.0)	2 (0.8)	0 (0.0)	2 (0.8)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Marital Status						
Single	1 (0.4)	6 (2.3)	5 (2.0)	12 (4.7)		
Married	2 (0.8)	55 (21.5)	185 (72.3)	242 (94.5)		
Separated	0 (0.0)	1 (0.4)	1 (0.4)	2 (0.8)	11.603	0.021*
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Religion						
Christianity	2 (0.8)	44 (17.2)	143 (55.9)	189 (73.8)		
Islamic	1 (0.4)	18 (7.0)	48 (18.8)	67 (26.2)	0.449	0.799
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Educational Status						
None	0 (0.0)	0 (0.0)	2 (0.8)	2 (0.8)		
Primary	0 (0.0)	3 (1.2)	5 (2.0)	8 (3.1)		
Secondary	2 (0.8)	15 (5.9)	42 (16.4)	59 (23.0)		
Tertiary	1 (0.4)	35 (13.7)	105 (41.0)	141 (55.1)	5.558	0.697
Postgraduate	0 (0.0)	9 (3.5)	37 (14.5)	46 (18.0)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Occupation						
Student	1 (0.4)	4 (1.6)	5 (2.0)	10 (3.9)		
Housewife	2 (0.8)	16 (6.3)	46 (18.0)	64 (25.0)		
Civil Servant	0 (0.0)	23 (9.0)	67 (26.2)	90 (35.2)		
Business Woman	0 (0.0)	18 (7.0)	71 (27.7)	89 (34.8)	4.963	0.026*
Others	0 (0.0)	1 (0.4)	2 (0.8)	3 (1.2)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		
Monthly Income						
Less than N20,000	3 (1.2)	15 (5.9)	23 (9.0)	41 (16.0)		
N20,000-N50,000	0 (0.0)	12 (4.7)	33 (12.9)	45 (17.6)		
N50,001-N100,000	0 (0.0)	15 (5.9)	64 (25.0)	79 (30.9)		
N100,001-N150,000	0 (0.0)	7 (2.7)	43 (16.8)	50 (19.5)	26.751	0.003*
N150,001-N200,000	0 (0.0)	7 (2.7)	11 (4.3)	18 (7.0)		
N200,001 and above	0 (0.0)	6 (2.3)	17 (6.6)	23 (9.0)		
Total	3 (1.2)	62 (24.2)	191 (74.6)	256 (100.0)		

DISCUSSIONS

In delving into the relationship between nutritional knowledge, practices, and packed cell volume of expectant mothers, a nuanced picture emerges from their food habits. A substantial 60.5% often choose low-fat options for lunch away from home, reflecting a conscious effort towards healthier choices. This echoes the sentiments of Bohn & Adeli [14], highlighting the importance of opting for low-fat alternatives for maternal well-being.

Interestingly, nearly half of expectant mothers (48.8%) usually avoid fried foods, showcasing a commendable awareness of dietary choices.

The observation that 79.3% of expectant mothers try to keep overall fat intake down aligns with the broader perspective of Dong *et al*. [15], who emphasizes the role of managing fat intake for maternal health. However, the fact that 20.7% do not adhere to this practice signals a need for targeted interventions. Notably, 89.9% always strive to consume plenty of fruits and vegetables, reinforcing a dedication to a balanced diet.

Conclusion

The comprehensive analysis of various aspects of maternal health, ranging from socio-demographic characteristics to nutritional knowledge, practices, and packed cell volume, paints a detailed picture of the well-being of expectant mothers. The exploration into socio-demographic factors lays the groundwork for understanding how diverse characteristics may influence nutritional knowledge, with insights drawn from established authors providing depth and credibility. This nuanced understanding forms the basis for tailored recommendations aimed at specific demographic groups.

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