Socio-Demographic Variables and Practices of Pregnant Women in Akwa Ibom North East Senatorial District

Etteudo, Grace Michael

Department of Human Kinetics and Health Education, Faculty of Education, University of Uyo

ABSTRACT

This study investigated socio-demographic variables and nutritional practices of pregnant women in Akwa Ibom North East Senatorial District. In order to achieve this purpose, five objectives, five research questions and five null hypotheses were formulated to guide the study. Descriptive survey research design was adopted for the study. The study population comprised all 7,206 pregnant women from all the 261 primary health care centers in Akwa Ibom North East Senatorial District who registered for antenatal clinic in the health care facilities. A sample size of 400 pregnant women was used for this study. This study employed simple random sampling technique for the selection of the sample size. The instruments used for data collection was Socio-Demographic Variables and Nutritional Practices Questionnaire (SDVNPQ). The instrument was validated by three experts; two lecturers from the Department of Human Kinetics and Health Education as well as one lecturer from Department of Psychological Foundations of Education. Cronbach's Alpha Statistics was used to obtained reliability coefficient of 0.85. Mean and standard deviation were used to answer the research questions while analysis of variance (ANOVA) was used to test the hypotheses at .05 level of significance. The study revealed that there is a significant influence of socio-demographic variables (level of education, age, economic status, family size and religion) on nutritional practices among pregnant women in Akwa Ibom North East Senatorial District. Based on these findings, the researcher recommends among others that the Ministry of Health should enact policies and improve basic education for all womenfolk of childbearing age both at the pre (before pregnancy), during and post pregnancy (after birth), on the need for wellness practices expected of expectant womenfolk and not just focusing on the sensitizations and counseling services rendered only during Antenatal and/or postnatal care which is centered towards the pregnant women only.

Keywords: Family Size, Nutritional Practices, Pregnant Women and Religion

INTRODUCTION

One action that most people take for granted is eating. Sometimes people worry more about getting enough food to last us through the day than the nutritional value of what people are eating. Healthy eating is recommended as part of the movement towards a healthier lifestyle. However in the pursuit of a nutritious diet, many people question if they are truly eating a balanced or an unbalanced diet while others believe that any meal will do. Despite the fact that there are numerous elements that influence one's food choices, including the availability of food in the area, the financial capacity to buy it, the food supply including how the foods are prepared, it must be acknowledged that 'we are what we eat', that nutrition has become crucial to the preventive and curative healthcare systems, and that an individual's understanding and appreciation of certain food values are important factors (Okafor, 2020).

United Nation International Children's Emergency Fund (UNICEF) (2019) reports that dietary factors have been linked to the occurrence of numerous illnesses in adults, including diabetes, heart disease, cancer, and a number of pediatric illnesses. Additionally, UNICEF noted that the emphasis on nutrition has changed from the minimum required to prevent or treat acute deficiency diseases, such as scurvy and beriberi, to the necessity of promoting health, longevity, and resistance to chronic illnesses like cancer, diabetes, hypertension, and cardiovascular diseases among others. The significance of diet during pregnancy is highlighted in several health-related television programmes, publications, newspapers, and health journals, to mention a few.

There are fast physiological changes that occur during pregnancy from the moment of conception until birth. In order to sustain fetal growth and maintain metabolism and tissue accretion, there is an increased need for appropriate nourishment during this time. However, 20 percent to 30 percent of pregnant women globally have some form of vitamin insufficiency, despite a wealth of evidence demonstrating the criticality of proper nutrition throughout pregnancy (Khan and Bhutta, 2020). Undernourishment of mothers is still a concern in underdeveloped nations because women typically have less access to food, healthcare, and education than males (Wen et al., 2020). 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, according to a study done by Sholeye, et al. (2014) on pregnant women from rural and urban communities in Ogun state, south western Nigeria. Sholeye, et al. (2014) added that low nutrition resulting from dietary factors, such as food limits, dietary indiscretion, low diet quality, poor feeding habits, and ignorance of nutrition, has been related, among other things, to poor mother and child health indices in developing countries.

It has been observed by Flick et al. (2020)that pregnancy puts a great deal of physiological, metabolic, and nutritional demands on women It is therefore further suggested that both the woman and her fetus may experience illness or even death if adequate nutritional demands are not met. While the majority of women understand the significance of eating healthy diets during pregnancy, some may not be aware of the precise dietary guidelines or may lack the necessary abilities to make positive dietary changes. Pregnancy-related complications are very common in Nigeria and can pose a serious risk to the mother's and the unborn child's lives, among those risks are low birth weight (LBW). Risk of low birth weight (LBW) can accompany premature delivery (Wen et al., 2020). Approximately 5–6 million children in Nigeria are impacted by LBW annually; in Ogun State, the rate was reported to be 11.4 percent (Ugwu, 2016). According to the study, a major contributing factor to the development of nutritional problems in mothers is both under- and over-nutrition, as well as micronutrient deficiencies such as those in iron, folate, calcium, vitamin D, and vitamin K. Numerous researchers throughout the nation have identified cases of under-nutrition. Furthermore, it was reported that 75percent of pregnant women in western Nigeria had inadequate diets, even though poor nutrition during pregnancy has a detrimental effect on both the mother's and the unborn child's health (Ugwu, 2016).

The science of food refers to how it functions in the body, and how it relates to overall health and this is known as nutrition. The major food components are proteins, carbohydrates, fats and oil, vitamins, and minerals as well as water and the more than 50 different nutrients that make them up (Levy et al., 2014). It follows that in order to eat healthfully, a person needs to be adequately aware of the various food components. The study of the connection between physiological processes and the necessary components of diets is another definition of nutrition science (Donatelle and Davis, 2019).Nutrition, according to the World Book Encyclopedia of Health (2016), is the process by which organisms ingest and utilize food. Thus, it is the study of food and how, following digestion and metabolism, food provides humans with nourishment. According to Brien (2020), it is the study of food and looking at the nutritional value of foods and the quantity of nutrients needed for normal growth and function, which varies depending on the individual.

Nutritional practice is the public display of one's understanding of nutrition in their homes, on the streets, and even at social events. Nutritional knowledge, which is obtained via both formal and informal education, is the foundation of meaningful nutritional practices and has been for as long as culture itself, having been passed down from parents to their children and from generation to generation. As a result, different cuisine types are available and prepared differently in every region. Socio-demographic factors may influence the degree of nutrition practices of Pregnant Women, in other aspects of life. The three main factors that determine nutritional practice according to Nana and Zema (2018) are dietary knowledge, obstetric circumstances, and socio-demographic factors.

Education has always been viewed as a means of enabling women to make decisions that are in their best interests. In a study conducted in Southwest Nigeria, Maduka and Enaruna (2021) came to the conclusion that neither the woman's nor her husband's educational background had an impact on pregnant women's acceptance of dietary practice. Furthermore, a different study revealed that pregnant women's knowledge score on nutritional practice enhanced in response to education and public engagement (Moradi et al., 2019). These results were also discovered in earlier research, which were somewhat consistent with the current study's findings (Motlagh et al., 2020). For example, Ewelina et al. (2019) found that higher educational level was a positive

determinant of healthier dietary patterns during pregnancy. Similarly, Maryam et al. (2016) found that educational classes on pregnancy exercise had a positive impact on exercise performance among pregnant women. These studies suggest that education plays a crucial role in promoting healthy behaviours during pregnancy, including nutritional practices and exercise.

Women of childbearing age especially those who are pregnant or nursing are the most vulnerable. Women's nutritional condition is particularly important since, through them and their offspring, the harmful effects of malnutrition are passed on to future generations (Cetin and Laoreti, 2015). The World Health Organization (2016) reports that, a large number of women do not get adequate micronutrients in their diets either before or after becoming pregnant. Additionally, many don't realise how much the state of their nutrition affects the course of their pregnancy and the health of their unborn child (Fasola et al., 2018). Since women in Nigeria are typically in charge of growing and cooking the food for the family, their knowledge or lack thereof of proper nutrition can have an impact on the general health and nutritional status of the family. Some researchers from Nigeria like Berti et al. (2016; Senbanjo et al. (2013) have shown that the country has a high prevalence of under-nutrition and over-nutrition as well as deficiencies in certain nutrients, such as iron, folate, vitamin D, and vitamin A The Nigeria Demographic and Health Survey shows that 11percentin women of reproductive age are thin or undernourished with body mass index (BMI) less than 18.5 kg/m2, 17 percent are overweight with BMI of 25–29 kg/m2) and 8percent are obese with BMI of 30 kg/m2 or above. The highest percentage of women who are overweight or obese is found in Lagos (44percent) (Senbanjo et al., 2013). As a result of the obesity, obstetric complications such as hypertension, anaemia, neural tube defects, night blindness, low birth weight, and maternal and prenatal mortality are common. In Lagos State, the rate of maternal mortality is 650 deaths per 100,000 live births (Senbanjoet al., 2013). Gokhale and Rao (2022) found that young age (<20 years) was associated with a higher risk of low diet diversity, while Ochogu (2020) found that age, education, and parity influenced knowledge and practices of nutrition among pregnant women. However, the finding contradicts Olariike et al.'s (2021) study, which found no correlation between nutritional knowledge and age among pregnant women. Malnutrition has a direct or indirect role as a predisposing factor in many of these deaths. In addition to providing a foundation for the development of nutrition education programmes and interventions that will enhance quality of life and lower morbidity, mortality, and health-care costs, it is hoped that this study will provide additional insight into the influence of age on nutritional practice of pregnant women in Akwa Ibom North East Senatorial District.

Another component in this study is the pregnant women's economic status. Numerous studies have shown how socioeconomic class (SEC) affects food intake; with lower SEC individuals are more likely to consume unhealthy diets, especially those with low intakes of fruits and vegetables. Food prices tend to reflect this in part, with less nutrient-dense, high-calorie items being less expensive (Jones et al., 2014). This can expose mothers to food insecurity which is generally understood to include issues related to food availability, fair access to food, and the suitability of the food supply in terms of culture, nutrition, and sustainability may be especially vulnerable to consuming insufficient amounts of nutrients. According to Leung et al. (2014), food insecurity is linked to poor dietary quality, which include lower intake of vitamin E, eicosapentaenoic acid (EPA), docosahexaenoic acid (DHA), carotenoids, and calcium. Taken together, these findings imply that pregnant and childbearing women who experience household food insecurity are especially vulnerable. This is in line with the work of Kever et al. (2015), who found that good socioeconomic background and regular attendance at antenatal clinics enhanced good dietary practices among pregnant women. Similarly, Girma-Tilahun et al. (2021) found that higher monthly income was significantly associated with good dietary practice and Agyei et al. (2021) found that higher monthly income was associated with higher dietary diversity scores. However, the finding contradicts Samuel and Balami's (2021) study, which found that income status was not a predictor of health promotion among pregnant women.

One important family characteristic that continues to affect pregnant women's nutritional practice is the size of the family. The total number of persons living in a household is its family size. Father, mother, child (ren) and blood relatives make up the family, which is a social unit (Okonkwo, 2015). In a similar vein, Ononuja (2015) asserted that a family is a group of individuals united by marriage, adoption, or birth, and typically sharing a residence. Family size and pregnant women's dietary practices were significantly correlated. Women with larger family sizes (5-7 and >7) were less likely to practice good maternal nutrition when compared to women with smaller family sizes (1-4) (Zewdie, 2022).This is explained by the fact that larger families may result in an

uneven share of food being given to the mother and an unstable distribution of food among family members, which may lead to less-than-ideal eating habits. Castro et al. (2014) found income, schooling, and parity were positively associated with healthy dietary patterns. Kuma et al. (2021) found family size less than five was associated with adequate dietary diversity. Wesołowska et al. (2019) found parity and living in small cities were related to dietary patterns

Religion and superstitious beliefs have significant impact on food, deeming some foods fit for human consumption while deeming others unfit. Even though a food is allowed in general, it may be forbidden to certain groups of people or during specific religious periods, depending on the stage of life (Zepro, 2015). Dietary laws and regulations control specific stages of the human life cycle and are linked to significant occasions like menstruation, pregnancy, childbirth, lactation, and, in traditional civilizations, the preparation for marriage, hunting, combat, and funerals (Gokhale and Rao, 2022). Ugwu (2016) discovered that the nutritional practices and taboos of the women showed a statistically significant association with age, parity, and support received from husband and community.

Poor eating habits may be linked to all of these issues. Therefore, it becomes essential that a pregnant woman should be able to eat healthy meal and have appropriate nutritional practice. Therefore, the researcher believes that if the level of nutritional practices of pregnant women in Akwa Ibom North East Senatorial District are recognized and addressed based on socio-demographic characteristics, their motivation to improve their nutrition will increase. There is a dearth of research that has examined the socio-demographic variables such as age, economic status, family size, and religion as determinants of nutritional practices of pregnant women in Akwa Ibom North East Senatorial District. This study aims at determining the socio-demographic variables as determinants of nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

Statement of the Problem

Adequate nutrition was identified as a fundamental human right during the 1978 World Health Organization (WHO)-sponsored conference of delegates from 134 nations and 67 United Nation members, with the goal of achieving an appropriate level of nutrition for all people worldwide (Ayo, 2013). The majority of pregnant women in Akwa Ibom North East Senatorial District do not practice appropriate nutrition, which has exposed them to disorders including chronic obesity, dental decay, overweight, low birth weight, and related issues. A key component of treatment for many pregnancy-related complications, such as iron deficiency anemia, hemorrhagic anemia, megaloblastic anemia, and toxemia is optimal nutrition. These medical conditions have significant morbidity and fatality rates on pregnant women. According to Ramakrishna (2018), low birth weight is still a major public health issue in many developing nations and is recognized to be caused by poor nutrition. According to a clear statement made by Nash (2022), maternal undernourishment, which inhibits growth even in full-term babies, may top lists of risks to the fetus's long-term health.

In the civil service state like Akwa Ibom North East Senatorial District, some pregnant women work as busy civil servants, bankers, among others. A number of women choose to eat out due to their hectic schedules. Upon closer observation and inspection, the pregnant women looked thin and undernourished. This study was specifically inspired by this. Furthermore, based on personal experience and observation, few antenatal clinics or maternity homes in Akwa Ibom State provide nutritional counselling to pregnant women, and those that do tend to downplay the significance of nutrition for a healthy pregnancy. This is completely wrong and not at all like what is available in other regions of Nigeria and internationally, where pregnant women are given information about healthy eating before, during, and after childbirth. An expectant mother ought to consider what makes up a healthy diet, particularly in light of the abundance of rich local foods available in their area. To the best of the researcher's knowledge, no research has been conducted to ascertain the extent of nutrition and food habits practiced by pregnant women in Akwa Ibom North-East Senatorial District. Based on this assumption, the researcher decided it was important to investigate socio-demographic variables as determinants of nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

Purpose of the Study

The purpose of the study was to investigate the influence of socio-demographic variables on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District. Specifically, the study achieved the following objectives:

i.   Determine the influence of level of education on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

ii. Ascertain the influence of age on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

iii. Assess the influence of economic status on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

iv. Find out the influence of family size on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

v.   Determine the influence of religion on nutritional practices of pregnant women in Akwa Ibom North East Senatorial District.

Research Questions

The following research questions were formulated to guide this study:

i.   What is the influence of level of education on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District?

ii. What is the influence of age on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District?

iii. What is the influence economic status on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District?

iv. What is the influence of family size on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District?

v.   What is the influence religion on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District?

Hypotheses

The following hypotheses were postulated to guide this study and were tested at 0.05level of significance:

$H0_1$: Level of education has no significant influence on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District.

$H0_2$: Age has no significant influence on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District.

$H0_3$: Economic status has no significant influence on nutritional practices of pregnant women in Akwa IbomNorth-East Senatorial District.

$H0_4$: Family size has no significant influence on nutritional practices of pregnant women in Akwa Ibom NorthEast Senatorial District.

H0$_5$: Religion has no significant influence on nutritional practices of pregnant women in Akwa Ibom North-East Senatorial District.

METHODOLOGY

The study adopted a descriptive survey research design, suitable for gathering data on situations, attitudes, and opinions within a population. This design enabled the researcher to collect information from pregnant women in Akwa Ibom North East Senatorial District regarding their socio-demographic characteristics and nutritional practices. Data were collected using a researcher-designed questionnaire, and results were generalized to the entire population of pregnant women in the area. The study area, located in the Niger Delta region of Nigeria, comprises nine local government areas with a diverse population engaged mainly in farming, trading, and civil service. The choice of this area was motivated by observed cases of malnutrition and related maternal and fetal health issues among pregnant women.

A sample of 400 pregnant women was selected through simple random sampling from 7,206 registered antenatal clients across 261 primary health care centers in the district. Data collection involved a validated and reliable questionnaire focusing on socio-demographic data and nutritional practices, with a 96% response rate achieved. Ethical approval and participant consent were obtained to ensure privacy and voluntary participation. Data analysis included means, standard deviations, and ANOVA to test hypotheses at a 0.05 significance level, ensuring the findings accurately reflect the nutritional practices and demographic factors influencing pregnant women in the district.

RESULTS

Research Question One

What is the influence of level of education on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District?

Table 1: Mean and Standard Deviation on the Influence of Level of Education on Nutritional Practices among Pregnant Women   n=385

Variable	Level of Education	n	$\overline{X}$	S.D
Nutritional Practices among Pregnant Women	No formal Education	11	29.90	3.64
	Primary	6	27.33	1.96
	Secondary	34	31.29	4.02
	Tertiary	334	33.04	4.48

Table 1 shows that the mean response of pregnant women who had no formal education in relation to their nutritional practices was 29.90 with a standard deviation of 3.64, pregnant women who had primary education in relation to their nutritional practices was 27.33 with a standard deviation of 1.96. Table 4.1 equally shows that the mean response of pregnant women who had secondary education in relation to their nutritional practices was 31.29 with a standard deviation of 4.02. The means response of pregnant women who had tertiary education in relation to their nutritional practices was 33.04 with a standard deviation of 4.48. Based on the data analysis, result in Table 1 indicates variance in nutritional practices among pregnant women meaning that level of education has a positive influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Research Question Two

What is the influence of age on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District?

Table 2:Mean and Standard Deviation on the Influence of Level of Education on Nutritional Practices among Pregnant Women n=385

Variable	Age	n	$\overline{X}$	S.D
Nutritional Practices among Pregnant Women	18-23 years	104	29.15	4.44
	24-28 years	159	30.42	4.12
	29-33 years	105	31.05	4.24
	34-38 years	17	33.35	4.27

Table 2 displays the mean scores and standard deviations for nutritional practices among pregnant women across different age groups. Specifically, the mean scores were; 29.15 (SD = 4.44) for women aged 18-23, 30.42 (SD = 4.12) for women aged 24-28, 31.05 (SD = 4.24) for women aged 29-33 and 33.35 (SD = 4.27) for women aged 34-38. These results indicate variations in nutritional practices among pregnant women across different age groups. This implies that the age of pregnant women significantly influence their nutritional habits, with older women exhibiting healthier practices and a greater understanding of proper nutrition during pregnancy in Akwa Ibom North-East Senatorial District.

Research Question Three

What is the influence economic status on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District?

Table 3: Mean and Standard Deviation on the Influence of Economic Status on Nutritional Practices among Pregnant Women   n=385

Variable	Economic Status	n	$\overline{X}$	Std. D
Nutritional Practices among Pregnant Women	Less than ₦ 50, 000 monthly	57	29.54	3.95
	₦50, 000- ₦200, 000.00 monthly	301	32.96	4.48
	₦2000, 000 and above monthly	27	32.70	4.78

Table 3 shows the mean scores and standard deviations for nutritional practices among pregnant women with different economic statuses. The results indicate that pregnant women earning less than ₦50,000 monthly had a mean score of 29.54 (SD = 3.95), those earning ₦50,000-₦200,000 monthly had a mean score of 32.96 (SD = 4.48) and those earning ₦200,000 and above monthly had a mean score of 32.70 (SD = 4.78). These findings suggest that economic status significantly influences nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with higher-income women exhibiting better nutritional habits and a greater understanding of healthy eating during pregnancy.

Research Question Four

What is the influence family size on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District?

Table 4: Mean and Standard Deviation on the Influence of Family Size on Nutritional Practices among Pregnant Women   n=385

Variable	Family Size	n	$\bar{X}$	Std. D
Nutritional Practices among Pregnant Women	1 - 3	165	33.32	4.35
	3 - 6	208	31.94	4.67
	7 and above	12	28.66	3.02

Table 4 shows the mean scores and standard deviations for nutritional practices among pregnant women with different family sizes. The results indicate that pregnant women between 1-3 family size had a mean score of 33.32 (SD = 4.35), those between 3-6 family size had a mean score of 31.94 (SD = 4.67) and those between 3-6 family size had a mean score of 28.66 (SD = 3.02). These findings indicate that family size has a significant influence on nutritional practices during pregnancy in Akwa Ibom North-East Senatorial District, with women from smaller families tend to show a greater commitment to healthy eating and nutritional well-being during pregnancy.

Research Question Five

What is the influence religion on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District?

Table 5: Mean and Standard Deviation on the Influence of Religion on Nutritional Practices among Pregnant Women   n=385

Variable	Religion	n	$\bar{X}$	Std. D
Nutritional Practices among Pregnant Women	Christianity	376	32.60	4.49
	Islam	2	27.50	0.70
	Traditional	7	24.85	2.85

Table 5 displays the mean scores and standard deviations for nutritional practices among pregnant women of different religious affiliations, highlighting variations in their nutritional habits and knowledge based on their religious beliefs and practices. The results reveal significant differences in nutritional practices among pregnant women from different religious backgrounds. Specifically, the findings show that Christian pregnant women had a mean score of 32.60 (SD = 4.49), indicating a relatively high level of nutritional awareness and practice. Muslim pregnant women had a mean score of 27.50 (SD = 0.70), indicating a moderate level of nutritional knowledge and practice. Traditionalist pregnant women had a mean score of 24.85 (SD = 2.85), indicating a relatively low level of nutritional awareness and practice. These findings indicate that religion plays a significant role in shaping nutritional practices during pregnancy in Akwa Ibom North-East Senatorial District, with Christian women exhibiting the highest level of nutritional awareness and practice, followed by Muslim women, and then traditionalist women.

Hypothesis One

Level of education has no significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Table 6: Analysis of Variance (ANOVA) of significant influence of Level of Education on Nutritional Practices among Pregnant Women

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	366.037	3	122.012	6.282	.000
Within Groups	7400.535	381	19.424		
Total	7766.571	384			

The results in Table 6 reveal a significant influence of education level on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with an F-value of 6.282 and a p-value of 0.000. Since the p-value is less than 0.05, the null hypothesis that education level has no influence on nutritional practices is rejected. This indicates that education level significantly influences nutritional practices among pregnant women in the district. To further investigate the specific groups with significant differences, a Post Hoc Scheffe test was conducted to identify the independent groups with significant variations in nutritional practices.

Table 7: Scheffe Test Analysis of the Difference in Influence of Level of Education

(I) Level of Education	(J) Level of Education	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No Formal Education	Primary	2.57576	2.23677	.723	-3.7051	8.8567
	Secondary	-1.38503	1.52876	.844	-5.6778	2.9078
	Tertiary Education	-3.13881	1.35054	.147	-6.9312	.6535
Primary	No Formal Education	-2.57576	2.23677	.723	-8.8567	3.7051
	Secondary	-3.96078	1.95157	.251	-9.4408	1.5193
	Tertiary Education	-5.71457*	1.81535	.020	-10.8121	-.6170
Secondary	No Formal Education	1.38503	1.52876	.844	-2.9078	5.6778
	Primary	3.96078	1.95157	.251	-1.5193	9.4408
	Tertiary Education	-1.75379	.79338	.182	-3.9816	.4740
Tertiary Education	No Formal Education	3.13881	1.35054	.147	-.6535	6.9312
	Primary	5.71457*	1.81535	.020	.6170	10.8121
	Secondary	1.75379	.79338	.182	-.4740	3.9816
*. The mean difference is significant at the 0.05 level.						

Table 7 presents the results of the Scheffe's test analysis, which reveals six possible pair-wise comparisons of mean differences in nutritional practices among pregnant women with different education levels (No Formal Education, Primary, Secondary, and Tertiary Education) at a significance level of 0.05. The analysis shows a significant mean difference of 5.71 between the Primary (2) and Tertiary Education (4) groups, indicating that pregnant women with tertiary education have significantly better nutritional practices compared to those with

only primary education. However, no significant mean differences were found in the other five comparisons, suggesting that the difference in nutritional practices is only significant between these two groups.

Hypothesis Two

Age has no significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Table 8: Analysis of Variance (ANOVA) of Significant Influence of Age on nutritional practices among pregnant women

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	882.575	3	294.192	16.282	.000
Within Groups	6883.996	381	18.068		
Total	7766.571	384			

The results presented in Table 8 reveal a statistically significant influence of age on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with an F-value of 16.282 and a p-value of 0.000. The extremely low p-value (less than 0.05) indicates that the null hypothesis, which states that age has no significant influence on nutritional practices, can be rejected. This means that age has a significant influence on the nutritional practices of pregnant women in the district. This significant finding warrants further investigation to determine the specific age groups with significant differences in nutritional practices. Therefore, a Post Hoc Scheffe test was conducted to identify the independent groups (age categories) with significant variations in nutritional practices. This analysis will provide valuable insights into how age influences nutritional practices among pregnant women in the district, enabling targeted interventions to improve maternal and fetal health outcomes. In essence, the result suggests that age plays a crucial role in shaping nutritional practices during pregnancy, and further analysis is needed to determine the specific age groups with significant differences in nutritional practices.

Table 9: Scheffe Test Analysis of the Difference in Influence of Age

(I) Age	(J) Age	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
18-23 years	24-28 years	-2.27383[*]	.53607	.001	-3.7791	-.7685
	29-33 years	1.09670	.58806	.325	-.5546	2.7480
	34-38 years	1.80090	1.11201	.454	-1.3217	4.9235
24-28 years	18-23 years	2.27383[*]	.53607	.001	.7685	3.7791
	29-33 years	3.37053[*]	.53452	.000	1.8696	4.8715
	34-38 years	4.07473[*]	1.08465	.003	1.0290	7.1205
29-33 years	18-23 years	-1.09670	.58806	.325	-2.7480	.5546
	24-28 years	-3.37053[*]	.53452	.000	-4.8715	-1.8696
	34-38 years	.70420	1.11127	.940	-2.4163	3.8247

34-38 years	18-23 years	-1.80090	1.11201	.454	-4.9235	1.3217
	24-28 years	-4.07473*	1.08465	.003	-7.1205	-1.0290
	29-33 years	-.70420	1.11127	.940	-3.8247	2.4163

*. The mean difference is significant at the 0.05 level.

The Scheffe's test analysis presented in Table 9 reveals six possible pair-wise comparisons of mean differences in nutritional practices among pregnant women across four age groups (18-23 years, 24-28 years, 29-33 years, and 34-38 years) at a significance level of 0.05. The analysis shows significant mean differences between Group 1 (18-23 years) and Group 2 (24-28 years) with a mean difference of 2.27, Group 2 (24-28 years) and Group 3 (29-33 years) with a mean difference of 3.22 and Group 2 (24-28 years) and Group 4 (34-38 years) with a mean difference of 3.22. Interestingly, no significant mean difference was found between Group 2 (24-28 years) and Group 3 (29-33 years). The largest mean difference of 5.49 was observed between Group 1 (18-23 years) and Group 3 (29-33 years), indicating that pregnant women in the 29-33 age group had significantly better nutritional practices compared to those in the 18-23 age group. These findings suggest that age has a significant impact on nutritional practices during pregnancy, with notable differences between specific age groups. This information can be used to develop targeted interventions and nutrition education programs tailored to the unique needs of pregnant women in different age groups.

Hypothesis Three

Economic status has no significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Table 10: Analysis of Variance (ANOVA) of Significant Influence of Economic Status on nutritional practices among pregnant women

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	561.399	2	280.700	14.264	.000
Within Groups	7517.292	382	19.679		
Total	8078.691	384			

The results in Table 10 reveal a significant influence of economic status on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with an F-value of 14.264 and a p-value of 0.000. Since the p-value is less than 0.05, the null hypothesis that economic status has no influence on nutritional practices is rejected. This indicates that economic status significantly influences nutritional practices among pregnant women in the district. To further investigate the specific groups with significant differences, a Post Hoc Scheffe test was conducted to identify the independent groups with significant variations in nutritional practices.

Table 11: Scheffe Test Analysis of the Difference in Influence of Economic Status

(I) Income Level	(J) Income Level	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Less than ₦50,000	₦50,000 – ₦200,000	-3.41627*	.64080	.000	-4.9910	-1.8416

	₦200,000 and above	-3.15984*	1.03638	.010	-5.7066	-.6131
₦50,000 – ₦200,000	Less than ₦50,000	3.41627*	.64080	.000	1.8416	4.9910
	₦200,000 and above	.25643	.89119	.959	-1.9336	2.4464
₦200,000 and above	Less than ₦50,000	3.15984*	1.03638	.010	.6131	5.7066
	₦50,000 – ₦200,000	-.25643	.89119	.959	-2.4464	1.9336
*. The mean difference is significant at the 0.05 level.						

The Scheffe's test analysis in Table 11 compares the mean differences in nutritional practices among pregnant women across three income groups (Less than ₦50,000, ₦50,000 – ₦200,000, and ₦200,000 and above) at a significance level of 0.05. The results show significant differences between Group 1 (Less than ₦50,000) and Group 2 (₦50,000 – ₦200,000), with a mean difference of 3.41, Group 1 (Less than ₦50,000) and Group 3 (₦200,000 and above), with a mean difference of 3.15. Notably, no significant difference was found between Group 2 (₦50,000 – ₦200,000) and Group 3 (₦200,000 and above). The largest mean difference of 3.41 was observed between Group 1 and Group 2, indicating that pregnant women with a moderate income (₦50,000 – ₦200,000) had significantly better nutritional practices compared to those with a lower income (less than ₦50,000). These findings suggest that economic status has a significant influence on nutritional practices during pregnancy, with significant differences between specific income groups. This highlights the importance of considering economic status in the development of nutrition education programmes and interventions for pregnant women.

Hypothesis Four

Family size has no significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Table 12: Analysis of Variance (ANOVA) of Significant Influence of Family Size on nutritional practices among pregnant women

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	351.279	2	175.639	8.683	.000
Within Groups	7727.412	382	20.229		
Total	8078.691	384			

The results presented in Table 12 demonstrate a statistically significant influence of family size on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with an F-value of 8.683 and a p-value of 0.000. The extremely low p-value (less than 0.05) indicates that the null hypothesis, which states that family size has no influence on nutritional practices, can be rejected. This means that family size has a significant influence on the nutritional practices of pregnant women in the district. This significant finding warrants further investigation to determine the specific family size groups with significant differences in nutritional practices. Therefore, a Post Hoc Scheffe test was conducted to identify the independent groups (family size categories) with significant variations in nutritional practices. This analysis will provide valuable insights into how family size influences nutritional practices among pregnant women in the district, enabling the development of targeted interventions to improve maternal and fetal health outcomes. The significant influence of family size on nutritional practices suggests that pregnant women from larger families may face unique challenges in maintaining optimal nutritional practices, potentially due to increased financial constraints, reduced access to resources, or altered family dynamics. By identifying the specific family size groups with significant differences

in nutritional practices, healthcare providers and policymakers can develop targeted strategies to support pregnant women from diverse family backgrounds, ultimately promoting healthier outcomes for both mothers and babies.

Table 13: Scheffe Test Analysis of the Difference in Influence of Family Size

(I) Family Size	(J) Family Size	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	**Upper Bound**
1-3	3-6	1.38016*	.46888	.014	.2279	2.5324
	7 and above	4.66061*	1.34474	.003	1.3561	7.9651
3-6	1-3	-1.38016*	.46888	.014	-2.5324	-.2279
	7 and above	3.28045	1.33529	.050	-.0009	6.5617
7 and above	1-3	-4.66061*	1.34474	.003	-7.9651	-1.3561
	3-6	-3.28045	1.33529	.050	-6.5617	.0009
*. The mean difference is significant at the 0.05 level.						

The Scheffe's test analysis in Table 13 reveals significant differences in nutritional practices among pregnant women across three family size groups (small: 1-3, medium: 3-6, and large: 7 and above) at a significance level of 0.05. The results show significant differences between the small family size group (1-3) and the medium family size group (3-6), with a mean difference of 1.38, significant differences between the small family size group (1-3) and the large family size group (7 and above), with a mean difference of 4.66, no significant difference between the medium family size group (3-6) and the large family size group (7 and above). The largest mean difference of 4.66 was observed between the small family size group (1-3) and the large family size group (7 and above), indicating that pregnant women from medium-sized families (3-6) had significantly better nutritional practices compared to those from small families (1-3). These findings suggest that family size has a significant influence on nutritional practices during pregnancy, with notable differences between specific family size groups. This highlights the importance of considering family size in the development of nutrition education programmes and interventions for pregnant women.

Hypothesis Five

Religion has no significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District.

Table 14:Analysis of Variance (ANOVA) of Significant Influence of Religion on Nutritional Practices among Pregnant Women

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	461.379	2	230.689	11.569	.000
Within Groups	7617.312	382	19.941		
Total	8078.691	384			

The results in Table 14 reveal a significant influence of religion on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District, with an F-value of 11.569 and a p-value of 0.000. The highly

significant p-value (less than 0.05) indicates that religion plays a crucial role in shaping nutritional practices during pregnancy, rejecting the null hypothesis of no influence. This finding warrants further investigation to identify specific religious groups with significant differences in nutritional practices. A Post Hoc Scheffe test was conducted to determine the religious groups with significant variations in nutritional practices, providing insights into how religious beliefs and practices influence nutritional choices among pregnant women. This knowledge will enable the development of targeted interventions to improve maternal and fetal health outcomes, tailored to the unique needs of different religious groups in the district.

Table 15: Scheffe Test Analysis of the Difference in Influence of Religion

(I) Religion	(J) Religion	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
Christianity	Islam	5.10372	3.16597	.274	-2.6762	12.8837
	Traditional	7.74658*	1.70344	.000	3.5606	11.9326
Islam	Christianity	-5.10372	3.16597	.274	-12.8837	2.6762
	Traditional	2.64286	3.58036	.762	-6.1554	11.4411
Traditional	Christianity	-7.74658*	1.70344	.000	-11.9326	-3.5606
	Islam	-2.64286	3.58036	.762	-11.4411	6.1554
*. The mean difference is significant at the 0.05 level.						

The Scheffe's test analysis in Table 15 highlights significant variations in nutritional practices among pregnant women across three religious groups (Christianity, Islam, and Traditional) at a significance level of 0.05. The results reveal significant differences in nutritional practices between Christian pregnant women and those practicing Traditional religion, with a mean difference of 7.74. No significant differences in nutritional practices between Christian and Muslim pregnant women. No significant differences in nutritional practices between Muslim and Traditional religious groups. These findings indicate that religion plays a significant role in shaping nutritional practices during pregnancy, with notable differences between specific religious groups. The significant difference between Christianity and Traditional religion suggests that pregnant women from these two groups may have distinct beliefs, values, and practices influencing their nutritional choices. In contrast, the lack of significant differences between Christianity and Islam, as well as between Islam and Traditional religion implies that pregnant women from these groups may share similar nutritional practices and beliefs. This analysis provides valuable insights into the influence of religion on nutritional practices during pregnancy, enabling healthcare providers and policymakers to develop targeted interventions and nutrition education programmes tailored to the unique needs of different religious groups.

DISCUSSION

The analysis of research question and hypothesis one revealed a significant influence of level of education and nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District. The reason being is that the Scheffe's test analysis showed significant differences in nutritional practices between women with primary and tertiary education, indicating that those with tertiary education engage in better nutritional practices. This finding is consistent with previous studies that have identified education level as a significant determinant of dietary patterns during pregnancy. For example, Ewelina et al. (2019) found that higher educational level was a positive determinant of healthier dietary patterns during pregnancy. Similarly, Maryam et al. (2016) found that educational classes on pregnancy exercise had a positive impact on exercise performance among pregnant women. These studies suggest that education plays a crucial role in promoting healthy behaviours during pregnancy, including nutritional practices and exercise. The findings highlight the importance of providing

pregnant women with access to education and training on healthy behaviours, particularly those with lower education levels.

The study's findings also underscore the need to address cultural beliefs and poor knowledge about exercise during pregnancy, which can act as barriers to healthy behaviours. Providing essential training and emphasizing the benefits of exercise and healthy nutrition can help alleviate worries and improve mothers' performance, ultimately leading to better health outcomes for both mothers and fetuses. Overall, the study's findings suggest that targeted interventions aimed at improving education and awareness about healthy behaviours during pregnancy can have a positive influence on maternal and fetal health outcomes.

The data analysis for research question and hypothesis two revealed that age has a significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District. The variance in mean scores across different age groups indicates that age influences nutritional practices to a high extent. The Post Hoc Scheffe test further identified specific age groups with significant differences in nutritional practices, highlighting the importance of age in shaping nutritional habits during pregnancy. This finding is consistent with previous studies that have identified age as a significant factor in determining nutritional practices during pregnancy. For example, Gokhale and Rao (2022) found that young age (<20 years) was associated with a higher risk of low diet diversity, while Ochogu (2020) found that age, education, and parity influenced knowledge and practices of nutrition among pregnant women. However, the finding contradicts Olariike et al.'s (2021) study, which found no correlation between nutritional knowledge and age among pregnant women. The discrepancy may be due to differences in the study population, sample size, or research design. The study's findings suggest that age-specific interventions and nutrition education programmes may be necessary to address the unique needs of pregnant women in different age groups. By tailoring interventions to specific age groups, healthcare providers can more effectively promote healthy nutritional practices and improve maternal and fetal health outcomes. The findings also highlight the importance of considering age in nutrition counseling and education during pregnancy. Healthcare providers should take into account the unique needs and characteristics of different age groups when providing guidance on nutrition and healthy habits during pregnancy.

The findings of research question three revealed that economic status has a significant influence on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District. The analysis showed that women with higher incomes exhibited better nutritional practices and a greater understanding of healthy eating during pregnancy. This is consistent with previous studies that have found a positive correlation between socioeconomic status and healthy dietary practices. The Scheffe's test analysis revealed significant differences in nutritional practices among pregnant women across three income groups, highlighting the importance of considering economic status in the development of nutrition education programs and interventions. This is in line with the work of Kever et al. (2015), who found that good socioeconomic background and regular attendance at antenatal clinics enhanced good dietary practices among pregnant women. Similarly, Girma-Tilahun et al. (2021) found that higher monthly income was significantly associated with good dietary practice and Agyei et al. (2021) found that higher monthly income was associated with higher dietary diversity scores. However, the finding contradicts Samuel and Balami's (2021) study, which found that income status was not a predictor of health promotion among pregnant women. The study's findings suggest that economic status is an important factor in determining nutritional practices among pregnant women, and that intervention aimed at improving nutritional knowledge and practices should consider the economic status of the target population. By tailoring interventions to the specific needs of different income groups, healthcare providers can more effectively promote healthy nutritional practices and improve maternal and fetal health outcomes.

The analysis of research question and hypothesis four revealed that family size has a significant impact on nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District. The Scheffe's test analysis showed significant differences in nutritional practices across three family size groups, indicating that family size influences nutritional practices during pregnancy. This suggests that smaller family sizes (less than five) are associated with better nutritional practices and adequate dietary diversity. Larger family sizes are associated with poorer nutritional practices and less dietary diversity. These findings align with previous studies for example Castro et al. (2014) found income, schooling, and parity were positively associated with healthy dietary patterns. Kuma et al. (2021) found family size less than five was associated with adequate dietary diversity. Wesołowska et al. (2019) found parity and living in small cities were related to dietary patterns.

Considering family size in nutrition education programs and interventions can help tailor support to pregnant women's specific needs, promoting healthy nutritional practices and improving maternal and fetal health outcomes.

The analysis of research question and hypothesis five revealed a significant influence of religion and nutritional practices among pregnant women in Akwa Ibom North-East Senatorial District. The finding of this is possible because Scheffe's test results reveal significant differences in nutritional practices between Christian pregnant women and those practicing Traditional religion, with a mean difference. This indicates that religion plays a significant role in shaping nutritional practices during pregnancy, with notable differences between specific religious groups. The significant difference between Christianity and Traditional religion suggests that pregnant women from these two groups may have distinct beliefs, values, and practices influencing their nutritional choices. This finding provides valuable insights into the influence of religion on nutritional practices during pregnancy, enabling healthcare providers and policymakers to develop targeted interventions and nutrition education programmes tailored to the unique needs of different religious groups. The finding of this study is in agreement with Ugwu (2016) who discovered that the nutritional practices and taboos of the women showed a statistically significant association with age, parity, and support received from husband and community.

CONCLUSION

In conclusion, this study provides robust evidence that socio-demographic variables, such as: level of education, age, economic status, family size, and religion, have a significant influence on nutritional practices among pregnant women in Akwa Ibom North East Senatorial District, Nigeria. The rejection of all five null hypotheses confirms the importance of these socio-demographic in promotingnutritional practices among pregnant women. The findings of this study have significant implications for educational policy, practice, and future research.

ACKNOWLEDGEMENTS

REFERENCES

1. Agyei, E. A., Afrifa, S. K., Munkaila, A., Gaa, P. K., Kuugbee, E. D. and Mogre, V. (2021). Income Level but Not Nutrition Knowledge Is Associated with Dietary Diversity of Rural Pregnant Women from Northern Ghana. Journal of nutrition and metabolism, 5581445.
2. Ayo, O.B. (2013). Adequate nutrition: Fulfilling our rights to a happy and healthy life. Business Times, 24-26pp.
3. Berti, C., Cetin, I. and Agostoni, C. (2016). Pregnancy and infants' outcome: nutritional and metabolic implications. Crit Rev Food Sci Nutr; 56:82-91.
4. Brien, K. M. (2020). Nutritional knowledge, attitude, and practices among pregnant and lactating women living with HIV in the Manzini Region of Swaziland. J Health Popul Nutr, 32:261-9.
5. Castro, M., de Souza, R. A., Vilela, A. A. F. and Kac, G. (2014). Association between socio-demographic factors and dietary patterns during pregnancy. Rev. Nutr., Campinas, 27(2):173-181.
6. Cetin, I. and Laoreti, A. (2015). From the womb to the adult. In: Vassilios F, Michele M, Antonio DV, et al., eds. The importance of maternal nutrition for health. Proceedings of the 11th International Workshop on Neonatology and Satellite Meetings. Oct 26-31,Cagliari (Italy). J Pediatr Neonat Individual Med; 4:e040220.

7. Ewelina, W., Agnieszka J., El˙zbieta T., Paweł K., Mariusz, G. J. D., . Wojciech, H., Gemma C. and Kinga, P. N, (2019). Socio-demographic, lifestyle, environmental and pregnancy-related determinants of dietary patterns during pregnancy. International Journal of Environmental Researchand Public Health, 1-15.

8. Fasola, M., Tenaw, Z. and Tachbele, E. (2018). Nutritional knowledge, attitude and practices among pregnant women who attend antenatal care at public hospitals of Addis Ababa, Ethiopia. Int J Nurs Midwifery, 10 (7): 81–89.

9. Flick, A. A., Brookfield, K. F., de la Torre, L., Tudela, C. M., Duthely, L., and Gonzalez-Quintero, V. H. (2020). Excessive weight gain among obese women and pregnancy outcomes. American Journal of Perinatology, 2, 333–338.

10. Girma-Tilahun, A., Molla-Kebede, A., and Ejigu, A. G. (2021). Dietary Practice and Associated Factors Among Pregnant Women at Public Health Institution in Mizan-Aman Town, Southwest Ethiopia. Nutrition and metabolic insights, 14, 11786388211057796.

11. Gokhale, D., Rao, S. (2022). Socio-economic and socio-demographic determinants of diet diversity among rural pregnant women from Pune, India. BMC Nutr **8**, 54

12. Jones N.R.V., Conklin A.I., Suhrcke M., Monsivais P. (2014). The Growing Price Gap between More and Less Healthy Foods: Analysis of a Novel Longitudinal UK Dataset. PLoS ONE. ;9:e109343.

13. Kever, R. T., Martins, S. D., Lola, N., Dathini, H., Habu, H., Fatima, A.A. and Sambo, B. D**.** (2015). Knowledge and attitude of pregnant Women towards dietary practices in Yerwa Clinic, Maiduguri Metropolitan Council, Borno State. Journal of Research in Nursing and Midwifery (JRNM), 4(1), 12-19.

14. Khan, Y. and Bhutta, Z. A. (2020). Nutritional deficiencies in the developing world: current status and opportunities for intervention. Pediatric Clinics of North America, 57, 1409–1441.

15. Kuma, M. N., Tamiru, D. and Belachew, T. (2021). Level and predictors of dietary diversity among pregnant women in rural South-West Ethiopia: A community-based cross-sectional study. BMJ open, 11(10), e055125.

16. Leung, C. W., Epel, E. S., Ritchie, L. D., Crawford, P. B. and Laraia, B. A. (2014). Food Insecurity Is Inversely Associated with Diet Quality of Lower-Income Adults. J. Acad. Nutr. Diet.,114:1943–1953

17. Levy, O., Digman, S. and Shirrefs, F. (2014). Essentials of life and health (4th Ed.) New York: Random House.

18. Maduka R. N. and Enaruna N. O. (2021). Acceptance of repeat cesarean section and its determinants among a Nigerian pregnant women population. Sahel Med. J, 24:104-110.

19. Moradi, R. U., Legg, C., Puri, A. and Thomas, N. (2019). Dietary restraint and self-reported meal sizes: diary studies with differentially informed consent. Appetite, 34(3): 235–243

20. Motlagh, R. Fekadu, H. and Beyene, G. D. (2020). Assessment of knowledge of pregnant mothers on maternal nutrition and associated factors in Guto Gida Woreda, East Wollega Zone, Ethiopia. J Nutr Food Sci., 3(6): 235- 245.

21. Nana, A. and Zema, T. (2018). Dietary practices and associated factors during pregnancy in northwestern Ethiopia. BMC Pregnancy Childbirth;18:183.

22. Nash, D. M., Gilliland, J. A., Evers, S. E., Wilk, P., Campbell, M. K. (2022). Determinants of diet quality in pregnancy: Sociodemographic; pregnancy-specific; and food environment influences. J. Nutr. Educ. Behav., 45:627–634.

23. Ochogu, J. O. (2020). Nutritional knowledge and practice of the pregnant women in Onitsha North and South Local Government Areas of Anambra State. Published MSc. Thesis of Nnamdi Azikwe University, Akwa, Anambra State, 173p.

24. Okafor, J. O. (2020). Principles of healthful living (2nd Ed.) Onitsha: Erudite publishers.

25. Okonkwo , G. O. (2015). Sociology of educational for Nigeria. Owerri, Total Publisher Ltd.

26. Ononuja, E. E. (2015). Sociology of education. Nigeria: London Nigeria Ltd

27. Ramakrishnan, U. (2018). Multiple micronutrient supplementation during pregnancy does not lead to greater infant birth size than does iron only supplementation: A randomized controlled trial in a semi-rural community in Mexico. American Journal of clinical Nutrition, **77:** 720.

28. Samuel G. K and Balami P. A. (2021). Socio-demographic predictors to health promotion among pregnant women in Okrika Local Government Area of Rivers State Nigeria. International Journal of Research and Innovation in Social Science (IJRISS), 5(2), 13-21.

29. Senbanjo, I. O., Olayiwola, I. O., Afolabi, W. A. and Senbanjo, O. C. (2013). Maternal and child under-nutrition in rural and urban communities of Lagos state, Nigeria: the relationship and risk factors. BMC Res Notes;6:286.

30. Sholeye, O. O., Catherine, A. B. and Olubukunola, A. J.(2014). Dietary habit of pregnant women in Ogun-East Senatorial Zone, Ogun state, Nigeria: A comparative study. International Journal of Nutrition and Metabolism, 6(4), 42-49.

31. Ugwu, E. A. (2016). Nutritional practices and taboos among pregnant women attending antenatal care at general hospital in Kano, Northwest Nigeria. Annals of Medical and Health Science Research, 6(2), 109-14.

32. Ugwu, E. A. (2016). Nutritional practices and taboos among pregnant women attending antenatal care at general hospital in Kano, Northwest Nigeria. Annals of Medical and Health Science Research, 6(2), 109-14.

33. United Nation International Children's Emergency Fund (UNICEF) (2019)

34. Wen, L. M., Flood, V. M., Simpson, J. M., Rissel, C., and Baur, L. A. (2020). Dietary behaviours during pregnancy: findings from first-time mothers in southwest Sydney, Australia. International Journal of Behavioral Nutrition and Physical Activity, 7, 13.

35. Wesołowska, E., Jankowska, A., Trafalska, E., Kałużny, P., Grzesiak, M., Dominowska, J., Hanke, W., Calamandrei, G., & Polańska, K. (2019). Sociodemographic, Lifestyle, Environmental and Pregnancy-Related Determinants of Dietary Patterns during Pregnancy. International journal of environmental research and public health, 16(5), 754.

36. World Health Organistion (2016). WHO recommendations on antenatal care for a positive pregnancy experience. WHO

37. Zepro, N. B. (2015). Food taboos and misconceptions among pregnant women of Shashemene District, Ethiopia, Sci. J. Public Heal. 3(3), 410–416.

38. Zewdie, H. E. (2022). Nutritional Practice and its Determinant's among Pregnant Women in Public Health Facilities of Malga District, Southern Ethiopia. J Women's Health Care 11(6):586