

Knowledge, Practice and Perceived Effects of Maternal Nutrition on Birth Outcomes among Clinic Attendees in Ifedayo Local Government Area, Osun State

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Abstract

Original Research Article

Maternal nutrition plays a fundamental role in determining pregnancy outcomes and the health status of both the mother and her child. It encompasses the quality and quantity of food and nutrients consumed before conception, during pregnancy, and after childbirth. Adequate maternal nutrition ensures the optimal growth and development of the fetus and reduces the risk of complications such as preterm delivery, low birth weight, and maternal mortality. Therefore, this study seeks to investigate the extent of knowledge, dietary practices, and perceived impacts of maternal nutrition on birth outcomes among women attending clinics in Ifedayo LGA, Osun State. The study also aims to identify the socio-demographic factors influencing maternal nutrition behavior.

Descriptive research design of survey type was used for the study. The target population for this study comprises all registered pregnant women attending antenatal clinics in primary health centers in Ifedayo Local Government Area, Osun State. A multi-stage sampling procedure was used to sample 357. A researcher developed and validated questionnaire with reliability co-efficient of 0.83, determined through split-half method was used for the study. The questionnaire was administered by the researcher with two research assistants in each ward. Inferential statistics of chi-square was used to analyse the hypotheses at 0.05 alpha level.

The finding of the study were that;

- Maternal nutrition knowledge significantly influence birth outcomes; (cal $\chi^2 = 4490.2 > \text{crit. } \chi^2(2) = 11.070$)
- Maternal nutrition practices significantly influence birth outcomes; (cal. $\chi^2 = 4170.6 > \text{crit. } \chi^2(2) = 11.070$)
- Perceived effects of maternal nutrition significantly influence birth outcomes; (cal. $\chi^2 = 4560.4 > \text{crit. } \chi^2(2) = 11.070$)

The study concluded that: Maternal nutrition knowledge, Maternal nutrition practices, Perceived effects of maternal nutrition, Knowledge, practice, and perceived effects of maternal nutrition and Improvement strategies on maternal nutrition on birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State. This implies that knowledge, practice and perceived effects of maternal nutrition on birth out comes among clinic attendees. The study, therefore, recommended that Healthcare providers should incorporate targeted health education programmes in to routine antenatal care to increase knowledge of maternal Nutrition as a determinant of birth out comes.

Keywords: Knowledge, Practice, Perceived Effects, Maternal Nutrition, Birth Outcome.

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Introduction

The growth, development, and overall health of a fetus are strongly influenced by maternal nutrition and dietary practices. Optimal pregnancy outcomes and complication-free births depend largely on the nutritional status of the mother before conception, during pregnancy, and after childbirth. Maternal nutrition plays a fundamental role in determining both maternal and neonatal health, as it encompasses the quality and quantity of food and nutrients consumed throughout the reproductive period. Adequate maternal nutrition supports optimal fetal growth and development and reduces the risk of adverse outcomes such as preterm delivery, low birth weight, and maternal mortality.

Despite its importance, poor maternal nutrition remains a major public health challenge, particularly in low- and middle-income countries. In sub-Saharan Africa, factors such as poverty, food insecurity, limited access to quality healthcare, and inadequate nutrition education continue to compromise maternal dietary intake (Adewuyi, et al, 2025). Globally, malnutrition accounts for approximately 45% of deaths among children under five years, with a significant proportion linked to maternal undernutrition during pregnancy (Kiani, 2022). Nutritional deficiencies including anemia, vitamin A deficiency, and insufficient protein intake have been shown to weaken maternal immunity and increase the risk of obstetric complications (Kiani, 2022). Conversely, over-nutrition and excessive gestational weight gain are associated with adverse outcomes such as gestational diabetes, pre-eclampsia, and delivery complications (Vorosmarti, et al, 2020).

In Nigeria, maternal nutrition remains a critical concern despite ongoing governmental and non-governmental interventions. Data from the Nigeria Demographic and Health Survey (Oweibia, 2025) reveal that approximately 58% of pregnant women are anemic, 22% are underweight, and about 25% experience micronutrient deficiencies. These nutritional inadequacies significantly contribute to poor birth outcomes, including low birth weight, intrauterine growth restriction (IUGR), and neonatal mortality (Perumal et al., 2025). The situation is often more severe in rural communities, such as

Ifedayo Local Government Area of Osun State, where access to antenatal nutrition education and quality healthcare services is limited. Cultural food taboos and traditional beliefs further restrict the consumption of nutrient-rich foods, increasing vulnerability to maternal malnutrition (Kayode et al., 2021).

Maternal nutrition knowledge refers to a pregnant woman's understanding of essential nutrients, dietary requirements, and the importance of adequate nutrition during pregnancy. Dietary practice reflects how this knowledge is translated into daily food choices, supplement use, and meal planning. Perceived effects describe a woman's beliefs about the relationship between nutrition and pregnancy outcomes, which significantly influence health-related behaviors (Omachi, 2024). In many developing countries, substantial gaps exist between nutritional knowledge and actual dietary practices due to socioeconomic constraints, cultural norms, and limited access to accurate nutritional information.

Maternal nutrition itself encompasses the intake of both macronutrients carbohydrates, proteins, and fats and micronutrients such as vitamins and minerals necessary for maternal and fetal well-being (Kiani, 2022). Proper nutrition during pregnancy reduces maternal morbidity, supports normal fetal development, and improves outcomes such as birth weight and neonatal survival (Has, 2024). Conversely, malnutrition during pregnancy is associated with adverse outcomes including stillbirth, preterm delivery, low birth weight, and long-term developmental impairments in children (Adeyemi, 2025).

Evidence consistently demonstrates that maternal nutrition knowledge and dietary practices are key determinants of pregnancy outcomes. Women with higher nutritional awareness are more likely to adopt healthy eating behaviors and experience improved maternal and neonatal health outcomes (Eze, et al, 2024). However, the translation of knowledge into practice remains a significant challenge, particularly in contexts where poverty, food insecurity, and cultural beliefs strongly influence dietary behavior (Adetunji et al., 2025). Although nutrition counselling is commonly provided during antenatal

care visits, such information does not always result in improved dietary practices or measurable health benefits.

Globally, studies have linked poor maternal nutrition to intrauterine growth restriction, low birth weight, preterm birth, and neonatal mortality (González-Fernández et al., 2024). Adequate intake of key nutrients such as iron, folic acid, calcium, and diversified diets has been shown to improve pregnancy outcomes and reduce complications including anemia and hypertensive disorders (WHO, 2021). Seid et al. (2023) reported that women with higher dietary diversity scores were significantly less likely to deliver underweight infants. Consequently, global nutrition initiatives emphasize routine supplementation, nutrition counselling, and community-based dietary interventions as effective strategies for improving maternal and neonatal health (UNICEF, 2023).

Nigeria faces a dual burden of malnutrition, characterized by persistent undernutrition alongside emerging overnutrition. Recent reports indicate that approximately 58% of pregnant women are anemic, while nearly 19% of infants are born with low birth weight (Oweibia, 2025). Key contributing factors include inadequate maternal diet, poor antenatal care utilization, early childbearing, and low socioeconomic status (Adeyemi, 2025). Limited dietary diversity and low consumption of fruits, vegetables, and animal-source proteins remain common, particularly among food-insecure households (Ujah et al., 2023).

Studies across Nigeria reveal a consistent gap between maternal nutrition knowledge and actual practice. While many women possess basic awareness of healthy nutrition, application is often constrained by poverty, food scarcity, cultural prohibitions, and misconceptions about supplements (Omachi, 2024). In southwestern Nigeria, for example, awareness of iron and folate supplementation is relatively high, yet compliance remains low due to fear of side effects and misinformation (Eze, et al, 2024). Cultural taboos restricting the consumption of foods such as eggs and meat during pregnancy further exacerbate nutritional deficiencies (Ogunjimi, et al, 2025).

Empirical evidence from Osun State highlights these challenges. Akinrinmade et al. (2024) found that maternal nutrition knowledge positively influenced dietary practices among antenatal clinic attendees, although economic constraints limited adherence to nutritional recommendations. Similarly, a study in Ife North Local Government Area reported that while most women understood the importance of a balanced diet, food insecurity and cost limited dietary variety (Olabimpe, et al 2022). Traditional beliefs and peer influence also played significant roles in shaping maternal dietary behaviors.

Against this backdrop, the present study seeks to assess the knowledge, practices, and perceived effects of maternal nutrition on birth outcomes among clinic attendees in Ifedayo Local Government Area of Osun State. By identifying gaps in knowledge, behavior, and perception, the study aims to generate evidence that can inform targeted health education, policy development, and community-based interventions to improve maternal and neonatal health outcomes in the study area.

Statement of the Problem

Maternal malnutrition remains a major public health concern and a significant contributor to maternal and infant morbidity and mortality in Nigeria. Despite sustained efforts by government agencies and international organizations to improve maternal nutritional status, pregnancy-related complications linked to poor dietary intake remain prevalent (Elemile, et al, 2024). In Osun State, particularly in Ifedayo Local Government Area, many women of reproductive age continue to experience inadequate nutritional knowledge, which adversely influences dietary practices during pregnancy.

Evidence from local health facilities indicates that a considerable number of pregnant women do not meet recommended dietary requirements. This situation is often driven by limited nutritional awareness, poverty, and cultural food restrictions that discourage the consumption of certain nutrient-rich foods (Mussa, et al, 2024). Consequently, many expectant mothers rely on low-quality diets deficient in essential nutrients such as iron, calcium, folate, and protein nutrients critical for healthy fetal

development. These deficiencies have been associated with adverse birth outcomes, including low birth weight, preterm delivery, and stillbirths (Gete et al., 2020).

Although health education and antenatal care programs aim to improve maternal nutrition knowledge, their effectiveness in translating knowledge into appropriate dietary practices remains uncertain, particularly in rural communities such as Ifedayo LGA. A noticeable gap persists between what pregnant women know about proper nutrition and how this knowledge is applied in daily life. Additionally, varying perception and socio-cultural beliefs about the effects of maternal diet on fetal growth often give rise to misconceptions, further limiting adherence to recommended dietary guidelines.

Given these challenges, there is a need for empirical evidence to better understand maternal nutrition knowledge, dietary practices, and perception within this context. Therefore, this study seeks to assess the level of knowledge, dietary practices, and perceived effects of maternal nutrition on birth outcomes among women attending clinics in Ifedayo Local Government Area of Osun State. The study also aims to examine the socio-demographic factors influencing maternal nutritional behaviors and to generate evidence-based recommendations for improving maternal and neonatal health outcomes in the study area.

Purpose of the Study

The main objective of this study is to examine the knowledge, practice, and perceived effects of maternal nutrition on birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State.

The specific objectives are to:

1. Assess the level of knowledge of maternal nutrition among clinic attendees in Ifedayo LGA.
2. Examine the nutritional practices of pregnant women attending clinics in the area.
3. Identify the perceived effects of maternal nutrition on birth outcomes.

Research Questions

1. What is the level of knowledge of maternal nutrition among clinic attendees in Ifedayo Local Government Area?
2. What are the nutritional practices of pregnant women in the study area?
3. What are the perceived effects of maternal nutrition on birth outcomes among the respondents?

Research Hypotheses

The following null hypotheses were tested in the study:

H₀₁: There is no significant relationship between maternal nutrition knowledge and birth outcomes among clinic attendees.

H₀₂: There is no significant relationship between maternal nutrition practices and birth outcomes among clinic attendees.

H₀₃: There is no significant relationship between perceived effects of maternal nutrition and birth outcomes among clinic attendees.

Methodology

Descriptive research design of survey type was used for the study. The target population for this study comprises all registered pregnant women attending antenatal clinics in primary health centers in Ifedayo Local Government Area, Osun State (July to October 2025). A multi-stage sampling procedure of purposive, proportional and convenience sampling techniques was used to sample 357. A researcher developed (Knowledge, Practice and Perceived Effect of Maternal Nutrition on Birth Outcomes) and validated questionnaire with reliability co-efficient of 0.83, determined through split-half method was used for the study. The questionnaire was administered by the researcher with two research assistants in each ward. Inferential statistics of chi-square was used to analyses the hypotheses at 0.05 alpha level.

Results

relationship between maternal nutrition knowledge and birth outcomes among clinic attendees.

1. Hypothesis one: There is no significant

Table 2: Chi-square (χ^2) Result showing relationship between maternal nutrition knowledge and birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State.

S/N	Items	Df	Cal value	Table value	Remarks
1	A Pregnant Woman should eat for two people to ensure the baby gets enough nutrients.	9	4490.2	11.070	Rejected
2	Drinking plenty of water during pregnancy can help prevent complications like urinary tract infections				
3	Folic acid supplements are important for pregnant women to prevent birth defects like spina bifida.				
4	Eating a diet high in sugar and fat during pregnancy can increase the risk of gestational diabetes and hypertension.				
5	A healthy diet and adequate nutrition during pregnancy can reduce the risk of preterm labor and low weight				

$N = 375$ cal. $\chi^2 = 4490.2 > \text{crit. } \chi^2 = 11.070 @ 0.05$ alpha level

The table 2 shows that the calculated χ^2 value of 4490.2 is higher than the critical χ^2 value of 11.070 with df 9 at 0.05 alpha level of significance. Thus, the null hypothesis was rejected. This means that there is no significant relationship between maternal nutrition knowledge and birth outcomes among

clinic attendees in Ifedayo Local Government Area, Osun State

2. Hypothesis two: There is no significant relationship between maternal nutrition practices and birth outcomes among clinic attendees.

Table 3: Chi-square (χ^2) Result showing relationship between maternal nutrition practices and birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State.

S/N	Items	Df	Cal value	Table value	Remarks
1	I consumed a balanced diet that included plenty of fruits, vegetables, wholegrains and lean proteins during my pregnancy	9	4170.6	11.070	Rejected
2	I took iron supplements as recommended by my healthcare provider during pregnancy				
3	I drank at least 8 glasses of water per day during my pregnancy.				

- 4 I avoid eating foods high in sugar and fat during my pregnancy..
- 5 I received adequate nutrition counseling from my healthcare provider during pregnancy

N= 375 cal. $\chi^2 = 4170.6 > \text{crit. } \chi^2 = 11.070 @ 0.05 \text{ alpha level}$

The table 3 shows that the calculated χ^2 value of 4170.6 is higher than the critical χ^2 value of 11.070 with df 9 at 0.05 alpha level of significance. Thus, the null hypothesis was rejected. This means that there is no significant relationship between maternal nutrition practices and birth outcomes among clinic

attendees in Ifedayo Local Government Area, Osun State.

3. Hypothesis three: There is no significant relationship between perceived effects of maternal nutrition and birth outcomes among clinic attendees.

Table 4: Chi-square (χ^2) Result showing relationship between perceived effects of maternal nutrition and birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State.

S/N	Items	Df	Cal value	Table value	Remarks
1	A healthy diet during pregnancy can reduce the risk of having a low birth weight baby.	9	4560.4	11.070	Rejected
2	Maternal nutrition has a significant impact on the baby's overall health and development				
3	Eating a balanced diet during pregnancy can prevent birth defects..				
4	Poor nutrition during pregnancy can increase the risk of pregnancy complications, such as gestational diabetes and hypertension.				
5	A mother's diet during pregnancy can influence the baby's long-term health and risk of chronic diseases				

N= 375 cal. $\chi^2 = 4560.4 > \text{crit. } \chi^2 = 11.070 @ 0.05 \text{ alpha level}$

The table 4 shows that the calculated χ^2 value of 4560.4 is higher than the critical χ^2 value of 11.070 with df 9 at 0.05 alpha level of significance. Thus, the null hypothesis was rejected. This means that there is no significant relationship between maternal nutrition practices and birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State.

Discussion of findings

The result of hypothesis one (1) revealed that maternal nutrition knowledge significantly affected birth outcomes in Ifedayo Local Government Area of Osun State. This finding is in accordance with (Akinbami, 2024) nutritional inadequacies significantly influence birth outcomes, resulting in

low birth weight, intrauterine growth restriction (IUGR), and neonatal mortality. Also in line with Vorosmarti, et al, (2020) that over nutrition or excessive weight gain during pregnancy can lead to gestational diabetes, pre-eclampsia, and complications during delivery.

The result of hypothesis two (2) revealed that maternal nutrition practices significantly influence birth outcomes among clinic attendees in Ifedayo Local Government Area of Osun State. This finding is in accordance with (Eze, et al, 2022) women with higher nutritional awareness are more likely to adopt healthy eating behaviors and achieve better pregnancy outcomes. Adetunji et al., (2023) the translation of knowledge into practice remains a major challenge, particularly in settings where socio-economic and cultural factors shape food consumption patterns. Pregnant women often receive nutrition-related counseling during antenatal visits, but such knowledge may not always translate into improved dietary practices or better health outcomes.

The result of hypothesis three (3) revealed that perceived effects of maternal nutrition significantly influence birth outcomes among clinic attendees in Ifedayo Local Government Area, Osun State. The finding corroborates with Mussa, et al, (2021) Observations from local clinics suggest that some pregnant women fail to meet recommended dietary requirements due to ignorance, poverty, or cultural restrictions that limit their intake of certain foods. Abakoba, et al., (2022), the consumption of low-quality diets lacking essential nutrients such as iron, calcium, folate, and protein often results in low birth weight, preterm birth, and stillbirths. WHO (2021) notes that nutritional deficiencies such as anemia, vitamin A deficiency, and inadequate protein intake compromise maternal immunity and increase the risk of obstetric complications.

Conclusion

Based on the findings of this study, the following conclusions were made:

1. Maternal nutrition knowledge significantly influence birth outcomes
2. Maternal nutrition practices significantly

influence birth outcomes

3. Perceived effects of maternal nutrition significantly influence birth outcomes

Recommendations

Based on the conclusions drawn from this study, the following recommendations were made:

1. Healthcare providers should incorporate targeted health education programmes in to routine antenatal care to increase knowledge of maternal Nutrition as a determinant of birth out comes.
2. Antenatal programmes should actively promote healthy lifestyle choices, including adequate nutrition, regular exercise and stress management, to address poor maternal nutrition practice that result to negative birth out comes.
3. Community health initiatives should focus on raising knowledge about influence of Maternal Nutrition on birth out comes. These campaigns can be integrated in to antenatal visits to encourage women to share relevant nutritional health information with health care providers.

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