



Determinants of dietary practices among pregnant women attending antenatal care at the Chukwuemeka Odumegwu Ojukwu Teaching Hospital, Anambra State

Blessing Chinwendu Nomeh

Nwafor Orizu College of Education, Nsugbe, Anambra State, Nigeria.

Correspondence should be addressed to Blessing Chinwendu Nomeh; blessmuna1@gmail.com

Paper received: 03-06-2026; revised: 27-07-2026; accepted: 01-08-2026; published: 15-08-2026

Keywords

Determinants
Dietary practices
Pregnant women
Antenatal care
Teaching hospital

Abstract

Adequate nutrition during pregnancy is essential for health of the pregnant women and the baby. Poor nutrition during pregnancy resulting from poor dietary practices may lead to reprogramming within fetal tissues, and poses a risk factor for diet related diseases later in life. The study investigated the determinants of dietary practices among pregnant women attending antenatal care in Chukwuemeka Odumegwu Ojukwu Teaching Hospital Awka; specifically, the study determined the dietary habits adopted by pregnant women; the factors influencing the dietary practices of the pregnant women and assess measures that could be adopted to improve nutritional practices of pregnant women. The population of the study was 600 registered pregnant women attending antenatal as at the time of the study. The sample size was 120 pregnant women that was randomly selected from the population, who accepted to participate in the study and were within the second and third trimester. The study design used for the study was a survey research design. The instrument for data collection was a structured questionnaire. Data collected was analysed using frequency and percentages. The major findings shows that the pregnant women dietary practice were inadequate as the women forbid certain foods during pregnancy due to religion, cultural belief, to avoid labour difficulty e.t.c. The respondents also agreed that low-economic status, poor nutritional knowledge, lack of husband support and ignorance/poor educational level was a challenge to their adequate dietary practice. It was concluded that nutrition education and counselling should be integral part of ante-natal programme and that programs that will help elicit husband support should be encouraged.

1. Introduction

Adequate nutrition during pregnancy is essential for the health of the pregnant women and the baby. Poor nutrition during pregnancy resulting from poor dietary practices may lead to reprogramming within fetal tissues and poses a risk factor for diet related diseases in later life (Olowu, Goodman, & Amu, 2021). Adequate diet during pregnancy supports optimal maternal weight gain, protect the mother from anemia, improves baby's birthweight and reduce preterm delivery. Furthermore, healthy eating during pregnancy is essential to meet the increased energy and nutrient requirement of both the mother and the fetus (Maykondo et al., 2022). During pregnancy nutrient intake and weight gain are the two most important modifiable factors influencing pregnancy outcome (Maykondo et al., 2022). It is important that mothers should increase their energy intake to approximately 300 extra calories, vitamins and minerals through increased macronutrient and micronutrient consumption. Mothers are also advised to eat a variety of food groups such as green leaf, vegetables, vitamin A rich fruits, meat, fish, bean, nuts, whole grain and other fruits in order to improve their overall health during pregnancy (Hopkins, 2025; Maykondo et al., 2022).

The mothers also need folate, iron, calcium and vitamin D supplementation for bone health and omega-3 fatty acids for fetal brain and eye development. A wise selection of food plays an important role in fetal development and growth. Inadequate intake of both macro and micro nutrients during pregnancy have severe consequences and complications like death of mother, fetal and new born death, birth defects and decreased physical and mental potential of the child in fetal growth restrictions and adverse prenatal outcome (Davis, 2021).

During ante-natal care nutrition education is a widely implemented strategy that has been implored to improve the knowledge and dietary practices of pregnant mothers for improved prenatal outcome. Equally studies on nutrition education to increase protein and energy intake decreased the risk of preterm birth and low birth weight, with a relative increase of almost half a kilogram in the birth weight of infants born to undernourished women, while for well-nourished women, there was no effect on birth weight (Maykondo et al., 2022). Also it is well recognized that knowledge alone may not lead to behaviour change, studies reported multiple additional factors influencing nutritional practices during pregnancy to include healthcare providers knowledge, parent's educational level, nutrition information provided, geographic location, belief and attitudes of mothers and the community, lack of family support and poor access to food (Doyle, Spallek, & Razum, 2016).

However, misconceptions, food taboos and beliefs targeting pregnant mothers are reported as important factors affecting dietary practices (Urneta et al., 2022). In addition, certain foods may become associated with pregnancy outcome leading to consumption of these foods being intentionally united despite their nutritional value (Maykondo et al., 2022). Practices like this have been described in many African countries (Mohammedet et al., 2019). Equally, some foods restricted because of the perception that this will prevent the baby from becoming too big leading to difficulties during childbirth (Maykondo et al., 2022). Such indigenous knowledge might be a barrier to the adoption of WHO recommendations for optimal dietary practices for pregnant mothers.

In Nigeria, Nigeria Demographic and Health Survey (NDHS) reported the prevalence of undernutrition and overnutrition among women age 15 to 49 years as 11% and 25% respectively (NDHS, 2013). Though the World Health Organization (WHO) and Food and Agricultural Organization (FAO) of the United Nations recommended consumption of at least two servings of fruits per day, approximately 16.0 million (1.0%) disability – adjusted life years and 2.8% of deaths worldwide (1.7 million) have been attributed to low fruits and vegetable consumption (Olatona, Olowu, Goodman, & Amu, 2010). Most pregnant mothers in Nigeria have been shown to consume vegetables but almost half of them, still avoid eggs, fish, meat and chocolate beverages that are high in protein needed by the fetus because of taboos (Olatong et al., 2021). Studies on the dietary diversity habits and dietary diversity of pregnant women in different regions in Nigeria showed that many pregnant mothers eat three meals but few eat fruits and vegetables on a daily basis, while many avoid eggs, milk, fish, snail and beans during pregnancy (Wordu & Akusu, 2020). Equally studies done in Nigeria revealed that spina bifida constitute about 72.7% of neural tube defects diagnosed in pregnant women, perinatal mortality of 81.8% and low birth weight mostly due to maternal malnutrition accounts for almost 30% of all births (Olatona et al., 2021). According to the report emanating from the training of health workers to curb infants deaths in Anambra State. Anambra State government in collaboration with United Nations children's fund (UNICEF) in July 2023, the maternal mortality rate in the state was reported to be 281 per 100,000 live births from public health facilities not including private hospitals (News Agency of Nigeria, 2023). This is a positive report but in most antenatal clinics, the focus is on check-ups and laboratory investigations while nutrition education and dietary requirement, a key component of antenatal care still remains a neglected area. Hence, this study on determinants of Dietary Practices among Pregnant Women attending Antenatal Care at the Chukwuemeka Ojukwu Teaching Hospital, Anambra State,

The main purpose of this study is to assess the dietary practices among pregnant women attending antenatal care at Chukwuemeka Odumegwu Ojukwu University Teaching Hospital, Awka. Specifically, the study seeks to determine the dietary habits adopted by these pregnant women, identify the factors influencing their dietary practices, and assess measures that could be adopted to improve their nutritional practices while attending antenatal care at the hospital.

2. Method

2.1. Area and Design of the Study

The design used for the study was survey research design. The area of the study was Chukwuemeka Odumegwu Ojukwu University Teaching Hospital Awka in Awka South Local Government Area of Anambra State. Awka South Local Government Area has Awka as its headquarters as well as the state capital.

2.2. Population of the Study

The population for the study consists of 600 registered pregnant women who were attending antenatal care at the Chukwuemeka Odumegwu Ojukwu University Teaching Hospital within the period of the study. The pregnant women were literate as about 30% had tertiary education, 65% had secondary education and 59% had primary education. The age range was from 18years to above 45years of age.

2.3. Sample for the Study

The sampling technique that was used for the study is purposive sampling technique. The randomly selected 120 pregnant women out of 600 women attending ante-natal care at Chukwuemeka Odumegwu Ojukwu University Teaching Hospital who accepted to participate in the study and are within the second and third trimesters.

2.4. Instrument for Data Collection

The instrument for data collection was a structured questionnaire. The instrument was divided into two sections. Section A sought for demographic data while section B contained information based on the purpose of the study.

2.5. Data Collection Method

The data was collected with the help of four research assistants, selected and briefed on how to administer and collect data. One hundred and twenty (120) copies of the questionnaire were distributed to the respondents during the antenatal clinic hours and was collected immediately after filling by the researcher and the research assistants to avoid loss of the instrument.

2.6. Data Analysis Techniques

The data was analyzed using frequency and percentages.

3. Results and Discussion

Table 1 above shows participant responses on their dietary practices during pregnancy. The result reveal that 50% of the women eat three times a day while 44.2% eats one – two times a day, 4.2% eats four to more times a day, only 1.7% eat at irregular times.

The result also shows that 25% of the respondents skip meals one to two times in a week, 33.3% skip meals three to four times in a week, 15% skip meals five to six times in a week; 1.7% skip meals seven times in a week while majority 54.2% don't skip meal; 41.7% of the respondent skip breakfast, 20.8% skip lunch while 12.5% skip dinner.

The result shows that majority of the respondents 70.5% do eat outside their homes while 16.0% claim they don't eat outside their home and 12.5% of the respondents agree they do eat outside their homes sometimes. The result of the study equally shows that only 29.2% of the women consume fruits and vegetables daily (5 and above servings) while 70.8% do not consume fruits and vegetable daily (5 and above servings). Only 46.7% of the women drink adequate amount of water daily while majority 53.1% do not drink adequate amount of water. In addition, only 16.7% of the respondent's drink alcohol daily while majority 89.1% do not drink alcohol. 20.8% of the respondents drink herbal medicine/tea eg (agbo) daily whereas majority 87.1% do not drink herbal medicine/tea daily. Only 4.2% of the respondent claim that they smoke cigarette while 95.1% of the respondent don't smoke cigarette.

Table 1. Participant's Responses on Dietary Practices among Pregnancy: (n = 120)

No.	Question	Options	Frequency	Percentage (%)
1.	How many times do you eat in a day?	1 – 2 times	53	44.2%
		3 times	60	50%
		4 or more times	5	4.2%
		Irregular	2	1.7%
2.	How many times in a week do you skip meals in a week?	1 – 2	30	25%
		3 – 4	40	33.3%
		5 – 6	18	15%
		7	2	1.7%
		None	65	54.2%
3.	Which meal of the day do you usually skip?	Breakfast	50	41.7%
		Lunch	25	20.8%
		Dinner	15	12.5%
4.	Do you eat outside your home?	Yes	85	70.5%
		No	20	16.7%
		Sometimes	15	12.5%
5.	Do you consume fruits and vegetables daily (5 and above servings)	Yes	35	29.2%
		No	85	70.8%
6.	Do you drink adequate amount of water daily?	Yes	56	46.7%
		No	64	53.3%
7.	Do you drink alcohol daily?	Yes	20	16.7%
		No	100	83.3%
8.	Do you drink any herbal medicine/tea e.g (agbo) daily?	Yes	25	20.8%
		No	95	79.2%
9.	Do you smoke cigarette?	Yes	5	4.2%
		No	115	95.8%
10.	Do you eat pastry snacks daily?	Yes	98	81.7%
		No	22	18.3%
11.	Do you avoid some foods or diet in the current pregnancy?	Yes	65	54.2%
		No	55	45.8%
12.	What are the foods?			
	Snail	15	15	12.5%
	Grasscutter	5	5	4.2%
	Okra soup	8	8	6.6%
	Monkey meat	30	30	25%
	Egusi soup	7	7	5.8%
13.	Do you crave for the following items?			
	Calabar chalk	25	25	20.8%
	Dry clay	38	38	31.7%
	Kolanut	10	10	8.3%
	Bitter kola	15	15	12.5%

The result also shows that majority of the respondents 81.7% do eat pastry snacks daily while 18.0% do not eat pastry snacks daily. The result equally revealed that 54.2% avoid some foods or diets in the current pregnancy while 45.2% do not avoid any food or diet in the current pregnancy, also the result revealed that 12.5% avoid snail, 4.2% grasscutter, 6.0% okra soup, 25% monkey meat and 14.1% egusi soup. Additionally, some of the respondents claim that they do crave for items like Calabar chalk. 20.8%, dry clay 31.7%, kolanut 8.3% and bitter kola 12.5%.

The result on Table 2 revealed that (54.2%) of the respondents forbid the intake of certain food items during pregnancy. The reasons for forbidding certain food items includes: religion (9.2%); cultural belief (20.10%); to avoid bid babies (8.3%); to avoid labour difficulty (12.5%); Dislike/discomfort of food (2.5%); medical condition disease (1.7%); and I am a vegetable (2.5%).

The result also shows that the factors the respondent agree will contribute to good nutritional practices during pregnancy includes: good education (41.7%); good social-economic status (68.3%); nutrition and health information (95.8%); and husband's support (25%).

Factors that can challenge adequate food intake during pregnancy includes" poor nutritional knowledge (65%); low social-economic status (50%); lack of husband's support (33.3%) and ignorance/poor educational level (91.7%).

Table 2. Participant's Responses on Factors Influencing the Dietary Practices of the Pregnant Women

No	Question	Options	Frequency	Percentage (%)
1.	Do you forbid the intake of certain food during pregnancy?	Yes	65	54.2%
		No	55	45.8%
2.	Why do you forbid this food items?	Religion	11	54.2%
		Cultural belief	24	45.8%
		To avoid big baby	10	9.2%
		To avoid labour difficulty	15	20.10%
		Disliked discomfort of the food	3	8.3%
		Medical condition disease	2	12.5%
		I catn a vegetable	3	2.5%
2.	What key factors do you agree will contribute to your good nutritional practices?	Good education	50	41. %
		Good social economic status	82	68.3%
		Nutrition and health information revealed in ante-natal clinic	115	95.8%
		Husband support	30	25%
3.	What factors challenge your adequate food intake during pregnancy?	Poor nutritional knowledge	78	65%
		Low-social economics status	60	50%
		Lack of husband support	40	33.3%
		Ignorance/Poor educational level	110	91.7%

Table 3 showed participants response on various measures that could be adopted to improve the nutritional practices of women during pregnancy. Majority of the women (75%) strongly agreed that nutrition education given during ante-natal clinic should be intensified. 50% of the women strongly agreed that women should be placed on prenatal multivitamin and mineral even before conception occur while 41.7% strongly agreed that small but frequent meal serving should be encouraged.

Table 3. Participant Responses on Measures that could be Adopted to Improve Nutritional Practices of Pregnant Women

No	Items	SA		A		SD		D	
		F	%	F	%	F	%	F	%
1.	Nutrition education given during ante-natal clinics should be intensified.	90	75	15	12.5	10	8.5	5	4.2
2.	Women should be placed on and continued prenatal multivitamins and minerals even before conception occurs.	60	50	35	29.2	17	10.8	12	10
3.	Small but frequent meal serving should be encouraged	50	41.7	20	16.7	30	25	20	16.7
4.	Educative programs cumed at eliciting husband support during pregnancy should be encouraged.	76	63.3	25	20.8	9	7.5	10	8.3
5.	Preconceptional education should be mandated for all couples.	40	33.3	60	50	12	10	8	6.7
6.	Pregnant women should exercise moderately.	55	45.8	15	12.5	20	16.7	30	25
7.	Food forbidden should be replace with those accepted.	45	37.5	32	26.7	25	20.8	18	15
8.	Smoking consumption of alcohol, caffeine and herbal medicine (agbo) should be discouraged during pregnancy.	72	60	23	19.2	10	8.5	15	12.5

The result also revealed that (63.3%) of the participant strongly agreed that educative programs aimed at eliciting husband support during pregnancy should be encouraged while (50%) agree that periconceptional education be mandated for all couples. Other measures which should be adopted include that (45.8%) strongly agreed that pregnant women should exercise moderately while (37.5%) strongly agreed that food forbidden should be replaced with those accepted 60% of participants also strongly agreed that smoking consumption of alcohol, caffeine and herbal medicine (Agbo) should be discouraged during pregnancy.

The result of the finding on the dietary practices during pregnancy revealed that half of the respondents (50%) ate three times daily while (44.2%) reported 1 – 2 times daily. This result shows higher prevalence for 3time daily and is in line with the results of Olatona et al., (2021) who reported that more than half of the respondents in their study (52.0%) ate three times daily. However, this

result is not similar with the finding in Odeda, Ogun State where 38% women ate three times daily (Ademuyiwa & Sanni, 2013). The result of the study also shows that most of the respondents (54.2%) do not skip meals and meals most commonly skipped in this present study is breakfast (41.7%). This is in line with the finding of Olatona et al. (2021), who reported (56.9%) for not skipping meals but in contrast with the type of meal skipped which is lunch (37.4%) instead of breakfast. However, a report from Northwestern Ethiopia study showed that only 38.3% of respondents in their study skip meal and most commonly skipped meal (70%) breakfast agrees with this present study (Nana & Zema, 2018). Skipping breakfast may be due to social economic status, perceived stress involved in cooking before going to work, misconception about weight gain and intermittent fasting or dietary habit acquired long before pregnancy. The study also revealed that only (29.2%) of the respondents do consume fruits and vegetables daily (5 and above serving) and is similar to the finding of Olatona et al. (2021) were only (16.7%) of the respondents consume fruits and vegetables but contrasts with the report from similar studies in Ireland (76%) and India (47%) (Olatona et al., 2021). Many of the respondents may not have information on the recommended servings of fruits and vegetables required daily.

Unfortunately, fruits and vegetables are the major sources of micronutrients needed for mother's good health and proper growth and development of the baby. 16.7% of the respondents drink alcohol daily during pregnancy and is similar with in Nigerian study were 5.7% consumed alcohol either as beer or wine and a Polish study that reported that consumption of alcohol was rare among its respondents (Olatona et al., 2021). Alcohol consumption should be discouraged during pregnancy as it can cause fetal alcohol syndrome in the fetus leading to irreversible mental and physical retardation (Olatona et al., 2021). However, 20.8% of the respondent drink herbal medicine/tea eg (Agbo) daily and is similar to the finding of Anyasor and Olowu (2017) who reported 47.6% of their respondents take herbal concoctions. Intake of this herbal mixtures during pregnancy has been associated with teratogenic effects resulting to miscarriages, premature birth and birth defect (Anyasor & Olowu, 2017).

Majority of the respondents 81.7% do eat pastry snacks daily and the result is slightly higher than the result in a similar study in Lagos were (57.1%) was reported on pastry snacks consumption (Olatona et al., 2021). Studies have shown that an interaction between maternal fat diet and the genotype during early life development can enhance the susceptibility to cardio-renal disease later in life (Kruse et al., 2017).

Consumption of high level trans fats, sugar, and salt that is in pastry snacks can be hazardous to the health of mother and the developing fetus (Olatona et al., 2021) pregnant women 54.2% in this study aimed some foods or diet in the current pregnancy such as snail, grasscutter, okra soup, monkey meat and egusi soup with percentage (12.5%, 4.2%, 6.6%, 25% and 5.8%) respectively. The result is slightly similar with the report from Ethiopia study where majority of the participant (74.4%) alcohol some food for various reasons (Nana & Zema, 2018).

Equally the pregnant women in this study crave for the following item Calabar chalk 20.8%, dry clay 31.7%, kolanut 8.3% and bitter kola 12.5%. this is not inline with the result of Olatona et al. (2021) were only 4.9% of pregnant women in their study ate dry clay but agrees with a study in Cameroon where 95% of pregnant (Nchangmugyia, Teenye, Njotang, & Ndombo, 2016).

Table 2 shows participant's responses on factors influencing the dietary practices of the pregnant women. 54.2% of the respondents agreed that they forbid intake of certain foods during pregnancy due to Religion, cultural belief, to avoid big baby, to avoid labour difficulty, dislike, discomfort of the food, medical condition/disease and I am a vegetarian with percentage score of (9.2%, 20.10%, 8.3%, 12.5%, 2.5%, 1.7% AND 2.5%) respectively. This is slightly in line with the finding of Anyasor and Olowu (2017) who reported (82.2%) for the forbidding intake of certain foods when pregnant.

The key factor which contributes to the good nutritional practices of the pregnant women was nutrition and health information received in anti-natal clinic with (95.8%) and is in line with the result of a study in semi-urban region of Ogun State were respondents reported that the key factor that contributed to their good nutritional practice was health/nutrition information given in anti-natal visit with (52.4%) (Anyasor & Olowu, 2017). Other factors that contributed to their good

nutritional practices include good education (41.7%), good social economic status (68.3%) and Husbands support (25%).

Equally the respondents acknowledged that the factors that challenge their adequate food intake during pregnancy was poor nutritional knowledge (65%) (50%), lack of husband support (33.3%) and ignorance/poor educational level is the key challenge as revealed from the result with (91.7%) and this is in line with Losanko et al. (2020) who is of the same view in their study, that showed that educational status of pregnant women was a significant factor with their dietary practice.

Participant responses on measures that could be adopted to improve nutritional practices of pregnant women. Majority of the women (75%) strongly agreed that Nutrition-education given during anti-natal clinics should be intensified. This is in agreement with the finding of Anyasor and Olowu (2017) were 51.3% of the participant strongly agreed. Available evidences from other studies showed that majority 95.2% and 94.2% of their respondents got their nutritional clinic classes (Okeke & Chiejina, 2024).

This shows that there is need for caregivers, midwives and other health care providers to educate the women on the importance of good nutrition during pregnancy. The result also revealed that 63.3% of the women strongly agreed that educative programs aimed at eliciting husband support during pregnancy should be encouraged. This is slightly inline with the finding of Anyasor and Olowu who reported that 51.3% agree that educative program aimed at eliciting spousal support should be organized and women are to encourage their husbands to attend such programmes (Anyasor & Olowu, 2017). While Gebremichael et al. (2022) noted that husband education is significantly associated with optimal nutrition and healthy practice; as husband education improved, the nutrition and health practices of their pregnant wives will improve. Equally (50%) of the women in this study agree that preconceptional education should be mandated for all couples. 50% of the participants strongly agreed that women should be placed on and continued multivitamins and minerals even before conception occurs and 41.7% also strongly agreed that small but frequent meal serving should be encouraged.

The result equally revealed that only 37.5% of the participants strongly agree that food forbidden should be replaced with those accepted while 60% strongly agreed that smoking, consumption of alcohol, caffeine and herbal medicine (Agbo) should be discouraged during pregnancy. This is similar with the finding of similar studies in semi-urban region of Ogun State and mariental clinic mariental district Namibia who reported that smoking and alcohol consumption during pregnancy will have negative consequences on the unborn baby, affecting the baby's birth weight, leading to short and long-term complications such as attention Deficit Hyperactivity Disorder (ADHD) and poor school performance (Anyasor & Olowu, 2017; Hamutenya, Nghitanwa, & Sankombo, 2023).

Finally, only 45.8% of the participants strongly agreed that pregnant women should exercise moderately and is similar with the finding of Anyasor and Olowu (2017) were mothers in their study (48.1%) strongly agreed that pregnant women should exercise moderately. In the absence of no health challenge mondrate exercise during pregnancy enhances weight control and prevents obesity after child bbirth and in later adulthood (Anyasor & Olowu, 2017).

4. Conclusion

Based on the study, it was concluded that the dietary practices of pregnant women during pregnancy were inadequate due to several factors, including the avoidance of certain foods because of religious and cultural beliefs, concerns about difficult labour, food dislikes, poor nutritional knowledge, low socioeconomic status, lack of husband support, and low levels of education. Therefore, nutrition education and counselling should be integrated and strengthened within antenatal care programmes, with particular emphasis on encouraging husband involvement to promote shared responsibility for the health of the mother and unborn child. Pre-conception education should also be encouraged for couples, while pregnant women should be advised to replace prohibited or avoided foods with nutritionally appropriate alternatives. In addition, smoking, alcohol consumption, excessive caffeine intake, and the use of herbal medicines such as Agbo should

be discouraged during pregnancy to support healthier dietary practices and better maternal and fetal outcomes.

Data Availability

The datasets generated during and/or analysed during the current study are available from the corresponding author on reasonable request.

Author Contributions

The author has read and approved the final version of the manuscript and agrees to be accountable for its content.

Conflicts of Interest

The author declares no conflict of interest regarding the research, including its data, location, and results.

Funding Statement

This research was conducted independently by the author without any financial support or funding from external institutions or organizations.

Acknowledgments

The author would like to thank all those who contributed to the preparation of this article.

Supplementary Materials

This study does not include any supplementary materials.

Declaration on AI Use

The author declares that AI-assisted tools were used solely to improve the readability and language of the manuscript under strict human oversight. No content, ideas, analyses, interpretations, or conclusions were generated by AI.

Ethical Approval

Ethical approval was not obtained for this study. However, the study was conducted with due consideration for the rights, privacy, confidentiality, and voluntary participation of the respondents. No personally identifiable information was reported.

Consent to Participate

Informed consent was obtained from all participants prior to their participation in the study. Participants were informed about the purpose of the study, the voluntary nature of their participation, the confidentiality of the information provided, and their right to withdraw from the study at any time without consequence.

References

- Ademuyiwa, M. O., & Samu, S. A. (2013). Consumption pattern and dietary practices of pregnant women in Odeda Local Government Area of Ogun State. *International Journal of Food Science Engineering*, 7, 489–493.
- Anyasor, C. O., & Olowu, O. H. (2017). Factors influencing the nutritional practice of pregnant women living in a semi-urban region of Ogun State, Nigeria. *Saudi Journal of Medicine*, 114–119. <http://scholarsmepub.com>
- Davis, M. A. (1993). Fetal nutrition and cardiovascular disease in adult life. *The Lancet*. [https://doi.org/10.1016/0140-6736\(93\)91224-A](https://doi.org/10.1016/0140-6736(93)91224-A)
- Doyle, I., Spalleke, J., & Razum, O. (2016). *Development of an explanatory model*.

- Gebremichael, M. A., Reta, A. E., Teshome, M. S., & Lema, T. B. (2022). Nutritional and health practice and associated factors among pregnant women on essential nutritional action frameworks in Ambo District, Ethiopia. *Journal of Nutrition & Food Science*, 12, Article 861.
- Hamutenya, S., Nghitanwa, E. M., & Sankombo, M. (2023). Knowledge of pregnant women regarding tobacco and alcohol use in pregnancy at Mariental Clinic, Hardap Region: A quantitative study. *Journal of Public Health in Africa*, 14(10), Article 2435. <https://doi.org/10.4081/jphia.2023.2435>
- Johns Hopkins Medicine. (2025). *Nutrition during pregnancy*. <https://www.hopkinsmedicine.org>
- Kruse, M., Fiallo, A., Tao, J., Susztak, K., Amann, K., & Katz, E. B. (2017). A high fat diet during pregnancy and lactation induces cardiac and renal abnormalities in GLUT4+/- male mice. *Kidney & Blood Pressure Research*, 42, 468–482. <https://doi.org/10.1159/000479383>
- Mkandawire, B. K., Horwood, C., & Haskins, L. (2022). A qualitative study to explore dietary knowledge, beliefs, and practices among pregnant women in a rural health zone in the Democratic Republic of Congo. *Journal of Health, Population and Nutrition*. <https://doi.org/10.1186/s41043-022-00333-7>
- Mohammed, B. H., Johnston, S. M., Vackova, D., Hassen, S. M., & Yalew, H. (2019). *The role of male partner in utilization of maternal health care services in Ethiopia: A community-based couple study*.
- Nana, A., & Zema, T. (2018). Dietary practices and associated factors during pregnancy in Northwestern Ethiopia. *BMC Pregnancy and Childbirth*, 18, Article 183. <https://doi.org/10.1186/s12884-018-1822-1>
- National Population Commission. (2013). *Nigeria Demographic and Health Survey (NDHS) 2013: Preliminary report*. National Population Commission.
- Nchang Mugyia, A. S., Kien Tanya, A. N., Njotang, P. N., & Ndombo, P. N. (2016). Knowledge and attitudes of pregnant mothers towards maternal dietary practices during pregnancy at the Etoug-Ebe Baptist Hospital Yaounde. *Health Sciences and Disease*, 17, 24–29.
- Okeke, H. C., & Chiyina, E. N. (2024). Nutritional knowledge and practices among pregnant women attending ante-natal clinics in health facilities in Nnewi South Local Government Area, Anambra State. *African Journal of Health, Nursing and Midwifery*, 7(3), 70–84.
- Olatona, F. A., Olowu, O. J., Goodman, O. O., & Amu, E. (2021). Dietary habits, diversity, and predictors among pregnant women attending primary health care centers for antenatal care in Lagos, Nigeria. *Journal of Family Medicine and Primary Care*, 10(8), 3076–3083.
- Wordu, G. E., & Akusu, M. O. (2020). Dietary practices and food preferences of pregnant women in Port Harcourt Metropolis, Nigeria. *Acta Scientific Nutritional Health*, 4(3), 45–48.
- Zerfu, T. A., Umata, M., & Baye, K. (2016). Dietary habits, food taboos, and perceptions towards weight gain during pregnancy in Arsi, rural central Ethiopia: A qualitative cross-sectional study. *Journal of Health, Population and Nutrition*, 35(1), Article 22. <https://doi.org/10.1186/s41043-016-0059-8>