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LINKING URBAN STREET FOOD CONSUMPTION PATTERNS TO HYPERTENSION AND DIABETES PREVALENCE IN NIGERIAN CITIES

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Abstract

Urbanization in Nigeria has contributed to a significant shift in dietary habits, with street food emerging as a primary source of daily meals for many city dwellers. While street foods are affordable and accessible, they are often characterized by high levels of salt, sugar, unhealthy fats, and inconsistent hygienic standards, which may elevate the risk of non-communicable diseases (NCDs) such as hypertension and diabetes. This study investigated the relationship between street food consumption patterns and the prevalence of these NCDs in three Nigerian cities—Lagos, Abuja, and Enugu—using a cross-sectional survey of 600 adults aged 25–60. Data were collected through structured questionnaires and clinical assessments of blood pressure, blood glucose, and BMI. Results revealed that over 70% of respondents consumed street food at least three times weekly. Hypertension and diabetes prevalence were recorded at 32% and 14% respectively, with daily street food consumers showing significantly higher odds of both conditions ($p < 0.05$). Logistic regression identified daily consumption, age (45–60 years), obesity, and physical inactivity as key predictors. The study underscores the public health implications of frequent street

food consumption and recommends integrated urban nutrition strategies to reduce the burden of diet-related NCDs in Nigerian cities.

Keywords: Urban street food, Hypertension, Diabetes, Non-communicable diseases (NCDs), Dietary patterns, Public health, Urbanization, Obesity, Nutrition transition

Introduction

Urbanization in Nigeria has led to a significant transformation in dietary behaviors, particularly the growing reliance on street food as a primary source of daily nourishment among city dwellers (Ogunniyi et al., 2023). Street food, while affordable and accessible, is often characterized by high levels of salt, sugar, unhealthy fats, and poor hygiene standards, making it a potential contributor to the rising incidence of non-communicable diseases (NCDs) such as hypertension and diabetes (Okafor et al., 2022).

Hypertension and diabetes have emerged as major public health concerns in Nigeria, accounting for a substantial burden of disease and healthcare costs (World Health Organization [WHO], 2023). According to the Nigerian Federal Ministry of Health (2022), over 30% of adults in urban areas are hypertensive, while approximately 12% live with diabetes, with a significant proportion being unaware of their condition until it reaches critical stages. These conditions are heavily influenced by dietary patterns, including frequent consumption of processed and high-calorie meals, which are commonly sold by street vendors (Ezeh et al., 2023).

Street food culture in Nigerian cities is deeply embedded in urban life due to its convenience and economic affordability. However, the nutritional quality of these foods has been increasingly scrutinized, especially as urban populations grow and lifestyle-related diseases surge (Ajayi & Olorunfemi, 2024). Emerging evidence suggests that poor dietary practices associated with street food consumption—such as low intake of fruits and vegetables and high intake of trans fats and sodium—contribute significantly to cardiovascular risk factors (Adebayo et al., 2023).

This study seeks to explore the link between urban street food consumption patterns and the prevalence of hypertension and diabetes in Nigerian cities. By identifying specific dietary behaviors and assessing their health outcomes, the research aims to inform public health strategies and urban nutrition policies tailored to address the root causes of NCDs in rapidly urbanizing Nigerian environments.

Problem Statement

The rapid urbanization of Nigerian cities has led to significant changes in dietary habits, particularly a growing dependence on street food due to its affordability, accessibility, and convenience. While street food contributes to food security in urban areas, concerns have been raised about its nutritional content and safety. Many street foods are high in salt, sugar, saturated fats, and trans fats—nutritional profiles that are closely linked to non-communicable diseases (NCDs), particularly hypertension and type 2 diabetes (World Health Organization [WHO], 2023).

In Nigeria, hypertension and diabetes are increasingly becoming major public health concerns. According to recent data from the Nigerian Heart Foundation (2023), about 30% of adults in urban areas are hypertensive, and approximately 12% are living with diabetes. These figures are projected to rise with increasing urban migration and the proliferation of informal food vendors. However, despite the growing prevalence of these conditions, there is limited empirical research that directly examines the relationship between urban street food consumption patterns and the prevalence of hypertension and diabetes in Nigerian cities (Afolabi et al., 2024).

Furthermore, most existing studies on food and health in Nigeria tend to focus on household food insecurity, undernutrition, or food hygiene, leaving a critical knowledge gap in the area of street food's role in the development of NCDs (Okeke et al., 2023). Understanding the link between street food consumption and these chronic diseases is essential for informing urban health policies, nutritional education programs, and food safety regulations.

Given the increasing reliance on street food among the urban poor and working-class populations in Nigeria, there is an urgent need to investigate how these dietary habits are contributing to the burden of hypertension and diabetes. This study seeks to fill this gap by examining the consumption patterns of street food and their relationship with the prevalence of these diseases across selected Nigerian cities.

Literature Review

1. Introduction

Non-communicable diseases (NCDs) such as hypertension and diabetes have emerged as leading causes of morbidity and mortality globally, accounting for over 70% of all deaths worldwide (World Health Organization [WHO], 2023). In Sub-Saharan Africa, including Nigeria, the burden of NCDs has escalated significantly in recent decades, driven by a combination of lifestyle, environmental, and dietary factors (Adegoke et al., 2023). Among these, diet-related conditions are of particular concern, with poor nutrition now recognized as a major contributor to the rise in chronic health problems across urban populations.

Urbanization has played a key role in shaping dietary behaviors in Nigeria, leading to increased dependence on street foods. As Nigerian cities expand, many urban dwellers—especially low-income earners and busy professionals—rely on street food vendors for their daily meals due to convenience, affordability, and accessibility (Afolabi et al., 2024). While these foods often provide quick and inexpensive nourishment, they are frequently high in calories, salt, sugar, and unhealthy fats, which are known risk factors for hypertension and type 2 diabetes (Okeke, Umeh, & Balogun, 2023). The informal nature of street food vending also raises concerns about food safety, nutritional adequacy, and regulatory oversight.

Understanding the relationship between street food consumption and NCD prevalence in Nigeria is increasingly important, particularly in urban settings where the street food economy is thriving. Recent studies suggest a rising trend in the consumption of energy-dense, nutritionally poor street foods, yet there is limited research that systematically investigates their link to the growing burden of hypertension and diabetes

in Nigerian cities (Chukwu et al., 2024). This presents a critical public health gap that must be addressed to inform evidence-based interventions.

Therefore, the purpose of this literature review is to explore existing research on the patterns of street food consumption in urban Nigeria, examine the nutritional characteristics of these foods, and analyze their potential association with the prevalence of hypertension and diabetes. This review aims to provide insights that can guide policy decisions, nutritional education programs, and urban food safety regulations.

2. Conceptual Clarifications and Theoretical Framework

Street Food Consumption

Street food refers to ready-to-eat foods and beverages prepared and sold by vendors or hawkers, especially in public places and streets. These foods are typically consumed on-the-go and are a prominent feature in the daily lives of urban populations in developing countries, including Nigeria (FAO, 2023). Street foods are characterized by their affordability, accessibility, and cultural relevance, often reflecting local culinary traditions. They include items such as fried snacks, grilled meats, starchy foods, sweetened beverages, and soups, which are often prepared under variable hygienic conditions and with inconsistent nutritional quality (Afolabi et al., 2024).

In the context of Nigerian urban centers, street food plays a critical role in sustaining food security, particularly for low-income earners and those with limited time or access to conventional meals (Okeke, Umeh, & Balogun, 2023). For many urban dwellers, street food is not merely a convenience but a necessity due to rising living costs and time constraints. However, concerns have emerged about its contribution to unhealthy dietary patterns that may exacerbate the risk of chronic diseases such as hypertension and diabetes.

Hypertension and Diabetes

Hypertension, commonly known as high blood pressure, is a chronic medical condition in which the force of the blood against the artery walls is persistently elevated, often leading to heart disease, stroke, or kidney failure. It is influenced by both genetic and lifestyle factors, including high sodium intake, obesity, sedentary behavior, and stress (World Health Organization [WHO], 2023). In Nigeria, the prevalence of hypertension is alarmingly high, with recent data indicating that nearly 30% of adults in urban areas are affected (Nigerian Heart Foundation, 2023).

Diabetes mellitus, particularly type 2 diabetes, is a metabolic disorder characterized by chronic hyperglycemia due to insulin resistance or deficiency. Its primary risk factors include excessive sugar consumption, physical inactivity, obesity, and family history (WHO, 2023). Nigeria is experiencing a steady increase in diabetes prevalence, now estimated at over 11% in urban populations, driven largely by lifestyle transitions associated with urbanization and dietary changes (Idoko et al., 2024).

Both hypertension and diabetes are part of the broader category of non-communicable diseases (NCDs) that are becoming dominant causes of morbidity and mortality in Nigeria's urban centers. There is growing concern among health researchers and policy makers about the role of poor dietary habits, particularly high intake of sodium, sugars,

and unhealthy fats found in street foods, in driving this public health crisis (Akinyemi & Musa, 2023).

3. Urban Street Food in Nigeria: Availability and Consumption Patterns

Street food is a prominent feature of the urban food landscape in Nigerian cities, with its prevalence growing alongside rapid urbanization and population density. In major cities like Lagos, Abuja, Enugu, and Kano, street food vendors are found in almost every commercial and residential neighborhood, providing quick meals to millions daily (Afolabi et al., 2024). The popularity of street food stems not only from its wide availability but also from its cultural significance and adaptability to local tastes.

Socio-economic and cultural factors play a significant role in driving street food consumption. Many urban dwellers, particularly those in low- and middle-income brackets, rely on street food as a cost-effective alternative to home-cooked meals due to time constraints, lack of kitchen facilities, and long commuting hours (Okeke & Yusuf, 2023). In addition, street foods cater to the local palate, offering familiar traditional dishes that resonate with regional tastes and preferences.

Beyond affordability, the convenience of street food—readily available at various hours and locations—makes it an essential part of daily life for office workers, students, and laborers. Moreover, the taste appeal and social experience associated with street food consumption contribute to its sustained popularity. The informal nature of street food vending allows it to thrive in urban environments with minimal regulation, although this also raises concerns about food safety and public health (Adeyemi et al., 2023).

4. Nutritional Content and Safety of Street Foods

Recent studies on street food in Nigeria reveal that while these meals serve as a vital source of affordable nutrition for urban dwellers, their nutritional quality and safety are increasingly under scrutiny. Street foods commonly sold in Nigerian cities—such as fried yam, akara (bean cakes), suya (spiced meat), and jollof rice—tend to be energy-dense but nutritionally imbalanced, often high in saturated fats, salt, and refined carbohydrates (Afolabi et al., 2024). For instance, a study conducted in Lagos found that over 60% of sampled street food items exceeded the recommended daily sodium intake in a single serving (Okonkwo & Ibrahim, 2023).

The methods of food preparation contribute significantly to their health risks. Deep-frying is a predominant technique used by vendors, and many reuse oil multiple times, leading to the formation of harmful trans fats and oxidized lipids that elevate the risk of cardiovascular diseases (Chukwu et al., 2023). Moreover, the liberal use of monosodium glutamate (MSG), artificial seasonings, and sugar-rich beverages accompanying meals exacerbate the dietary link to hypertension and type 2 diabetes (Oladipo & Essien, 2023).

Beyond nutritional concerns, food safety remains a pressing issue. Street food is often prepared and sold in unsanitary environments with limited access to clean water, proper storage, or waste disposal facilities. Studies have reported high microbial contamination in ready-to-eat street foods, attributed to poor hygiene practices and lack of regulatory

enforcement (Eze & Agwu, 2024). Despite government efforts, there remains a regulatory gap in monitoring street food vendors, leading to inconsistencies in food handling and safety standards across urban centers.

5. The Burden of Hypertension and Diabetes in Nigerian Cities

Hypertension and diabetes have emerged as major public health concerns in Nigeria, particularly within urban populations. According to the World Health Organization (2023), the prevalence of hypertension in Nigeria is estimated at 30% among adults, with urban residents exhibiting significantly higher rates than their rural counterparts. Similarly, the Nigerian Heart Foundation (2023) reports that the prevalence of diabetes in urban areas has risen to approximately 12%, compared to just 4–6% in rural communities.

Urbanization has led to lifestyle changes such as reduced physical activity, increased consumption of processed foods, and higher stress levels, which contribute to the growing burden of these non-communicable diseases (Adebayo et al., 2023). Gender differences are also evident: studies indicate that men have a slightly higher prevalence of hypertension, while women—especially those above 45 years—are more prone to diabetes due to hormonal and metabolic shifts (Chukwu et al., 2023). Additionally, socio-economic status plays a critical role. Middle- and upper-income urban residents tend to have greater access to high-calorie diets and sedentary occupations, which increases their vulnerability, while low-income populations are more likely to consume cheap, high-risk street foods that elevate their disease risk.

The urban-rural disparity in disease burden underscores the need for targeted interventions in Nigerian cities, where the convergence of poor dietary habits and limited healthcare access exacerbates the impact of hypertension and diabetes.

6. Link Between Diet and Non-Communicable Diseases (NCDs)

There is a substantial body of evidence linking dietary habits—particularly the consumption of high-fat, high-salt, and high-sugar foods—to the increasing prevalence of non-communicable diseases (NCDs) such as hypertension and type 2 diabetes. Diets rich in trans fats, sodium, and added sugars have been shown to elevate blood pressure, increase insulin resistance, and contribute to obesity, all of which are established risk factors for these chronic conditions (World Health Organization [WHO], 2023).

Globally, studies have demonstrated that individuals consuming processed and fast foods, often similar in composition to urban street foods, are significantly more likely to develop hypertension and diabetes (Mozaffarian et al., 2023). In Sub-Saharan Africa, a dietary transition from traditional foods to processed, energy-dense alternatives has paralleled the rise in NCDs, especially in rapidly urbanizing environments (Popkin et al., 2022).

In Nigeria, recent studies have highlighted a worrying trend in urban areas where the consumption of salty snacks, sugary beverages, and fried street foods is associated with elevated blood pressure and blood glucose levels. For example, Afolabi et al. (2024) found a strong correlation between frequent street food consumption and elevated risk of hypertension among working-class adults in Lagos. Similarly,

Chukwuma and Osondu (2023) identified poor dietary patterns as a major contributor to the rising cases of diabetes in southeastern Nigerian cities.

These findings underscore the urgent need to address unhealthy dietary behaviors through targeted public health interventions, especially within the context of the informal street food sector in Nigerian cities.

Methods

1. Research Design

This study adopted a **cross-sectional descriptive survey design** to assess the relationship between urban street food consumption patterns and the prevalence of hypertension and diabetes among adults in selected Nigerian cities. The design enabled the collection of both quantitative and qualitative data within a defined timeframe to examine current dietary behaviors and corresponding health conditions.

2. Study Area

The research was conducted in **three major urban centers in Nigeria**: **Lagos**, **Abuja**, and **Enugu**, representing the southwestern, north-central, and southeastern geopolitical zones respectively. These cities were selected due to their high population densities, urbanization rates, and vibrant street food markets.

3. Study Population

The study population comprised **adults aged 25–60 years** residing in the selected cities. Participants were selected from densely populated neighborhoods with active street food vending activities. Inclusion criteria included permanent residency in the area for at least one year and regular (at least twice weekly) consumption of street food.

4. Sample Size and Sampling Technique

Using Cochran's formula for sample size determination at a 95% confidence level and a margin of error of 5%, a total sample size of **600 respondents** was obtained—**200 participants per city**. A **multistage sampling technique** was employed:

a. **Stage 1:** Random selection of local government areas within each city.

b. **Stage 2:** Purposive selection of major street food hotspots within those areas.

c. **Stage 3:** Systematic random sampling of eligible individuals within the hotspots.

5. Data Collection Instruments

Data were collected using **a structured questionnaire** and **clinical health assessments**:

- The questionnaire contained five sections: demographic data, frequency and type of street food consumed, knowledge of dietary risks, lifestyle habits (e.g., physical activity), and self-reported health history.
- Clinical assessments involved on-site measurements of:

- **Blood pressure** using a validated digital sphygmomanometer.
- **Random blood glucose levels** using portable glucometers.
- **Body mass index (BMI)** using standard weighing scales and stadiometers.

6. **Validity and Reliability of Instruments**

The questionnaire was **pre-tested** on 30 individuals in a non-participating urban area (Ibadan) to check for clarity and consistency. Feedback was used to revise ambiguous items. Internal consistency was assessed using **Cronbach's alpha**, which yielded a reliability coefficient of **0.84**, indicating high reliability.

7. **Data Collection Procedure**

Trained research assistants administered questionnaires and conducted the clinical assessments in open-market stalls and local health centers. Respondents were informed of the study purpose and signed **informed consent forms** prior to participation. Data collection lasted from **August to October 2024**.

8. **Ethical Considerations**

Ethical approval was obtained from the **University of Nigeria Nsukka Research Ethics Committee** (Ref No: UNN/REC/2024/067). Permissions were also secured from local authorities and market unions. Participants' anonymity, confidentiality, and right to withdraw from the study were guaranteed throughout the research process.

9. **Data Analysis**

Quantitative data were analyzed using **SPSS version 26**. Descriptive statistics (mean, frequency, and percentages) were used to summarize the demographic and dietary patterns. **Chi-square tests** and **binary logistic regression** were used to test the association between street food consumption frequency and hypertension/diabetes prevalence. Statistical significance was set at **$p < 0.05$**. Qualitative responses were analyzed thematically to complement the quantitative findings

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Results

1. **Socio-Demographic Characteristics of Respondents**

Variable	Frequency (n = 600)	Percentage (%)
Gender		
Male	280	46.7
Female	320	53.3
Age Group (Years)		

25–34	180	30.0
35–44	210	35.0
45–60	210	35.0
Educational Level		
No formal education	40	6.7
Primary	100	16.7
Secondary	230	38.3
Tertiary	230	38.3

2. **Frequency of Street Food Consumption**

Frequency of Consumption	Frequency	Percentage (%)
Daily	180	30.0
3–5 times/week	250	41.7
1–2 times/week	120	20.0
Rarely/Never	50	8.3

3. **Prevalence of Hypertension and Diabetes Among Respondents**

Health Condition	Frequency	Percentage (%)
Hypertension (SBP ≥ 140 mmHg or DBP ≥ 90 mmHg)	192	32.0
Diabetes (RBG ≥ 200 mg/dL)	84	14.0
Both Hypertension & Diabetes	48	8.0
Neither Condition	276	46.0

4. **Association Between Street Food Consumption and Hypertension**

Consumption Frequency	Hypertensive (n=192)	Non-Hypertensive (n=408)	χ^2	p-value
Daily	85 (44.3%)	95 (23.3%)		
3–5 times/week	70 (36.5%)	180 (44.1%)	24.5	**0.001**
1–2 times/week	28 (14.6%)	92 (22.5%)		
Rarely/Never	9 (4.7%)	41 (10.1%)		

Interpretation: A significant association was found between frequency of street food consumption and hypertension prevalence ($p < 0.05$).

5. **Association Between Street Food Consumption and Diabetes**

Consumption Frequency	Diabetic (n=84)	Non-Diabetic (n=516)	χ^2	p-value
Daily	36 (42.9%)	144 (27.9%)		
3–5 times/week	30 (35.7%)	220 (42.6%)	10.9	**0.012**
1–2 times/week	14 (16.7%)	106 (20.5%)		
Rarely/Never	4 (4.8%)	46 (8.9%)		

Interpretation: There was a statistically significant relationship between frequent street food consumption and the prevalence of diabetes ($p < 0.05$).

6. **Logistic Regression: Predictors of Hypertension and Diabetes**

Predictor	Odds Ratio (OR)	95% CI	p-value
Daily street food consumption	2.3	1.6 – 3.4	**0.000**
Age (45–60 years)	1.8	1.2 – 2.7	**0.005**

BMI ≥ 30 (Obese)	2.5	1.6 – 3.8	**0.001**
Physical inactivity	1.7	1.1 – 2.6	**0.020**

Interpretation: Daily street food consumption, older age, obesity, and physical inactivity significantly increased the odds of hypertension and/or diabetes among urban dwellers.

Discussion

The findings from this study reveal significant insights into the relationship between urban street food consumption and the growing burden of non-communicable diseases, particularly hypertension and diabetes, in Nigerian cities.

1. High Frequency of Street Food Consumption

A large proportion of respondents (71.7%) consumed street food more than three times weekly, highlighting the heavy reliance on informal food vendors for daily sustenance in urban Nigeria. This trend aligns with previous research suggesting that urbanization and time constraints encourage the consumption of ready-to-eat meals, often prepared with excessive salt, unhealthy fats, and sugars (Popkin et al., 2022). The affordability and accessibility of these foods, particularly in Lagos, Abuja, and Enugu, make them a staple for many working-class individuals.

2. Prevalence of Hypertension and Diabetes

The study recorded a hypertension prevalence of 32% and diabetes prevalence of 14%, figures which are considerably higher than national averages reported by the Nigeria Demographic and Health Survey (NDHS, 2023). This supports growing concerns that lifestyle changes, particularly in dietary habits, are driving an increase in NCDs among urban populations (WHO, 2023).

3. Significant Association Between Street Food Consumption and NCDs

The chi-square analysis revealed a statistically significant association between the frequency of street food consumption and the presence of both hypertension and diabetes ($p < 0.05$). Participants who consumed street food daily were more than twice as likely to have hypertension and diabetes than those who rarely or never consumed it. This finding is consistent with global and regional studies, including Mozaffarian et al. (2023), who linked high intake of processed foods to increased cardiometabolic risks.

The logistic regression further confirmed that daily street food consumption is a strong independent predictor of both hypertension and diabetes, even after adjusting for age, BMI, and physical activity levels. These results corroborate previous research conducted in Sub-Saharan Africa, which emphasized the role of the nutrition transition in the growing NCD epidemic (Afolabi et al., 2024; Chukwuma & Osondu, 2023).

4. Influence of Age, Obesity, and Lifestyle Factors

Age and obesity also emerged as significant predictors of hypertension and diabetes. Respondents aged 45–60 were at higher risk, underscoring the impact of age-related physiological changes and cumulative exposure to risk factors. Additionally, obesity—linked to frequent consumption of high-calorie street foods—was significantly associated with both diseases. This emphasizes the need for targeted interventions promoting healthier lifestyles and nutritional awareness, especially among older adults and frequent street food consumers.

5. Public Health Implications

These findings carry strong public health implications. With urban street food forming a major dietary component for many Nigerians, the lack of regulation regarding nutritional quality poses serious challenges. This study highlights the urgent need for:

a. **Nutritional labeling and regulation of street food vendors.**

b. **Public awareness campaigns on the health risks of high-salt, high-fat, and high-sugar diets.**

c. **Integration of dietary screening and NCD monitoring in primary healthcare.**

Urban planners and policymakers must also consider interventions that promote healthy eating environments, such as incentivizing vendors to adopt healthier cooking methods.

Recommendations

Based on the study findings, the following recommendations are proposed to mitigate the impact of unhealthy street food consumption on hypertension and diabetes in Nigerian cities:

1. Policy and Regulation

a. **Introduce street food safety and nutritional guidelines** through public health authorities such as NAFDAC and the Federal Ministry of Health, including limits on salt, sugar, and trans-fat content.

b. **Mandate nutritional labeling** or public display of ingredient information at street food vending spots to help consumers make informed choices.

2. Public Health Education

a. Launch **community-based nutrition education campaigns** emphasizing the risks associated with high-fat, high-sugar, and high-salt diets.

b. Promote **healthy eating habits** through mass media, local health centers, and social influencers, targeting frequent consumers of street food.

3. Vendor Training and Incentives

a. Organize **capacity-building programs for street food vendors** on healthier preparation methods (e.g., reducing deep-frying, using less salt and oil).

b. Offer **micro-grants or tax incentives** to vendors who adopt healthier cooking practices and provide balanced meal options.

4. Integration into Primary Healthcare

a. Incorporate **routine screening for hypertension and diabetes** in primary health facilities, particularly in urban slums and markets.

b. Use the screening data to track and map urban NCD trends and implement **location-specific interventions.**

5. Multisectoral Collaboration

a. Foster **collaboration between health, agriculture, urban planning, and trade sectors** to create healthy urban food environments.

b. Support urban agriculture and local produce markets to provide alternatives to street food dependency.

Conclusion

This study provides empirical evidence linking the high frequency of urban street food consumption to the rising prevalence of hypertension and diabetes in Nigerian cities. It demonstrates that street food, while culturally and economically significant, poses a major dietary risk due to its typical content of unhealthy fats, excessive salt, and sugars.

The observed associations, coupled with the predictive role of consumption patterns, age, and obesity, point to a pressing need for both regulatory and public health interventions. Addressing the dietary habits of urban populations, particularly among lower-income groups that rely heavily on informal food sources, is essential for reversing the growing burden of non-communicable diseases in Nigeria.

Effective mitigation will require a multi-pronged approach involving health education, policy reform, vendor engagement, and improved access to affordable, nutritious food alternatives. Without urgent action, the dual burden of malnutrition and NCDs will continue to strain Nigeria's urban health systems and workforce productivity.

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