



Poor Dietary Practices as Determinants of Pregnancy Outcomes Among Women in Ilorin South, Nigeria

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Abstract

Dietary practices, which include the inadequate intake of essential nutrients, poor meal planning, and limited dietary diversity, can affect the nutritional needs of pregnant women. The increasing nutritional needs of pregnant women target the development of their fetuses and poor practices could be associated with poor pregnancy outcomes. This study investigated poor dietary practices as determinants of pregnancy outcomes among women in Ilorin South LGA, Kwara State, Nigeria. Descriptive survey research design was adopted for the study. Multistage sampling procedure was used to select a sample of 198 respondents. A self-developed questionnaire which was face and content validated by three experts was used for data collection. Instrument's reliability was established using split-half method and was subjected to Spearman Ranking Correlation which generated 0.76 correlation coefficient. The collected data was analysed using chi-square at 0.05 alpha level. The findings indicated that premature birth ($\chi^2_{(9,198)} = 127.24, 0.00$), maternal mortality ($\chi^2_{(9,198)} = 143.61, 0.00$) and still births ($\chi^2_{(9,198)} = 219.704, 0.00$) were predominant outcomes of poor dietary practices during pregnancy among women. It was recommended that community health educators should enlighten pregnant women on the importance of maintaining proper dietary intake to avoid adverse pregnancy outcomes.

Keywords: Dietary Practices, Pregnancy Outcomes, Premature Birth, Still Birth, Maternal Mortality

Introduction

The quality of nutrition during pregnancy is one of the most crucial foundations for maternal and child health. Proper maternal nutrition goes beyond simply consuming food, it involves the intake of balanced, diverse, and nutrient-rich meals that meet the increased physiological



demands of pregnancy. A well-nourished pregnant woman is more likely to experience a healthy pregnancy, deliver a healthy baby, and recover more effectively postpartum. Conversely, poor dietary practices can significantly undermine these outcomes, particularly in regions where food insecurity, poverty, and limited nutritional education are prevalent.

Sufficient, high-quality mother nutrition is essential for women's reproductive health and performance as well as the health, survival, and development of children (Bloomfield et al., 2013; Nabarro, 2013). The window of opportunity to prevent chronic malnutrition, childhood obesity, and medical complications arising later in life refers specifically to the first 1000 days of life, from conception to age two (Pem, 2015; Mameli et al., 2016). Certain Adverse Pregnancy Outcomes (APO) risks, such as foetal growth restriction, low birth weight in babies, and small-for-gestational-age births, can be reduced by improving the nutrition of both the mother and the child. Additionally, it helps prevent vitamin deficiencies (Imdad & ZA, 2011; Islam, 2013). Pregnant women must have healthy diets because the high nutritional costs of pregnancy and lactation significantly contribute to their low nutritional status (McGowan & McAuliffe, 2012). Taken together, these insights provide a strong justification for investigating poor dietary practices as a determinant of pregnancy outcomes. They emphasises the need for focused research and targeted nutritional interventions to improve maternal and neonatal health outcomes in communities where these challenges are most pronounced.

Pregnancy is the most significant nutritionally demanding event in a woman's life. Pregnant women are more susceptible to malnutrition due to the high need for nutrients to deposit energy in the form of new tissue, the enlargement of existing maternal tissues including the breast and uterus, and higher energy requirements for tissue synthesis (Goldberg, 2002). In 2021, approximately 4.7 million children under the age of five died worldwide, with an estimated 2.4 million of these deaths, over 50%, attributed to child and maternal malnutrition (Ritchie, 2024). Mother undernutrition is evidently a significant problem in the majority of countries in sub-Saharan Africa, South-central Asia, and Southeast Asia (Black et al., 2008; Akombi et al., 2017). Malnutrition during pregnancy



has both immediate and long-term consequences on an infant's health by influencing the infant's development and is associated with a higher risk of non-communicative disorders such as obesity, type 2 diabetes, hypertension, and cardiovascular disease later in life (Isolavi, 2011). Underweight babies whose survival is in jeopardy are born to malnourished mothers, who are also more likely to get illnesses and miscarry (Rodriguez, 2020).

Good and bad dietary practices are two ways to define dietary practice, which is defined as observable acts or behaviour of dietary habit (Beglah, 2023). Dietary deficits brought on by eating patterns and habits during pregnancy are more common than at any other stage of the life cycle. According to various researchers, many pregnant women in developing nations restrict their food intake for a variety of reasons, including cultural dictates and the perception of the severity of delivery complications because large babies make delivery challenging, as well as the desire to have smaller babies because they will have a lower risk of delivery complications (Daba et al., 2013; Kuche et al., 2015). In some studies, maternal mortality, low birth weight, and intrauterine growth retardation are thus frequently caused by inadequate intake of vital nutrients, including protein, energy, vitamins C, A, and iron, as a result of improper nutrition practices, in addition to environmental, socioeconomic, and infection factors (Tena & Bacalo, 2002; Madhavi & Singh, 2011). However, systematic reviews have found that the relationship between maternal dietary patterns and risks of preterm birth or variations in birth size remains inconclusive (Chia et al., 2019).

Healthy growth and development depend on adequate prenatal nutrition, and brain development is especially sensitive to the quantity of protein and fat intake (Walker, 2005). Human behavioural and emotional development in offspring has been linked to nutritional intake during pregnancy (Liu & Raine, 2006; Sullivan et al., 2014; Edlow, 2017; Bleker et al., 2019). However, studies on the link between nutritional intake during pregnancy and development in children have faced limitations because, while improved nutrition can be introduced and studied, it is ethically and practically impossible to experimentally induce inadequate nutritional intake. It has been difficult to confirm or disprove the role of prenatal nutrition in human neurodevelopment



because correlates of poor nutrition, such as low-income status, substance use, and maternal physical and mental health issues, are also linked to poor developmental outcomes for the offspring (Cortés-Albornoz et al., 2021).

Poor maternal nutrition has been strongly associated with adverse maternal health outcomes. For instance, diabetic mothers with poor glycaemic control face significantly higher risks compared to those with well-managed glucose levels. Research by Scholl et al. (2004) indicates that poor glycaemic control in pregnancy is linked to a threefold increase in the risk of congenital anomalies, miscarriage, and perinatal mortality. These people are also more likely to have larger foetuses and placentas due to the associated high glucose levels, which increases the likelihood of caesarean section deliveries (King, 2006; Nordin et al., 2006). Pre-eclampsia, a condition that endangers both the mother and the child, is also more likely to occur. Conversely, reduced carbohydrate intake during pregnancy has a growth-restricting effect on the foetus, indicating that maintaining normal glucose levels is essential for the best possible pregnancy result (Clapp, 2002).

Minimising the impact of insufficient food intake on the brain is one of the objectives of the metabolic adaptations to foetal famine. It is hypothesised that a lower brain metabolism is maintained after birth as the body tries to adapt to a lower calorie intake by lowering metabolism rates. Foetal malnutrition has been linked to neurological, emotional, and cognitive effects, according to epidemiological studies (Calder & Yaqoob, 2000). Underweight children were shown to have lower dendritic counts (Burdge et al., 2002). Reduced blood flow as a result of dwindling nutrient availability may be linked to this decline (Calder & Yaqoob, 2000). A fatty acid imbalance in the diet can affect how essential fatty acids are transferred to the foetus. Inappropriate fat consumption, for instance, has been shown to have detrimental consequences on the brain, including lower levels of docosahexaenoic acid as a result of defective foetal transfer (Nielsen et al., 2005).

Due to the growing baby need for additional nutrients to maintain its growth, pregnancy poses a significant risk for maternal malnutrition (WHO, 2011). Malnutrition and food insecurity are still problems across the world, with poor nations being the most impacted (Davis et al.,



2010). Micronutrient deficiencies are common among women of reproductive age in developing countries, and they have several detrimental effects on women's survival, employment, and health (Black et al., 2013). This has implications for the attainment of Sustainable Development Goals (SDGs) 1 (eradicate all forms of hunger and malnutrition) and SDG 2 (reduce poverty) respectively.

In developing nations, inadequate dietary intake is a major cause of maternal malnutrition. This is primarily due to poverty, high-intensity agricultural labour, a high fertility rate, and inadequate quantity, quality, and diversity of diets (Lee et al., 2013). Accordingly, research showed that pregnant women frequently have low intakes of macronutrients and micronutrients because their diets are usually boring, consisting mostly of plants or cereals and lacking in foods high in micronutrients, such as fruits, vegetables, and animal products (Lee et al., 2013). Dietary diversity is one of the suggested strategies to optimise maternal diet and prevent malnutrition (Desta et al., 2019). This study is therefore motivated by the urgent need to examine how poor dietary practices contribute to negative pregnancy outcomes in Ilorin South Local Government Area, Kwara State. A proper understanding of these links is essential to inform local health interventions, guide policy formulation, and develop nutrition-focused educational programs targeted at pregnant women.

Statement of the Problem

Maternal nutrition plays a significant role in ensuring a healthy pregnancy and optimal outcomes for both mother and child. However, in many developing regions, including Ilorin South Local Government Area, Kwara State, poor dietary practices remain a common challenge. These practices, characterised by inadequate intake of essential nutrients, poor meal planning, and limited dietary diversity, may be influenced by socio-economic factors, cultural beliefs, low levels of nutritional awareness, and food insecurity. Poor maternal nutrition has been linked to a range of adverse pregnancy outcomes such as low birth weight, preterm birth, intrauterine growth restriction, and increased maternal morbidity and mortality. Despite efforts by health authorities to promote nutritional awareness and antenatal care, many pregnant



women in the area still experience complications that may be preventable through proper nutrition.

Many factors have been investigated in influencing maternal dietary behaviours in different sections of the country. For instance, exposure to nutrition information, attitude towards certain dietary habits and nutrition knowledge, attending antenatal care, maternal education and income were studied as predictors of mother dietary behaviours. In addition, age at first marriage, meal frequency, educational status, employment of head of family, religion, maternal age and marital status were revealed as predictors of maternal nutritional status, which in turn influence dietary patterns of mothers. Identifying particular factors impacting maternal dietary habit is crucial and critical to designing proper intervention. Meanwhile limited studies have investigated the consequences of poor eating behaviours on pregnancy outcomes in Nigeria. Maternal eating patterns throughout pregnancy play a crucial influence in influencing the long-term health and nutritional status of both the mother and her growing baby. By identifying specific dietary deficiencies and associated pregnancy complications, this research seeks to bridge the knowledge gap and provide evidence-based recommendations for improving maternal and child health in Ilorin South LGA. Thus, this study was aimed to assess if poor dietary practices could determine pregnancy outcomes among women in Ilorin South Local Government Area, Kwara State.

Research Questions

The study sought to provide answers to the following questions:

1. Are poor dietary practices a determinant of premature birth among pregnant women in Ilorin South Local Government Area, Kwara State, Nigeria?
2. Are poor dietary practices a determinant of maternal mortality among pregnant women?
3. Are poor dietary practices a determinant of still birth among pregnant?



Research Hypotheses

The following hypotheses were tested:

- Ho₁:** Poor dietary practices are not a significant determinant of premature birth among pregnant women
- Ho₂:** Poor dietary practices are not a significant determinant of maternal mortality among pregnant women.
- Ho₃:** Poor dietary practices are not a significant determinant of still birth among pregnant women

Methodology

The research design used for this research is a descriptive research design of survey type. The researcher employed this research design because it focuses on systematically collecting information about subjects' characteristics and perceptions and describing the existing data. The population for the study comprises of 84,462 women reproduction age (15-49 years) in Ilorin South LGA, Kwara State (Population Projection, 2024). The target population are 406 pregnant women attending 11 primary health care centres in Ilorin South LGA, Kwara state (Clinics Records, 2024). The appropriate sample size was determined by Research Advisor (2006), which claimed that for a population of 406 at 95% confidence level and 5% margin error, a sample of 198 is adequate for the study. A multistage sampling procedure was used for the study. Stratified random sampling technique was used to divide the primary care health centres into existing 11 wards in Ilorin South LGA and a primary health care centre was randomly selected from each ward of the LGA. A proportionate sampling technique was used to sample 198 respondents from the selected primary health care centres using 48.8% of the population. Convenience sampling technique was used to choose the respondents who consented and voluntarily participated in the study. In all, 198 respondents were used for the study. A researchers' structured questionnaire with Likert rating scale of Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD) was used in gathering and collecting data for this study. The questionnaire was titled "Questionnaire on Poor Dietary Practices as Determinants of Pregnancy Outcomes among Women". To ascertain the content and face validity of the instrument, copies of the questionnaire carefully constructed by the researchers were



examined by experts in the field, their suggestions and recommendations were imbibed to improve the quality of the instrument. To obtain a reliable instrument that can be used for the study, the researcher adopted a split-half method, the instrument was administered to twenty (20) respondents outside the study area (Ilorin East LGA) once. The scores of the even and odd of questionnaire administered were computed and correlated using Spearman Brown Rank Correlation. A reliability coefficient (r) of 0.76 was obtained, which affirms that the research instrument is reliable. The administration of the instrument (questionnaire) was carried out by the researchers with the help of two research assistants, who also helped in translating the questionnaire to those women in the language they understood. The research assistants were trained before the time of administration. Data and information gathered from respondents were kept highly confidential, and prompt retrieval of the filled questionnaire was ensured to avoid loss. The data that was obtained during administration was sorted, coded and subjected to appropriate statistical analysis. Inferential statistics of chi-square (χ^2) was used to analyse the postulated null hypotheses at 0.05 alpha, using statistical package for social science (SPSS) version 20.0.

Results

Hypothesis One: *Poor dietary practices will not significantly a determinant of premature birth among pregnant women*

Table 1: Chi-square (χ^2) Results of Premature Birth and Poor Dietary Practices

S/ N	ITEMS	SA	A	D	SD	df	Cal . X ² Val	Tab. X ² val.	Deci sion
1	Suboptimal nutritional status may make the growing foetus more vulnerable to harmful environmental exposures	77 (38.9%)	79 (39.9%)	31 (15.6%)	11 (5.6%)				



2	Process of malnutrition starts in the womb and continues until death	66 (33.3%)	87 (43.9%)	38 (19.2%)	7 (3.5%)	9	12	16.9	H ₀ Rejected
3	Unbalanced nutrition during pregnancy for babies may result in premature birth	75 (37.9%)	95 (48.0%)	25 (12.6%)	3 (1.5%)		7	2	
4	Insufficient dietary intake during pregnancy for babies leads to premature birth	58 (29.3%)	96 (48.5%)	34 (17.2%)	10 (5.1%)				
Column Total		276	357	128	31				

< 0.05 alpha level

Table 1 shows that the calculated chi-square value is 127.24 and the table value is 16.92 with the degree of freedom 9 at 0.05 alpha level. Since the sig. value of 0.00 is less than 0.05 alpha level. Therefore, the null hypothesis is rejected. This implies that poor dietary practices is significantly a determinant of premature birth among pregnant women in Ilorin South Local Government Area, Kwara State.

Hypothesis Two: *Poor dietary practices will not significantly a determinant of maternal mortality among pregnant women in Ilorin South Local Government Area, Kwara State.*



Table 2: Chi-square (χ^2) Results of Maternal Mortality and Poor Dietary Practices

S/N	ITEMS	SA	A	D	SD	d f	Cal X ² Val	Tab. X ² Val.	D
5	Insufficient dietary intake can be linked to maternal mortality.	98 (47.5%)	63 (31.8%)	22 (11.1%)	15 (7.6%)				
6	Smoking during pregnancy can cause maternal mortality.	89 (44.9%)	73 (36.9%)	27 (13.6%)	9 (4.5%)	9	143.61	16.92	R
7	Consumption of fish and other sea food that contain omega fatty acids, especially during pregnancy help to prevent maternal mortality.	90 (45.4%)	70 (35.4%)	30 (15.1%)	8 (4.0%)				
8	Increased risk of micronutrient deficiency during pregnancy may lead to maternal mortality	110 (55.6%)	63 (31.8%)	19 (9.6%)	6 (3.0%)				
Column total		387	269	98	38				

< 0.05 alpha level

Table 2 shows that the calculated chi-square value is 143.61 and the table value is 16.92 with the degree of freedom 9 at 0.05 alpha level. Since the sig. value of 0.00 is less than 0.05 alpha level. Therefore, the null hypothesis is rejected. This implies that poor dietary practices is significantly a determinant of maternal mortality among pregnant women in Ilorin South Local Government Area, Kwara State.



Hypothesis Three: *Poor dietary practices will not significantly a determinant of still birth among pregnant women in Ilorin South Local Government Area, Kwara State*

Table 3: Chi-square (χ^2) Results of Still Birth and Poor Dietary Practices

S/ N	ITEMS	SA	A	D	SD	Row Total	df	Cal . X ² Val	Tab X ² Val.	D
9	Irregular diet before getting pregnant can lead to stillbirth.	85 (42.9%)	87 (43.9%)	24 (12.1%)	2 (1.0%)	198				
10	Smoking can lead to stillbirths	76 (38.4%)	91 (46.0%)	24 (12.1%)	7 (3.5%)	198	9	219.70	16.92	R
11	Alcohol intake during pregnancy results to stillbirth	99 (50.0%)	60 (30.3%)	23 (11.6%)	16 (8.1%)	198				
12	Effect of pregnancy micronutrient deficiency include still birth.	71 (35.9%)	94 (47.5%)	25 (12.6%)	8 (4.0%)	198				
Column total		331	332	96	33	792				

< 0.05 alpha level

Table 3 shows that the calculated chi-square value is 219.70 and the table value is 16.92 with the degree of freedom 9 at 0.05 alpha level. Since the sig. value of 0.00 is less than 0.05 alpha level. Therefore, the null hypothesis is rejected. This implies that Poor dietary practices is a significant determinant of still birth among pregnant women in Ilorin South Local Government Area, Kwara State.



Discussion

The findings from this study reveal that poor dietary practices significantly impact pregnancy outcomes among women in Ilorin South Local Government Area, Kwara State. The study explored the poor maternal nutrition as determinants adverse pregnancy outcomes, including premature birth, maternal mortality, and stillbirth. The finding shows that poor dietary practices could be linked with premature birth. The study findings indicate a significant association between poor maternal dietary practices and an increased risk of preterm birth. This suggests that inadequate intake of essential nutrients during pregnancy may compromise foetal development and elevate the likelihood of adverse outcomes. These results underscore the critical importance of ensuring adequate maternal nutrition during pregnancy. Healthcare providers and policymakers should prioritise nutritional counselling and support for expectant mothers, particularly in regions where food insecurity and limited access to nutritious foods are prevalent. Implementing targeted nutritional interventions can play a vital role in improving pregnancy outcomes and reducing the incidence of preterm births.

The results align with existing literature, emphasising the critical role of adequate maternal nutrition in ensuring favourable pregnancy outcomes and reducing associated risks. This finding corroborates previous research highlighting the importance of adequate maternal nutrition in reducing the likelihood of premature delivery (Imdad & Bhutta, 2011; Islam, 2013). Suboptimal maternal nutrition deprives the developing foetus of essential nutrients, making it more vulnerable to harmful environmental exposures (Goldberg, 2002). Additionally, studies have established that nutritional deficiencies during pregnancy impair foetal growth, leading to preterm births (Daba et al., 2013; Kuche et al., 2015). The study findings indicate that inadequate intake of macronutrients and micronutrients such as proteins, vitamins, and iron can significantly contribute to preterm births. This correlates with study by McGowan and McAuliffe (2012), who suggested that the high nutritional cost of pregnancy makes pregnant moms more prone to malnutrition and bad pregnancy outcomes.



The study revealed that poor dietary practices have a significant influence on maternal mortality. This finding suggests that inadequate nutrition during pregnancy may directly contribute to health complications that increase the risk of maternal death. Poor dietary intake can weaken the immune system, reduce the body's ability to fight infections, and contribute to a range of health issues that compromise maternal well-being. Moreover, inadequate consumption of essential nutrients can lead to complications such as anaemia, hypertension, and gestational diabetes, all of which pose serious risks during pregnancy and delivery. These findings highlight the urgent need for nutrition-focused interventions among pregnant women, particularly in resource-limited settings.

This is consistent with findings from earlier research that have related maternal mortality to inadequate nutritional intake, micronutrient deficiencies, and harmful lifestyle choices such as smoking and alcohol usage (Rodriguez, 2020). Nutritional inadequacies during pregnancy weaken the immune system, increasing susceptibility to infections and problems that may lead to mortality (Black et al., 2008; Akombi et al., 2017). Furthermore, poor glycaemic control in diabetic mothers has been related with increased risks of pregnancy problems, including miscarriage, congenital abnormalities, and pre-eclampsia (Scholl et al., 2004; King, 2006). The study findings coincide with the assumption that supporting optimum nutrition throughout pregnancy can dramatically reduce maternal mortality and improve pregnancy outcomes (WHO, 2011).

The findings of this study reveal a significant link between poor dietary behaviours and the incidence of stillbirth. This highlights the critical role maternal nutrition plays in determining pregnancy outcomes, especially in relation to foetal viability. The results suggest that inadequate consumption of essential nutrients, particularly key fatty acids necessary for foetal development, can lead to severe consequences, including foetal loss. These findings carry important implications for public health interventions. They reinforce the urgent need for targeted nutritional education among pregnant women, especially in resource-constrained settings, to enhance dietary practices and promote healthier lifestyles.



This complements existing studies that relates poor maternal nutrition to intrauterine growth restriction and foetal loss (Isolauri, 2011; Koletzko et al., 2012). The study underscores the harmful impacts of malnutrition, particularly shortages in critical fatty acids that play a crucial role in foetal development (Nielsen et al., 2005). Unhealthy lifestyle practices, such as smoking and alcohol consumption, were also identified as contributors to stillbirth, which aligns with earlier research that have established these risk factors as deleterious to foetal survival (Calder & Yaqoob, 2000; Burdge et al., 2002). The findings stress the necessity of ensuring appropriate maternal nutrition to prevent stillbirth and improve positive pregnancy outcomes.

The study highlights the need for focused nutritional interventions to enhance maternal dietary behaviours in Ilorin South Local Government Area, Kwara State. There is a need for enhanced knowledge and education on the importance of maternal nutrition, especially among women of reproductive age. Healthcare practitioners should emphasize the benefits of balanced nutrition during prenatal care visits and encourage pregnant women to consume diverse diets rich in vital nutrients. Government and non-governmental groups should establish nutrition initiatives focused on enhancing food security and access to appropriate prenatal care. Additionally, authorities should promote maternal nutrition as part of broader public health programs to reduce maternal and newborn morbidity and mortality.

Conclusion

The findings from this study provide compelling evidence that poor dietary practices significantly affect pregnancy outcomes, leading to premature birth, maternal mortality, and stillbirth. The study aligns with existing research on the impact of maternal nutrition on foetal development and overall pregnancy outcomes. Addressing maternal malnutrition through targeted interventions, education, and policy initiatives is crucial in improving maternal and child health in the study area and beyond. Future research should explore additional factors influencing maternal dietary practices and assess the effectiveness of nutritional interventions in mitigating adverse pregnancy outcomes.



Recommendations

Based on the research work the following recommendations were made:

1. Community health educators should educate pregnant women on the importance of maintaining proper and adequate dietary intake to avoid premature birth.
2. Health information on effect of poor dietary practices should be disseminated to pregnant women to avoid the loss of their lives or those of their infants.
3. Nutritionists should educate pregnant women on the importance of adequate nutritional intake to prevent still birth.

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