

Research Article

Evaluating Consumer Perspectives on Quick Service Restaurants Practices and Challenges in Addressing Non-Communicable Diet Related Diseases in Port Harcourt

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Abstract: There is rise of non-communicable diseases (NCDs) in Africa, especially in Nigeria, and needs urgent public health attention. High consumption of nutrient-poor diets and the reduction in physical activity has increase in the prevalence of NCDs, such as obesity, diabetes, cardiovascular diseases, and certain cancers. NCDs now account for 71% of all deaths globally, posing a major threat to public health worldwide especially in developing nations. Rise of urbanization and the increasing influence of Western culture has allowed traditional diets to be replaced by processed, calories-dense foods, which can be due to socioeconomic factors such as poverty, lack of education, and limited access to healthcare. The aim of this study is to evaluate consumer perspectives on Quick Service Restaurants Practices and Challenges in addressing Non-Communicable Diet related Diseases in Port Harcourt (QSR). Port Harcourt, Rivers state Nigeria is the study area with a diverse range of quick-service restaurants, including Kilimanjaro, Genesis Fast-food Restaurants, Chicken Republic, Kentucky Fried Chicken Fast-food, and Dominos Pizza. 206 subjects participated in this descriptive study, which comprise male and female, with ages ranging from 20 years and above, including married and single respondents of diverse occupations, different levels of education, and frequencies of quick-service restaurant visits. Statistical analysis was performed using the Statistical Package for Social Science version 26, frequency and percentage were obtained. T-test and ANOVA was used to test for hypotheses at 0.05 level of significance. Gender distribution of the subjects showed that 56.3% identified as male, while 43.7% identified as female and majority of subjects were 31-40 years 8.3%, 99.0% of the subjects had tertiary education, the frequency of visiting QSR showed that most subjects 80.6% visited monthly. QSR most visited was Kilimanjaro Fast-food 37.9%. An independent t-test showed a statistically significant difference ($p = 0.00$) between the perceptions of males and females suggesting that gender affects how people view QSR practices, but both genders agreed that QSRs are not doing enough to educate the public on healthy eating. ANOVA results showed a p-value of 0.65, indicating no statistically significant differences in perceptions across age groups. This suggests that age does not significantly influence how consumers perceive QSR practices. Independent t-test showed no significant difference between genders perspectives on challenges facing employees in effectively addressing non-communicable diet-related diseases in QSR ($p = 0.48$). This means that gender does not have a significant impact on how employees perceive the challenges in addressing NCDs in QSRs. The ANOVA results showed borderline significance ($p = 0.05$), suggesting that age may have a weak influence on how employees perceive these challenges. Although employees across all age groups acknowledge the challenges, 51-60 years view them as more severe. In conclusion, the findings of this study emphasize the urgent need for action to address the growing burden of non-communicable diet-related diseases in Nigeria and other developing countries. Policymakers, food industry leaders, and public health organizations must work together to implement strategies that promote healthier diets, regulate harmful food practices, and make nutritious foods more affordable.

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Introduction

The rise of non-communicable diseases (NCDs) in Africa, and particularly in Nigeria, is an urgent public health issue that demands immediate attention. As rapid globalization and urbanization sweep through the continent, they are significantly altering dietary patterns and lifestyle choices. The consumption of high-energy, nutrient-poor diets and the reduction in physical activity are driving a steep increase in the prevalence of NCDs, such as obesity, diabetes, cardiovascular diseases, and certain cancers. According to (1), NCDs now account for 71% of all deaths globally, posing a major threat to public health worldwide. This alarming trend is especially evident in developing nations, where hunger, unhealthy diets, high-risk lifestyles, and limited access to healthcare have worsened the overall burden of disease (2).

One of the most notable contributors to the rising rates of NCDs in Africa is the proliferation of Quick Service Restaurants (QSRs). These establishments offer easily accessible, often cheap, and highly convenient food that is typically high in unhealthy ingredients such as salt, sugar, fat, and calories, while being low in essential nutrients (3). As competition among QSRs intensifies, these establishments are increasingly focused on catering to changing consumer preferences by offering foods that are not only affordable but also satisfy the growing demand for fast, processed, and indulgent meals. However, this convenience comes at a cost to public health, as research has linked frequent fast-food consumption to obesity, diabetes, and heart disease key contributors to NCDs (2).

Nigeria, like many other countries in sub-Saharan Africa, is experiencing a significant dietary transition. Historically, the Nigerian diet was rich in locally sourced, fiber-rich foods, which were integral to maintaining health and preventing disease. However, with the rise of urbanization and the increasing influence of Western culture, traditional diets are being replaced by processed, calorie-dense foods. This shift is compounded by socioeconomic factors such as poverty, lack of education, and limited access to healthcare, which further exacerbate the risk of NCDs in the population (2); (4); (5). The global dietary transition, characterized by an increase in the consumption of unhealthy fats, sugars, and salts, has thus had a particularly profound effect on developing nations, contributing to the global rise of diet-related NCDs.

The changing dietary structure in Nigeria reflects a broader trend observed across many developing nations, where an increasing proportion of deaths and disability-adjusted life years (DALYs) are attributed to NCDs (6). Risk factors for these diseases, including poor diet, physical inactivity, obesity, tobacco use, and harmful alcohol consumption, are becoming more prevalent. Notably, research has shown that fast-food consumption directly correlates with higher body mass index (BMI) and insulin resistance, both of which are associated with a higher risk of developing NCDs like obesity, type 2 diabetes, and cardiovascular diseases (7).

One of the primary challenges in addressing NCDs in Nigeria is the widespread lack of awareness about these diseases and the misconceptions surrounding their prevention and treatment. The complexity of NCD prevention and control is compounded by factors such as insufficient nutrition education, limited government intervention, and a lack of effective policies targeting unhealthy food marketing and advertising, particularly to vulnerable populations such as children and low-income groups (Afshin et al., 2017). Moreover, the enabling environment for improving the food system in Nigeria is fraught with difficulties, including poor infrastructure, corruption, and bureaucratic inefficiencies that hinder progress in addressing NCDs at the national level (5).

In this context, addressing the growing burden of NCDs in Nigeria requires evidence-based, comprehensive interventions that tackle the root causes of these diseases. This study aims to evaluate consumer perspectives on the practices of Quick Service Restaurants (QSRs)

and the challenges in addressing diet-related NCDs in Port Harcourt, Nigeria. By understanding the views and behaviors of consumers, the study seeks to inform the development of policy frameworks and public health strategies that can effectively address dietary risk factors, promote healthier diets, and curb the rising rates of NCDs in Nigeria. The findings of this research will contribute to the formulation of actionable recommendations to help prevent and control NCDs, ultimately reducing the burden of these diseases on individuals, communities, and the healthcare system.

By focusing on Nigeria, this study will highlight the need for integrated strategies that combine nutrition education, regulatory interventions, and community engagement to combat the dietary shifts that contribute to NCDs. Given the country's ongoing transition toward unhealthy diets, it is essential that comprehensive and sustainable policies are implemented to promote healthier food environments and raise public awareness about the risks of diet-related diseases. The success of such initiatives will be crucial not only for reducing the burden of NCDs in Nigeria but also for improving the overall health and well-being of its population in the face of globalization and urbanization.

Research Objectives

The broad objective of this research is to evaluate consumer perspectives on Quick Service Restaurants Practices and Challenges in addressing Non-Communicable Diet related Diseases in Port Harcourt. However, the specific objectives are:

1. Examine the key challenges employees face in addressing non-communicable diet-related diseases (NCDs) in quick service restaurants.
2. Evaluate the effectiveness of current practices and policies implemented by quick service restaurants to mitigate diet-related non-communicable diseases.

Research Questions

The research questions are as follows:

1. What are the main challenges employees face in addressing non-communicable diet-related diseases in quick service restaurants?
2. How effective are the current practices and policies implemented by quick service restaurants in addressing non-communicable diet-related diseases?

Research Hypothesis:

Based on the provided results from the comparison of male and female perspectives, age group differences, and the challenges faced by employees in addressing diet-related non-communicable diseases (NCDs) in Quick Service Restaurants (QSRs) in Port Harcourt, Nigeria, the following hypotheses can be formulated:

1. **Hypothesis 1 (H₁):** There is a significant difference in male and female perceptions of the current practices and policies implemented by Quick Service Restaurants (QSRs) in Port Harcourt

Null Hypothesis (H₀): There is no significant difference between male and female perceptions regarding the current practices and policies implemented by QSRs in Port Harcourt.

2. **Hypothesis 2 (H₂):** There is a significant difference between male and female perceptions of the challenge's employees face in addressing NCDs in QSRs.

Null Hypothesis (H₀): There is no significant difference between male and female perceptions of the challenges in addressing NCDs in QSRs.

3. **Hypothesis 3 (H₃):** Age significantly influences perceptions of current practices and policies implemented by QSRs in Port Harcourt.

Null Hypothesis (H₀): Age does not significantly influence perceptions of current practices and policies implemented by QSRs in Port Harcourt.

4. **Hypothesis 4 (H₄):** Age significantly influences perceptions of the challenges faced by employees in addressing NCDs in QSRs.

Null Hypothesis (H₀): Age does not significantly influence the perception of challenges faced by employees in addressing NCDs in QSRs.

Justification of the study

The escalating threat of non-communicable diseases (NCDs) in Nigeria has reached a critical juncture, particularly in urban centers like Port Harcourt, where the once-affluent nation's problem has now become a daunting reality (8);(9). Globalization, demographic shifts, and transformations in food consumption patterns have fueled this trend, with the proliferation of Quick Service Restaurants (QSRs) serving high-calorie, high-fat, and high-sugar foods significantly contributing to the burden of NCDs (10).

As Nigeria grapples with a double burden of disease, high rates of infectious diseases and NCDs converge, compounded by widespread poverty, poor diets, and exposure to harmful substances (6);(11). Unhealthy diets, characterized by low fruit and vegetable intake and excessive consumption of processed foods, are a major contributor to NCDs, with the high prevalence of obesity, poor diet quality, and undernutrition fueling this epidemic (1). The strain on healthcare budgets is immense, threatening economic development and diminishing quality of life.

In this context, a comprehensive evaluation of consumer perspectives on QSR practices and challenges in addressing diet-related NCDs in Port Harcourt is imperative. By delving into consumer attitudes, preferences, behaviors, and perceptions, this research seeks to uncover the gaps and barriers to healthy eating in QSRs, understand the challenges faced by QSRs in providing healthy and affordable food options, and examine the impact of QSRs on dietary habits and NCD risk factors.

Analysis of the literature reveals that poor nutrition is a global problem, with 1.9 billion adults worldwide overweight or obese, 2 billion people suffering deficiencies of key vitamins or minerals, and nearly 800 million not getting the food they need to live a healthy life (1). Furthermore, linkages between urbanization and access to affordable healthy diets are not unequivocal, with QSRs often being a convenient but unhealthy option for many consumers (6).

Ultimately, this study aims to inform policy approaches and evidence-based interventions, promoting access to healthy and affordable diets and contributing to effective strategies to address the growing burden of NCDs in Nigeria (8). The findings will have far-reaching implications for stakeholders, including policymakers, healthcare professionals, QSR operators, and consumers, paving the way for a healthier and more sustainable food environment in Nigeria.

Review of literature

The alarming rise in non-communicable diseases (NCDs) in developing countries, particularly in Africa, has been a subject of increasing concern in recent years. The role of Quick Service Restaurants (QSRs) in shaping dietary patterns and their implications for public health are critical areas of research in understanding the growing burden of diet-related NCDs. As cities like Port Harcourt in Nigeria undergo rapid urbanization and globalization, there is an observable shift towards unhealthy dietary practices, facilitated by the prevalence of QSRs offering energy-dense, nutrient-poor foods (1); (4). This literature review explores the connection between the growing consumption of processed foods from QSRs, the increasing

incidence of NCDs, and the socioeconomic and policy challenges that impact food choices, with a focus on Nigeria.

NCDs and Changing Dietary Patterns in Developing Countries

The global rise in non-communicable diseases (NCDs), particularly cardiovascular diseases (CVDs), diabetes, and obesity, is a major public health challenge, especially in developing countries. This phenomenon is intricately linked to the ongoing "nutrition transition" occurring in these nations (1). The nutrition transition refers to the shift from traditional, nutrient-dense diets consisting of locally grown foods to energy-dense, processed foods that are high in fats, sugars, and sodium. This shift is being fueled by factors such as rapid urbanization, globalization, economic growth, and the increasing availability of fast foods, particularly from Quick Service Restaurants (QSRs) (4). The changing dietary habits are leading to an increased burden of diet-related NCDs, especially in low and middle-income countries (LMICs) like Nigeria (12).

As urban centers in developing countries grow, so does the prevalence of QSRs, which provide easily accessible, affordable, and often highly appealing foods. These foods are typically rich in unhealthy fats, sugars, and sodium, and are often marketed as quick and convenient alternatives to traditional home-cooked meals (3). The proliferation of such restaurants is exacerbating the rise of diet-related diseases in many developing nations, including Nigeria, where unhealthy dietary patterns are becoming increasingly widespread (2). The ease of access to these foods, combined with busy lifestyles and an increasing preference for convenience, means that individuals are consuming more processed foods and fewer nutrient-dense, whole foods.

The Mechanisms of Nutrition Transition

The nutrition transition in developing countries is driven by several interrelated factors. One of the most prominent drivers is economic development, which typically leads to higher disposable incomes. As the economic status of many individuals improves, they can afford more diverse food options, including energy-dense, processed foods offered by QSRs (13). However, this often comes at the expense of traditional diets, which are usually composed of locally grown, seasonal, and minimally processed foods. Traditional diets, which are more plant-based and lower in fats and sugars, are increasingly being replaced by diets high in refined carbohydrates, added sugars, and industrial fats. These foods are linked to the rising rates of obesity and related conditions, such as diabetes and hypertension (14).

In addition to economic factors, globalization plays a significant role in shaping dietary behaviors in developing countries. The spread of Western-style foods and the expansion of multinational fast-food chains into developing markets have contributed to the erosion of traditional food cultures (1). As multinational companies introduce fast-food options into these markets, they use aggressive marketing techniques, targeting urban populations and youth with advertisements that emphasize convenience, taste, and low price, while downplaying the health risks associated with these foods (15). Such marketing strategies not only influence food choices but also encourage the normalization of unhealthy eating habits. This process is often referred to as "nutrition imperialism," where Western eating patterns are imported and adopted by societies that previously relied on more traditional and healthier diets (15).

The Role of QSRs in Promoting Unhealthy Diets

Quick Service Restaurants (QSRs) are a critical component of the nutrition transition in urban areas of developing countries. The proliferation of these restaurants has been linked to the rising consumption of processed, unhealthy foods. Many QSRs offer foods that are high in calories but low in essential nutrients, such as fats, sugars, and sodium (3). This dietary pattern is associated with the development of obesity, cardiovascular diseases, and type 2 diabetes, all of which are major contributors to the global burden of NCDs.

The increasing number of QSRs, particularly in rapidly urbanizing areas like Port Harcourt, Nigeria, has made processed and fast foods more accessible to a larger proportion of the population, particularly in low- and middle-income urban centers (2). This convenience

factor plays a significant role in the shift away from home-cooked meals to fast food, as consumers are looking for food options that are quick, affordable, and require little preparation (4). The rise of these restaurants also corresponds with increased consumption of sugary beverages, snacks, and deep-fried foods, which are staples of many fast food menus and have been strongly linked to obesity and metabolic diseases (12).

In many urban settings, the consumption of fast food has become synonymous with modernity and social status, with individuals, particularly youth, associating it with convenience and enjoyment (3). As such, the dietary habits promoted by QSRs are increasingly seen as fashionable and desirable, despite their negative health consequences. These cultural shifts underscore the need for targeted public health interventions that address not only the availability of unhealthy foods but also the cultural and social factors that influence food choices (4).

The Impact of Marketing Strategies on Dietary Habits

The advertising and marketing strategies employed by QSRs play a pivotal role in shaping consumer perceptions and dietary behaviors. The primary focus of these marketing efforts is on taste, convenience, and price, often with little regard for the nutritional content of the food being promoted (15). In many developing countries, where health literacy is low and nutrition education is minimal, such marketing campaigns can significantly influence food choices, especially among children and young adults.

QSRs utilize targeted advertising through various channels, including television, social media, and outdoor billboards, to reach a broad audience. Studies have shown that advertisements for fast food and sugary drinks are especially effective in influencing children's preferences for unhealthy foods, leading to an increase in the consumption of high-calorie, nutrient-poor foods (16). These strategies often create a sense of urgency and desire for immediate gratification, which drives the consumption of unhealthy foods at the expense of more nutritious alternatives (2).

Moreover, QSRs often employ "happy meal" promotions and toys to attract younger consumers, further ingraining unhealthy eating habits at an early age (16). In the context of Nigeria and other developing countries, where Western media and advertising have a powerful influence on youth culture, these marketing tactics can exacerbate the rise of NCDs by encouraging children and adolescents to develop long-term preferences for fast food (16).

The Impact of Quick Service Restaurants (QSRs) on Public Health

The proliferation of Quick Service Restaurants (QSRs) in urban centers has significantly influenced dietary patterns, raising concerns about their contribution to the rising prevalence of non-communicable diseases (NCDs) such as obesity, type 2 diabetes, and cardiovascular diseases. QSRs typically offer foods that are high in calories, fats, sugars, and sodium, with minimal attention to their nutritional value (12); (3). These establishments often market their products as convenient, affordable, and palatable, appealing to busy urban populations who may lack the time or resources to prepare healthier meals (12).

i. Nutritional Composition and Health Risks

The foods offered by QSRs are characterized by high energy density, excessive portion sizes, and the inclusion of unhealthy ingredients such as trans fats and refined carbohydrates. For instance, a study by (17) found that frequent consumption of fast food was associated with increased body mass index (BMI), a known risk factor for various NCDs. Similarly, a review by (3) highlighted that meals from QSRs often contain high levels of saturated fats, sugars, and sodium, contributing to adverse health outcomes.

Furthermore, the consumption of ultra-processed foods, commonly served in QSRs, has been linked to an increased risk of over 30 health conditions, including cardiovascular diseases and type 2 diabetes (18). These foods are typically low in essential nutrients and high in additives, which can lead to poor dietary quality and increased disease risk.

ii. Nutritional Labeling and Consumer Awareness

The lack of clear and accessible nutritional labeling in QSRs exacerbates the public's limited knowledge of the health risks associated with consuming processed foods. A study by (3) noted that the absence of effective food labeling in many QSRs means that consumers are often unaware of the nutritional content of the foods they consume, including the amounts of sugar, salt, and unhealthy fats present in their meals. This lack of transparency further complicates efforts to promote healthier eating habits and prevent diet-related NCDs (12).

Challenges in Addressing Non-Communicable Diet-Related Diseases

Non-communicable diseases (NCDs) are a group of chronic, non-infectious diseases that reduce quality of life and can lead to death (19). NCDs are the leading cause of mortality worldwide, responsible for 70% of global deaths (19), equivalent to 40 million people (20). The risks of dying from NCDs are highest in low- and middle-income countries, particularly in sub-Saharan Africa (NCD Countdown 2030 collaborators, 2018). In Nigeria, NCDs account for 29% of total deaths, with a higher prevalence in urban areas (19).

NCDs have enormous health and economic repercussions, with millions experiencing premature mortality or compromised quality of life, and countries facing reduced productivity and arrested economic growth (Joint WHO/FAO Expert Consultation, 2003). Increased prevalence of obesity, poor-quality diets, and pervasive undernutrition contribute to this epidemic (19). Every country bears a combined burden of malnutrition and NCDs, with no country immune (20).

Urbanization accelerates NCD prevalence, with 5.4 billion people expected to live in urban environments by 2036 (21). Urban populations are more exposed to risk factors like air pollution, tobacco use, harmful alcohol use, unhealthy diets, and physical inactivity (22). Globalization, urbanization, and industrialization have brought development but also imposed new lifestyles and risky behaviors, contributing to chronic diseases (23).

Modifiable shared risk factors include tobacco use (smoke and smokeless forms), harmful use of alcohol (local and factory brewed), unhealthy diets (such as excessive consumption of red meat, salt, saturated fat, refined sugars in foods and drinks, suboptimal consumption of fiber, micronutrients, vitamin A, folic acid, vegetables, fruits, etc.), and physical inactivity (23). Other risk factors include hereditary conditions, illicit drug use, unsafe sex, unsafe water, poor sanitation and hygiene, exposure to harmful radiation, and climate change (24).

Nigeria faces numerous challenges related to infrastructure, productivity, land degradation, access to land, services, and finance (25). The country has the largest population living in extreme poverty, suffering malnutrition, and a growing middle and higher class consuming an unhealthy 'western' diet, resulting in obesity (26). Poor rural road infrastructure undermines farm profitability, increases waste, and impedes access to markets, inputs, equipment, and new technology (27).

Since 2000, urban populations have undergone the nutrition transition, with nutrition-related NCDs causing a larger proportion of death and disability compared to undernutrition (23). Rural populations are now undergoing the same transition, showing higher prevalence of overweight and obesity compared to urban areas (28).

Urbanization and rising incomes lead to increased consumption of diverse foods, including dairy, fish, meat, legumes, fresh fruits, and vegetables, as well as more processed foods (27). This transition is characterized by changes in food consumption patterns, with diets shifting beyond traditional grains into dairy, fish, meat, vegetables, and fruits, but also into consumption of more processed foods (29)..

The increased availability of these options often results in increased food consumption and dietary diversity (26). Dietary preferences are shaped by marketing and other supply factors, with a reinforcing compounding effect on the food produced, supplied, and consumed (30). However, urbanization has also contributed to the spread and consumption of processed and highly processed foods, which are increasingly cheap, readily available, and marketed (25).

To ensure access to healthy diets, nutritious foods must be both available and affordable (20). Availability refers to the existence of food from either own production or the market, while affordability refers to people's financial capacity to acquire sufficient food, depending on household income and food prices (29). Low incomes constrain how much food households can economically access, but relative prices and systematic food price dispersion will greatly influence the types of foods selected and, as a result, may influence diet-related nutrition outcomes (27).

Public Health Implications and Solutions

The nutrition transition, fueled by the expansion of QSRs and the widespread consumption of processed foods, has significant implications for public health in developing countries. The shift towards unhealthy diets high in fats, sugars, and sodium has been a major factor in the increasing prevalence of NCDs such as obesity, diabetes, and hypertension. To address these growing health challenges, there is a critical need for policy interventions that regulate the food environment and promote healthier eating habits.

One of the most important steps in combating the rise of diet-related NCDs is the implementation of effective food labeling regulations. Clear and informative food labels can help consumers make more informed decisions about the foods they eat and encourage them to choose healthier options (12). In addition to food labeling, governments should consider implementing taxes on unhealthy foods, particularly those high in sugar and trans fats, to reduce consumption and incentivize the food industry to produce healthier products (31).

Furthermore, public health campaigns aimed at raising awareness about the risks of unhealthy eating and promoting the benefits of a balanced, nutrient dense diet are essential in reversing the negative health trends associated with the nutrition transition. These campaigns should target vulnerable populations, particularly low-income groups, who are most at risk of adopting unhealthy dietary patterns due to limited access to healthier food options and low levels of nutrition education (6).

Lastly, there is a need for greater collaboration between governments, the food industry, and public health organizations to create an environment that supports healthier eating choices. This includes improving the availability of nutritious foods in urban areas, supporting local agriculture, and encouraging the food industry to offer healthier menu options in QSRs (14).

Regulatory Challenges and the Need for Policy Interventions

Effective regulation is a key component of addressing the growing burden of NCDs related to poor dietary habits. In Nigeria, the food system faces numerous challenges, including inadequate infrastructure, corruption, and a lack of governmental oversight in regulating the food industry (5). These challenges hinder efforts to implement effective policies that promote healthier food environments, regulate food labeling, and restrict the marketing of unhealthy foods.

There is a pressing need for stronger regulatory frameworks that ensure that QSRs provide healthier food options and accurately label their products. As noted by (6), governments must work to develop and enforce policies that promote healthier eating habits, such as the imposition of taxes on unhealthy foods, restrictions on food marketing, and subsidies for healthier food options. Additionally, (31) suggest that governments should implement policies that encourage the availability of affordable, nutritious foods in urban areas and regulate the food industry to prevent the promotion of unhealthy diets.

Policy Recommendations

To mitigate the adverse health impacts associated with QSRs, several policy interventions are recommended:

1. **Mandatory Nutritional Labeling:** Implementing regulations that require QSRs to provide clear and standardized nutritional information on menus and food packaging can help consumers make healthier choices (12). In Nigeria, research

indicates that while a majority of consumers read nutritional labels, a significant portion does not fully understand the information presented. A study conducted in Lagos found that 70.6% of respondents read nutritional information, but only 64.9% understood it (32). This highlights the need for clearer and more accessible nutritional labeling to empower consumers to make informed dietary choices.

2. **Public Awareness Campaigns:** Educating the public about the health risks associated with excessive consumption of fast foods and the importance of balanced diets can promote healthier eating habits (3). One of the major obstacles to addressing the rise of NCDs in developing countries is the low level of awareness regarding the risks associated with poor dietary habits. Many consumers are unaware of the health implications of frequently consuming processed foods, and misconceptions about nutrition and diet-related diseases persist in the public. As noted by (2), the lack of knowledge about the dangers of consuming foods high in unhealthy fats, sugar, and sodium is a major barrier to NCD prevention. This lack of awareness is compounded by a general lack of education on nutrition, which is especially prevalent in low-income populations.

The importance of public health campaigns aimed at educating consumers about the risks of poor dietary habits cannot be overstated. (31) argue that comprehensive nutrition education programs should be implemented to raise awareness about the health risks of consuming processed foods and to promote healthier food choices. Such initiatives should focus on providing consumers with the knowledge they need to make informed decisions about their diets and the foods they consume.

Education plays a vital role in the prevention and control of NCDs. Public health education campaigns that raise awareness about the risks of consuming unhealthy foods and promote the benefits of healthier diets are essential in combating the rise of diet-related NCDs (12). These campaigns should be tailored to specific populations, with a focus on the most vulnerable groups, such as low-income individuals and communities with limited access to healthy foods.

Moreover, nutrition education should be integrated into school curricula and community outreach programs, as these are effective means of reaching a broad audience and encouraging long-term behavioral changes. It is crucial to involve healthcare providers, nutritionists, and other public health professionals in these efforts to ensure that the information provided is accurate, accessible, and actionable.

3. **Regulation of Marketing Practices:** Restricting the marketing of unhealthy foods, especially to children and adolescents, can reduce the appeal of fast foods and decrease their consumption (12).
4. **Promotion of Healthy Alternatives:** Encouraging QSRs to offer healthier menu options and promoting the availability of nutritious foods in urban areas can provide consumers

Empirical review

The increasing prevalence of non-communicable diseases (NCDs) has become a significant health concern globally, and quick service restaurants (QSRs) have been identified as one of the key contributors to unhealthy dietary practices. This review seeks to explore consumer perspectives on QSR practices and their challenges in addressing diet-related NCDs, with a focus on the Port Harcourt area in Nigeria.

1. *Diet-Related Non-Communicable Diseases and the Role of QSRs*

Non-communicable diseases, including cardiovascular diseases, diabetes, and obesity, are increasingly associated with poor dietary habits. Research has highlighted the critical role of diet in the onset and progression of these diseases. (33) report that dietary factors are

responsible for a substantial portion of NCD-related deaths, with poor diet choices, such as high sodium intake and low consumption of fruits and vegetables, being key contributors. These findings are mirrored in (34) discussion of the role of dietary patterns, particularly refined carbohydrates and unhealthy fats, in the rise of NCDs.

Quick service restaurants (QSRs) in urban areas like Port Harcourt play a significant role in shaping consumer dietary behaviors. As (35) noted, QSRs often provide energy-dense, nutrient-poor foods that are linked to NCD risk factors such as obesity and hypertension. The frequency of consumption of these foods, often combined with sedentary lifestyles, exacerbates the risk of developing chronic diseases.

2. Consumer Perspectives on QSR Practices

Understanding consumer perspectives on QSR practices can offer insights into how these establishments influence dietary choices and the burden of NCDs. Studies like (36) explore the nutritional knowledge of food vendors in Ghana, noting a significant gap in nutrition education and awareness of diet-related NCDs among vendors. Although vendors may be aware of some aspects of nutrition, such as basic food groups, many fail to integrate this knowledge into their practices. This is particularly evident in Port Harcourt, where a similar lack of knowledge among QSR owners and vendors could result in the continued offering of foods that contribute to NCDs, such as fried foods, sugary beverages, and highly processed items.

A study on fast-food vendors in Ghana found that 49% of vendors lacked adequate nutrition knowledge, with only 6.2% demonstrating a solid understanding of diet-related diseases (36). Similarly, the Consensus NHF-CAPSANI Summit (2022) highlights the lack of consistent nutritional policies and health promotion in food establishments, which hampers efforts to reduce the prevalence of NCDs. QSRs in Port Harcourt face similar challenges where nutrition education and regulatory frameworks are insufficient to guide healthy food practices.

3. The Role of Government and Regulation in Addressing NCDs

Government regulations play a pivotal role in shaping the food environment and improving public health outcomes. (37) discuss the need for policy frameworks that support the creation of healthy food environments, particularly in low-and middle-income countries. While Ghana has initiated some efforts to improve food environment policies, such as restricting the marketing of unhealthy foods, a similar initiative in Port Harcourt is lacking. Research suggests that the Nigerian government faces challenges in implementing effective policies to address diet-related NCDs, with food vendors often bypassing recommended guidelines for health and nutrition.

The (38) study in Nigeria emphasizes the importance of collaboration between government bodies, food industries, and consumers to reduce the burden of NCDs. This could involve improving food labeling, enforcing stricter regulations on unhealthy food marketing, and promoting public health initiatives. In Port Harcourt, this could mean stricter regulation of QSR practices, such as limiting the use of unhealthy oils and encouraging vendors to offer healthier menu options.

4. Employee Responsiveness and Customer Satisfaction in QSRs

The role of employee responsiveness in influencing customer satisfaction and addressing diet-related NCDs in quick service restaurants has also been explored in a recent study by (39). This study investigated the impact of employee responsiveness to non-communicable diet-related diseases on customer satisfaction in Port Harcourt's QSRs, including Kilimanjaro, Genesis Fast-food, Chicken Republic, Kentucky Fried Chicken, and Domino's Pizza. The findings revealed that customer satisfaction is significantly influenced by how employees respond to concerns related to diet-related diseases. However, there was no significant difference in responses based on gender, although females tended to rate responsiveness higher. The study also showed that different age groups rated employee responsiveness in varying degrees, with younger age groups (21-30) being more proactive in their recommendations for improving QSR practices related to NCDs. The study calls for increased employee training

and awareness of dietary health risks to improve customer satisfaction and promote healthier food choices.

Materials and methods

1. *Study Area*

The study focuses on Port Harcourt, the capital city of Rivers State, Nigeria, with a diverse range of quick-service restaurants, including Kilimanjaro, Genesis Fastfood Restaurants, Chicken Republic, Kentucky Fried Chicken Fastfood, and Dominos Pizza. Port Harcourt has numerous registered hotels and school cafeterias, as well as hundreds of eating houses, food canteens, food kiosks, and other food vending stalls scattered throughout the city. The economic activities of Port Harcourt include manufacturing, such as food processing, paints, and petroleum product refining. The city is largely peaceful and sociable, with many restaurants, recreational centers, and fun spots providing meals to a large number of workers and visitors.

2. *Research Design*

This study employs a descriptive research design to evaluate consumer perspectives on quick-service restaurants' practices and challenges in addressing non-communicable diet-related diseases in Port Harcourt. Descriptive research design is a type of research methodology used to describe characteristics or behaviors of a population or phenomenon, focusing on observing and documenting the existing state of affairs without attempting to manipulate or control variables.

3. *Study Population*

The study targets customers of quick-service restaurants in Port Harcourt, with a sample size of 206 participants, representing a diverse demographic. The population comprises both male and female genders, with ages ranging from 20 years and above, including married and single respondents of diverse occupations, different levels of education, and frequencies of quick-service restaurant visits.

4. *Study Instrument*

Data collection involves a combination of primary and secondary sources, including structured questionnaires and interviews (Appendix A). The questionnaire, designed with a summative rating scale ranging from 1 to 5 in Likert scale format, facilitates nuanced responses. Section A of the questionnaire collects demographic information, while Section B addresses specific research inquiries. Secondary data sources, including libraries, journals, articles, textbooks, and online databases, contribute to the literature review and contextual understanding of consumer perspectives on Quick Service Restaurants Practices and Challenges in addressing Non-Communicable Diet related Diseases in Port Harcourt

5. *Data Analysis*

Statistical analysis was performed using the Statistical Package for Social Science version 26, frequency and percentage were obtained. T-test was used to determine Current Practices and Policies Implemented by Quick Service Restaurants and Challenges facing Employees in Effectively Addressing Non-Communicable Diet-Related Diseases in Quick Service Restaurants between male and female; ANOVA is used to determine across age groups at 0.05 level of significance. All results were presented in tables and charts.

6. *Validity and Reliability of Instrument*

Ensuring the validity and reliability of the research instrument was paramount. To validate the questionnaire, it underwent rigorous evaluation by the institutional ethical committee to ensure it effectively covered the study variables. Additionally, reliability assessment was conducted using Cronbach's alpha, a measure of internal consistency, to confirm the reliability and consistency of the questionnaire responses. These measures contribute to the credibility and trustworthiness of the study findings.

Results

The data obtained from the study was analyzed, and the results revealed several key findings.

Frequency Distribution of Socio-Demographic Variables

Gender Distribution:

The gender distribution of the respondents indicated that a total of 116 respondents (56.3%) identified as male, while 90 respondents (43.7%) identified as female. This shows a slightly higher proportion of male respondents, which could be influenced by factors such as societal and cultural norms, different eating habits, or varying levels of health awareness.

Age Distribution:

The age distribution revealed that the majority of respondents (79, or 38.3%) fell within the 31-40 age range, typically considered middle-aged. The second-largest group was from the 21-30 age range, comprising 73 respondents (35.4%), a group often considered young adults. Smaller groups were represented by 23 respondents (11.2%) in the 41-50 age range, 21 respondents (10.2%) under 20 years of age, and 10 respondents (4.9%) who were above 50 years. This suggests that most respondents were middle-aged adults, with a notable proportion of younger adults, which may point to a higher level of health awareness and concern.

Educational Level:

The majority of respondents, 204 (99.0%), had attained tertiary education, indicating a well-educated sample. Only 2 respondents (1.0%) had a secondary level of education. This high educational level suggests that the respondents are likely to possess a higher level of awareness about health and nutrition, which may influence their dietary choices and perceptions.

Frequency of Visiting Quick Service Restaurants (QSRs):

When asked about their frequency of visiting quick service restaurants, the majority of respondents (166, or 80.6%) reported visiting QSRs on a monthly basis. This was followed by 33 respondents (16.0%) who visited weekly, and 7 respondents (3.4%) who visited daily. The frequency of visits may be influenced by factors such as convenience, affordability, taste preferences, and lifestyle choices.

Most Visited Quick Service Restaurants:

The data revealed that Kilimanjaro Fast-food was the most frequently visited QSR, with 78 respondents (37.9%) naming it as their preferred choice. It was followed by Genesis Fast-food and Chicken Republic, with 61 respondents (29.6%) each selecting these options. Domino's Pizza and KFC were less popular, with only 4 respondents (1.9%) and 2 respondents (1.0%) respectively visiting these restaurants. The popularity of Kilimanjaro, Genesis, and Chicken Republic could be attributed to factors such as taste, convenience, marketing strategies, and possibly nutritional value.

Frequency distribution of Socio-demographics variable

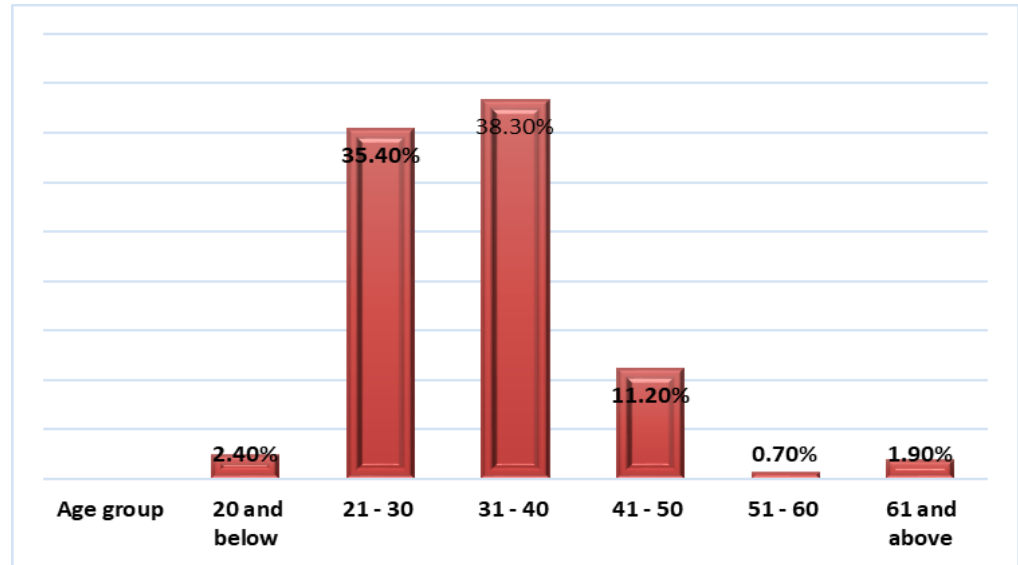


Figure 1: Frequency Distribution of Across Age Groups

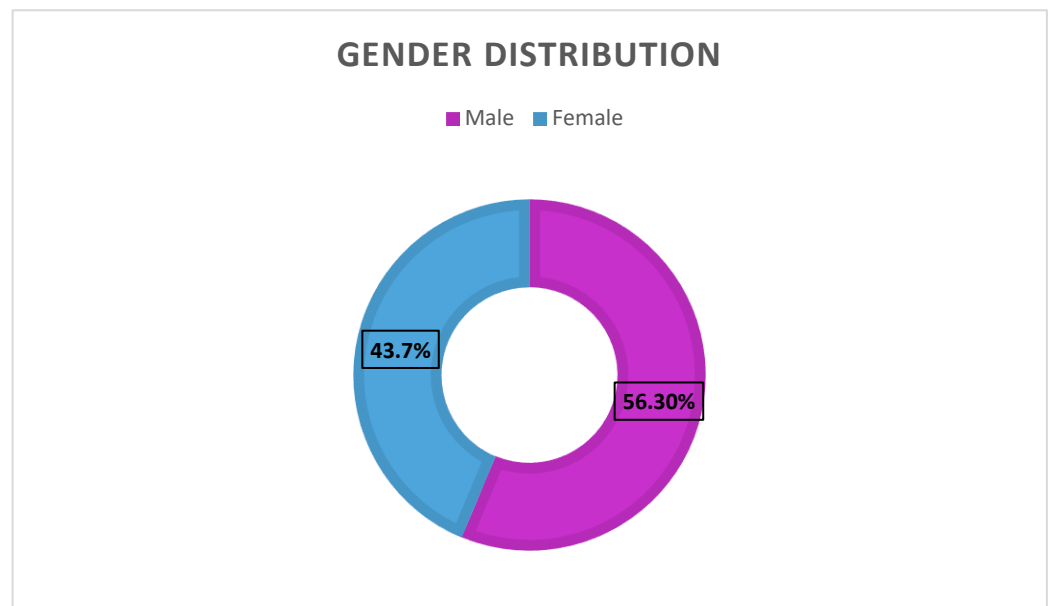


Figure 2: Frequency Distribution between genders

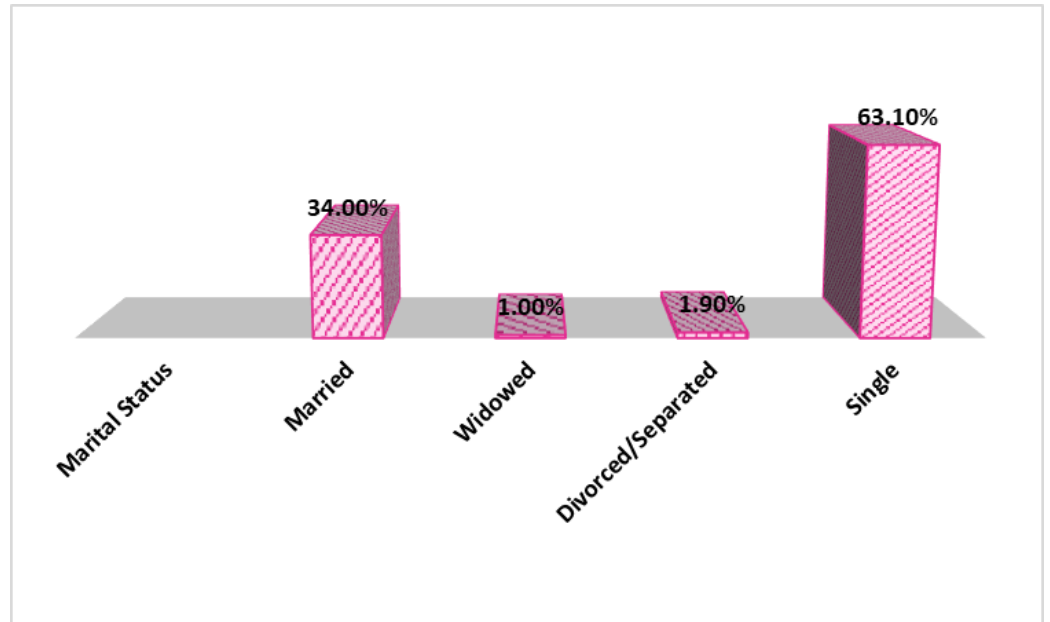


Figure 3: Frequency Distribution of marital status

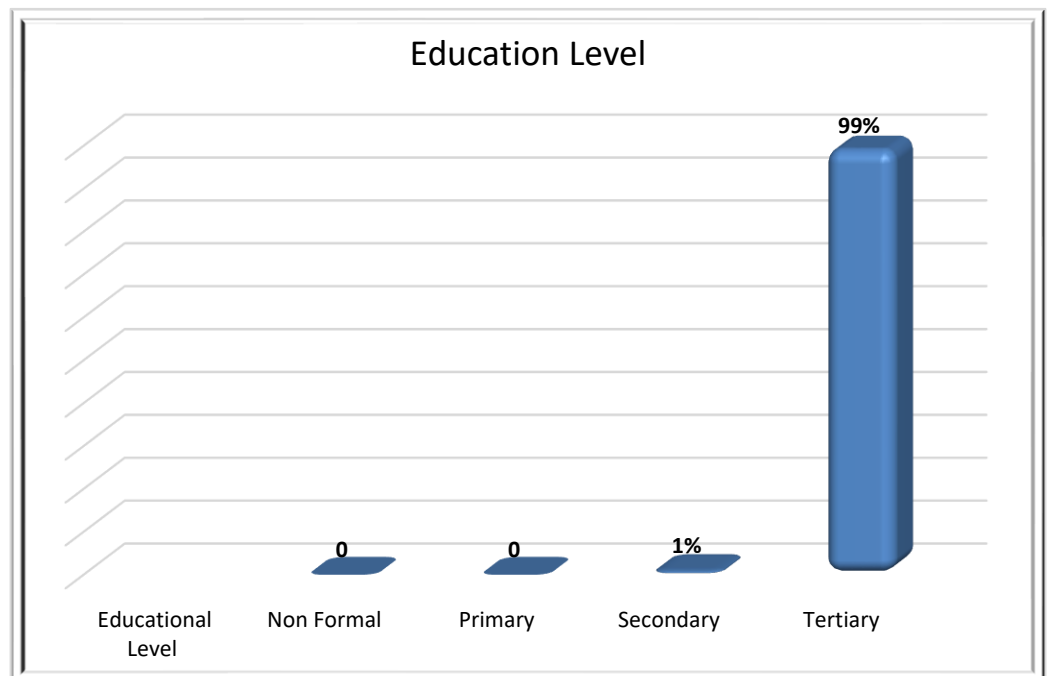


Figure 4: Frequency Distribution of education status

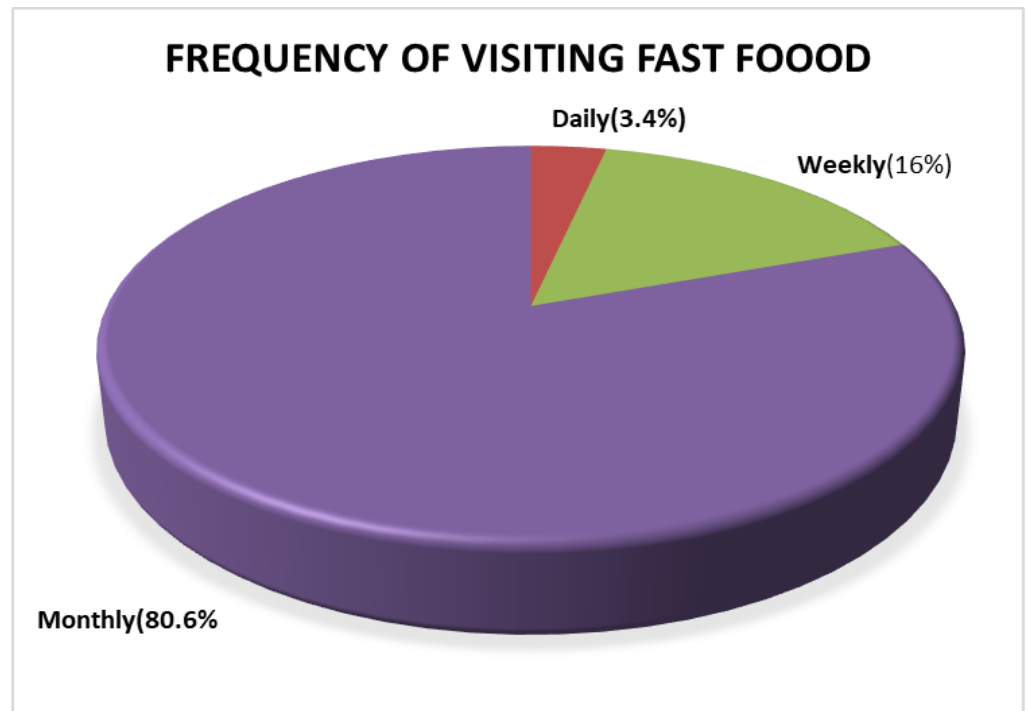


Figure 5: Frequency of visiting Quick Service Restaurants

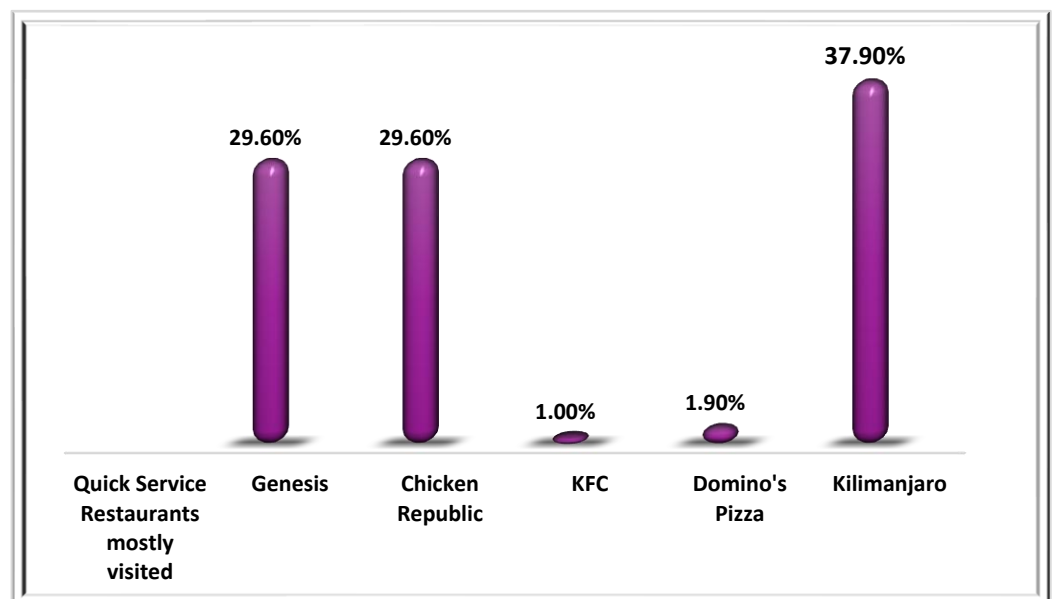


Figure 6: Frequency Distribution of Quick service restaurants mostly visited

From the table 1 below, the analysis of Quick Service Restaurants' (QSRs) practices showed some differences between how males and females view QSRs.

For nutritional labeling, males (Mean = 2.86, SD = 1.36) thought QSRs were slightly better at clearly labeling nutritional content than females (Mean = 2.43, SD = 1.02). Overall, the average rating for both groups was 2.65 (SD = 1.19), indicating a mild positive view of how well QSRs label their food.

When asked if QSRs educate the public on unhealthy diets, both males (Mean = 4.22, SD = 0.74) and females (Mean = 4.11, SD = 1.16) strongly agreed that QSRs do not do enough to warn people about reducing processed foods, refined sugars, and sodium. The overall average was 4.17 (SD = 0.95), showing general agreement that more education is needed.

Males (Mean = 2.95, SD = 1.16) felt that QSRs were slightly more restrictive about offering unhealthy foods than females (Mean = 2.57, SD = 0.97). The combined average rating was 2.76 (SD = 1.07), suggesting that both genders felt QSRs could do more to limit unhealthy food options.

Both males (Mean = 3.71, SD = 1.07) and females (Mean = 3.60, SD = 0.83) agreed that taxes on processed foods should be increased. The combined average rating was 3.66 (SD = 0.95), showing similar views on this issue.

An independent t-test showed a statistically significant difference ($t = 2.885$, $df = 204$, $p = 0.00$) between the perceptions of males and females. This suggests that gender affects how people view QSR practices, especially when it comes to labeling and offering unhealthy foods. Males tended to have a slightly more positive view, but both genders agreed that QSRs are not doing enough to educate the public on healthy eating.

Table1: Mean Comparison (Independent t test) between Male and Female on Current Practices and Policies Implemented by Quick Service Restaurants

S/no	Description	Mean±SD	Mean±SD	Mean±SD
	Current Practices and Policies Implemented by Quick Service Restaurants	Male	Female	Aggregate
		N=116	N=90	N=206
1	The nutritional content of packaged foods is clearly and genuinely labeled	2.86±1.36	2.43±1.02	2.65±1.19
2	They do not inform the public about reducing consumption of refined carbohydrates and, processed meat, industrial fats, and sodium	4.22±0.74	4.11±1.16	4.17±0.95
3	They restrict the provision of unhealthy food and market products with greater health benefits	2.95±1.16	2.57±0.97	2.76±1.07
4	They increase taxes on processed foods.	3.71±1.07	3.60±0.83	3.66±0.95
	Total	13.73±2.40	12.71±2.31	14.24±4.16

Aggregate Mean±SD	3.47±0.64	3.21±0.66	3.56±1.04
t-test	2.885		
Df	204		
p-value	0.00		

Table 2 compares male and female perspectives on the challenges employees face in addressing non-communicable diet-related diseases (NCDs) in Quick Service Restaurants (QSRs) in Port Harcourt.

Regarding risk factors for NCDs (such as air pollution, tobacco use, alcohol consumption, unhealthy diet, and inactivity), males (Mean = 2.66, SD = 1.36) rated these risks slightly higher than females (Mean = 2.29, SD = 1.25). The overall average was 2.48 (SD = 1.31), indicating moderate concern about these risks.

When it comes to poor urban environments contributing to NCDs (like heart disease, stroke, and obesity), females (Mean = 4.16, SD = 0.96) rated this challenge slightly higher than males (Mean = 4.01, SD = 1.18), with an overall average of 4.01 (SD = 1.07). This suggests strong agreement that urban environments worsen NCD risks.

On the issue of the high cost of healthy diets, both males (Mean = 3.75, SD = 1.17) and females (Mean = 3.80, SD = 1.42) agreed that healthy foods are expensive, with an average rating of 3.78 (SD = 1.29).

For the lack of monitoring and evaluation of NCD programs by food agencies, females (Mean = 4.26, SD = 0.74) expressed stronger agreement than males (Mean = 4.03, SD = 0.90), with an overall average of 4.14 (SD = 0.82).

The aggregate mean for females (3.79, SD = 0.69) was slightly higher than for males (3.72, SD = 0.78), with minimal difference.

An independent t-test showed no significant difference between male and female perspectives on these challenges ($t = -0.703$, $df = 204$, $p = 0.48$). This means that gender does not have a significant impact on how employees perceive the challenges in addressing NCDs in QSRs. Both genders largely agree on the challenges, and the results suggest that interventions should focus on raising general awareness, improving the affordability of healthy foods, and strengthening regulatory oversight, rather than being gender-specific.

Table2: Mean Comparison (Independent t test) between Male and Female on Challenges facing Employees in Effectively Addressing Non-Communicable Diet-Related Diseases in Quick Service Restaurants

S/N	Description	Mean±SD	Mean±SD	Mean±SD
		Male	Female	Aggregate
		N=116	N=90	N=206
9	Most people are prone to the risk factors for NCDs: air pollution, tobacco use, harmful use of alcohol, unhealthy diet, and physical inactivity	2.66±1.36	2.29±1.25	

				2.48±1.31
10	Poor urban environments increase the occurrence of NCDs; cardiovascular disease (heart disease and stroke), respiratory illnesses, obesity, cancers, diabetes	4.01±1.18	4.16±0.96	4.01±1.07
11	Diets including fruits, vegetables, whole grains, nuts, and seafood are expensive, thereby increasing reliance on processed food	3.75±1.17	3.80±1.42	3.78±1.29
12	Programs concerning NCDs lack monitoring and evaluation by food agencies.	4.03±0.90	4.26±0.74	4.14±0.82
	Total	14.45±3.01	14.50±2.76	14.41±4.49
	Aggregate Mea± SD	3.72±0.78	3.79±0.69	3.60±1.12
	t-test	-0.703		
	Df	204		
	p-value	0.48		

Table 3 presents an analysis of variance (ANOVA) comparing how different age groups perceive the current practices and policies of Quick Service Restaurants (QSRs) regarding non-communicable diet-related diseases in Port Harcourt.

The youngest group (<21 years, N = 5) had the most positive perception of QSR practices, with a mean rating of 3.60 (SD = 0.55). The 21-30 years age group (N = 73) had slightly lower, but still positive, ratings (Mean = 3.42, SD = 0.71). The middle-aged groups (31-40 years and 41-50 years) showed moderate perceptions, with mean ratings of 3.32 and 3.39, respectively. The older groups (51-60 years and >60 years) demonstrated the lowest ratings, with means of 3.27 and 3.00. The >60 age group showed no variability (SD = 0.00), with a fixed mean of 3.00.

The ANOVA results showed an F-value of 0.66 with a p-value of 0.65, indicating no statistically significant differences in perceptions across age groups. This suggests that age does not significantly influence how consumers perceive QSR practices.

The consistency in ratings across different age groups implies that QSR practices are viewed similarly by consumers, regardless of their age. Therefore, the findings suggest that interventions to improve QSR practices should focus on approaches that target the general population, rather than being age-specific. The overall moderate ratings indicate that there is room for improvement in QSR practices across all demographic groups.

Given the p-value of 0.65, which is greater than 0.05, the null hypothesis is accepted, meaning that age does not significantly influence perceptions of current QSR practices and policies.

Table3: Mean Comparison (ANOVA) between the various Age groups on Current Practices and Policies Implemented by Quick Service Restaurants

Age group	N	Mean ± SD	Std. Error	95% Confidence Interval for mean		Df	F	Sig
				Lower Bound	Upper Bound			
< 21	5	3.60±0.55	0.24	2.92	4.28			
21 - 30	73	3.42±0.71	0.08	3.26	3.59			
31 - 40	79	3.32±0.69	0.07	3.16	3.47			
41 - 50	23	3.39±0.49	0.10	3.18	3.61	5	0.660	0.65
51 - 60	22	3.27±0.63	0.13	2.99	3.55			
>60	4	3.00±0.00	0.00	3.00	3.00			
Total	206	3.36±0.66	0.04	3.27	3.45			

Table 4 presents an Analysis of Variance (ANOVA) comparing how different age groups perceive the challenges employees face in addressing non-communicable diet-related diseases (NCDs) in Quick Service Restaurants (QSRs) in Port Harcourt.

The older age groups, including those aged 51-60 years (Mean = 4.14, SD = 0.6) and those over 60 years (Mean = 4.00, SD = 0.00), as well as the youngest group (<21 years, Mean = 4.00, SD = 0.00), perceived the greatest challenges. On the other hand, the age groups 21-50 years rated the challenges lower, with mean scores ranging from 3.52 to 3.78.

The ANOVA results showed borderline significance (p = 0.05), suggesting that age may have a weak influence on how employees perceive these challenges. Although employees across all age groups acknowledge the challenges, older workers (51-60 years) view them as more severe.

Interventions should consider age-specific approaches, especially for older age groups who express more concern. While challenges are recognized broadly, age plays a minor role in how severely they are perceived, indicating that workplace strategies could benefit from being tailored to address age-related differences.

Given the p-value of 0.05, which is on the threshold of statistical significance, the null hypothesis is accepted, meaning age has only a weak influence on how challenges are perceived.

Table4: Mean Comparison (ANOVA) between the various Age groups on Challenges facing Employees in Effectively Addressing Non-Communicable Diet-Related Diseases in Quick Service Restaurants

Age group	N	Mean ± SD	Std. Error	95% Confidence Interval for mean		Df	F	Sig
				Lower Bound	Upper Bound			
< 21	5	4.00±0.00	0.00	4.00	4.00			

21 - 30 y	73	3.78±0.69	0.08	3.62	3.94			
31 – 40	79	3.65±0.77	0.08	3.47	3.82			
41 – 50	23	3.52±0.89	0.18	3.13	3.91	5	2.236	0.05
51 - 60	22	4.14±0.64	0.13	3.85	4.42			
>60	4	4.00±0.00	0.00	4.00	4.00			
Total	206	3.75±0.74	0.05	3.65	3.85			

Discussion of findings

This study sought to explore the perspectives of consumers and employees regarding the practices, policies, and challenges in Quick Service Restaurants (QSRs) in Port Harcourt, Nigeria, particularly in relation to non-communicable diet-related diseases (NCDs). The findings from the data analysis offer a nuanced view of the factors affecting perceptions of QSR practices, employee challenges, and the role of socio-demographic factors, including gender and age. This discussion highlights the implications of these findings and places them in the context of global and local trends in dietary patterns, NCD prevention, and public health.

Gender Differences in Perceptions of QSR Practices

One of the primary findings from this study is the significant gender difference in perceptions of current practices and policies implemented by QSRs in Port Harcourt. The t-test analysis revealed that males and females had different perceptions regarding the nutritional labeling of packaged foods, restriction of unhealthy food, and the taxing of processed foods. Specifically, males generally rated the nutritional content labeling and the restriction of unhealthy foods more positively compared to females. This is in line with previous studies that have found gender-based differences in health behaviors and attitudes toward food choices and nutrition (40). Males might be more inclined to view policies implemented by QSRs positively, possibly due to higher awareness or interest in food-related health issues compared to females.

The significant difference in nutritional labeling (p-value = 0.00) suggests that awareness and transparency about food content may vary by gender. It could imply that QSRs may not be effectively communicating important nutritional information to the public, particularly women, who could benefit from improved food labeling to make informed choices. In contrast, both genders shared a negative view about QSRs' efforts to reduce the consumption of unhealthy foods, such as processed meats, industrial fats, and refined carbohydrates. This finding supports the need for more stringent regulations and policies to address unhealthy food practices in QSRs, as these foods are linked to increased risks of NCDs (1).

Perceptions of the Challenges in Addressing NCDs

In terms of the challenges faced by employees in addressing diet-related NCDs, both male and female participants agreed on the key challenges, but there were no significant gender differences in their perspectives. The non-significant t-test result (p-value = 0.48) suggests that gender does not play a significant role in how employees perceive the barriers to addressing NCDs in QSRs. Both genders expressed concerns about poor urban environments contributing to NCDs and the high cost of healthy foods leading to increased reliance on processed foods. This finding resonates with global trends indicating that urbanization, socio-economic factors, and access to healthy food are critical drivers of the NCD epidemic (2); (4).

Interestingly, females were slightly more concerned than males about the lack of monitoring and evaluation of NCD-related programs by food agencies. This could indicate that women are more attuned to the institutional shortcomings in public health frameworks, as

previous studies have suggested that women are often more engaged with public health issues, including nutrition and wellness (41). However, the overall similarity in perspectives suggests that interventions aimed at improving QSR practices and tackling NCDs should be universally applicable, rather than tailored to gender-specific needs.

Age Differences in Perceptions of QSR Practices

The analysis of variance (ANOVA) results for different age groups showed no statistically significant differences in perceptions of current practices and policies implemented by QSRs. The findings indicate that perceptions of QSR practices remain relatively consistent across age groups, suggesting that consumers of all ages share similar concerns about the nutritional content of QSR meals and the effectiveness of health-promoting policies. This could reflect a general public awareness of the negative health impacts of fast food, which has been widely documented in both developed and developing countries (17); (31).

However, the mean ratings across all age groups were moderate, indicating that there is room for improvement in how QSRs address health issues. This consistency across age groups further supports the notion that interventions to improve QSR practices should focus on a broad, population-wide approach rather than being segmented by age (12).

Age Differences in Perceptions of Challenges in Addressing NCDs

When it comes to the challenges employees face in addressing NCDs, the findings were more complex. Although there was no significant difference in perceptions across age groups, older age groups (particularly those aged 51-60 years) rated the challenges more critically. This suggests that older employees might have more experience or awareness of the health risks associated with NCDs and the urban environment's role in exacerbating these risks (6). The borderline significance of the ANOVA result ($p = 0.05$) implies that age might have a weak influence on how employees perceive the severity of challenges in addressing NCDs. Given that older age groups generally rate challenges more harshly, interventions aimed at addressing NCDs might benefit from considering the specific needs and concerns of older employees.

Implications for Public Health and Policy

The findings of this study have important implications for both local and global efforts to address diet-related NCDs. The significant gender differences in perceptions of QSR practices and the moderate overall ratings across age groups point to a need for more effective nutrition education, improved food labeling, and stronger regulations on food marketing and consumption in fast-food environments (31). The lack of significant differences in perceptions between male and female employees regarding the challenges they face in addressing NCDs suggests that public health campaigns targeting QSRs should focus on universal issues, such as improving the affordability of healthy food, enhancing food regulation, and increasing public awareness about the dangers of processed foods.

Moreover, the challenges posed by poor urban environments and the high cost of healthy foods underscore the need for structural changes to improve access to healthy, affordable food options in urban areas. Policymakers should consider supporting local food systems that promote healthier, more sustainable diets as part of broader public health strategies to combat the rising prevalence of NCDs in developing countries like Nigeria (2).

Conclusion

This study offers a thorough examination of consumer and employee perspectives on the practices, policies, and challenges associated with addressing non-communicable diet-related diseases (NCDs) in Quick Service Restaurants (QSRs) in Port Harcourt, Nigeria. The findings highlight the critical role QSRs play in shaping dietary habits and contributing to the growing burden of NCDs, underscoring the need for comprehensive strategies to mitigate their impact. As NCDs continue to rise globally, particularly in rapidly urbanizing regions, it is essential to understand the various factors contributing to unhealthy dietary patterns and develop effective solutions.

The study reveals that while males and females have some differences in their perceptions of QSR practices, with males generally having a more favorable view of nutrition-related labeling and food restrictions, both genders share concerns about the insufficient efforts to reduce unhealthy food consumption and promote healthier options. This suggests that there is broad dissatisfaction with the current practices in QSRs and highlights the need for more effective regulations. The lack of transparency in food labeling and the failure to restrict unhealthy food options are issues that must be addressed by both the government and the food industry. These findings align with global research that points to fast food consumption as a major contributor to rising obesity rates and diet-related diseases like cardiovascular conditions, diabetes, and cancer.

Interestingly, gender did not significantly affect employees' perceptions of the challenges they face in addressing NCDs. Both male and female employees expressed similar concerns about the need for stronger monitoring and regulation of food safety and NCD-related programs. They also shared a recognition that the high cost of healthy foods is a major barrier to improving diets and reducing reliance on processed, unhealthy options. This suggests that interventions aimed at improving NCD prevention in QSRs should focus on universal public health concerns, rather than gender-specific solutions. Policymakers and industry leaders should prioritize the affordability and accessibility of healthy food options and work toward stronger regulatory frameworks to reduce the availability of unhealthy foods in the market.

The analysis of age differences provided additional insights into how different demographic groups perceive QSR practices and challenges. While the perceptions of QSR practices did not significantly vary by age, older employees (51-60 years) expressed a stronger concern about the challenges posed by NCDs. This could reflect their greater awareness of the long-term health consequences of diet-related diseases. These findings indicate that interventions to improve NCD prevention should consider the unique concerns of older workers, who may be more attuned to the risks associated with poor dietary habits. However, the consistency in perceptions across different age groups suggests that strategies to improve public health and food practices should adopt a more holistic approach, addressing the needs of all demographic groups.

The study also emphasized the importance of monitoring and evaluating NCD-related programs. Employees and consumers alike expressed frustration with the lack of oversight by food agencies in regulating NCD prevention efforts. Stronger regulatory frameworks and more rigorous enforcement of food safety standards are necessary to ensure that QSRs comply with policies that promote public health. Without proper monitoring and accountability, it will be difficult to achieve meaningful progress in reducing the incidence of diet-related NCDs.

In terms of recommendations, the findings suggest several key actions that could be taken to improve the situation. First, QSRs should be encouraged to adopt clearer, more comprehensive nutritional labeling to help consumers make informed choices. Clear and transparent labeling has been shown to be an effective tool in promoting healthier eating habits and empowering consumers to make better dietary decisions. Additionally, stronger regulations should be implemented to limit the provision of highly processed and unhealthy foods in QSRs. Governments could consider imposing taxes on unhealthy food products, similar to those on sugary beverages, to reduce their consumption and incentivize healthier alternatives.

Furthermore, addressing the high cost of healthy foods is critical. Public health policies should focus on making fruits, vegetables, whole grains, and other nutritious foods more affordable. Subsidies for healthy foods, combined with efforts to support local agriculture, could help reduce the economic barriers to healthy eating. This would help alleviate the reliance on processed foods that are often cheaper but nutritionally deficient.

The study also highlights the need for more effective monitoring and evaluation of NCD programs by food agencies. Employees and consumers alike expressed a desire for better oversight of food safety and health-related programs. This would ensure that QSRs are held accountable for promoting public health and making healthier food choices more accessible.

Monitoring and evaluation are critical for identifying gaps in existing programs and ensuring that they are achieving their intended outcomes.

In addition, public health campaigns aimed at raising awareness of the risks associated with diet-related NCDs and promoting the benefits of healthy eating are essential. These campaigns should be targeted not only at individuals but also at communities and schools, where healthier eating habits can be fostered from a young age. By educating the public about the long-term consequences of unhealthy diets, it is possible to shift societal attitudes and create a culture of health-conscious eating.

Lastly, collaboration between QSRs, government agencies, and civil society organizations is crucial for addressing the challenges posed by diet-related NCDs. By working together, these stakeholders can develop effective strategies to ensure that QSRs offer healthier food options, adopt transparent labeling practices, and promote better eating habits among consumers. Such collaboration will help create an environment in which healthy eating is both accessible and desirable, ultimately improving the health of individuals and communities.

In conclusion, the findings of this study emphasize the urgent need for action to address the growing burden of non-communicable diet-related diseases in Nigeria and other developing countries. While there are differences in perceptions based on gender and age, the broader issue of NCDs requires a comprehensive, inclusive approach. Policymakers, food industry leaders, and public health organizations must work together to implement strategies that promote healthier diets, regulate harmful food practices, and make nutritious foods more affordable. By taking a holistic approach to improving the food environment, it is possible to reduce the prevalence of diet-related NCDs and improve the overall health outcomes of individuals and communities.

Recommendations

The findings from this study underscore the urgent need for comprehensive measures to tackle the rising threat of non-communicable diet-related diseases (NCDs) associated with Quick Service Restaurants (QSRs) in Port Harcourt, Nigeria. The study highlights various areas for intervention, ranging from improved labeling practices to more robust health education campaigns. These recommendations aim to foster an environment in which healthier food choices are more accessible, and the population becomes more informed about the risks of unhealthy eating habits.

First, a key issue identified is the lack of clear and comprehensive nutritional labeling in QSRs. With a large segment of consumers expressing concerns over unclear nutritional content, it is imperative that QSRs adopt transparent and consumer-friendly labeling practices. Nutritional labels that detail calorie counts, sodium, sugar, and fat content would help consumers make informed decisions about their food choices. Governments should play a crucial role in mandating these changes by establishing regulations that require all QSRs to display this essential information clearly. These regulations should not only be enforced but also include penalties for non-compliance, ensuring that food outlets prioritize consumer health and transparency.

Moreover, the study found that QSRs are not doing enough to restrict unhealthy food options or promote healthier alternatives. It is crucial for food vendors to take active steps toward offering healthier menu options, such as dishes lower in saturated fats, sugars, and sodium, and high in nutrients. The introduction of food policies that limit the availability of harmful ingredients such as processed meats and industrial fats could significantly reduce the risk of NCDs. Additionally, QSRs should be encouraged to use natural spices and herbs in place of artificial additives like stock cubes and flavor enhancers, which contribute to excessive sodium intake. Public-private collaborations could foster these changes, where the government incentivizes food establishments that prioritize health-conscious practices in their menu offerings.

The cost of healthy foods is another critical factor that was emphasized in the findings. With both male and female respondents noting that fruits, vegetables, and other healthy

options are expensive, many consumers are forced to turn to cheaper, processed alternatives. This financial barrier could be alleviated through targeted subsidies aimed at reducing the cost of healthy foods, such as fresh produce and whole grains. By making these foods more affordable, governments can encourage consumers to opt for nutritious options over processed foods. Public health campaigns could also provide information on cost-effective ways to incorporate more healthful ingredients into daily meals, such as buying in-season produce or cooking meals at home.

The lack of effective monitoring and evaluation of NCD-related programs in the food industry emerged as another area of concern. Participants expressed frustration over the inadequate oversight of QSR practices and the weak enforcement of health-related regulations. To address this, food agencies must strengthen their monitoring mechanisms to ensure that QSRs adhere to public health standards. Regular audits and inspections, along with stricter enforcement of policies, would help ensure that the food served at these establishments meets health guidelines. Transparency in how these programs are evaluated will also encourage accountability and greater public trust in the effectiveness of the policies designed to combat NCDs.

Public health education also emerged as a central theme in the findings. There is a pressing need for comprehensive and sustained health education campaigns aimed at raising awareness about the risks of unhealthy eating habits. These campaigns should target a wide range of audiences, from schoolchildren to adults, educating them on the dangers of consuming excessive amounts of processed foods, high-fat diets, and sugary drinks. The education should focus on how poor dietary choices contribute to the development of NCDs such as obesity, diabetes, and cardiovascular diseases. Additionally, nutrition education should be incorporated into school curriculums and vocational training, particularly in catering institutions, to equip young people and food vendors with the knowledge and skills to prepare healthier meals.

Age-specific interventions should also be considered, as older age groups particularly those aged 51-60 demonstrated a greater concern about the risks of NCDs in QSRs. While perceptions of QSR practices were relatively consistent across age groups, older individuals showed a heightened awareness of the long-term consequences of unhealthy diets. Tailored programs that address the specific health concerns of older adults, particularly those related to chronic diseases, could be beneficial in reducing the incidence of NCDs in this demographic. These programs should emphasize the importance of maintaining a balanced diet and offer practical advice on healthier food choices.

Finally, it is essential to recognize that addressing NCDs in QSRs requires a multi-sectoral approach that involves collaboration between various stakeholders, including government agencies, health organizations, the food industry, and civil society. Governments should work closely with food industries to develop policies that both promote healthier food options and regulate the marketing of unhealthy foods, particularly to vulnerable populations like children. These stakeholders can work together to create a policy framework that encourages QSRs to adopt healthier practices while ensuring that healthier food options are accessible to all consumers.

In conclusion, the findings of this study provide a clear roadmap for improving the dietary practices within QSRs in Port Harcourt, Nigeria, and addressing the rising burden of non-communicable diet-related diseases. By implementing policies that improve nutritional labeling, restrict unhealthy foods, subsidize healthy options, and strengthen the monitoring of health-related programs, it is possible to create a food environment that promotes healthier eating habits. A concerted effort from all sectors of society governments, the food industry, and consumers is essential in reducing the impact of NCDs and improving public health outcomes in Nigeria. With these recommendations, it is hoped that a sustainable and health-conscious food system can be established, benefiting both individuals and society as a whole.

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