
The Impact of Meal Planning and Bulk Food Purchase on Nutritional Well-Being among Low-Income Households in Delta State, Nigeria

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ABSTRACT

This study examined the impact of meal planning and bulk food purchasing on the nutritional well-being of low-income households in Delta State, Nigeria. The study investigated how these food management practices influence dietary quality, food affordability, food waste reduction, and adherence to healthy eating behaviors among economically disadvantaged households. A quantitative descriptive survey research design was adopted for the study. Data were collected from 42 low-income households selected from urban and rural communities in Delta State using structured questionnaires. Descriptive statistics, including frequencies, percentages, and mean scores, were used for data analysis. The findings revealed that meal planning improved food budgeting, balanced diet consumption, and reduced impulsive food purchases. Bulk food purchasing was also found to improve household food availability, reduce transportation expenses, and enhance financial savings. The study showed that meal planning and bulk purchasing contributed significantly to food waste reduction and improved adherence to healthy dietary practices. The study concluded that meal planning and bulk food purchasing are practical and sustainable strategies for improving nutritional well-being among low-income households. The study recommended nutrition education programs, cooperative food purchasing systems, and policy interventions aimed at improving access to affordable nutritious foods.

Keywords: Meal Planning, Bulk Food Purchase, Nutritional Well-being, Food Security, Dietary Adherence, Low-Income Households.

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I. INTRODUCTION

Nutritional well-being is an essential component of human health and development because it contributes significantly to physical growth, cognitive functioning, disease prevention, and overall quality of life (Whitney & Rolfes, 2016).

Adequate nutrition enhances productivity and healthy living, while poor nutrition increases vulnerability to malnutrition, obesity, cardiovascular diseases, and weakened immunity (Black et al., 2013). This underscores the need to ensure consistent access to adequate and nutritious food for households, particularly those in vulnerable socio-economic conditions. Food insecurity remains a major global public health challenge, especially among low-income households. According to the Food and Agriculture Organization (FAO, 2019), millions of households in developing countries struggle to access nutritious food due to poverty, inflation, unemployment, and economic instability. In Nigeria, rising food prices and persistent economic hardship have further worsened household food security and dietary quality, particularly among economically disadvantaged populations (Akinyele, 2009). These challenges underscore the widening gap between food availability and nutritional adequacy in low-income settings.

At the local level, Delta State reflects these broader national and global challenges despite its economic significance from oil production. The state continues to experience socio-economic inequality and food accessibility challenges, with many low-income households struggling to maintain balanced diets due to limited income and rising food costs (Olayemi, 2012). As a result, households often depend on inexpensive energy-dense foods with low nutritional value, increasing the risk of nutrient deficiencies and diet-related diseases (Darmon & Drewnowski, 2008). This situation necessitates the exploration of practical household-level strategies that can improve food utilization and nutritional outcomes.

In response to these challenges, meal planning and bulk food purchasing have been widely recognized as important household food management strategies that can enhance nutritional well-being and food security. Meal planning involves the deliberate organization of meals before preparation, including activities such as recipe selection, shopping list preparation, budgeting, and meal scheduling (Harrar, 2025). Studies have shown that households practicing meal planning are more likely to consume balanced diets, reduce unhealthy eating behaviours, and minimize food waste (Ducrot et al., 2017). In addition, it improves financial efficiency by reducing impulsive food purchases and strengthening household budgeting practices (Evans, 2012). Similarly, bulk food purchasing involves buying food items in large quantities at reduced unit prices for future use (Blattberg, Eppen, & Lieberman, 1981). This practice enhances household food availability, reduces transportation costs, and improves food security, particularly during periods of economic instability, although over-reliance on low-cost processed foods may negatively affect diet quality (Dorward, 2012; Wansink, 2004).

Closely related to these strategies, nutritional well-being refers to the ability of individuals and households to obtain and consume adequate nutrients required for healthy living, encompassing dietary quality, nutrient adequacy, and food accessibility (Whitney & Rolfes, 2016). It is strongly influenced by socio-economic conditions, food security, and household food management practices (Black et al., 2013). Poor nutritional well-being is associated with malnutrition, weakened immunity, obesity, and other chronic diseases, whereas healthy dietary patterns contribute positively to physical and mental health outcomes (Darmon & Drewnowski, 2008; Jacka et al., 2010). From a theoretical standpoint, this study is anchored on the Household Production Theory and the Food Security Theory.

The Household Production Theory explains how households combine resources such as income, time, and food items to maximize welfare and nutritional outcomes through strategies like meal planning and bulk purchasing (Becker, 1965). The Food Security Theory, on the other hand, emphasizes access to sufficient, safe, and nutritious food as a key determinant of nutritional well-being, focusing on availability, accessibility, utilization, and stability (FAO, 2019). Despite the recognition of these household strategies, empirical evidence on the combined effect of meal planning and bulk food purchasing on nutritional well-being among low-income households in Delta State remains limited. This gap in knowledge necessitated the present study, which therefore investigated the impact of meal planning and bulk food purchasing on nutritional well-being among low-income households in Delta State, Nigeria.

1.1 Problem Statement

Low-income households in Delta State continue to experience serious nutritional challenges resulting from poverty, food insecurity, rising food prices, and limited access to nutritious foods. These conditions often lead to unhealthy dietary practices, poor nutritional intake, and increased vulnerability to nutrition-related diseases. Although meal planning and bulk food purchasing have been identified as effective strategies for improving food management and reducing household food costs, many households still experience difficulties maintaining healthy diets and effective budgeting practices. There is limited empirical evidence on how meal planning and bulk purchasing specifically influence nutritional well-being, dietary quality, food waste reduction, and dietary adherence among low-income households in Delta State. This gap in knowledge necessitated the present study.

1.2 Aim of the Study

This study aimed to examine the impact of meal planning and bulk food purchasing on the nutritional well-being of low-income households in Delta State, Nigeria.

1.3 Objectives of the Study

The specific objectives of the study were to:

1. examine the influence of meal planning on household food budgeting and balanced diet consumption.
2. determine the impact of bulk food purchasing on household food affordability and food availability.
3. investigate the effect of meal planning and bulk purchasing on food waste reduction.
4. examine the influence of meal planning and bulk purchasing on adherence to healthy dietary practices.

1.4 Research Questions

The following research questions guided the study:

1. How does meal planning influence household food budgeting and balanced diet consumption?
2. What impact does bulk food purchasing have on household food affordability and food availability?
3. How do meal planning and bulk purchasing affect food waste reduction?

4. How do meal planning and bulk purchasing influence adherence to healthy dietary practices?

1.5 Area of Study

The study was conducted in Delta State, Nigeria. Delta State is located in the South-South geopolitical zone of Nigeria and consists of both urban and rural communities. The state experiences varying socio-economic conditions that influence household food accessibility, purchasing behavior, and dietary practices.

1.6 Population of the Study

The population of the study comprised low-income households residing in selected communities within Delta State. Household heads and caregivers responsible for food purchasing and meal preparation constituted the target respondents.

2. SAMPLE AND SAMPLING TECHNIQUE

A sample size of 42 households was selected for the study using a combination of purposive and simple random sampling techniques. The use of these sampling techniques enabled the researcher to obtain relevant data from respondents who possessed the required characteristics for the study while also ensuring fairness in participant selection. Purposive sampling was initially employed to identify low-income households that met the inclusion criteria of the study. The researcher specifically targeted households with limited financial resources and those directly involved in food purchasing, meal planning, and household food management practices. This technique was considered appropriate because it allowed the researcher to focus on respondents who were knowledgeable and experienced in the subject matter under investigation.

After identifying eligible households through purposive sampling, simple random sampling was used to select participants from the identified population. This approach ensured that every eligible household had an equal opportunity of being selected for participation in the study, thereby reducing selection bias and improving the representativeness of the sample. The sample included respondents from both urban and rural communities within Delta State to ensure diversity in socio-economic conditions, food accessibility, and household dietary practices. The selection of households from different residential settings enhanced the generalizability of the findings and provided broader insight into the nutritional experiences of low-income households in the study area.

2.1 Data Collection Method

Data for the study were collected using a structured questionnaire designed by the researcher based on the objectives and variables of the study. The questionnaire was developed to obtain information on meal planning practices, bulk food purchasing behavior, nutritional well-being, food waste reduction, and dietary adherence among low-income households. The questionnaire consisted mainly of closed-ended questions arranged using a Likert scale format ranging from Strongly Agree (SA), Agree (A), Disagree (D), to Strongly Disagree (SD).

The Likert scale format was adopted because it enabled respondents to express the extent of their agreement or disagreement with the questionnaire items simply and systematically. This format also facilitated quantitative analysis and interpretation of the data collected. The questionnaire was divided into sections covering respondents' demographic information, meal planning practices, bulk food purchasing habits, food budgeting behavior, dietary quality, food waste management, and adherence to healthy eating practices. This structure ensured that all relevant aspects of the study objectives were adequately addressed. To ensure the validity of the instrument, the questionnaire was subjected to expert review by specialists in nutrition and research methodology. The experts examined the questionnaire items to determine their clarity, appropriateness, and relevance to the objectives of the study.

Their suggestions and corrections were incorporated into the final version of the instrument to improve its quality and effectiveness. The reliability of the instrument was determined using Cronbach's alpha to assess the internal consistency of the questionnaire items. A pilot study was conducted among respondents with characteristics similar to those of the study population but outside the main study area. The responses obtained from the pilot study were analyzed, and the Cronbach's alpha coefficient indicated that the instrument possessed acceptable reliability for data collection. The questionnaires were administered directly to respondents by the researcher with the assistance of trained research assistants where necessary. Respondents were informed about the purpose of the study and assured that the information provided would be treated confidentially and used strictly for academic purposes.

3. PRESENTATION OF RESULTS

Research Question 1

How does meal planning influence household food budgeting and balanced diet consumption? Table 1 presents respondents' responses regarding the influence of meal planning on household food budgeting and balanced diet consumption.

Table 1: Meal Planning and Household Food Budgeting

Variable	SA	A	D	SD	Mean
Meal planning improves food budgeting	23	14	3	2	3.38
Meal planning promotes balanced diets	22	15	3	2	3.36
Meal planning reduces impulsive food purchases	19	17	4	2	3.26

Decision Mean = 2.50

The results in Table 1 show that respondents agreed that meal planning improves household food budgeting, promotes balanced diets, and reduces impulsive food purchases. The highest mean score of 3.38 indicates strong agreement that meal planning improves food budgeting practices.

Research Question 2

What impact does bulk food purchasing have on household food affordability and food availability?

Table 2 presents respondents' responses regarding the impact of bulk food purchasing on food affordability and food availability.

Table 2: Bulk Food Purchasing and Food Affordability

Variable	SA	A	D	SD	Mean
Bulk purchasing saves money	25	12	3	2	3.43
Bulk purchasing improves food availability	23	14	3	2	3.38
Bulk purchasing reduces transportation costs	21	15	4	2	3.31

Decision Mean = 2.50

The results in Table 2 reveal that respondents strongly agreed that bulk purchasing improves food affordability and food availability. The highest mean score of 3.43 indicates that respondents perceive bulk purchasing as a financially beneficial strategy.

Research Question 3

How do meal planning and bulk purchasing affect food waste reduction?

Table 3 presents respondents' responses regarding food waste reduction.

Table 3: Meal Planning, Bulk Purchasing, and Food Waste Reduction

Variable	SA	A	D	SD	Mean
Meal planning reduces food waste	23	13	4	2	3.36
Planned shopping reduces food spoilage	21	15	4	2	3.31
Proper food storage reduces waste	22	14	4	2	3.33

Decision Mean = 2.50

The results in Table 3 indicate that meal planning and proper food management practices contribute significantly to food waste reduction. Respondents generally agreed that planned shopping and food storage practices minimize food spoilage.

Research Question 4

How do meal planning and bulk purchasing influence adherence to healthy dietary practices?

Table 4 presents respondents' responses regarding adherence to healthy dietary practices.

Table 4: Meal Planning, Bulk Purchasing, and Dietary Adherence

Variable	SA	A	D	SD	Mean
Meal planning improves healthy eating	22	15	3	2	3.36
Meal planning increases fruit and vegetable intake	21	14	4	3	3.26
Bulk purchasing improves access to nutritious foods	20	15	5	2	3.26

Decision Mean = 2.50

The results in Table 4 reveal that respondents agreed that meal planning and bulk purchasing improve healthy eating practices and access to nutritious foods.

4. DISCUSSION OF RESULTS

The findings from Research Question 1 revealed that meal planning significantly improves household food budgeting and balanced diet consumption among low-income households. Respondents agreed that meal planning reduces impulsive food purchases and promotes healthier dietary choices. These findings are consistent with Ducrot et al. (2017), who found that meal planning improves dietary quality and promotes healthier eating patterns. The findings also support Evans (2012), who observed that meal planning improves financial management and reduces unnecessary food expenditure.

The findings from Research Question 2 showed that bulk food purchasing improves food affordability and household food availability. Respondents indicated that buying food items in bulk reduces transportation costs and helps households save money. These findings agree with Blattberg, Eppen, and Lieberman (1981), who noted that bulk purchasing reduces household food expenditure through lower unit prices. Similarly, Dorward (2012) emphasized that bulk purchasing enhances food security and long-term food accessibility among vulnerable households.

The findings from Research Question 3 revealed that meal planning and proper food storage significantly reduce food waste among households. Respondents agreed that planned shopping and organized food management practices reduce food spoilage and unnecessary waste. These findings align with Principato et al. (2015), who identified meal planning as a major predictor of responsible household food management behaviour. The findings further support Evans (2012), who argued that organized meal scheduling minimizes food wastage and promotes sustainable consumption practices.

The findings from Research Question 4 demonstrated that meal planning and bulk purchasing improve adherence to healthy dietary practices. Respondents reported improved fruit and vegetable intake as well as better access to nutritious foods. These findings are consistent with Sanders et al. (2021), who found that households practicing meal planning are more likely to adhere to nutritional recommendations. Similarly, Wolfson and Bleich (2015) observed that organized meal preparation contributes significantly to healthier dietary behaviours.

5. CONCLUSION

The study concluded that meal planning and bulk food purchasing significantly improve nutritional well-being among low-income households in Delta State, Nigeria. These food management practices enhance dietary quality, improve food affordability, reduce food waste, and promote healthier eating behaviors. The findings therefore demonstrate that meal planning and bulk purchasing are practical and sustainable strategies for addressing food insecurity and nutritional challenges among economically disadvantaged households.

6. RECOMMENDATIONS

1. Government agencies should organize nutrition education programs aimed at promoting meal planning and healthy food budgeting practices among households.
2. Community-based cooperative food purchasing systems should be encouraged to improve access to affordable nutritious foods.
3. Public health organizations should promote awareness campaigns on food waste reduction and balanced dietary practices.
4. Households should be educated on proper food storage and meal preparation practices to reduce food spoilage and waste.
5. Policymakers should expand food subsidy programmes targeted at improving food security among low-income households.

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