EFFECTS OF FEEDING HABITS ON PREGNANCY OUT-COMES IN SOUTHERN TARABA, NIGERIA

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Abstract

Nutrition is important in the lives of pregnant women as it is important for a child's development during gestation. Pregnant women in various parts of the world are often forced to abstain from certain nutritious foods either as an allergy by the pregnancy, simple dislike from food preferences or a traditional food habit, while some do not have access to the nutritious food necessary during pregnancy. This study examined the effects of feeding habits on the pregnancy outcomes in southern Taraba State, Nigeria. The Theory of Reasoned Action (TRA) was adopted for the study. A cross-sectional research design was used in this study. The sample size of the study was drawn using Taro Yamane's sample size determination formula. A multistage sampling technique was used for the study. The quantitative instrument was structured questionnaire and the qualitative method were adopted Key Informant Interview (KII) guide. The data collected was analyzed using descriptive and inferential statistics. Analysis of qualitative data was done using manual content analysis. Findings of the study revealed thatmost of the women who delivered in Southern Taraba had one complication or the other. It was found that there was high consumption level of carbohydrate like yams, rice, millet, guinea corn and maize. It was concluded that, the feeding habits of pregnant women in the study area was poor, therefore, the study recommended among others that there is need engage local communities in discussions about the benefits of feeding habits during pregnancy to challenge harmful traditional beliefs. Also, there is need to develop policies that promote access to diverse and nutritious foods for pregnant women, considering the socio-economic constraints in the area.

Keywords: Feeding, Habits, Pregnancy and Out-Comes

Introduction

Nutrition in pregnancy is necessary for the safety and healthy living of the mother and the unborn baby.Thus, has gained global attention over the years due to the understanding that it has socio-economic and cultural importance and also serve as a determinant for growth and development (Ugwa, 2016). The prevalence of undernourishment jumped from 8.0 percent in 2019 to around 9.3 percent in 2020 and continued to rise in 2021 – though at a slower pace – to around 9.8 percent. It is estimated that between 702 and 828 million people in the world (corresponding to 8.9 and 10.5 percent of the world population, respectively) faced hunger in 2021.

In Europe, there are differences in terms of income and development levels, as well as food culture and traditions. These differences are some of the challenges that are related to unhealthy diet. These are mainly characterized by energy imbalance and excessive intakes of fats, sugars and salt. This can be attributed to the consumption of highly processed, energy-dense manufactured foods and sugar-sweetened beverages (Imamura, Wartella, Lichtenstein & Boon 2015).

In Africa, pregnant women are forced to abstain from certain nutritious foods either as an allergy by the pregnancy, simple dislike from food preferences or a traditional food habit while some pregnant women

do not have access to the nutritious food necessary for their health during pregnancy (Ugwa, 2016). There is unusual dietary intake of certain nutrients by the pregnant women in the country.

In West-Africa, several pregnant women were in acute food insecurity without effective interventions in the year 2020. In 2021, the nutritional situation also remained worrying in the West and Central African region. In Nigeria, religious affiliation, age, level of income, educational level, and other socio-cultural factors have been proven to affect the nature of feeding habits of pregnant women (Samuel & Okoroma, 2020). Researchers from western parts of Nigeria have reported that 75% of pregnant women had inadequate dietary energy intake and another from the Eastern part reported that 15% adhere to traditional beliefs or taboos about feeding practices in pregnancy (Ojofeitimi, Ogunjuyigbe, Sanusi, Orji, Akinola &Liasu, 2008; Madifor, 2010; Ugwa, 2016).

Undoubtedly, healthy nutrition choices in pregnancy can help to promote fetal growth and development as well as boost the maternal immune system. It promotes the development of birthing structures/muscles, promote the overall health of the pregnant woman (Meija & Rezeberga, 2017), prepare the body for lactation (Nana &Zema, 2018) and improve feto-maternal outcomes (Kominiarek&Rajan, 2016). Adequate nutrition is highly recommended in pregnancy as an indispensable strategy to maintain healthy/recommended body weight during the period as well as to prevent the incidence of non-communicable diseases in the unborn child later in life (World Health Organization, 2018; Kanikwu, Jimmy & Emesowum, 2021). This is evident in the high rate of maternal mortality, still-birth, highest risk of pregnancy complications, hypertension and diabetes and adverse birth outcomes, including preterm delivery, low birth weight infants, caesarean delivery and perinatal mortality (Lindsay, Gibney & McAuliffe, 2012).

Several scholars have conducted researches in other parts of the world both at the international, national and local levels. At the international; scene, Marques, O'Connor, Roth, Susser and Bjørke-Monsen (2013), assessed the influence of maternal prenatal and early childhood nutrition and maternal prenatal stress on offspring immune system development and neurodevelopmental disorders. Marangoni, Cetin, Verduci, Canzone, Giovannini, Scollo, Corsello and Poli (2016), examined maternal diet and nutrient requirements in pregnancy and breastfeeding in Italy. Appiah *et al,* (2021), evaluated the nutritional Knowledge and dietary intake habits among pregnant adolescents attending antenatal care clinics in urban community in Ghana. These studies did not capture the general nutritional behaviour of the pregnant women and how it has affected the pregnancy out among women in Taraba State.

Inah, Iyam and Emilia (2012), examined the food and nutrient intake of pregnant women of the out-patient department of general hospital, Calabar, Nigeria; Adinma, Umeononihu and Umeh (2022), assessed the determinants and nutritional behaviour of pregnant women in riverine communities of the Niger Delta Region, Nigeria. All of these studies were carried out in other places and not in Taraba State, and the studies did not examine the feeding habits and pregnancy out comes among women in southern Taraba, Nigeria.

In Taraba State, there are situations of nutritional imbalance consisting undernutritionintake of deficient food, and sometimes intake of poor diet in spite of excess calorie (Adinma, Umeononihu & Umeh, 2022). This has negative implication on the pregnancy outcomes of women. One could therefore, imagine the nutritional behaviour of the pregnant women in Southern Taraba, and the extent to which such behaviours have affected the pregnancy outcome. It is against this background that this study examined the feeding habits and pregnancy out comes among women in southern Taraba State, Nigeria.

Methods

A cross sectional research design were used in this study because. The location for this research was southern senatorial zone of Taraba State, Nigeria. The southern senatorial zone of Taraba State, Nigeria was created from the defunct Gongola state in 1991, is one of the five states that make up the Northeast geopolitical zones in Nigeria. The population for the study were women of reproductive age within age (15-49 years) who have at one point in time or the other experienced pregnancy. The sample size of the study was drawn using Taro Yamane's (1967) sample size determination formular. This was adopted because, the

population of the study is known and the formula produced a sample size that is representative of the population.

A multistage sampling technique was used for the study. In the first stage, cluster sampling technique was used to divide the study area into five areas according to the LGAs that make up the study area (southern part of Taraba State). A systematic random technique was used to select the households in the study. The headquarters of each council wards was used as starting point. Simple random sampling technique was used for selection of the respondents for the study. In every household, only one respondent was selected for the study. The quantitative instrument was structured questionnaire and the qualitative method adopted was Key Informant Interview (KII) guide.The data collected were analyzed using descriptive and inferential statistics. Quantitative data was collated using Statistical Package for Social Science (SPSS). The analysis was done at the three levels viz: Univariate, bivariate and multivariate levels. The univariate analysis was done using Simple percentages, frequencies, tables, mean and standard deviation was used to capture the study's findings.

Results

Socio-Demographic Characteristics of Respondents

Findings on table 1 showed that a majority of the respondents were within the youthful ages of 20- to 40 years. This means that the selection of the respondents was not done by chance hence the study was particularly for women of reproductive age. Most of the respondents were married which indicated that, nutrition in pregnancy were majorly observed among the married people in the study area. The educational level of the respondents showed that, a majority of them had higher and secondary education. This showed that formal education was widely accepted in the study area, more so that majority of the respondents were young women. It was also revealed that most of the respondents were Christians. This showed that Southern Taraba is a Christian dominated area made of variety of denominations with several churches. The occupational status of respondents revealed that a majority of the respondents were unemployed, followed by farmers. Moreover, farming was the major occupation of respondents is as a result of the arable and fertile soil in the study area. Even those who have other sources of income still took farming as their send occupation.

Data on the annual estimated income of the respondents revealed that a majority earned less than N200, 000 per annum. This revealed that was low a relatively low financial status among a majority of the respondents probably because many of the women depended on their husbands Moreso, that a majority of the women who participated in the study were unemployed. The location of the respondents showed that, most of them were from urban areas. In this study, the headquarters of the five Local Government areas where the study was carried out is considered to be urban areas and so, most of the respondents were from these LG headquarters.

Table 1: Percentage distribution of socio-demographic characteristics of Respondents

Variable	Categories	Frequency(N=1113)	Percent
Age	15-20	90	8.1
	21-25	369	33.2
	26-30	334	30.0
	31-40	274	24.6
	41-49	46	4.1
Marital status	Single	32	2.9
	Married	1037	93.2
	Cohabiting	25	2.2
	Divorced	5	0.5
	Widow	14	1.3
Educational status	No formal	252	23.2
	Primary	172	15.5

	Secondary	295	26.5
	Tertiary	388	34.9
Occupation	Student	114	10.2
	Unemployed	593	53.3
	House wife	60	5.3
	Farming	216	19.4
	Civil servants	112	10.1
	Petty trading	18	1.6
monthly income	50,000	543	48.8
	51-100,000	146	13.1
	101-200,000	165	14.8
	201-300,000	163	14.6
	301-400,000	96	8.5
Religion	Christians	665	59.7
	Muslims	347	31.2
	Traditional religion	54	4.9
	Free thinkers	47	4.2
Location	Urban	667	59.9
	Rural	206	18.5
	Semi-urban	59	5.2
	Annex	181	16.3

Source: Field Survey, 2024

The data on the table presented the relevant socio demographic characteristics of respondents covered in the study. This was necessary in understanding the nature of respondents and their relevance in providing useful information necessary in addressing the study objectives. It also had implications on the findings and its generalizations. Analysis of these characteristics showed the suitability of the respondents and validity of findings.

Pregnancy Outcomes in Southern Taraba

The findings of the study revealed that most of the women in Southern Taraba had successful delivery in their last pregnancy, also, a majority of them reported that they ever had pregnancy issue. From the assessment of the respondents, it was reported that the most commonly pregnancy outcome in Southern Taraba was delivery with complication. This showed that, most of the women who delivered in Southern Taraba had one complication or the other.

Table 2 Pregnancy Outcome in Southern Taraba

S/N	Categories	Frequency(N=1113)	Percent
1	**outcome of your last pregnancy**		
	Successful	667	59.9
	Stillbirth	206	18.5
	Not successful	59	5.2
	Not sure	181	16.3
2	**ever experience any pregnancy issue**		
	Yes	990	87.4
	No	123	12.6
3	**Assessment of pregnancy outcome**		
	Successful	114	10.2
	Stillbirth	112	10.1
	healthy delivery	60	5.3
	deliver with complication	593	53.3

neonatal death	18	1.6
maternal mortality	114	10.2

Source: Field Survey, 2024

Table 2 presented the pregnancy outcomes among women in southern Taraba. The high-level delivery with complication in the study area implies that a combination of socioeconomic, cultural, and infrastructural factors that contribute to maternal health challenges in the region. In Southern Taraba, studies have reported maternal mortality ratios as high as 900 deaths per 100,000 live births. While there is a noted decreasing trend, the rates remain alarmingly high compared to national and global averages.

Feeding Habits

Findings on the feeding habits reviewed that some women vomited when they took vegetables, so, they did not take it, most pregnant women in the study area did not consume beans.Most women in southern Taraba were of the view that they could not eat what was available, the cost of meat was beyond the rich of many women, so they could not eat it.

Table 3: Mean Ratings of Feeding habits

S/N	statements	Strongly Agreed	Agreed	Undecided	Disagreed	Strongly Disagreed	Mean	Stand
1	I eat mangoes	210	244	117	294	248	2.89	1.455
2	Banana	779	200	73	36	25	4.50	0.920
3	I consume mostly canned food	481	298	120	144	70	3.88	1.269
4	I usually do not like food but take coke a lot	879	224	5	2	3	4.77	0.477
5	I do not like any food aside tuwo	521	230	152	144	66	3.89	1.283
6	Vegetables make me vomit so I don't eat it	378	292	246	133	64	3.71	1.213
7	I don't like beans so I do not eat it	799	239	50	15	10	4.62	0.718
8	I eat what is only available	98	100	100	521	294	2.27	1.198
9	I vomit always during pregnancy I don't eat much	735	248	82	16	32	4.47	0.910
10	The cost of meat is too high so I rarely eat it	198	242	117	304	252	2.85	1.444

Source: Field Survey, 2024

It was inferred from Table 3 various ways in which of feeding habits have affected pregnancy outcomes among women. Most of the aspects of balanced diet and pregnancy outcomes among women had the mean scores of above 2.50 showing the acceptability of the fact the fact that pregnancy. The high value of the means of the items indicated the acceptance of the statements. The values of standard deviation were between 0.592 and 1.687which showed how close the values are to the mean.The findings above were further corroborated by one of the female Key Informant aged 35 years old who had three children as at the time of this study, he had this to say:

> Many rural communities in Southern Taraba lack well-equipped healthcare facilities. Primary Health Centres (PHCs) often suffer from shortages of essential medical supplies, diagnostic tools, and medications. This inadequacy forces residents to rely on traditional healers or undertake long journeys to urban centers for medical attention (KII/Ibi/2024).

The results from KII corroborated the findings from the quantitative data. A 32 years old female key informant in General Hospital Wukari LGA, Southern Taraba State reported that:

> The scarcity of trained healthcare professionals, including doctors, nurses, and midwives, is a pressing issue. In 2021, the State Emergency Maternal and Child Health Intervention Centre (SEMCHIC) recruited 104 midwives, but only 75 remained active across 128 PHCs in the state. This shortfall is particularly acute in LGAs like Kurmi, Takum, and Ussa, where several health facilities operate without any midwives (KII/Wukari/2024).

Reacting to this, a 34 years old key informant in Rafu Hospital Lissam had this to say:

> Poor road networks and transportation challenges exacerbate the difficulties in accessing maternal healthcare. The ban on motorcycles in certain areas has further limited mobility, compelling some families to resort to using wheelbarrows to transport pregnant women to distant health facilities, often with tragic outcomes (KII/Lisaam/2024).

From the forgoing data, it was inferred that, pregnancy outcomes in Southern Taraba, Nigeria, are significantly influenced by a combination of infrastructural, socioeconomic, and cultural factors.The region, encompassing local government areas such as Takum, Wukari, Donga, and Ussa, faces considerable challenges in maternal and child health**.** Another health personnel during an interview in one of the health centres in Takum noted that:

> Economic hardships, including poverty and unemployment, hinder access to quality maternal healthcare. Many women cannot afford the costs associated with transportation, medical fees, or even basic necessities during pregnancy. Additionally, low educational attainment and cultural beliefs often restrict women's autonomy in seeking healthcare services (KII/Takum/2024).

Another male key informant stated that:

> Due to the unavailability of skilled healthcare providers, many women turn to TBAs for assistance during childbirth. While culturally accepted, TBAs often lack the necessary training to handle complications, leading to increased risks of maternal and neonatal mortality (KII/Donga/2024).

Another health care worker stated that

> The SEMCHIC initiative aimed to bolster maternal healthcare by recruiting and deploying midwives across the state. Despite challenges in meeting recruitment targets, the program has placed midwives in several PHCs, enhancing access to skilled birth attendants in some areas (KII/Donga/2024).

Addressing the multifaceted challenges affecting pregnancy outcomes in Southern Taraba requires a collaborative approach involving government agencies, non-governmental organizations, and community stakeholders.By implementing targeted interventions and policies, it is possible to improve maternal and child health outcomes in the region.

Discussion of Findings

Findings on the study from the qualitative and quantitative data reviewed that, most of the women in Southern Taraba had successful delivery in their last pregnancy, also, a majority of them reported that they ever had pregnancy issue, from the assessment of the respondents it was reported that pregnancy outcome in

Southern Taraba was delivery with complication. This showed that, most of the women who delivered in Southern Taraba had one complication or the other. The high-level delivery with complication in the study area implied that a combination of socioeconomic, cultural, and infrastructural factors that contribute to maternal health challenges in the region. In Southern Taraba, studies have reported maternal mortality ratios as high as 900 deaths per 100,000 live births. While there is a noted decreasing trend, the rates remain alarmingly high compared to national and global averages.

Taraba State experiencehigh incidence of teenage pregnancies, contributing to adverse maternal and child health outcomes.Adolescent mothers face increased risks of complications such as eclampsia, obstructed labor, and postpartum hemorrhage, often due to physical immaturity and inadequate prenatal care. Many women in Taraba State continue to utilize the services of TBAs, who, despite offering emotional support and community-based care, often lack formal medical training.This reliance can lead to delays in recognizing obstetric emergencies and the absence of sterile delivery practices, posing risks to maternal health. In rural areas, women often undertake arduous journeys, sometimes on foot or motorcycle, to reach functional health facilities.These challenges are exacerbated during the rainy season when roads become impassable, leading to delays in receiving critical care. The findings of the study were in line with WHO, UNICEF, UNFPA, & World Bank, (2010). This line of thinking is plausible in the context of the "3D Model," because the effectiveness of MHS falls under the third form of delay. The effectiveness or efficiency of MHS might have been undermined by the first and second types of delay particularly when 35 obstetric cases reach the hospitals in moribund conditions and deaths occurred within an hour of admission, thereby, swelling up the statistic on maternal deaths. The findings also agreed with Lukka (2014), who observed that pregnancy outcome is the result of conception and ensuing pregnancy, including live births, stillbirths, spontaneous abortion, induced abortion. The outcome may follow natural or artificial insemination or any of the various reproductive techniques such as embryo transfer or fertilization in vitro. The spectrums of events from conception to the birth of a live and healthy infant are complex. Problems that arise during the course of the reproductive process define the adverse outcomes of pregnancy. Major adverse pregnancy outcomes are abortions, low birth weight, birth asphyxia, neonatal mortality including still births, malformation of the baby and death of the mother due to difficult delivery (Factors that influence the outcome of pregnancy are many and could be biological, socio economic, environmental, demographic or cultural. These factors include maternal nutrition, maternal age, birth interval, pre-natal care, cigarette smoking, alcohol consumption, drug abuse, unsafe sex leading to unplanned pregnancy and poverty.

Data from the qualitative and quantitative instruments showed women in the study area had poor feeding habits, as many of them reported to have vomited when they took vegetables, so, they did not take it, most pregnant women in the study area did not consume beans women in southern Taraba were of the view that they could not eat what was available, the cost of meat was beyond the rich of many women, so they could not eat it. The findings agreed with the previous findings of Luka (2014), who stated that poor maternal nutrition before and during pregnancy impacts adversely on pregnancy outcome and infant survival, and can result in spontaneous abortion, stillbirth, congenital malformation, IUGR, preterm delivery and perinatal and neonatal death. Malnutrition also increases the risk of maternal infection, which further impacts on perinatal and neonatal morbidity and mortality. Because much of brain growth occurs during late pregnancy and early infancy, maternal malnutrition also can impair early childhood development.

Studies showed that intrauterine malnutrition have more serious consequences for children than postnatal malnutrition. Under-nutrition, as well as over-nutrition during pregnancy, was associated with adverse pregnancy outcomes. The IOM (Institute of medicine) published recommended weight gains by pre-pregnancy BMI. Wasting in pregnant women can be defined as a MUAC (Mid-upper arm circumference) < 22cm. Low pre-pregnancy BMI is considered a risk factor for preterm birth and intra-uterine growth retardation. Pregnant women in developing countries start to attend antenatal clinics late in pregnancy, so that pre-pregnancy BMI may be unknown and antenatal care can be based on pregnancy weight gain only. Women with short 10 stature 145cm), low body weight 45kg), and/or MUAC < 22cm are considered to be

at risk of adverse pregnancy outcomes. Weekly weight gains should range from 0.3kg for overweight women to 0.5kg or more for underweight women from the second trimester.

Conclusion/Recommendations

Based on the findings of the study, it was concluded most women had pregnancy issues and had delivered with complications.Personal allergy and dislike constrained women from consuming food like when they took vegetables, so, they did not take it, most pregnant women in the study area did not consume beans women in southern Taraba were of the view that they could not eat what was available, the cost of meat was beyond the rich of many women, so they could not eat it.The culture of the people in Southern Taraba prevented women from eating snails, gizzard and crab. Also, cultural processes of preparing some food made to develop allergy against their favorite foods, such as fish, potatoes, fruits, beans, eggs, butternut and pumpkin during pregnancy. Pregnant women in the study area were made to consumed herbal concoctions for strengthening during pregnancy because it helped to ease labour and overall health of both the mother and the baby.

Based on the findings of this study, the following recommendations are made;

Since women are avoiding vegetables (folate) and meat (iron/protein), the state should provide free Iron-Folic Acid (IFA) and Multiple Micronutrient Supplements (MMS) during prenatal visits. Also, there is need engage local communities in discussions about the benefits of balanced nutrition during pregnancy to challenge harmful traditional beliefs.Also, there is need to develop policies that promote access to diverse and nutritious foods for pregnant women, considering the socio-economic constraints in the region.

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