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Walden University

College of Health Sciences

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Gachomo Mapis

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Walden University
2019

Abstract

The Dietary Decision-Making Process of Women in Nigeria

by

Gachomo Mapis

PharmD, Howard University, 2009

BS, Ohio State University, 2004

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

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October 28, 2019

Abstract

Nigerians have been opting for a more processed Western diet. These changes in dietary choices have aligned with obesity and undernutrition, attributable to micronutrient deficiencies or malnutrition. Many scholars have presented varying intervention strategies ranging from consumption of a variety of foods containing the necessary micronutrients to food fortification. The purpose of this grounded theory study was to explore the perceptions of women in an urban city in Nigeria on indigenous foods and Western dietary influences to determine social interactions, the consequence of the interactions, and the women's current perceptions of food choices. The social-ecological model was used to explore the interaction between a woman and her environment.

Women between the ages of 20 to 30 from the urban city of Jos, Nigeria, constituted the population of interest, and 12 women were chosen for the sample. From the in-depth interviews, a thematic analysis was employed to provide sociocontextual reasoning for changes in diet that have led to the loss of interest in traditional foods and cultures. This study found that Jos has a variety of foods, yet women choose the same staple foods to feed their families. Additionally, despite a marginal understanding of the health impact of diet, most women choose the convenience and palatability of Western options, citing cost as the rationale for choosing to cook staple Western-inspired meals at home.

Understanding media, convenience, and cost can impact social change by enlightening communities on the interconnectedness of human health, cultures, and industrialization. Health care providers can monitor the outcomes of those who consume a variety of indigenous foods to see how such a practice could influence the overall health status of Nigerian families.

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Dedication

To my husband, for insisting that I pursue my dream of working in public service. Your love, support, and persuasion are immeasurable. Thank you. I also dedicate this to my son, Isidore, for being a happy and patient baby.

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Chapter 1: Introduction to the Study

Fourteen of the 20 determinants of global deaths relate to diet and nutrition, with micronutrient deficiency impacting one-third to one half of the world's population (Miller & Welch, 2013; Shrimpton et al., 2016). Nigerians have been opting for a more processed Western diet, leading to undernutrition and overnutrition (Popkin, 2009; Shrimpton et al., 2016). Nigerians have an estimated 55% poverty rate (93.7 million Nigerians) and a high instance of infectious diseases and food insecurity (Toromade, 2019). Morbidities associated with malnutrition include diarrhea, measles, anemia, and gastroenteritis (John, Yilgwan, Ige, Abok, & Okolo, 2012).

The expansion of science and technology has enhanced understanding of disease management, leading to overall longer human lifespans (Temple & Burkitt, 1994/2012). Since the 20th century, global improvements in many areas relate to nutrition, infectious diseases, and housing (Temple & Burkitt, 1994/2012). In contrast, hunger, malnutrition, and food insecurity continue to plague many indigenous communities (Burchi, Fanzo, & Frison, 2011). The acceptance of a Western-based diet and lifestyle has undermined food security and health status throughout the African continent (Demi, 2014; Raschke & Cheema, 2008).

Miller and Welch (2013) sought to understand why Nigerians have an increased interest in adopting a Western-based diet rather than eating a traditional diet high in fiber, fruits, and vegetables. Abandoning or changing the traditional diet has led to low interest and confidence in traditional foods and cultures (McAuley & Knopper, 2011). The cultural loss has disrupted social, psychological, nutritional, economic life and lifestyle (McAuley & Knopper, 2011).

In this study, I sought to understand the perceptions of women in Nigeria regarding dietary choices. With the growing health needs of Nigerians, I gave voice to respondents' perceptions on food transitions and preference for Western diet options. I focused on understanding the adoption of Western-influenced diets rather than the maintenance of traditional Nigerian diets to address micronutrient malnutrition (as suggested by Olayiwola, Soyibo, & Atinmo, 2004). Street food consumption rose from 53.2 to 92.6% when 65% of Nigerian women entered the workforce (Eneh & Nkamnebe, 2011). This change in women's status also impacted child-feeding practices, resulting in a rise in micronutrient deficiencies, considering that women are the primary diet decision makers in Nigeria (Eneh & Nkamnebe, 2011; Olayiwola et al., 2004). Despite their change in status, it was prudent to understand women's motivations and drive surrounding dietary choices. In this study, I explored indigenous women's understanding of the nutritional value of indigenous fruits and vegetables. The knowledge from this study can boost future awareness campaigns relating to the consumption of indigenous fruits and vegetable nutrition because women are typically the diet decision makers in Nigerian homes (Eneh & Nkamnebe, 2011). Indigenous fruits and vegetables not only improve the health of indigenous people, but its commercialization also alleviates poverty and contributes to income (Oladele, 2011).

Background

Before the Amalgamation of Nigeria in 1914, the groups that comprised Nigeria were agricultural people who primarily cultivated peanuts, cocoa, and palm trees (Effoduh, 2014). Nigeria remained divided into northern and southern regions with the south having more interaction with the colonizers, resulting in more modern economies

(Effoduh, 2014). Rice, sugar, wheat, and Irish potatoes were introduced in the 1930s and 1940s, following the second world war, to feed the army and civilians (Effoduh, 2014). After its independence in 1960, Nigeria had an undiversified economy; as a result, hunger has remained an issue from the 1970s and early 1980s to the 2000s (Effoduh, 2014). Around 1975, urbanization, accompanied by massive industrialization, dominated most industries including the food-production industry in the urban regions of Africa (Steyn & Mchiza, 2014). Although the government initiated many programs such as “operation feed the nation” to curb hunger and encourage the indigenes to grow local foods, few people participated, so Nigeria imported most of its foods and still does (Effoduh, 2014; Yagboyaju, 2019). The shift to reliance on processed imported foods began in the 1970s; by the 1990s, Nigerians started consuming less dense starch, fiber, fruits, and vegetables (Popkin, Adair, & Ng, 2012). A noticeable increase in the incidence of diabetes, hypertension, and obesity accompanied the nutritional change (Popkin et al., 2012). Hypertensive cardiovascular disease is the cause of death in 83.5% of Nigerians, and the obesity rate has risen to over 62% of the female population (Commodore-Mensah, Samuel, Dennison-Himmelfarb, & Agyemang, 2014).

Biological and social factors shape dietary choices and the nutritional status of individuals, due to the biocultural interrelationship between them (Dufour & Piperata, 2017). Adebooye and Opabode (2004) looked at the environmental, political, and socioeconomic factors that influenced the loss of indigenous foods, specifically fruits and vegetables in Africa. Of the 150 plants commonly consumed by people today, 115 are indigenous to Africa; yet, people neglect these vegetables and fruits because the world market focuses on a few elite crops for industrial growth (Adebooye & Opabode, 2004).

Increasing awareness and promoting conservation efforts of indigenous plants and fruits are matters of urgency because industrialization, deforestation, environmental degradation, and pollution are threats to plant diversity as food and medicine (Adebooye & Opabode, 2004). This neglect of indigenous fruits and vegetables is resulting in the erosion of culture and breakdown of traditional systems (Adebooye & Opabode 2004). Conservation could be a solution to food insecurity on the continent (Adebooye & Opabode, 2004). Banwat, Lar, Daber, Audo, and Lassa (2012) examined the national average fruit and vegetable consumption and the attitudes and knowledge of adults in Tudun-Wada; the researchers found that 92.4% had a fair knowledge of fruits and vegetables, but only 69.2% had appropriate consumption practices. The motives and knowledge of women as diet decision makers are important because their choices often have a long-term detrimental impact if not addressed.

Problem Statement

Noncommunicable diseases, such as cardiovascular disease, cancer, chronic respiratory diseases, or diabetes, are the leading causes of death in low-income African countries such as Nigeria (Gowshall & Taylor-Robinson, 2018). Western-based diets and lifestyles align with these increases in chronic diseases throughout the African continent (Demi, 2014, Gowshall & Taylor-Robinson, 2018). Furthermore, the degree of contact with industrial societies is the greatest determinant of change among peasants (Migdal, 2015). Malnutrition has become a growing problem in Nigeria (Roberts, 2017) because local Nigerian dishes that were made from whole, unprocessed, freshly prepared foods, packed with spices are being replaced as Nigerians opt for a more processed Western diet

(Popkin, 2009; Shrimpton et al., 2016). Nigeria is challenged by overnutrition and undernutrition, both attributable to micronutrient deficiency (Popkin, 2009).

The inadequate, extreme, or imbalanced consumption of nutrients characterizes malnutrition (Abubakar et al., 2017). To combat malnutrition in Africa, many scholars have presented strategies ranging from advocating the consumption of a variety of foods from multiple food groups (Miller & Welch, 2013) to food fortification (Darnton-Hill & Nalubola, 2002). Plant-based foods with high nutritional value are beneficial in addressing the adverse effects of micronutrient deficiencies (Kunyanga, Imungi, & Vellingiri, 2013). Micronutrient is a collective term for trace vitamins and minerals; people need these trace elements for cellular and metabolic activities including cell proliferation, apoptosis, cell differentiation, tissue growth, and homeostasis (Wilson, Gummow, McAninch, Bianco-Miotto, & Roberts, 2018). Although biofortification is the leading nutritional strategy to alleviate micronutrient deficiencies in developing nations (Högler, Aguiar, Kiely, & Tulchinsky, 2016), food diversification needs more consideration. Overall, three strategies adopted in Nigeria to address malnutrition include the fortification of staple foods with micronutrients, supplementation of micronutrients missing in the form of vitamins or minerals, and increased production and education of horticulture to ensure consumption of micronutrient-rich foods (Anetor, 2015).

Micronutrient malnutrition is prevalent due to poor dietary intake, unbalanced distribution, or lack of understanding of the importance of food diversity; it is critical to address this deficiency because micronutrients impact the prognosis of diseases, the maintenance of tissues, food metabolism, and the prevention of diseases (Anetor, 2015; Harika et al., 2017). Studies of malnutrition are finite in Nigeria because most focus is on

micronutrient deficiencies in iron, vitamin A, iodine, folic acid, or zinc; scholars also focus on malnutrition in children under the age of 5, largely due to weak governance, limited access to health care, urbanization, and corrupt practices (Uchendu & Abolarin, 2015). Although not well quantified, the economic, neurointellectual, educational, physical, and productivity impact of malnutrition are explicit (Darnton-Hill et al., 2005). Rasaki et al. (2018) found over 38% prevalence of hypertension in malnourished adults.

Purpose

The purpose of this study was to investigate the perceptions of women between the ages of 20 and 30 in an urban city in Nigeria about indigenous foods and Western influences. In this study, I investigated the diet choices among the indigenous peoples of Nigeria. The knowledge acquired should guide the future design of programs that can address the current health challenges of malnutrition and food insecurity among the populace. I sought to further understand how diets that were natural evolved into modern food-like substances. Primitive diets are more nutritious (Harris, 2016).

In this basic qualitative study, I collected data from women in an urban setting of Nigeria using a health self-assessment on a scale of poor health to excellent health. Most of the women considered themselves to be in good or excellent health because they were not symptomatic and had not been diagnosed with an ailment. I collected information collected on their diet and their perceptions of diet. I inquired if women associated their health with their diet from an indigenous's point of view. The initial assessment identified women who met the inclusion criteria of this study (women who were primary decision makers surrounding food procurement and preparation, women between the ages of 20

and 30, and women residing in the city of Jos) to understand the widespread adoption of the Western diet from a biocultural or nutritional anthropology perspective.

Research Questions

Food insecurity and chronic health are a threat to future Nigerians, especially the children (Owoo, 2018). It is important to investigate if some factors influence diet decisions and how they changed over the years. Indigenous diet choices are prejudiced by perceptions of social class rather than food security, but to fully understand and design health programs to address concerns, qualitative queries at the grassroots level, that directly engage local women, can help health practitioners understand how women choose diets for their families. The following three research questions steered the collection of data for this study:

RQ1: What are the dietary habits of sampled women in Jos, an urban area of the middle belt of Nigeria?

RQ2: What are urban Nigerian women's perceptions of nutrition that lead to the adoption of a Western-based diet instead of a traditional Nigerian diet?

RQ3: What are the lived experiences of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households?

Theoretical Framework

The social ecological model (SEM) and systems theory were used to analyze personal narratives; identify key themes across experiences; and assess the influence of social, governmental, and environmental influences on individual behaviors surrounding decisions on nutrition and maintaining dietary decisions. I used the SEM to identify social and behavioral changes through a multifaceted and interactive capacity (as in The

United Nations Children's Emergency Fund [UNICEF], 2009). Social networks influence individual behaviors in Nigeria, due to cultural values and attitudes that promote communal rather than individualistic actions (Gyekye, 2010). I used the SEM to explore how factors in the social environment can affect behavior, based on multiple levels of influence (aligned with Glanz, Rimer, & Viswanath, 2015). Pertinent constructs are individual, interpersonal, organizational, community, and public policy (Glanz et al., 2015). Furthermore, the hierarchical levels of the SEM, such as the individual, interpersonal, community, organizational, and policy-enabling environment interrelate and overlap, resulting in one level influencing another (Dyer, 2015).

Researchers use systems theory to explore how and why people form groups and how these groups interact as parts of the whole system, as they adapt to changes in the environment (Heath & Bryant, 2013). Ackoff pioneered the movement for systems thinking, illustrating the crossover that exists among varying disciplines (as cited in Watson et al., 2010). Systems theory is a generalized theoretical model that considers relationships in the empirical world without a focus on a singular discipline. Boulding (1956) regarded systems theory as the skeleton of science and as the skeleton in the cupboard, in that although it offers a framework and structure for a study, it exposes the reality that often subject matters do not fit neatly into current models and theories, thereby deflating excessive philosophical claims.

A humanistic approach to understand the whole person can support transferability. People are accountable for their perspectives. In this study, I explored some aspects of history to better understand how it has shaped current dietary perceptions of the value placed on traditional diets to influence future educational programs that

could shape decisions on nutrition. Chapter 2 provides more detail on these theoretical concepts.

Nature of the Study

For this study, I used a basic qualitative study design, employing thematic analysis to provide a comprehensive, sociocontextual, detailed description and interpretation of the phenomenon of interest, enveloping beliefs, constructs, and emotions (Saldaña, 2015; Vaismoradi, Jones, Turunen, & Snelgrove, 2016). In this study, I explored the perceptions of community women in an urban city of Nigeria on the nutrition of dietary behaviors. Through individual interviews, the indigenous women of Nigeria had a voice. Contextualizing indigenous women's worldviews can support the future development of competent and pragmatic health research (Vaismoradi et al., 2016).

Definitions

In this section, I note some key phrases or terminologies used in this study.

Acculturation: Cultural modification of an individual, group, or people by adapting to or borrowing traits from another culture or a merging of cultures because of prolonged contact (Berry, 2015).

Body mass index (BMI): A measure of body fat that is the ratio of the weight of the body in kilograms to the square of its height in meters (i.e., a person with a BMI of more than 30 is obese; Centers for Disease Control and Prevention [CDC], 2016).

Chronic diseases: A disease that persists for a long time. Chronic disease is one that lasts 3 months or longer (Centers for Disease Control and Prevention [CDC], 2019). Generally, vaccines and medications cannot prevent or cure chronic diseases, nor do they

just disappear. Examples include arthritis, cardiovascular diseases such as heart attacks and stroke, cancer such as breast cancer and colon cancer, diabetes, epilepsy and seizures, obesity, and oral health problems (Bernell & Howard, 2016).

Food/nutrition transition: A shift in dietary consumption and energy expenditure that coincides with economic, demographic, and epidemiological changes (Alvergne, Jenkinson, & Faurie, 2016).

Globalization: The act or process of globalizing, resulting in an increasingly integrated global economy marked by free trade, free flow of capital, and the tapping of cheaper foreign labor markets (Beck, 2018).

Excellent health: An operational measure of women having no chronic disease or risk factors affecting themselves or family members. Women who are physically active may consciously choose healthy unprocessed foods for themselves and their families.

Good health: An operational measure of women having zero to one chronic disease.

Fair health: An operational measure of women having one to two chronic diseases.

Poor health: An operational measure of women having three or more chronic diseases.

Indigenous: Innate or occurring naturally in a region or environment. Indigenous culture has a historical distinctiveness and occurs naturally in a region (*Merriam-Webster*, n.d.).

Malnutrition (starvation): A hunger-related condition that arises because of inadequate essential minerals, vitamins, and other nutrients needed for healthy body function (Saltzman et al., 2014).

Micronutrient deficiency: Lack of essential vitamins and minerals required in small amounts by the body for proper growth and development (Centers for Disease Control and Prevention [CDC], 2019).

Quality of life: An operational definition determined as sampled women who have no condition that restricts their activities of daily living.

Urbanization: The process of making an area more urban (Sadorsky, 2018).

Assumptions

An assumption of the study was that the participants answered the semistructured questions honestly, providing a deeper understanding of women's perceptions on diet choices for their households. Also, an assumption of the study was that women were the key dietary decision makers for their households. Although these women were likely going to fear stigmatization because the interviews were recorded, assurance that privacy and confidentiality were preserved allayed those fears. Additionally, because participation was voluntary and participants could withdraw from the study at any time with no ramifications, participants had a sincere interest in participating in the study, and the sample was appropriate, with all participants meeting the inclusion criteria. Also, I assumed participants had the relevant experiences needed to achieve the objectives of the qualitative case study as decision makers in their homes. Last, because this study was limited to participants who meet the inclusion criteria, the study was channeled because

participants had all experienced the same or similar phenomenon of the study and had appropriate knowledge and experiences to address the interview questions.

Scope and Delimitations

The study design was descriptive in nature and focused on understanding the dietary behaviors of women in an urban city in Nigeria. Diet and nutrition are indicators of health; therefore, a clearer understanding of dietary composition by the local community and a change in attitudes and beliefs surrounding diet and nutrition could help guide educational curricula and public health interventions (Fialkowski, Okoror, & Boushey, 2012). The community benefits from understanding how diet composition affects the risk of chronic ailments such as malnutrition, diabetes, cancer, chronic kidney, or liver diseases (Fialkowski et al., 2012).

The phenomenon of interest for this study was micronutrient malnutrition, a collective term that describes hidden hunger or the insufficiency of essential vitamins and trace minerals, often because of high consumption of energy-dense nutritionally poor foods (Black, 2003; Cusick & John, 2014). Understanding the perceptions of women and how Westernization might be influencing their choice of energy-dense foods can assist in developing educational campaigns and inspiring future studies. The conceptual framework focused on environmental and cultural norms.

The research sample comprised six women between ages 20 and 30 living in an urban setting in Nigeria. The primary data-gathering method used was in-depth interviews in either English or Hausa (a native dialect) to determine women's perspectives and influences impacting their social and economic attitudes, values, challenges, and overall dietary choices. Working closely with subgroups such as

Zummunta Mata, community leaders, and local experts such as nongovernmental organizations, I used purposeful and convenience sampling to recruit participants.

I delimited the study to only young women between the of ages 20 and 30 with young families. I analyzed the gathered data assigning themes and coding. I used translated or verbatim quotations from respondents. For data management, I incorporated recording devices, electronic filing systems, and physical files for handwritten notes. I locked all physical data in a safe cabinet to maintain privacy and confidentiality.

Limitations

This qualitative study was limited in population control. This study was limited to the chosen target population; therefore, the focus was on the context in which the data were obtained. Hence, the findings from this qualitative study may not be generalized or transferred to a new location because the research problem may be specific to Jos city of Plateau State, Nigeria. Also, this study was qualitative and relied on a small sample drawn from one location (Jos, Plateau State). Qualitative interview data allowed for deeper meaning, identifying patterns, and coding themes that could assist in transferring knowledge to other groups in Nigeria or Africa, outside the study sample, with dynamics similar to the women of Jos.

Another limitation was possible researcher bias. As an indigene of Plateau State, Nigeria, with an interest in the role of indigenous foods and nutrition, my background could influence data triangulation. To minimize my bias, I reevaluated impressions of respondents and challenged my preexisting assumptions, remaining cognizant not to assume relationships between a feeling and behavior. I also had participants review the data to maintain context. Because of the possible language barrier, I used the help of a

translator, when needed, during interviews with the participants. Hence, I conducted the interviews in English but I had a translator for those who did not understand the English language. I then had the interviews transcribed to the respective language and reviewed for accuracy by the interviewees. Further, all interviews were translated into the English language for analysis and interpretation. Last, I did not consider the perspectives of men because much of the food choices are made by women.

Significance

Although similar studies have been conducted around the globe, no researchers conducted a study of this kind in Sub-Saharan Africa that allowed indigenes to reflect on their choices. What scholars did not know is why urban women from Nigeria have been opting more for a processed Western diet. This study addressed this gap by focusing on the women's voices in relation to their dietary habits and factors that influence choices while inferring micronutrient malnutrition from habits in the women of Jos, Plateau State, Nigeria. I explored participants' understanding of indigenous foods and opinions on Western diets in relation to their health status. Because I am an indigene of this population, locals had a rare opportunity to be comfortable, trusting, and likely respond differently than in most prior studies conducted, monitored, and sponsored by Western nongovernmental organizations or international groups that were observing the population as a foreign body.

This qualitative study lends a voice to the indigenous people of Plateau State by trying to understand the problem from their point of view. A dearth of qualitative studies exists on indigenous people's perceptions of the double burden of malnutrition in Nigeria or the nutritional transition from a biocultural perspective. The current focus in Nigeria is

food fortification because researchers such as Darnton-Hill and Nalubola (2002) believed food fortification has improved the health of individuals in industrialized nations.

Understanding of nutritional health is still low, despite the fair understanding of the value of fruits and vegetables. A need persists for better understanding of the benefits of traditional foods, improved access to more options, improved understanding of how food choice impacts health, and reflections on the different diet options (i.e., Western versus traditional). It was important to hear the perspectives of these indigenous women and seek patterns in their diet to design programs that can improve their health outcomes through behavioral changes.

Summary

The goal of this study was to explore the reasons Nigerians are losing interest in consuming traditional foods. Darnton-Hill and Nalubola (2002) believed fortification has improved the health of individuals in industrialized nations, but affordability is an issue in Nigeria; hence, the health benefits of indigenous foods should be considered. I also examined the potential health benefits of traditional foods in reducing or combating the rise of chronic diseases by highlighting the perceptions leading to current food choices. From the results of this study, I explored whether a connection or trend exists connecting the rise in chronic noncommunicable ailments with rising food transitions to Western-based foods. Harris (2016) claimed that foods found to promote health are unprocessed; they contain high levels of minerals, soluble fats, and vitamins. Researchers and stakeholders have ascribed chronic diseases and obesity in Nigeria to industrialization and urbanization (Kolawole & Obueh, 2013).

In this chapter, I introduced food transition and the impact of urbanization on the health of Africans and Nigerians. I also provided an analysis of the effectiveness and drawbacks of westernization on indigenous food options. In Chapter 2, the literature review, I analyze the effects of this challenge in other parts of Africa. In Chapter 3, I discuss the three research questions, the methodology chosen for this qualitative study, the rationale for using a basic study, a description of the research location, the inclusion and exclusion criteria for participants, and the purposeful sampling strategy. I also explain the scope of the study including data, organization, storage, coding, and analysis. In Chapter 4, I provide the results, and in Chapter 5, I interpret the results and provide recommendations and social-change implications.

Chapter 2: Literature Review

Nigeria is facing obesity and undernutrition, attributed to micronutrient deficiency (Popkin, 2009). Some Nigerians have been opting for a more processed Western diet and the acceptance of a Western-based diet and lifestyle have been associated with increased incidences of chronic diseases in Africa (Demi, 2014; Popkin, 2009; Shrimpton et al., 2016). Although Nigeria still battles infectious diseases and other typical diseases of developing nations such as malaria, typhoid fever, leishmaniasis, lymphatic filariasis, Chagas' disease, polio, Guinea worm, onchocerciasis, and schistosomiasis, many Nigerians also suffer from cardiovascular and other chronic diseases (Adediran, Akintunde, Opadijo, & Araoye, 2015; Stevens, 2017). Micronutrient malnutrition impacts the prognosis of diseases, maintenance of tissues, food metabolism, and prevention of diseases (Anetor, 2015; Harika et al., 2017).

The purpose of this study was to explore the perceptions of women in an urban setting in Nigeria on indigenous foods and Western influences. The understanding gleaned from this study will help health care providers ascertain if an association exists between these perceptions and malnutrition and food insecurity. By exploring indigenous women's perspectives, I gained an understanding of their values, challenges, customs, and attitudes in relation to their decision making surrounding the nutritional value of indigenous foods and Western foods, and how these decisions impact their diet, agricultural practices, and health.

In this literature review, I present research on food transitions of indigenous populations, the effects of these transitions, and the explored solutions. Understanding how nature, globalization, and culture shape diet choices in Nigeria can influence future

intervention campaigns. This literature search and review highlights qualitative scholars who explored these perceptions of indigenous populations of Sub-Saharan Africa who are opting for Western diets despite the changes in health outcomes. I explore the views, knowledge, perceptions, and biases shared by the indigenous people about the Western diet and indigenous fruits and vegetables or dietary diversity.

Increasing population and the unsustainable exploitation of nature have negatively influenced food security (Singh, Singh, & Srivastava, 2016). Accompanying population growth has been a growth of global livestock, due to increased demand and interest in foods of animal origin (Singh et al., 2016). The combined pressures in animal husbandry and population growth have affected the environment and added pressure to the agricultural sector (Singh et al., 2016). Concurrent with this global change is a resultant decline in the consumption of indigenous African foods, associated with the emergence and spread of chronic diseases on the African continent (Raschke & Cheema, 2008). African indigenous foods are at risk of extinction, due to negative perceptions associated with global diet shifts (Demi, 2014).

In addition, 400 million people in the world are indigenous. Indigenous peoples have the lowest health indices, attributable to poverty, malnutrition, overcrowding, poor hygiene, environmental contamination, and infections (Gracey & King, 2009). Colonization has negatively aligned with indigenous health because it has affected the mental, physical, social, and emotional health of populations that were dominated, disrupting the fabric of their traditions (Gracey & King, 2009).

Malnutrition is changing the scope of nutrition education in Nigeria, largely because local Nigerian dishes, previously prepared from organic whole foods, are being

replaced by conventionally grown and genetically modified Western foods (Popkin, 2009; Shrimpton et al., 2016). The most common deficiencies in Nigerian diets include iron, iodine, vitamin A, zinc, and vitamin B-12 (Harika et al., 2017). Most studies of malnutrition in Nigeria are limited because they tend to focus only on micronutrient deficiencies such as iron, vitamin A, iodine, folate, or zinc; they also focus on malnutrition in children under 5 years of age (Uchendu & Abolarin, 2015). However, I approached micronutrient malnutrition based on its impact on the prognosis of diseases, maintenance of tissues, food metabolism, and prevention of diseases (see Anetor, 2015; Harika et al., 2017).

Rasaki et al. (2018) confirmed the high prevalence of hypertension in malnourished adults. When researchers studied the perceptions of indigenous people in Mexico irrespective of age, locality, and size, people preferred the Western food option over traditional items, perceived to be tastier; additionally, Monarrez-Espino, Greiner, and Hoyos (2004) speculated that the Western diet preference was a proxy for wealth. In Jos, Banwat et al. (2012) found a fair knowledge of the nutritional values of fruits and vegetables (92.4%) but low consumption (69.2%) of these fruits and vegetables; however, the researchers did not investigate other barriers beyond education such as the cost of fruits and vegetables relative to other options or accessibility. Despite awareness of the importance of fruits and vegetables, Nigerians consume low amounts, according to research investigating the purchasing behavior of consumers (Ohen, Umeze, & Inyang, 2014). Cost and visual attractiveness are factors that influence the purchase and consumption of fruits and vegetables in Nigeria (Ohen et al., 2014). It was important to identify and understand the perspectives of indigenous people in Nigeria on this subject.

In this chapter, I review several African countries, their perspectives, and the researched frameworks that investigated malnutrition, diet transition, and the impact diet transition has on current health status in Africa. Theoretical frameworks served as a blueprint for this investigation by giving the study a foundation and focus (see Casanave & Li, 2015). The theoretical lens for this study was the SEM and systems theory. These theories are intended to be used to modify eating behavior when addressing a person's intentions, perceptions, and attitudes about social paradigms, supposed barriers, levels of empowerment, and perceived will power (Fila & Smith, 2006).

Literature-Search Strategy

The literature-search strategy I used was a topic-based approach for most searches and keywords. I focused on peer-reviewed articles, abstracts, and journals; Walden dissertations in Walden's online library; Google Scholar; ProQuest; and numerous websites. Some governmental and nongovernmental websites used include the World Health Organization (WHO), World Food Program, CDC, Food and Agriculture Organization, U.S. Agency for International Development Washington, Nigerian Department of Women Affairs, and the Plateau State Department of Health. Additionally, I used Internet sources like Google, web pages, and news outlets.

Beyond keywords, I reviewed references cited in publications and articles as a guide to finding similar relevant works and additional viewpoints. To understand the perceptions of women in an urban setting in Nigeria, some keywords I searched included *indigenous food, food security, micronutrient malnutrition, malnutrition in Sub-Saharan Africa, Western diet transitions, diet and chronic diseases, overnutrition and undernutrition, Nigerian nutrition paradox, African women and nutrition, malnutrition*

and obesity, malnutrition and the economic status, nutritional anthropology, globalization and diet, indigenous foods and nutritional content, wild vegetables, African food security, diseases of poverty, diet and perceptions, diet and social contexts, indigenous food sustainability, poverty and malnutrition, governance and food security, malnutrition and policies, storytelling and behavior change, diet decisions of women and health, rural versus urban diet, urban migration and diet, globalization, processed foods, systems theory, SEM, grounded theory, diffusion of innovation theory, and health belief model.

Theoretical Foundation

A framework is an abstract idea that enriches a study (Casanave & Li, 2015). Researchers use a framework to explain the why and how of a study by offering what the study is about and interpretations of study findings in comparison to other studies. Concepts are abstract, based on incidence, whereas theory shows how the concepts connect (Casanave & Li, 2015). Researchers need theoretical frameworks to serve as the blueprint for a research study (Casanave & Li, 2015; Ravitch & Carl, 2015). A theory helps in designing the research questions, guiding the selection of relevant data, and allowing the researcher to suggest solutions or associations (Casanave & Li, 2015; Ravitch & Carl, 2015). In a qualitative study, social sciences and humanities theories guide researchers to explain complex concepts that normally are difficult to understand (Reeves, Albert, Kuper, & Hodges, 2008). Theories offer researchers a lens to look at complex social issues and guide thoughts. The lens sheds light on complex issues and helps researchers develop a simpler interpretation of results.

The theoretical lens used by researchers depends on the research question and the researcher's willingness to accept the theoretical assumptions that shape their disciplinary training and the meanings attached to them (Collyer, 2018; Rubin & Rubin, 2011). Researchers from various disciplines benefit from looking at different traditions and paradigms by avoiding identifying with a single view (Collyer, 2018). I used grounded theory (see Glaser & Strauss, 1971) in this study to explore the lived experiences of locals by drawing and developing themes directly from the shared stories of participants (aligned with Denzin & Lincoln, 2011). I also explored the motivation for women to grow or choose foods for themselves and their families. Future interventions can be developed around those themes (as in Momenee, 2017). Scholars use systems theory and SEM to explain how and why people form groups and how these groups interact as parts of a whole system, as people adapt to changes in the environment (Heath & Bryant, 2013).

Food insecurity impacts more than 2 billion people worldwide, including in Nigeria (Nair, Augustine, & Konapur, 2016). Most current studies relating to diet choices, food security, and micronutrient malnutrition in Nigeria are quantitative and focus on pregnant women and children under 5 years of age. Factors contributing to food insecurity include poor infant- and child-feeding practices; lack of access to proper healthcare, water, and sanitation; and poverty. Poor earning, management of money, poor food preparation, or a high cost of foods increase malnutrition in urban and rural areas (John et al., 2012). The desire for quality livelihood and nutrition security is the same in urban and rural areas; however, housing, crime, transportation, and wage constraints are typical of urban areas whereas lack of education, understanding of food-preparation

techniques, and access are more common in rural areas (Mohiddin, Phelps, & Walters, 2012; Olayiwola et al., 2004). Because Africans are known for their storytelling traditions and women play a role in men's and children's dietary health, examining their lived experiences offers an in-depth understanding of their choices, norms, values, and challenges (see Ravitch & Carl, 2015).

Grounded Theory

Grounded theory is a constructivist methodology to explain social interactions, the consequences of those interactions, and how such interactions change over time (Glaser & Strauss, 1971). Some authors argue that grounded theory evolved from studying the symbolic interactionist approach to human behavior coined by Blumer (as cited in Robrecht, 1995; Wells, 1995). In this claim, human beings act based on the meaning they apply to the object in their interaction (Robrecht, 1995). Researchers developed grounded theory to systematize qualitative studies at a time when it was considered unscientific, generating theory from the “ground” up, in the sense that it begins with open coding, then axial coding, and ends with selective coding (Glaser & Strauss, 1971).

Grounded theory has four components: (a) fit—do the concepts fit what is being described?, (b) relevance—is the study's finding relevant to the people affected by the phenomenon?, (c) workability—how is the phenomenon addressed and managed?, and (d) modifiability—can the theory be modified with the introduction of new data? (Tossy, Brown, & Lowe, 2017). In grounded theory, data collection rests on social interaction in the form of field studies, observations, or interviews. Researchers analyze the data by coding and categorization. A grounded theory should be grounded in the data, not

imposed on the data; hence, grounded theory is about approaching the data to find the theory, not using theory to manipulate the data.

I used grounded theory to analyze personal narratives, identify key themes across experiences, and assess the motivation of participants to make and maintain dietary decisions. Grounded theory also explains these experiences holistically because I applied qualitative and some quantitative concepts. Although grounded theory is qualitative in nature, its structure establishes credibility, confirmability, consistency, reliability, and generalizability in coding, saturation, and memorandum writing (Healy & Perry, 2000). Grounded theory is appropriate for studying social processes because it guides a researcher to gain an in-depth understanding of participants' lived experiences (Howren et al., 2018).

Systems Theory

Ackoff pioneered the movement for systems thinking, illustrating the crossover that exists among varying disciplines (as cited in Watson et al., 2010). Ackoff dissuaded people from focusing on techniques as being narrow-minded and a blind pursuit of efficiency; instead, researchers should recognize that systems are a holistic portrayal of work that shows the interconnectedness of work, people, and things (as cited in Gharajedaghi, 2011; Watson et al., 2010). Ackoff argued that problems arise because of interactions of parts of different systems and never because of a single system (as cited in Watson et al., 2010). The malnutrition challenge in Nigeria arose from a disconnection in among various systems such as agriculture, the environment, policy, and social systems, resulting in inadequate infrastructure and services, housing shortages, traffic congestion, crime, and street violence (Aliyu & Amadu, 2017). von Bertalanffy (1968) articulated

that the complexities of system thinking requires a reorientation of worldview with an emphasis on holistic, integrative, and ecological orientation. Systems theory, therefore, is an awareness that a cause may have several effects and an effect often has several causes (Spruill, Kenney, & Kaplan, 2001). The theory is a generalized theoretical model that considers relationships in the empirical world without a focus on a singular discipline. Boulding (1956) regarded systems theory as the skeleton of science and the skeleton in the cupboard; although it offers a framework and structure for the study, it also exposes the reality that subject matters often do not fit neatly into current models and theories, so it deflates excessive philosophical claims.

Kaput et al. (2014) affirmed that researchers should study nutrition from a systems perspective. Kaput et al. emphasized the need to understand that malnutrition is multifaceted; therefore, understanding approaches to manage malnutrition require knowledge of environmental and social conditions that impact health, education, or infrastructural mechanisms. Changing community behavior requires an understanding that the community is a complex living system of human beings; understanding tools or contexts plays a role in community and country development (Kaput et al., 2014; Spruill et al., 2001; Zoellick, 2010).

Social-Ecological Model

The SEM was adopted from Bronfenbrenner's (1979) theoretical perspective on human development. The perspective centers on the evolving interaction between people and their environment (Bronfenbrenner, 1979). Researchers use this theory-based framework to explore how factors in the social environment affect behavior, based on multiple levels of influence. SEM constructs are individual, interpersonal, organizational,

community, and public policy (Glanz et al., 2015). Because behavior change is multilayered, this study centered on malnutrition, food security, and micronutrient deficiencies and required understanding of multiple interconnecting networks. I used the SEM to understand the transactional relationship between people and their physical and sociocultural surroundings (aligned with Sallis, Owen, & Fisher, 2015). According to the SEM, proximal networks such as families and friends influence behaviors. To achieve changes in behavior, social networks and policies must motivate behavior (Sallis et al., 2015).

In Plateau State, Nigeria, nutrition education resulted in a positive improvement in food-related knowledge and attitudes of women in that community (Jatau, 2013; Minkler, 2012), suggesting that community engagement is a practical approach to community development. The interplay among personal, cultural, and environmental factors was useful in identifying the dietary behaviors of women in an urban city of Nigeria using the five levels of influence: intrapersonal level (taste preferences, habits, and nutritional knowledge), interpersonal level/social environment (culture, social traditions, and role expectations; and patterns in peer groups, friends and family), organizational, community, and public policy levels/physical environment (environmental factors that affect food access and availability; Robinson, 2008). SEM includes the complexities of public health and emphasizes the need to avoid a single-level analysis of health behaviors or health outcomes (Robinson, 2008).

Conceptual Framework

A conceptual framework is also specific to the researcher's worldview, influenced by experiences and conditioning, beliefs, and values (Flick, 2014). From my conceptual

view, I tried to understand and analyze general awareness and perceptions of women surrounding Westernization and their choices relating to food and nutrition balance in Nigeria. As described in the segment on systems theory, multiple factors influence food choices. Individual interviews shed light on what aspects of culture, values, norms, and conditions affect why Nigerians budget or choose which foods to consume. An interplay between environmental, agricultural, economic, and policy considerations impacts conceptual frameworks to understand food choices. When studying the Amazonian community for the consequence of food taboos, Dufour and Piperata (2017) found that food taboos, economic changes, and city living aligned with undernutrition in adults and children. Industrialization results in shifts in income levels, cultural beliefs, and norms among indigenous people, eventually resulting in a change in their nutritional status (Dufour & Piperata, 2017). When Sosa, Cardinal, Contarini, and Hough (2015) examined food choice motives and food-related emotions of 320 women aged 25–55 in low-income and middle income households in two Argentine cities, the researchers assessed buying habits, storage, cooking, nutritional composition, and exchange with other family members concerning food; Sosa et al. found that income motivates diet significantly, not the city or the product purchased.

The food-related-lifestyle (FRL) model attempts to characterize consumers by how they employ food and eating to obtain life values (Grunert et al., 2011). Specifically, researchers using the FRL try to evaluate if consumer perceptions guide food choice behavior. The FRL was first introduced in the mid-1990s by Brunsø and Grunert (1995) and Grunert, Brunsø, and Bisp (1997). The Grunert et al. (1997) study in China found that economic growth and a shift from rural to urban dwellings resulted in a progressive

shift in food consumption from grains to meat and other exotic high-value food products, and is a worldwide phenomenon. To address malnutrition and food insecurity, developing nations need reorientation back to traditional diets that are readily available and cost-effective (Odinye, 2012; Yang, 2014).

The conceptual framework for this study focused on general perceptions of women about diet and nutrition and their cultural norms, shaped by multiple ethnic groups. Urban environmental education, food, and biodiversification promotion, and human and community well-being guided the study principles. Because the focus was to understand how perceptions influence malnutrition rate, exploring participants' understanding of diverse indigenous food options compared with Western food options and how the choices they are making affect community health was the foundation of this study approach. The study also sought to further understand how nature and culture, primitive and modern, tradition and science have, over the years, transformed diets that were close to nature into the current modern food-like substances (Fieldhouse, 2013). Interestingly, these so-called primitive diets provide healthier nutrition (Harris, 2016; see Figure 1).

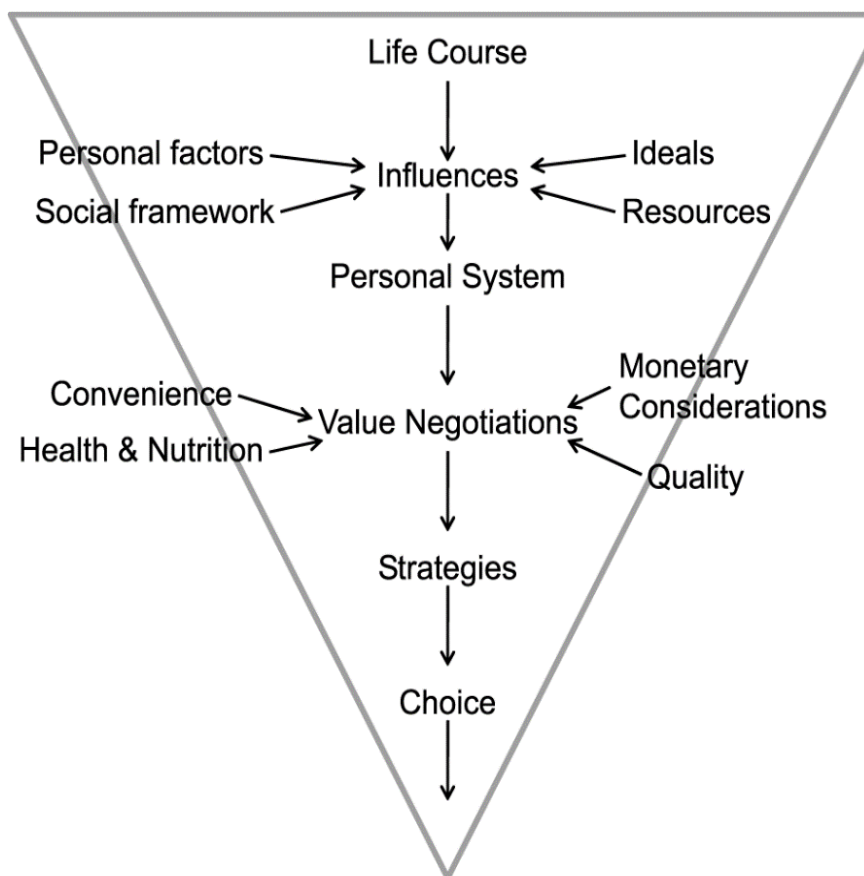


Figure 1. A conceptual model of the components in the food choice process.
Note. Adapted from “Food choice: A conceptual model of the process,” by T. Furst, M. Connors., C. A. Bisogni, J. Sobal, & L. W. Falk, 1996. *Appetite*, 26(3), p.251. Gachomo Mapis. Adapted with permission (See Appendix A).

An estimated two billion people suffer from chronic micronutrient deficiency globally (Nair et al., 2016). Because women are the primary diet decision makers in Nigeria, this qualitative study entailed collecting data on women in an urban setting of Nigeria on their diet, health, perceptions of diet, and how this diet has a likely effect on their health, from indigenes’ point of view. The goal was to better understand reasons for the widespread adoption of Western diets, considering these nutritional problems from a biocultural or nutritional anthropology perspective (Jerome, Kandel, & Pelto, 1980). Micronutrient malnutrition in the context of nutrition transition presents in the form of

stunting, increased morbidity and mortality, increased obesity and its attendant chronic diseases (Eckhardt, 2006).

Review of Literature

Malnutrition is a growing problem in the world. Malnutrition includes undernutrition and overnutrition, which often coexist in the same communities (Shrimpton et al., 2016). Contrary to popular notions, malnutrition affects the developed and developing worlds (Kraemer et al., 2016). Shrimpton et al. (2016) asserted that, of the 20 global determinants of deaths, 14 relate to diet and nutrition. However, in obese populations, the issue is not typically undernutrition, but micronutrient deficiency, known as hidden hunger (Saltzman et al., 2014). Micronutrients are substances found in trace amounts but essential for human health. They include all vitamins and trace minerals include zinc, copper, selenium, chromium, cobalt, iodine, manganese, and molybdenum. Current studies show that micronutrient deficiency affects one third to one half of the world's population (Miller & Welch, 2013). Some of the most common micronutrient deficiencies are of iron, iodine, and vitamin A, though zinc and B-12 deficiencies are also common (Miller & Welch, 2013).

With the shift from food manufacturing, many people in Sub-Saharan Africa went from diets high in carbohydrates and fiber, and low in fat to diets high in saturated fat, sodium and sugar, and low in fiber (Popkin et al., 2012; Steyn & Mchiza, 2014). When Kenyan, Tanzanian, and Ugandan communities were studied in 1928, the presumed lifelong low blood pressure was devastated by acculturation of these ethnic food groups (Baldachin, 1963; Scotch, 1963; Trowell, & Burkitt, 1981), accompanied by a notable rise in incidences of appendicitis, diverticular disease, varicose veins, and colorectal

cancer, because of the consumption of low fiber Western diets (Statovci, Aguilera, MacSharry, & Melgar, 2017; Trowell & Burkitt, 1981). A study conducted in the Benin Republic of West Africa in urbanized locations found an associated cardiometabolic risk attributed to rapid urbanization and technological advancements resulting in increased BMI, blood pressure, serum cholesterol, and insulin resistance (Delisle, Ntandou-Bouzitou, Agueh, Sodjinou, & Fayomi, 2012). Also, notably, the burden of malnutrition and obesity doubled in the Benin populace (Delisle et al., 2012). City dwellers had micronutrient deficiencies because of poor diet quality; they preferred diets high in meats, eggs, dairy products, vegetables, and fats (Delisle et al., 2012). When researchers investigated the perceptions of Tarahumara women of Northern Mexico, most of the women preferred Western options over traditional Mexican foods; the women perceived Western foods to be tastier (Monarrez-Espino et al., 2004). Monarrez-Espino et al. (2004) speculated that diet choice is a proxy for wealth. Furthermore, a study in South Africa intending to address ongoing challenges surrounding hunger, food insecurity, and malnutrition, found solutions focusing on technology and fortification rather than horticulture because the indigenous people perceived traditional foods to be poor people's food, so did not consume them (Cloete & Idsardi, 2013).

The origin of changing eating habits. The diversity of Africa is noted by its distinction in language, culture, the pattern of nutrition, and physical characteristics; thus, the Khoisan, Afro-Mediterranean, and Negroids represent different groups and regions, but all mistakenly joined in race in the 19th and 20th centuries (Reid, 2011). In 1957, when researchers studied the Zulu tribe of South Africa, urban dwellers had a notably high rate of hypertension, attributable to acculturation and urbanization (Scotch, 1963). In

a 50-year research study conducted in the last African countries to be westernized—Kenya, Tanzania, and Uganda—that began in 1928, researchers surmised that acculturation of these ethnic groups had resulted in increased cases of high blood pressure (Baldachin, 1963; Scotch, 1963; Trowell, & Burkitt, 1981).

Industrialization resulted in global communities. These communities are experiencing behavioral changes attributable to social and economic patterns; in turn, researchers have linked industrialization to a shift from the diversified traditional eating pattern to a more simplistic monotonous diet, packed with highly dense carbohydrates (Fungo, Muyonga, Kabahenda, Okia, & Snook, 2016). Odinye (2012), who studied Western influence in Chinese and Nigerian cultures, found that westernization led to the extinction of indigenous languages, foods, and religions in both countries, with a noticeable shift from traditional diets, focused on medicinal elements of foods, to a high fat, high sugar, and calorie-dense diet (Odinye, 2012). People perceived that westernization epitomizes success and modernity (Odinye, 2012). Likewise, Brazilians have replaced unprocessed or minimally processed foods with processed and ultraprocessed ones (Monteiro, Levy, Claro, de Castro, & Cannon, 2011). This change is leading to a loss of traditional food composition with a continuous decline (Monteiro et al., 2011). As disposable income grew, the consumption of processed foods increased (Odinye, 2012). The Brazilian study further established a positive association between increased processed-food intake and the risk of certain diseases; for example, increased soft-drink consumption accompanied increased cases of diabetes and obesity (Monteiro et al., 2011).

The consequence of changing eating habits of indigenous people. As a global phenomenon, malnutrition has been in the spotlight. The World Bank has instituted multiple nutrition development strategies (Horton, Shekar, & Ajay, 2009). Also, the Scaling Up Nutrition movement was formed by the United Nations (UN) under the Millennium Development Goals (MDGs; Horton et al., 2009; Pittore & Reed, 2016). In Nigeria, nutrition is a major problem mainly because of the lack of consumer awareness of human nutritional needs (Pittore & Reed, 2016). Health practitioners, community leaders, and governmental institutions all share responsibility to influence social change (Pittore & Reed, 2016).

During the 3rd African Nutrition Epidemiology Conference, held at the National Research Centre in Cairo, Egypt, the presented research concluded that malnutrition in Africa resulted from inadequate food production and availability (Shaalán, 2009; Sohn et al., 2009). Though many countries have made strides in addressing nutritional status, a correlation emerged between malnutrition and the economic status of a nation (WHO, 2017). A conclusion from the African Nutrition Epidemiology Conference was that malnutrition is responsible for obesity and stunting the growth of Nigerian children (Shaalán, 2009).

Globalization has made Africa complex because Africa no longer addresses only infectious diseases. It has a double burden of communicable and noncommunicable diseases (WHO, 2017). To support these claims, Zhao et al. (2015) found that iron deficiency was initially reported among obese individuals in 1961. When the meta-analysis analyzed 26 cross-sectional and case-control studies, compared with individuals who were not overweight, overweight/obese individuals had lower serum iron

concentrations. With the rising obesity epidemic, it is important to address the possible iron deficiency. While holding other determinants of weight, such as age, ethnicity, educational level, and socioeconomic status constant, the study by Zhao et al. found that the risk of developing iron deficiency was still significant in obese participants compared to nonobese participants. The researchers concluded that a probable cause of obesity is not always calorie dense diets but nutrient-sparse foods.

Another study that investigated malnutrition by Gonçalves et al. (2014) cited several studies showing that vitamin D is a risk factor for the progression of chronic kidney disease. Additionally, the study reinforced the role of vitamin D in blood-pressure control and found a significant increase in proteinuria. Based on conclusive data from this study, the researchers concluded that vitamin D deficiency is an aggravating factor for tubulointerstitial damage and formation of interstitial fibrosis after ischemia/reperfusion injury. Finally, the effect of vitamin D on parathyroid hormone is also significant. When Adedeji et al. (2017) assessed the relationship between the nutritional status of school children and their cognitive functioning, the researchers found a 35.4% prevalence of malnutrition and suboptimal IQ among 62.7% of all pupils in the study. Malnutrition aligned with socioeconomic status, attendance in public school, and parental literacy (Adedeji et al., 2017). Cognitive functioning does not only impact children but also is a likely culprit for the risk of chronic diseases in adulthood (Adedeji et al., 2017).

Although these aforementioned studies considered the harmful effects of diet transition and the possible cause of new adaptations, scholars do not know why urban women from Nigeria have been opting for a more processed Western diet when they have economical and more readily available options produced locally. Direct discussions with

these women can help researchers understand the perceptions of urban women surrounding decisions leading to the adoption of a Western-based diet rather than a traditional Nigerian diet. This study gave a voice to the indigenous women. I used a participatory research strategy to inform the conceptual framework of the study, and the implementation of knowledge informed educational programs and clinical practices. The results were beneficial to medical practitioners, nutritionists, and public health workers. This understanding further affirms my case for addressing micronutrient deficiencies.

Adverse effects of urbanization on macronutrient/micronutrient intakes of Africans. Industrialization has led to the influx of people from rural to urban settings in Nigeria (Kuddus & Rahman, 2015), credited with technological advancement and economic growth. However, a concurrent increase in poverty, inequality, environmental hazards, chronic diseases and causes of infectious diseases has also emerged (Kuddus & Rahman, 2015). Consequently, people have transitioned from foods rich in starch and dietary fiber to foods high in energy-dense snacks, animal protein, and sweetened beverages, resulting in suboptimal micronutrient intakes resulting in poor health of the populace (Kuddus & Rahman, 2015; Vorster, Kruger, & Margetts, 2011).

Urbanization is influencing the growing trend of cardiovascular and other chronic diseases, due to its dietary influences on BMI, cholesterol, fasting blood glucose, and blood pressure (Adediran et al., 2015). The indices are significantly higher among urban dwellers than their rural counterparts (Adediran et al., 2015). A similar study conducted in South Africa explored the dietary intake of rural and urban areas in the northern province of the country and the challenges of improving diet quality coupled with the associated risk of cardiovascular diseases (Dolman et al., 2014). The researchers

evaluated the diet quality and deficiency scores. Despite increased overall micronutrient intake by the urban population, some micronutrients such as fiber, calcium, potassium, and vitamin C were significantly low. Notwithstanding the high diet quality, this province had high deficiency scores as well. Urban dwellers were, therefore, seen to be at a greater risk of cardiovascular diseases, especially women, due to the increased obesity rate (Dolman et al., 2014).

When Paxton et al. (2016) conducted their study in New York of African immigrants, participants confirmed that diets in their home countries were rich in vegetables, fiber, fruits, or roots, compared to the standard American diet, which consists largely of meat, soda, and desserts. African immigrants were accustomed to home-cooked meals compared to the U.S. style of dining out. Many participants confirmed the change in their weight and overall health since migrating to the United States (Paxton et al., 2016). Most participants reported being diagnosed with health conditions, including hypertension, high cholesterol, arthritis, and diabetes, since migration. In Nigeria, accompanying the steady growth of urbanization has been the emergence of popular Western-brand fast-food industries such as Cold Stone Creamery, Kentucky Fried Chicken, Domino's Pizza, and McDonald's. Western food items are very popular and generally regarded as desirable status symbols (Steyn & Mchiza, 2014). Steyn and Mchiza (2014) showed a positive association between the rise in obesity and the increased prevalence of noncommunicable diseases such as cardiovascular diseases and diabetes, with increased urbanization. In Sub-Saharan Africa, 27% of adults aged 20 years and older are overweight, and 8% are obese, with higher numbers in urban communities (Steyn & Mchiza, 2014).

Urbanization in the form of pollution, substance abuse, traffic injuries, housing, sanitation, security, water, and nutrition crises contributes to the challenges impacting dietary decisions of urban dwellers (Kuddus & Rahman, 2015). In Nigeria, urbanization aligns with increased adoption of a Western lifestyle, leading to nutrition transition in addition to the natural adverse influencers (Akarolo-Anthony et al., 2013). Consequent urbanization has also led to shifts from rural to urban areas, resulting in people adopting diets high in sugar, fats, calories, low fiber, and having low physical activity. Changing infant feeding practices and family dynamics vis-a-vis acculturation exacerbate the problem (Gracey & King, 2009; Vorster et al., 2011). Hunger and inadequate micronutrients led to various deficiencies of minerals and vitamins such as zinc, iodine, and folic acid (Gracey & King, 2009). These deficiencies resulted in various complications such as hypothyroidism, blood loss, and intestinal parasites (Gracey & King, 2009).

Health-promoting lifestyles can be encouraged, education on healthy indigenous foods can be advocated, and existing fast-food structures can be strong avenues for nutrition transition from urban high-dense foods to nutritionally dense alternatives with proper training and education (Oyewole & Atinmo, 2015). The workforce in these urban areas, if well trained, can serve as agents of change (Oyewole & Atinmo, 2015). For example, with increased education, consumer demands shift to interest in more nutritionally dense foods that are convenient, such as smoothie stands or vegan and vegetarian options (Stetsiuk, 2015).

The proposed solution to consequences. Although Miller and Welch (2013) recommended consumption of different foods from multiple food groups to combat this

problem, Darnton-Hill and Nalubola (2002) argued that food fortification has helped improve the health and well-being of people in industrialized nations. Fortification of foods with micronutrients is a technology used to add missing essential nutrients in a community into foods to increase micronutrient uptake in a cost-effective way. Typically, staple foods are fortified to address a common deficiency in the population. Fortification is the main strategy used in Nigeria today to address micronutrient malnutrition without changing eating habits.

Pittore and Reed (2016) noted that the *Fortification of Flours Act*, though passed in 2002, is not well structured or adhered to; as a result, regulations are not in place to enforce this government mandate. Government bodies such as the Standards Organization of Nigeria and the National Agency for Food and Drug Administration and Control discovered that, over a period of 10 years, only 10% of the population is complying with this mandate (Darnton-Hill & Nalubola, 2002). Better strategies and policies are needed. Darnton-Hill and Nalubola (2002) challenged this Act, noting that sustainability is only possible if nutritional education and social marketing are used to convince consumers and policymakers of its value. Currently, Standards Organization of Nigeria has mandated fortification of staples including vegetable oils, cereal flours, and sugar, but faces the same fate. The aim of this fortification is to eradicate vitamin A, zinc, iron and folic acid deficiencies in Nigeria. The National Agency for Food and Drug Administration and Control is the governing body responsible for ensuring compliance (Darnton-Hill & Nalubola, 2002).

Korenromp et al. (2016) highlighted another strategy by the WHO to advance micronutrient use in Nigeria. The researchers discussed the use of micronutrient powder

postpartum (Korenromp et al., 2016). The goal of using this powder is to decrease the risk of anemia and iron deficiency in children. A study in other parts of Africa, Asia, and the Caribbean showed a 31% decrease in anemia and 51% decrease in iron deficiency in children when children, aged 6–23 months, used fortified powder (Korenromp et al., 2016). Before the distribution program commenced, 840 health staff were trained on the benefits, their role, and the support groups available to families (Korenromp et al., 2016).

In addition to food fortification, Kung'u et al. (2015) noted that supplements can help address malnutrition mortality. Diarrhea is the second leading cause of death in children, especially in developing countries (Kung'u et al., 2015). It is a result of malnutrition and gastrointestinal parasites; chronic diarrhea leads to death because it further depletes nutrients and results in severe dehydration. The Kung'u et al. study used zinc supplements combined with low-osmolarity oral rehydration salts solution to treat children. The intervention took place in Osun State, in southwestern Nigeria (Kung'u et al., 2015). When the study was evaluated, researchers found that knowledge of intervention and understanding of causes of diarrhea increased from 46.4% to 71.3% in caregivers (Kung'u et al., 2015). The introduction of zinc has helped in other interventions. The goal of studies was not to treat, but to increase skilled knowledge in caregivers. Leadership is critical in the implementation and sustainability of fortification programs. For nutritional challenges to be addressed, it is important to scale the capacity of the workforces through education and training, especially in low-income countries like Nigeria. Improving public health care access requires an empowered workforce (Shrimpton et al., 2016).

Bello, Asubonteng, Sodamade, and Adeniyi (2014) cited the UN claim that more than 870 million people are malnourished or hungry globally. The authors stipulated that food insecurity in Africa is a result of overreliance on rice, maize, wheat, and cassava as the main calorie sources, due to the high cost of fruits and vegetables. The researchers believe the solution to nutrient deficiency and food insecurity in Nigeria is nutrient-rich foods like vegetables, so they set out to investigate the nutritional components of two wild vegetables found in Southern Nigeria: *Vitex doniana* leaf (leaf of the tree) and *Sesamum indicum* leaf. The researchers collected and analyzed samples of the vegetables for their mineral elements. The authors outlined the nutrient composition of each vegetable and its antinutrient, presenting quantitative data, based on laboratory tests and data analysis. Bello et al. (2014) carried out this study based on support and recommendations from the UN. They found these vegetables to have high levels of micro- and macronutrients; hence, their cultivation and consumption should be encouraged. When successfully implemented in community settings, these vegetables dramatically reduced public health burden, encouraging studies of other wild fruits and vegetables and addressing the cost concerns of available fruits and vegetables. The researchers dried the vegetables before centrifuging and testing, so it is possible the vegetables lost some of their nutrients.

In a similar study, conducted on fresh, raw forms of vegetables, researchers studying undernutrition in Sub-Saharan Africa found that forest foods in Cameroon are highly nutritious (Fungo et al., 2016). Fungo et al. (2016) cited studies that showed that forest foods contribute 36% of total vitamin A, 20% of iron in Gabonese diets, 31% of retinol activity equivalents (vitamin A), and 19% of the iron in Tanzanian diets. Of the

277 families interviewed for the study, 53% responded positively to the need to consume forest foods for optimal health.

These study results are relevant for nutritional balance, disease management, and prevention in areas of nutrition, micronutrient deficiencies, chronic-disease management, and food security. Additionally, similar studies can help eradicate hunger at low cost without aid from developed countries. Other relevant studies conducted in other parts of Africa—Gabon, Benin, Uganda, and Tanzania—encouraged the consumption of readily available foods that are nutritionally dense to eradicate undernutrition. All the studies emphasized the need to educate local communities on what micronutrient deficiency is and the need to consume whole foods that contain these nutrients rather than fortified foods created to address the deficiency, especially if the foods are available (Fungo et al., 2016). The study by Fungo et al. is relevant to the current conversation surrounding malnutrition and micronutrient deficiencies on a global scale. If successfully implemented, this understanding of the value of readily available local foods could curb food scarcity in Africa. Furthermore, understanding decreased the overall financial burden of feeding the continent (Fungo et al., 2016).

Sodjinou et al. (2014) further expounded on nutrition training in West Africa. A lack of trained personnel leads to an inability to strengthen the institutions relating to nutrition and MDGs and reduce poverty in general (Sodjinou et al., 2014). Very little has been done, and new strategies are needed. Though nutrition degree programs are offered in Nigeria to help train the workforce, most programs are state-owned and rely on government subsidies for funding. Additionally, nutritionists have too few roles outside their state roles (Sodjinou et al., 2014). To achieve MDGs, nutrition intervention is

critical (De-Regil, Peña-Rosas, Flores-Ayala, & del Socorro Jefferds, 2014). Preventable vitamin and mineral malnutrition needs public health leaders to integrate programs into other already established programs. De-Regil et al. (2014) believed these programs work if they are owned and managed by local stakeholders. Stakeholders benefitted from understanding the interrelationship between the national programs and the global public health network such as the CDC and WHO. The ministries of health, nonprofit organizations, volunteers, and community advocates all benefitted when they collaborated to educate the communities on fortification, micronutrient powders, supplementations, and breastfeeding support. Numerous challenges influence the adaptation of these programs.

Sablah, Baker, Badham, and De Zayas (2013) asserted that the success of the programs required more than the UN's Scaling Up Nutrition program. Success demands extensive public and private partnerships because malnutrition is multidimensional. Governments should be responsible for developing strategies and policy direction. They should set regulations, monitor progress, and ensure accountability. In contrast, the private sector can help advocate for social values in communities. Currently, most programs are managed and run by the government and a few nonprofit organizations. Sablah et al. recommended involving for-profit private organizations. They speculated that the absence of the private sector is likely because systems are unorganized, so the government and international institutions are unaware of who to contact or with whom to interact. Africa needs to scale up because it is still behind and continues to undermine global health and economic goals (Sablah et al., 2013). Gillespie, Haddad, Mannar, Menon, and Nisbett (2013) were concerned about the challenge of undernutrition in

Nigeria and West Africa. Among numerous political discourses on the national and international scale, Scaling Up Nutrition encourages countries to create an enabling environment for nutritional programs (Sablak et al., 2013).

Social change in Africa must include an examination of traditionalism and modernity of society and how together they influence social mobilization because structural indices interconnect (de Sardan, 2015). In other words, nutrition cannot be improved by nutrition interventions alone but require a broader involvement that draws on various sectors such as security, maternal education, improved water, and agricultural interventions (Kraemer et al., 2016). Change is not clear-cut. Although change diffuses and absorbs modernity, it ought to maintain its own peculiarity and stability (Eisenstadt, 1965). One reason Africa is currently experiencing this rise in chronic diseases is the wave of westernization, without consideration of cultural peculiarities (Stephens, Porter, Nettleton, & Willis, 2006). What makes the world beautiful is its plurality, the interplay of differences, and its peculiarity, but the world has shifted to suppressing differences and uniqueness by eliminating diverse civilizations and cultures (Stephens et al., 2006). This action is making a Western lifestyle attractive and making traditions of the indigenous people seem distasteful (Stephens et al., 2006). To fit the global framework, Africa is abandoning its customs; however, it is necessary to evolve into an emancipatory and participatory approach that explores indigenous voices and empowers African consciousness (Owusu-Ansah & Mji, 2013; Stephens et al., 2006).

Policy challenges in Nigeria regarding solutions. Echebiri (2015) examined some of the challenges the Nigerian government faces relating to the implementation of health priorities such as nutritional deficiencies. Political instability, poor infrastructure,

and inadequate health care leadership are some of these challenges. One key concern is the lack of good managers. The federal government, WHO, and UN agencies collaborate to address this leadership challenge in Nigeria. WHO is the world leader in global health, but other agencies such as UNICEF have played a pivotal role in Nigeria. The Federal Ministry of Health oversees all health issues in Nigeria. Due to recent political instability, health matters are not a priority in Nigeria. Instead of the federal government allocating adequate funding for health improvement and promotion, it focuses on religious intolerance (Echebiri, 2015). Hence, most of the health funding in Nigeria currently comes from the UN, World Bank, UNICEF, WHO, or other international organizations such as the Bill and Melinda Gates Foundation (Obansa & Orimisan, 2013). The huge gap in local leadership causes a failure to focus on malnutrition or micronutrient deficiency. WHO defines most policies such as MDGs and the new national health policy, so they are not culturally relevant or practical. Though WHO guides its member countries, it does not mandate any local implementation of its policies (Obansa & Orimisan, 2013).

Oyibocha et al. (2014) were disheartened by the lack of short-term, medium-term, or long-term goals in Nigeria. Nigeria lacks good governance on the federal level and in the public health sector. The country has no set goals, vision, strategies, or approaches at any given time (Oyibocha et al., 2014). Oyibocha et al. appealed for cooperation among sectors. They believed that health is the human right of all Nigerian citizens and that the federal, state, and local governments have a responsibility to provide a health care system that works. The three tiers of government noted above still largely operate and manage health care. Health facilities and practitioners are lacking, especially in rural areas where

nearly 70% of the population reside (Oyibocha et al., 2014). The authors blamed poverty in Nigeria as one of the main challenges because more than half of the country is poor and cannot afford health care. The lack of structures and the high cost of the current system is one reason Oyibocha et al. called for strategic and purposeful leadership in the Nigerian health sector.

Nigeria ranked 187th among 191 WHO member states in health (Antia & Bertin, 2004). The U.S. global health initiative for Nigeria is to see it build a health-care-delivery system that can support its population. Uzochukwu and colleagues (2016) recommended Nigeria invest in health research. These researchers argued that expanding national health research gives decision makers concrete data to help them strengthen these health systems. They opined that access to new information could change the society because it directs goals and vision for a critical assessment of challenges and directs program implementation. Considering the weaknesses in leadership and systems mentioned throughout this paper, it is evident that strengthening current systems would shift systems development.

Summary and Conclusions

The rise of communicable and noncommunicable diseases in developing nations could explain the current challenge of overnutrition and undernutrition in Nigeria (Popkin, 2009). Although good nutrition is fundamental for growth and health, the salient beliefs and perceptions of urban women in Nigeria, particularly regarding their food choices and diet decision-making processes had not previously been explored. This information is critical because of the current level of malnutrition and micronutrient deficiencies in the whole population, but especially among children. Additionally,

exploring the perceptions of women is vital because women are the cornerstone in answering the nutritional needs of most families in Nigeria. In the past, emphasis was placed on expert opinion, but to design a program that is sustainable and practical, it is important to investigate further the perceptions, contexts, culture, challenges, and opinions of the indigenes. As nutrition transition continues to rise in Africa, understanding specific populations can guide public health interventions surrounding healthy diet promotion for disease alleviation (Akarolo-Anthony et al., 2013).

The frameworks for this study are grounded theory, due to needing to understand the experiences of the indigenous people, and systems theory, because of the correlation between nutrition and economic status (Shaan, 2009). SEM notes the interaction between individuals' choices and their interactions with their environment. Food is an integral part of the daily life and a huge part of most Nigerian interactions; hence, more time should be spent choosing, preparing, and eating nutritious foods (Nneli, Nwafia, & Orji, 2007).

A need persists to address the availability and quality of foods; hence, in this study, I identified thinking systems that influence both. In this chapter, the literature review, I included the theoretical and conceptual frameworks for food choices. I provided analysis of historical contexts and levels of food transition in Nigeria. In Chapter 3, I include the three research questions, the methodology chosen for this qualitative study, and the rationale and approach for measuring and collecting data.

Chapter 3: Research Method

The purpose of this study was to explore the perceptions of women in an urban city in Nigeria on indigenous foods and Western influences. I sought to understand women's perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet. I explored how the women in this community perceived their choices and what role these perceptions on choices have in impacting their future diet decisions to address the growing micronutrient malnutrition in the community. By compiling perspectives from different individuals of their worldview from immediate experiences, perspectives relating to diet choices of ordinary people living their everyday lives unfolded (as suggested by Groenewald, 2004).

In this chapter, I address the research methodology used to meet the objectives of the study, including three research questions and a discussion of the research design chosen for this study. I expand on the rationale for using a general qualitative study, offer a description of the research location, and identify the sample population and sampling method, providing justification and the overall scope of the study. I explain the method for the selection of the minimum of six participants, the instruments and sources for data collection, the transcription process, member checking, translation, storage, and data analysis. Finally, I discuss protocols on culture/context and ethics, privacy, and reliability and validity of the study.

Research Design and Rationale

I conducted qualitative, face-to-face interviews to investigate the perceptions of women in Nigeria in relation to dietary food choices. Qualitative scholars seek to answer questions relating to the how and why of human behavior (Creswell, 2013). Qualitative

researchers intend to explore and understand a central phenomenon (Creswell, 1998). This method provides a close interaction between participants and the researcher for a deeper understanding of attitudes and influences. A qualitative-study approach is consistent with this study, due to its constructivist philosophical foundation that focuses on extracting and constructing meanings from the lived experiences of those who have experienced the phenomena under study (see Rudestam & Newton, 2015), rather than a quantitative study, which focuses on establishing relationships between variables through the use of vast amounts of data (Yin, 2013). A qualitative study provides a deeper understanding of the perspectives and perceptions of participants and provides insight into their experiences. Additionally, I preferred a qualitative study to a quantitative study because I was able to explore a social problem by building a holistic picture through analysis of words, reports, views of informants, and conducts of participants in a natural setting (aligned with Creswell, 1998). Content analysis was a good choice, as it is generic and exploratory. I used a content analysis approach to explore what happened to whom, when, how, and with what consequences (as in McDavid, Hawthorn, & Huse, 2013).

Research Questions

The following three research questions guided the collection of data for this study:

RQ1: What are the dietary habits of sampled women in Jos, an urban area of the middle belt of Nigeria?

RQ2: What are urban Nigerian women's perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet?

RQ3: What is the lived experience of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households?

I employed thematic analysis to provide an in-depth, sociocontextual and detailed description and interpretation of the phenomenon of interest, enveloping beliefs, constructs, and emotions (see Saldaña, 2015; Vaismoradi et al., 2016). I explored the perceptions of women surrounding dietary behaviors in the urban city of Jos, Nigeria. As concepts emerged from the codes, I categorized them in a format that highlighted the surrounding phenomena to develop themes or broader concepts. The study was open to emerging themes from the data itself without limiting it to what I specified. Also, assessing the themes according to their properties and dimensions increased the needed knowledge of a theme and explains how properties vary among their dimensional ranges to differentiate themes (as in Strauss & Corbin, 1998).

Role of the Researcher

In this qualitative research, I was an instrument of data collection using inductive data analysis (see Hoepfl, 1997). The focus of this study was descriptive, yet interpretive of indigenous experiences. As the researcher, I conducted data collection, data analysis, and reporting of these inductive research findings. As a pharmacist for 10 years, I have employed qualitative methodology when talking to my patients. Pharmacy is one of the most trusted professions because patients are comfortable sharing their experiences and the stories; the pharmacist learns the art of listening and interpreting what the patient is saying for meaning (Gardner, 2016). To better serve my patients, I learned to understand what motivates their decision making, thoughts, behaviors, and attitudes, while applying my training in problem solving and decisional techniques to address their complex needs. In pharmacy practice, I learned to ask probing questions and listen to build a deeper and more effective level of conversation.

As a native of Jos, I understand the needs and challenges of the inhabitants. My background increased my risk of bias because it was personal, and I have interest in the outcome of this study. To mitigate these biases, I used clear English language; ensured the translator was proficient in English and Hausa, translated prior to the interview and reviewed for accuracy; avoided jargon and culturally irrelevant terminologies; framed questions in a tone that was not misleading or partial; kept my style and information neutral with the right number of options; offered enough detail and transparency; and built trust by being honest. To avoid selection bias, I tailored questions and targeted a population that met the research goals. I achieved this by having clear intentions and having set requirements that participants must have met to achieve study objectives. I was as specific as possible (see Penwarden, 2015). Nonmisleading language in a setting that was nonjudgmental allowed for honesty and reduced the misinterpretation of questions.

With the help of my translator, I applied communication and culturally relevant presentation of information and recommendations while focusing on study goals and the offer of solutions (aligned with Laureate Education, 2012). In addition to participant recruitment, I recruited a trained female translator who was proficient in English and Hausa for this research. Culturally, women in Nigeria do not typically openly describe their intimate motivations to the opposite sex, so a female translator who speaks Hausa fluently was necessary for me to interpret the accuracy of the data collection. I trained this translator regarding the purpose and background of the research, as well as the planned interview process, the ethics of fieldwork, and procedures for obtaining informed consent from participants prior to the interviews. The translator received a stipend as compensation for her time.

I took observational field notes during the interviews. In addition, I transcribed and produced transcripts of the interview recordings, which I reviewed with participants for accuracy. With the help of my translator, all interviews conducted in Hausa were translated and transcribed into English prior to analysis. I concentrated on the research participants to ensure they were interviewed in accordance with approved Walden University Institutional Review Board (IRB) protocols. My role, therefore, was relatively objective because I reside outside Nigeria and have not been an active member of the group in more than 20 years.

Methodology

Plateau State is in the northcentral part of Nigeria. It is known to have the largest landmass in Nigeria, 1,000 m above sea level (Were, 1998). The fertile soil and favorable climate in Plateau State make farming commonplace and biodiversification of crops routine. The most common dietary deficiencies in Plateau State indigenes are of iron, iodine, vitamin A, zinc, and B-12 (Zoakah, Idoko, Okoronkwo, & Adeleke, 2000). Stunting among children is prevalent in Plateau State (Zoakah et al., 2000). Zoakah et al. (2000) revealed that 34.9% of the children studied were stunted. The Nigeria Demographic and Health Survey (National Population Commission & ICF International, 2014) found 29% of Plateau State indigenes to be malnourished with acute malnutrition (35.7%) and overnutrition (28.6%). The northern region of Nigeria has the highest levels of malnourished people in Africa, likely due to combined pressure in agriculture and population growth (Singh et al., 2016; SOS Children's Village International, n.d.). Poverty significantly aligns with malnutrition, and Nigeria's poverty rate ranges from 22% to 41%, depending on the state or region (Save the Children, 2015). In this study, I

explored the diet decision-making process of women in Jos, the capital city of Plateau State, Nigeria.

Participant-Selection Logic

The thematic analysis provided an in-depth, sociocontextual, and detailed description and interpretation of how participants experienced or made sense of their experiences, encompassing beliefs, constructs, and emotions (Saldaña, 2015; Vaismoradi et al. 2016). In this study, I explored perceptions on nutrition and dietary behaviors of community women in the urban city of Jos in Nigeria. I asked the women broad, general, and detailed questions to collect their personal views. I analyzed the information to discern themes that address each of the research questions. Using the themes, I induced the meaning of the information, drawing from research and my reflections, that together illuminated the experiences of these participants from their perspectives. I employed individual interviews to give a voice to the indigenous women of Nigeria.

After sharing the flyer and discussing the purpose of the study with the women during their fellowship meeting, I recruited interested participants who met the inclusion criteria of the study. In addition, women who knew other women who were interested and met the criteria shared the information so I could recruit them as well for the study. I used purposive sampling to recruit all participants. In the end, the objective of this study was to uncover the meaning of participants' experiences. Researchers can use purposive sampling to make sense of participants' personal and social worlds (Smith & Osborn, 2004). I employed a semistructured individual interview in an urban setting to give a voice to the indigenous people of Nigeria. This understanding can shed light on considerations and potential constraints, such as cost.

I took precautions to maintain the confidentiality of the data. Information that could have identified participants was confidentially stored in a locked file cabinet. Participants assigned themselves pseudonyms to ensure participants' privacy was protected in the published version of the study. Additionally, I deleted all their addresses or locations from publication and included no pictures or videos in publications. Participants had the choice to opt out of the study at any stage.

I asked participants to share their accounts through individual stories, as they appraised events surrounding their diet choices for themselves and their families. I helped caregivers, policymakers, the media, and community members understand these experiences and allow for policies to be designed for optimal health programs and outcomes. This was an ideal design because the study approach is an underresearched methodology.

Instrumentation

The source of data for this study included semistructured interviews, observation, and field notes. I conducted interviews using my own interview questions or instrument (see Appendices B, C, and D). Once I recruited the selected sample based on the inclusion criteria, I used one-on-one, semistructured interviews with predetermined questions, but I was flexible enough to incorporate emerging questions that developed from the responses of the interviewees (as in Babbie, 2007). I scheduled a 60–90 minute interview with each participant, and each interview was audio-recorded, once I received approval and signed consent from the participant. By e-mail, everyone received and signed an informed-consent form with information on the nature and purpose of the study, and the right to either participate or end the interview at any time. Although a

minimum of six participants were required for this study, the actual number of participants was determined based on data saturation.

I started the interviews by asking participants about their nutritional background. Obtaining their background helped put their experiences in context. By asking them about their lives and actively listening to them, I built rapport because I conveyed my interest in their lives and their experiences around their family, schools, friends, neighborhoods, and workplaces. These revelations provided context for their current situation (aligned with Seidman, 1998). Additionally, I allowed participants to describe their stories and understanding as women residing in Jos and their views on nutrition and food procurement. I conducted the interviews in a neutral space chosen by participants that was free from distraction, and ensured their privacy such as a primary schoolground on weekends. All interviews were recorded and transcribed with their consent. I also took notes to document the nonverbal communications of interviewees for additional detail and triangulation. I labeled data using dates, names, and preferred pseudonyms. Creswell (1998) noted that researchers' creation and organization of files is the first step in the data-analysis process. The safety and security steps I took in storing my data aligned with Walden University IRB regulations.

Researchers can access various programs to manage and analyze qualitative study text (Belotto, 2018). In the past, electronic data analysis was congruent with quantitative studies; however, this narrative is changing. Computer-assisted qualitative data analysis software (CAQDAS) is increasingly developed (Zamawe, 2015). Unlike in quantitative data analysis, however, CAQDAS such as NVivo software is a data-management tool; hence, it helps only with the management process. Presently, no software analyzes

qualitative data. To understand social constructs that guide actions in the social world, no software understands contexts from transcripts and field notes.

CAQDAS assisted me with indexing segments of text to themes, coding, carrying out complex searches, and examining relationships between themes. Using CAQDAS added credibility and legitimacy to my research. For example, NVivo helped me collect and archive almost any data with improved accuracy. It ensured effective coding and made retrieval of data easier (as in Zamawe, 2015). It can also easily reshape, overhaul, move, combine, and link patterns, while maintaining accuracy. However, NVivo cannot merge two documents by means other than copying and pasting, and it is difficult to format an image, table, or paragraph (Edhlund & McDougall, 2016); many times, researchers lose formatting settings, bookmarks, and page numbers (Edhlund & McDougall, 2016).

I used coding to analyze the data. Coding is the process by which researchers examine, unravel, categorize and conceptualize data in new ways (Strauss & Corbin, 1998). Coding begins from an examination of participants' words, used to express and describe their insights and experiences. In coding, a researcher examines and labels each word, phrase, and sentence as a concept or phenomenon (Strauss & Corbin, 1998). As concepts similar in nature emerge, researchers group them to develop themes surrounding the phenomena. Assessing themes according to their properties and dimensions increases knowledge of the theme, explains how properties vary among dimensional ranges, and differentiates between themes (Strauss & Corbin, 1998).

Choosing between traditional manual text analysis (TTA) and CAQDAS depends on the research project. Although Microsoft Word only performs basic functions, a

researcher often chooses TTA or CAQDAS, based on the complexity of the work (La Pelle, 2004). TTA allows coders to manually place each data item in various categories (Bright & O'Connor, 2007; Saldaña, 2015). Some advantages of TTA are that it is practical when a person is trying to learn basic coding procedures and qualitative analysis, it is available to everyone (especially those with limited expertise and access to the automated computer software), and it gives room for human interpretation of the data instead of computer-generated meaning. Additionally, TTA is manageable for small-scale projects, is culturally sensitive because many things are not in the English dictionary or cannot be interpreted from a Western point of view, is cost-effective, and the researcher can connect to it easily. In contrast, bias may increase because researchers can “read between the lines,” TTA requires many coders with large projects, it can be time-consuming, and it typically has a limited number of predetermined categories (Bright & O'Connor, 2007; Saldaña, 2015).

The researcher is still responsible for coding the data. CAQDAS does not do the coding for the researcher, but it stores, organizes, manages, and reconfigures the data to improve interpretation and reflections by the researcher (Saldaña, 2015). CAQDAS helps with speed, rigor, team research, and generalizability. Some advantages of CAQDAS include (a) it enhances the ability to work with a large data sample, (b) it assists in the development of organizing the system, (c) it assists in theory building and construction, (d) it allows the researcher to explore various possibilities of data analysis and interpretation, (e) it creates and shares large datasets, (f) it facilitates group projects because one copy of data can be used by many individuals at the same time, (g) it allows for secondary analysis of qualitative datasets, (h) it facilitates exploration of

epistemological issues, (i) it works as a pedagogical tool, and (j) it is time-efficient.

However, CAQDAS carries a risk of incorrect coding due to syntax and it is possible to miss patterns and categories if the software does not recognize relationships (Bright & O'Connor, 2007; Saldaña, 2015).

For qualitative research methods, with or without software, I am aware that I was the key research instrument because I decided what to record, how much to use, set the agenda, and analyzed what I deemed important, based on the research question and the focus of the study. I drove the analysis based on my implicit/explicit theories. To be most effective, I separated my stereotypes, personal opinions, and judgments from my observations and recording of meanings and opinions of the participants. I achieved this goal by focusing on building a trusting relationship and being sensitive to the surrounding environment.

Procedures for Recruitment, Participation, and Data Collection

I designed posters to advertise the study and shared them exclusively with the groups with which I was working to recruit the women who made decisions surrounding food procurement, were between the ages of 20–30, and resided in the city of Jos. I imposed no specific socioeconomic-status requirement for membership in this study. Women's organizations such as *Zumunta Mata* were ideal and key in the recruitment process because I had access to Muslim and Christian women and they could introduce the study to individual women and encourage participation. *Zumunta Mata* in the Hausa language translates to Women's Fellowship and is a strong union in churches or Muslim communities. This is a medium where women mobilize, contribute financially toward the

church and member development, and exert power and influence to gain security.

Zumunta women benefit from its social, political, economic, and religious value.

I worked closely with the leader of *Zumunta Mata* to recruit participants. I contacted the leader by phone to discuss my intention. I also obtained her e-mail address, and, through e-mail, I provided her with information describing my research study and obtained a letter of agreement to accompany my IRB application. I also beseeched her to circulate, by e-mail and during their meetings, my invitation to the women to participate in the research on their diet decision-making process, centered on young women who managed diet choices in their homes. The initial correspondence included my e-mail address and telephone number, and I asked participants to contact me personally, if interested, to protect their identities. The telephone number was for likely participants who might not have had access to e-mail.

I used purposeful sampling. The sample size was a minimum of six because a qualitative study typically requires a smaller, yet flexible, sample size. The goal was not to reflect the entire population but to ensure I achieved saturation by gaining a range of perspectives and experiences from different people, backgrounds, and opinions (Hall & Harvey 2018). Saturation is the point at which new information or themes no longer emerge from the research data (Guest, Bunce, & Johnson, 2006). Although I planned to select women that represent the direct population group, I continued interviewing beyond the initial six because new themes continued to emerge. I wanted to ensure the study gained all relevant information necessary for a more objective, reliable, and valid study. Community gatekeepers are highly revered, so being flexible was useful as long as the objectives of the study remained the guiding principles. Being respectful and heeding the

advice of community experts helped me establish rapport quickly and save time. The focus of this sampling choice was to get good information about the problem, study sites, and individuals in an effective manner (as suggested by Creswell, 2007). The purpose was to understand the perceptions of participants surrounding diet choices for themselves and their families.

For recruitment, an inquirer in a qualitative study purposefully selects individuals and sites that provide necessary and substantial information (Creswell & Clark, 2010). That is, I sought to deliberately recruit participants who either had experienced the problem or had knowledge of the phenomenon explored in the study. Therefore, as noted above, I used purposeful sampling to select or recruit a small number of participants from women's fellowship groups located in Jos, which allowed me to address the research questions. The small number of participants located at a single site provided in-depth information concerning the phenomenon explored in the research study. In addition, because a qualitative study is not designed to generalize from the sample, because I used a small number of participants, the study is more detailed compared to results obtained from typically larger sample groups. The initial interview questions obtained individual-level information on the dietary intake of households in an urban setting in Jos, Nigeria. The objective was to determine the quality of foods consumed, eating habits, the age of participants, and the key decisions guiding food choices.

I hoped to interview a minimum of six women who indicated interest in the study and met the inclusion criteria. Inclusion criteria for this study consisted of family settings where women made the decisions surrounding food procurement, women between the ages of 20–30, and women residing in the city of Jos. I preferred younger women (age

20–30) participants because they are most likely to have young children and thus have a greater influence on the nutrition status of their children and families (as described in National Population Commission & ICF International, 2014). The exclusion criteria were women older than 30 and homes where men were the primary decision makers on food procurement. Educational status was not relevant for this study because interviews were offered in the local dialect and were culturally sensitive. Individual interviews offered an in-depth, holistic picture of motivators. This method improved triangulation for validity and reliability of the qualitative study. Diversity helped in the collection, description, and organization of the information.

Following contact with all potential participants, I introduced myself and the purpose of the study. I also introduced the translator who helped me with the interpretation of information in the local dialect. The translator emphasized the purpose of the study. I ensured all participants understood Walden University IRB protocols. I guided those who were still interested in being interviewed through the informed-consent process. The informed-consent form emphasized the importance of the study, the unique contribution of the information they provided, and the potential risks and benefits to individual participants. The form also highlighted the voluntary nature of participation and the right to decline participation or to withdraw from the interview at any time without consequence. Participants had the option to receive an oral informed consent in case reading was a challenge. This oral consent was documented using a short form that states all the requirements were presented orally. The participant signed the form. I informed participants about the video and audio recording devices, electronic filing systems, physical files for handwritten notes before transcription, and storage afterward.

I centralized all information gathered from the interviews, stored in a cloud system such as Zotero, Excel, and Word files. I locked all physical data to maintain privacy and confidentiality with the knowledge that all physical data are hard to access when traveling. All recordings were transcribed. The interviewees reviewed the transcript to verify its accuracy and I stored amended scripts in preparation for analysis. As noted, I locked all the physical data in a box, and password protected all electronic data on a secure computer to which only I had access.

Consequently, the step-by-step application process follows: I met with the translator and participants to discuss the study. Interested participants reviewed and signed the consent forms after they were informed that participation was voluntary and they were free to withdraw up to 24 hours after the interview. I then conducted and recorded the interviews with the help of the translator assistant. Before transcription of data, the participants were

- Allowed 24 hours to withdraw from the study
- After 24 hours, the interviews were transcribed
- The participants had the opportunity to review the transcript to verify its accuracy
- The final draft was translated.

Research Design

These were cross-sectional, semistructured, in-depth qualitative interviews to understand what motivates indigenous women in the urban city of Jos to opt for more Western food choices over readily available local options. In an explorative inquiry or

qualitative study (see Creswell, 1998), social sciences and humanities theories help guide researchers to explain complex concepts that normally are difficult to understand. Other qualitative designs include, among others, phenomenology and grounded-theory designs. Phenomenological research focuses on the lived experiences of participants (Yin, 2013). It would be ideal if I were living among the locals; because I do not currently reside in Nigeria, a phenomenological study did not align with the purpose of the study. The intent of a grounded-theory research design is to develop a theory (Yin, 2013); this study's main aim was not to develop a new theory but to support or modify existing theories. I applied systems theory and SEM as theoretical frameworks.

Ethical Procedures

Materials for this study were culturally relevant and respectful of local customs and values. Individual interviews gave a voice to the indigenous women, but more importantly, they epitomized respect for their opinions, allowed them autonomy for introspection, and established trust in the study and in the roles they played as community-change agents. I recorded all information from the face-to-face interviews and they were transcribed verbatim. I conducted interviews in a secure environment to ensure privacy and confidentiality. I also took precautions to maintain the confidentiality of the data by locking all physical data and ensuring they were only accessible to me. The use of triangulation and allowing interviewees to review the transcripts for accuracy and authenticity further established trustworthiness, validity, and reliability of the study.

Data-Analysis Plan

Qualitative data analysis, the most crucial aspect of qualitative research, is an intuitive, dynamic, and creative process of inductive reasoning and theorizing, with little

mechanical and technical procedures to follow (Basit, 2003; Saldaña, 2015). Codes in the qualitative data analysis are the researcher's generated in-depth sociocontextual constructs that translate data about the research topic (Saldaña, 2015; Vaismoradi et al., 2016). In-depth, semistructured, open-ended interview data are the backbone of qualitative research in the social sciences; researchers then code and analyze these interview data. Reliable coding for qualitative data analysis is not focused on the interview, but rather on the field-notes, journals, or observations; hence, it was important to understand verbal and nonverbal messaging (aligned with Campbell, Quincy, Osserman, & Pedersen, 2013).

All recorded and transcribed information from the face-to-face interview were analyzed using identified themes and coded based on food choice, the role of the family, cooking, the influence of others, the influence of government, and the idea of balance. I used NVivo, a qualitative data analysis application, to measure individuals' behaviors and attitudes in relation to themes. I recorded data, immediately transcribed to preserve nuance. I reviewed the content extensively so I could appropriately identify key issues. NVivo searches texts in a short period of time and can combine identified themes. Codes are tags used in the data to help create themes and help with the identification of patterns. Field notes captured the actual behaviors of participants. This combination of multiple data collections and analysis were pragmatic and solidified reliability.

Issues of Trustworthiness

Qualitative research is rooted in sociology and anthropology while addressing social context (Jones & Smith, 2017). Trustworthiness builds confidence in a study; Elo et al. (2014), in their examination of trustworthiness, used terms such as credibility,

dependability, conformability, transferability, and authenticity. I conducted this analysis at all stages of the study; from data collection to reporting of the results, the focus was to maintain trust. This is very important yet difficult to detect in qualitative research because often work is subjective and nuanced. However, I was committed to maintaining authenticity and neutrality by using a language translator and offering the interview in the local dialect; engaging participants; being open, honest and respectful; and engaging community leaders so I could ensure all intellectual and methodological rigor, meaningfulness, value, and utility were sound (as in Spencer, Ritchie, Lewis, & Dillon, 2003).

According to Rouse (2012), although the quantitative study is standardized, in a qualitative study, validity focuses on sensitivity to context, commitment, and rigor, coherence and transparency, and impact and importance. Validity is about the quality of work, not a rigid checklist. For quality, I aligned the research question, sampling, data collection, data analysis, and supporting studies cohesively. The conclusion of this study did not derail from the initial focus. In this study, I explored the health and diet of urban women in part of Jos, Nigeria. The research question and interview questions were in the local dialect, the interpreter was trained beforehand and was part of the community, all interviews were recorded and transcribed verbatim, and an outside consultant/statistician analyzed the data. I used supporting studies conducted around Africa, India, or aboriginal societies in Canada or Australia, based on identified commonalities, to establish high rigor and robustness.

Summary

In Chapter 3, I presented the method I used to gather data needed to answer my research questions. I used basic qualitative study to gather information on the feelings and emotions of participants about their diet decision-making process around Western and traditional food options in Jos, an urban city in Plateau State, Nigeria. All study participants met the inclusion criterion and I clearly expressed and explained the issue being investigated in-depth (Seidman, 1998). To gain pure and valuable scientific data, I considered the experiences and feelings of people. Additionally, I offered justification for the selection of the sample and the ethical issue of privacy and confidentiality for all participants. I employed purposive sampling of women in one locale (Jos) by collaborating with a local women's group. I further elaborated on how I would collect the data and my role as an instrument in gathering the data, especially during the interview process. In Chapter 4, I present the results produced from this research. I also explain the implications of the results in relation to the study. Finally, I describe the implications of this research for other Nigerian cities and African nations.

Chapter 4: Results

Qualitative Results

The objective of this research was to identify factors relevant to three research questions reflected in 12 interviews. I viewed each interview as a single incident and considered each interview independently in the data analysis. I identified common themes across the data to answer the three research questions.

Data Analysis

The process of data analysis involves “making sense out of text and data ... and preparing the data for analysis, conducting different analyses, moving deeper and deeper into understanding the data, representing the data, and making an interpretation of the larger meaning of the data” (Creswell, 2009, p. 183). I sought patterns, themes, and dimensions in the data through analysis of the interviews, coding of the data, and further analysis, as themes and patterns emerged. My goal was to describe participants’ subjective experiences and views.

The first level of identification occurred during the initial selection of the interview participants and then the review of each interview transcript. After transcribing all of the individual interviews, I read each transcript. I had all of the interviewees review the transcribed interview to ensure accuracy and credibility. I also wanted to ensure I maintained context. Furthermore, I analyzed the data for each interview and then conducted open coding using NVivo software, an analytic tool to facilitate the coding process.

I used open coding, which uses a brainstorming technique described by Corbin and Strauss (2008) to “open up the data to all potentials and possibilities contained within

them” (p. 160). In open coding, the researcher reviews the data contained in the dataset before beginning to group and label concepts. The process of coding includes taking the raw data, pulling out concepts, then further developing them in properties and dimensions, and grouping them into themes.

The data analysis process included the following steps:

1. Review all interview transcripts notes
2. Import the data into NVivo
3. Code the data in NVivo using open coding
4. Define the properties of the codes to identify themes
5. Further refine themes as needed.

I describe the resulting themes in the summary of the research findings.

Coding

The coding process resulted in identifying a total of 23 primary themes. I laid out all themes as presented by NVivo. I then delineated the themes into three areas, with each area focusing on one of the three research questions. I summarize findings for each research question, providing verbatim examples from the interviews to illustrate the themes.

Research Question 1

RQ 1: What are the dietary habits of sampled women in Jos, an urban area of the middle belt of Nigeria?

I summarize the six primary themes related to this research question in this section. This section includes tables summarizing the definition of the identified themes, the frequency of occurrence of the themes, and the number of interviewees who

mentioned a theme. As reflected in Table 1, the six themes were (a) Jos has a variety of foods, (b) women decide what to cook and eat, (c) food consumed has little variety, (d) women grow their own food, (e) minimal advice by a medical professional to change dietary habits, and (f) women do not eat healthy foods. Table 1 shows the frequency with which the themes appeared across interviews and across the data.

Table 1

Themes, Definitions, and Frequencies of Themes for Research Question 1

Theme	Definition	Number of interviewees who mentioned the theme	Number of times theme appeared across the interviews
Jos has a variety of foods.	Jos has a variety of foods for nutrition.	12	36
Women decide what to cook and eat.	Women decide what to cook and eat in their households.	12	14
Food consumed has little variety	Women choose the same food staples.	7	10
Women grow their own food.	Women plant and grow their own food.	5	6
Minimal advised by a medical professional to change dietary habits.	Women were seldom advised by a medical professional to change dietary habits.	4	5
Women do not eat healthy foods.	Women indicate that they do not eat healthy food.	2	2

Jos has a variety of foods. The most frequently occurring theme for Research Question 1 was Jos has a variety of foods. Jos having a variety of foods was mentioned 36 times in 12 interviews. For example, Respondent 1 shared, “At times we will eat beans to help balance our diet.” In another example of this theme, Respondent 10 indicated, “But I always make sure I balance my diet, that is why I make sure I prepare foods like

beans, fish, vegetables, with Cray fish because they are good diets.” Respondent 12 stated, “I try to ensure that I prepare a meal that we can eat, I also ensure I prepare a balanced diet for my family.” Respondent 2 mentioned,

I also try to provide variety from available resources. For example, some days we eat *tuwo*, other days we eat rice or yam or beans and so on. They include carbohydrates, vitamins, proteins, fats, and oil, etc. if we have a balanced combination of these, we get our nutritious diet.

Respondent 4 shared,

I eat a variety of foods, but I think the most usual type is *tuwo*, whether it is made of *acha*, *semovita*, corn flour, etc. I eat it with vegetable, *egusi*, *okro* soup, etc. Each day for breakfast, tea with potato chips or *kosai*. For lunch, I have rice or *tuwo* or porridge. I eat the leftover for dinner or take snacks.

Women decide what to cook and eat. The next theme for Research Question 1 was women decide what to cook and eat. Women decide what to cook and eat was mentioned 14 times in 12 interviews. Respondent 1 said,

I decide most of the food we eat but at times I ask my husband what he wants to eat. I am very strong-minded; I eat what I want. I cook what my husband likes or the children sometimes but mostly it is what I like.

Respondent 12 stated, “I’m the one who decides what we eat.” Respondent 2 indicated, “I decide what we eat but it is my husband who provides much of it. My

husband and children eat whatever food I prepare for us.” Respondent 3 also indicated, “I decide what we eat as meals in my home,” and Respondent 4 stated, “I decide what we cook in the house with my husband’s support.” Respondent 6 stated, “It is me who decides. Anything I wish to cook for my family is what I cook. Nobody tells me that, this is what I should cook.”

Food consumed has little variety. The next theme for Research Question 1 was food consumed has little variety. Food consumed has little variety was mentioned 10 times in seven interviews and refers to the notion that although food variety is available, women tend to cook the same staple foods of *tuwo* or *gwote*; hence, some women lacked food variety and ate the same things repeatedly. Respondent 1 expressed,

My husband always buys the main foods like rice and beans and spaghetti for the month, so we do not have much money left to buy fruits and vegetables. ... As a Hausa woman, we use to [sic] eat *tuwo* a lot. We typically eat *tuwo* today and rice the next day. When I am pregnant, I hate rice, so I eat a lot of *tuwo*. So most of my life I have eaten the same thing, *tuwo* or rice.

Respondent 10 shared,

There are days that I cook once, I generally will serve leftover as the breakfast to my family; sometimes, I will get little biscuits and water and give it to my children after feeding them the leftover, this is to help save cost.

Similarly, Respondent 11 mentioned,

I eat a particular type of food for days e.g. rice and then change based on taste. In my house, I usually cook *tuwo*, rice, yam, spaghetti, and potatoes. In the morning I usually take tea or leftover from the previous night, in the afternoon, I cook rice or yam, and in the night, *tuwo*.

Finally, Respondent 5 explained,

All days are not the same, some days we take pap in the morning while in the afternoon we eat beans and at night we take okra soup with whole wheat *fufu*. I ensure we don't repeat the same food all days.

Women grow their own food. The next theme for Research Question 1 was women grow their own food. Women grow their own food was mentioned six times in five interviews. Respondent 10 stated, "I planted maize, sweet potatoes, *karkashi*, Irish potatoes. I did that in order to support my family." Respondent 2 explained,

I have a small garden at home where I grow vegetables as I told you earlier, I like fresh foodstuff. I believe they add to one's health. I have also heard that most processed foods or preserved ones contain stuff that affects our health, so I minimize the consumption of such meals. I grow vegetables like spinach, *karkashi*, etc. We also have a pear tree in the compound.

Respondent 3 said,

In the village, I have a small farmyard to grow my vegetables but in the city, I don't have the space to do that. Even though I will like to grow my food,

remember in the city, I don't have the time to plant and tend to a farm and at the same time do my work.

In a final example, Respondent 8 stated, "Yes, I grow maize and rice."

Minimal advice by a medical professional to change dietary habits. The next theme for Research Question 1 was minimal advice by a medical professional to change dietary habits. Advised by a medical professional to change dietary habits was mentioned five times in four interviews. Respondent 1 explained the advisement she received from a nurse to change her diet:

When I had my last child, I had high blood pressure and when I asked the nurse what to do, she suggested I eat more vegetables. That was the only time I was advised to change my diet; When I first came home, I tried to change my diet, but it is difficult for me to stay consistent because I am reluctant. Sometimes I can say its financial, but food is really cheap and available. I just focus on being satiated rather than feeling healthy.

Respondent 10 reported being advised in the following manner, "once, I was told that fruits and vegetables are good for my body. I was advised to eat fruits like banana, pineapple, carrots or even eat dates" Respondent 5 shared,

I am not healthy. I have been diagnosed with high blood pressure. My doctor advised me to reduce the quantity of protein I used to consume when I was pregnant because then I used to consume more of fish and meat which I was told contributed to my current health challenge.

Finally, Respondent 9 said, “Doctors rarely advised us to eat fruits like apples, oranges, mango, and other fruits.”

Women do not eat healthy foods. The final theme for Research Question 1 was women do not eat healthy foods. Women do not eat healthy foods was mentioned two times in two interviews. Respondent 1 shared, “My husband always buys the main foods like rice and beans and spaghetti for the month, so we do not have much money left to buy fruits and vegetables.” Respondent 12 mentioned, “I don’t really consider myself a healthy eater, but whenever I eat healthy foods, I do feel it deep within me.”

I found six themes to answer Research Question 1 that denoted the need for a study such as this. A need persists for education and sensitization of the public and health practitioners. Although women in Jos believe they eat a wide variety of foods, based on the strength of that theme, it was clear they did not have a good understanding of nutrition because they also indicated that they often eat from two or three main food staples. Their diet choices were mainly based on the goal of feeling sated, not the nutritional content of the foods. The women receive little education from health providers on diet and nutrition. Of the 12 interviewees, only two women attempted to grow their own food. The rest of the women cited city living as the main constraint to growing their own food.

Research Question 2

RQ 2: What are urban Nigerian women’s perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet?

I summarize the seven primary themes related to this research question in this section. As reflected in Table 2, the seven themes were (a) nutrition is related to good

health, (b) women eat few traditional foods, (c) women prefer imported and Western food items, (d) nutrition should be balanced, (e) Western foods are appealing, (f) it is difficult to adopt a completely Western diet in Nigeria, and (g) Western foods are healthy. Table 2 also shows the frequency with which the themes appeared across interviews and across the data.

Table 2

Themes, Definitions, and Frequencies of Themes for Research Question 2

Theme	Definition	Number of interviewees who mentioned the theme	Number of times the theme appeared across the interviews
Nutrition is related to good health.	Nigerian women perceive that nutrition relates to good health.	12	30
Women eat few local traditional foods.	Nigerian women indicate that they eat few local traditional foods.	11	26
Women prefer imported and Western food items.	Nigerian women indicate they eat more imported and Western food items.	10	17
Nutrition should be balanced.	Nigerian women indicate that nutrition should be balanced.	6	10
Western foods are appealing.	Nigerian women perceive that Western foods are processed but appealing.	5	6
Difficult to Have a Healthy Diet in Nigeria.	Nigerians perceive it is difficult to have a healthy diet in Nigeria because location limits the availability of certain foods.	4	4
Western foods are healthy.	Nigerian women perceive Western foods are healthy.	2	2

Nutrition is related to good health. The most frequently occurring theme for Research Question 2 was nutrition is related to good health. This theme refers to Nigerian women's perceptions that nutrition relates to good health. Nutrition is related to good health was mentioned 30 times in 12 interviews. For example, Respondent 1 indicated that fruits and vegetables "regulate the body and aid digestion." Respondent 10 said, "If we eat healthy food, my children will look good, not just *karkashi* soup without spices. If my kids look good, I will also be good." When asked, how important is it for her to eat and feed her family a nutritious diet, Respondent 11 said, "It is important because it improves health, and it helps children to grow." Respondent 2 explained,

I think a nutritious diet is one which provides all the nutrients the body needs. They include carbohydrates, vitamins, proteins, fats, and oil, etc. If we have a balanced combination of these, we get our nutritious diet. I learned this from school.

Respondent 3 also explained,

A nutritious diet I think is a diet that provides one with nutrients in the body, like carrots, beans, vegetable fruit, etc. all have what they give to the body for health and I learned it from school and from my mother at home.

Respondent 4 shared, "I love porridge (*gwote*) our local staple. To make it nutritious, I will add vegetables, seasonings like *maggi* and meat or fish if I can afford. It will look good, taste good and add good to the body." In a final example, Respondent 5

said, “It is important for my family and I to look good, and healthy. Nutritious diet prevents us from falling sick. While unhealthy foods lead to sickness.”

Women eat few traditional foods. The next theme for Research Question 2 was women eat few local traditional foods. Women eat local traditional foods was mentioned 26 times in 11 interviews. For example, Respondent 1 described the local food she and her family eat as follows:

We eat mostly rice or *tuwo* with *miyan kuka* (baobab) soup or okra soup. I choose *miyan kuka* because I grew up eating it. My mother used to always make it but now I add *maggi* or meat and oil. If I eat vegetable soup or okra, at times it makes me constipated. I cannot repeat that soup for two days. I will have to cook it daily.

Growing up, I believe eating *tuwon masara* and *miyan kuka* is healthier than eating any other food/soup, so it is a staple in our home. Also, in my culture, while pregnant and before you give birth, they insist you should avoid fatty foods. People suggest you eat fish not beef so as to avoid rashes on a babies’ body and they also claim that fish encourages babies to defecate.

Respondent 10 stated, “I feel they [advertisement] are great, I learned how to cook *eguisi* soup through that television, it also exposes me to learning about new nutritious foods.” Respondent 11 mentioned, “Even though I rarely eat it, I think sweet potatoes, maize, guinea corn, etc. are good for our body, and our parents ate it and were healthier and stronger than us.” Respondent 3 said,

In the village, we ate local food such as beans, *acha (fonio)*, *tamba*, yam, etc. We also ate *tuwo*, porridge (*gwote*) *kunu* and so on. We do not get foreign or imported food there to eat unlike here in the city.

Respondent 4 said, “I like local food and I eat a lot of it, like *acha*, *cocoyam* and the like.” In a final example of this theme, Respondent 5 shared,

I think Nigerian staple foods are nutritious because I cook them in my house like Irish potatoes, this is what is produced here. Nigerian staple foods are foods like vegetables, sweet potatoes, *cocoyam*, and maize, which my mother used to plant.

Women eat imported and Western food items. The next theme for Research Question 2 was women eat imported and Western food items. Women eat imported and Western food items were mentioned 17 times in 10 interviews. For example, Respondent 1 explained:

We are advised to eat locally made foods. They are neither good nor bad but *talia* or spaghetti, I prefer imported. Also, during rainy season, tomatoes are scarce and more expensive so I buy the canned tomatoes because it is cheaper and accessible. Imported foods are convenient and easy to make, for example, we used to make local spaghetti with flower and eggs, but it takes a long time so buying spaghetti is quick for my family. We eat spaghetti 2 or 3 times a week. Kids like *indomie* noodles so I make it for them once every week or two.

Respondent 11 said: “Foreign foods like rice, potatoes, etc. I eat them about three to four times a week. I used to eat local foods when I was young but later I added imported foods to it as I grew older.”

Respondent 12 described imported foods and stated, “They are rice, fish, canned meat, groundnut oil, and food seasonings. I consume them like five times a day.”

Respondent 3 explained:

In the village, we ate local food like beans, *acha*, *tamba*, yam, etc. We also ate *tuwo*, porridge (*gwote*), *kunu* and so on. We do not get foreign or imported food to eat. But it has changed since I came to the city. For example, I now eat foreign rice, even the local foods we hardly eat. ... We eat foreign rice, spaghetti, noodles, etc. almost on a daily basis.

Respondent 6 said, “I eat foreign food 2 or 3 times a day, the rest of the days of the week I eat local food.” Respondent 7 explained, “We have many foreign foods in our market, like groundnut oil, palm oil, and noodles. Whenever I see such foods in the market I feel like moving them all to my house. I always eat such foods.” In a final example, Respondent 9 said, “Imported foodstuff such as rice, yam, noodles are good but some people say it causes cancer or appendicitis. I consume it almost every day.”

Nutrition should be balanced. The next theme for Research Question 2 was nutrition should be balanced. Nutrition should be balanced was mentioned 10 times in six interviews. For example, Respondent 11 said, “I eat what I want now unlike in the past that I ate only carbohydrates or what was available.” Respondent 12 indicated, “I try to ensure that I prepare a meal that we can all eat. I also ensure I prepare a balanced diet for

my family. Things are difficult so all days are not the same.” Respondent 2 shared, “I think a nutritious diet is one which provides all the nutrients the body needs. ... They include carbohydrates, vitamins, proteins, fats, and oil, etc. If we have a balanced combination of these, we get our nutritious diet.” Respondent 3 explained, “A nutritious diet I think, is a diet that provides one with nutrients in the body, like carrots, beans, vegetables, fruits, etc. all have what they give to the body for health.”

Western foods are appealing. The next theme for Research Question 2 was Western foods are processed but appealing. Western foods are processed was mentioned six times in five interviews. For example, Respondent 2 stated:

I have also heard that most processed foods or preserved ones contain stuff that affects our health, so I minimize the consumption of such foods. ... Imported foods are those produced and processed in a foreign land and are only brought to our markets for sale. Examples are foreign rice, canned products like sardines, *geisha*, and noodles. Frankly, I rarely consume other types of foreign foods except for the rice which I like because it has no sand in it compared to the local rice. But I eat a lot of rice in a week. Sometimes I eat noodles. I prepare these in a variety of ways; I know they are imported foods too but everyday food will not be sweet without imported seasonings like *royco*, *maggi*, *knorr*, etc.

Respondent 3 said:

I know very little about foreign foods. I hear speculations that they cause disease, but I have not seen anyone who has been put down by them. I have not been affected by them either, so I don't know how true the speculations are.

Similarly, Respondent 4 shared, "Imported foods are okay, but I hear some of them cause cancer, for example, sardines, *geisha* and other canned foods are said to be dangerous. I don't eat them often. I buy noodles for my child because of school." In a final example of this theme, Respondent 8 indicated:

Concerning imported foods like rice, there are things our bodies need that are not found in it. For me, it is better to eat local food compared to imported food because it is not useful in the body even though it taste good. Some examples of imported foods are spaghetti, indomie noodles, tin tomatoes, canned rice, canned beans, and others.

Difficult to have a healthy diet in Nigeria. The next theme for Research Question 2 was difficult to have a healthy diet in Nigeria. Difficult to have a healthy diet in Nigeria was mentioned four times in four interviews. For example, in regard to healthy or nutritious food items, Respondent 12 said, "Here in Jos, I easily access food but in places like Bauchi it is not the same." Respondent 2 mentioned, "It is not easy in this part of the world to observe the rules of nutritious diets strictly, but I am trying and wish others too will try." Respondent 3 shared: "Availability and affordability are the determining factors to getting healthy food to eat as I said." In a final example, Respondent 8 indicated:

Sometimes lack of money, sometimes ignorance of what balance diet is, as I explained to you concerning my village people, in the morning they take *kunu*, in the afternoon they take *gwote* and in the night they eat *tuwo* every day; that is the result of ignorance.

Western foods are healthy. The final theme for Research Question 2 was Western foods are healthy. Western foods are preferred was mentioned two times in two interviews. For example, Respondent 1 said, “I do not think imported foods are unhealthy and most of the fast foods. I buy these things because the kids like it so I buy it for them.” Respondent 9 said, “Imported foods are stuff like rice, yam, and noodles. It is tasty.”

Almost all respondents mentioned that the availability of nutritious foods is not the issue, but accessibility, which is limited due to cost. The younger the interviewee, the more dependent she is on a Western diet. I found that the women who were 22 or younger believed the Western diet is healthy and convenient whereas the women over 28 believed the Western diet should be avoided, due to health risks. However, all respondents indicated they incorporate Western foods into their daily diet due to the convenience of preparation. When asked about local foods, they agreed they are healthier, yet believe their children do not like such foods, so they limit preparation of purely traditional foods. Most women cited the importance of a balanced diet and its health benefits, yet argued that a healthy diet is limited by financial constraints. What they consider healthy foods is often animal products like fish, meat, or eggs.

Research Question 3

Research Question 3 was, what is the lived experience of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households? I summarize the 10 themes related to this research question in this section. As reflected in Table 3, the themes were (a) women cook to provide nutritious food or cook to make the food healthier, (b) cost limits the consumption of certain foods, (c) nutritious food is available, (d) media influences nutrition, (e) family influences nutrition, (g) school provides nutrition knowledge, (h) women are not influenced to change diet or nutrition, (i) women teach their children about nutrition, (j) healthy foods may be unavailable, and (k) women can eat nutritiously with little money. Table 3 also shows the frequency with which the themes appeared across interviews and across the data.

Women cook to provide nutritious foods. The most frequently occurring theme for Research Question 3 was women cook to provide nutritious foods or cook to make the food healthier. Women cook to provide nutritious foods or cook to make the food healthier was mentioned 41 times in 12 interviews. For example, Respondent 1 explained:

I am in-between. I cook but I will not say I love cooking. You cannot be healthy if you eat fast-food. Cooking is necessary, you have to cook. I try to stay healthy for my family by buying vegetables that are in season because they are cheaper, I add them to the rice.

Table 3

Themes, Definitions, and Frequencies of Themes for Research Question 3

Theme	Definition	Number of interviewees who mentioned the theme	Number of times the theme appeared across the interviews
Women cook to provide nutritious foods or cook to make the food healthier.	Nigerian women cook to provide nutritious foods or cook to make the food healthier.	12	41
Cost limits the consumption of certain foods.	Budgetary constraints and cost limit the consumption of certain foods for Nigerian women.	12	35
Nutritious food is available.	Healthy and nutritious food is available and accessible.	10	23
Media influences nutrition.	Media influences nutrition for Nigerian women.	9	16
Family influences nutrition.	Family influences nutrition for Nigerian women.	8	13
School provides nutrition knowledge.	School provides nutrition knowledge and information for Nigerian women.	8	12
Women are not influenced to change diet or nutrition.	Nigerian women are not influenced to change their diet or nutrition.	4	11
Women teach their children about nutrition.	Nigerian women socialize with their children and teach them about nutrition.	9	9
Healthy foods may be unavailable	Healthy foods may be unavailable for Nigerian women.	5	6
Women can eat nutritiously with little money.	Nigerian women perceive they can eat nutritiously with little money.	2	2

Respondent 10 said, “Eating at home is better, also cooking at home is better because one will be sure of what he or she is eating.” Respondent 12 states, “I try to

ensure that I prepare a meal that we can all eat. I also ensure I prepare a balanced diet for my family.” Respondent 2 stated:

I prefer to eat my own food, the one I prepare. Eating outside could be disastrous to one’s health, you won’t know the hygienic state under which the food was prepared, or the water used to cook, etc. Some people are concerned only about profit but not the health of others. Eating outside is cheaper for me but not healthier. When I cook, I make sure I spend money to get the right items that will add value to the diet. That makes it expensive compared to the one you just go out to buy and eat.

Respondent 3 explained:

By adding nutritious items such as vegetables, fish, etc. even though some of the traditional foods are said to be nutritious without having to add anything. For example, local beans or porridge (*gwote*) are said to be good for the body. ... I enjoy cooking. I believe I use my talent as a good cook to prepare the best meal for my household. I always want my husband and children to be healthy, so I do my best to feed them with nutritious meals.

Respondent 4 stated:

I love cooking. I believe a quality diet is a necessity and I must cook well for my household to be healthy. Therefore, even if I didn’t like to cook, I always consider the health of my family and give a healthy diet a priority.

Respondent 5 mentioned, “I love cooking because I like preparing healthy foods for my family.” Respondent 6 stated, “I have just finished taking *gwote*, I put vegetables in it. I take *gwote* everyday. ... Yes, you can make it more nutritious by adding maggi, fish, palm oil and many more.” Respondent 7 indicated, “Yes, like washing of *acha* grains to remove sand, it’s a healthy way of preparing Nigerian food. Also cooking potatoes with vegetables is another means.” When asked about making traditional Nigerian foods healthier, Respondent 8 indicated:

By washing our hands, adopting the good method of preservation, and keeping it away from rats. We can also make it more nutritious by adding fish, spices and other ingredients. ... I usually buy *moimoi* or *akara*, which is protein to eat with the *kunu* to make it more nutritious.

Cost limits the consumption of certain foods. The next theme for Research Question 3 was cost limits the consumption of certain foods. Cost limits the consumption of certain foods was mentioned 35 times in 12 interviews. For example, Respondent 1 explained:

I believe I need one serving of fruit and also half of your food should be vegetable. While I know this, I do not always practice it because it is too expensive if you don’t have a lot of money. You will have to wait until you are able to go downtown to get fruits or vegetables at a discounted rate. Vegetables and protein are not part of the family budget. My husband always buys the main foods like rice, beans and spaghetti for the month, so we do not have much money

left to buy fruits and vegetables. For example, if I try to buy an orange for 50 *naira* here, I will get 2 or 3 but if I go downtown, I can get 4 or 5 so at times I don't want to buy it until I go into town. We can only buy enough to last a day or two when I enter town.

Respondent 10 mentioned, "Here in Tudun Wada, it is easy for me to eat healthy but it also depends on the money one has, as most sellers would want to make gains so they make goods to be expensive." Respondent 12 also stated, "Money prevents me from accessing foods like potatoes, vegetables, fruits and eggs. ... Due to the bad economy, whatever we get is what we eat without looking at the nutrition diet just to save us from starving." Respondent 2 mentioned:

As you said, Jos is a city, and my life is affected by what the city provides; the type of foodstuff available, the cost of buying such foodstuff, the availability of money to purchase the foodstuff and so on determines what I get to eat in my home. I guess it is same for everyone. In the past, the cost of food was not as high as it is now and most of the condiments were local and almost free to get. Today, most items are imported so you have to spend much money to prepare a pot of soup. Life was easy back in the days, but not anymore.

Respondent 3 explained:

I buy my food in the market everyday. Everything can be found in the market where I work. If you have the money, you will get what you want. Availability and affordability are the determining factors to getting healthy foods to eat. Like I

said, these food items are available, but the purchasing power being limited sometimes is another factor.

Respondent 4 shared:

I buy my food in the market nearby. But you know buying fresh vegetables or fruits and other sources of nutrients needs money which is hard to get. So, it is not easy at all. But I like nutritious food. It is not easy to get fish, Irish potatoes, etc. but vegetables are easily accessed so I eat a lot of them. I think getting healthy foods is one thing, but eating it is another. In my case, it is the cost of purchasing the food items that hinder me from eating much nutritious food. But I am trying hard. Our community is blessed with many food items that can provide nutrition, only that you have to buy, and the money is not easy to come by.

In a final example of this theme, Respondent 7 explained, “I manage a food base on what I can afford at a moment because things keep changing. There are days that we hardly afford the complete three square meals, so we eat and drink *garri* during such times.”

Nutritious food is available. The next theme for Research Question 3 was nutritious food is available. This theme refers to the perception that nutritious food is available and accessible. Nutritious food is available was mentioned 23 times in 10 interviews. For example, Respondent 12 said, “Here in Jos, I easily access food but in places like Bauchi it is not the same.” Respondent 2 also said, “There is always an availability of options around us. We are blessed, we have no short supply of a variety of

foodstuff. From grains to fruits, vegetables, tubers and so on, we have plenty of them.” Respondent 3 shared, “I buy my food in the market where everything can be found. If you have the money, you will get what you want.” Respondent 4 stated, “Vegetables are easily accessed so I eat a lot of them.” Respondent 5 mentioned, “I buy my foodstuff inside Tudun Wada market. There, I can get high-quality foodstuff or I can also get it in Angwan Miango market, where it is easy for me.” Respondent 7 shared, “Everything is available for us in the market.” In a final example of this theme, Respondent 8 shared, “I usually buy from the nearby market. Quality nutritious food is the food that builds our body and I can find it very close.”

Media influences nutrition. The next theme for Research Question 3 was media influences nutrition. Media influences nutrition was mentioned 16 times in nine interviews. Respondent 1 said, “Rice and vegetables are healthy foods. I learn about diet from television.” Respondent 10 explained, “I learned how to cook *eguisi* soup through that medium [media]; it also exposes me to learning about new nutritious foods.” Respondent 11 indicated, “I like the advertisement, I usually copy whatever I see them doing; it makes me eat a variety of foods.” Respondent 2 explained:

I have learned a lot from television and magazines which have improved my cooking skills. It is true, the mass media exposes us to different cuisines and food items. The things I see on the media has helped to change my diet a little over the years.

Respondent 4 stated:

The advertisements about food help propagate those products and food to the public and the diets are constantly changing. As for me, I am not in touch with those advertisements closely and I don't learn anything from them. I don't eat much of the advertised food but as I said, seasonings and spaghetti are familiar to me. I consume them. The media may have helped introduce them to me, I don't remember.

Respondent 8 shared, "Television is very important. It teaches many women who are ready to learn how to cook. The advert changed the way I cook." In contrast, Respondent 3 explained how the media is a negative influence on nutrition and diet:

Not much is said about healthy diet as the attention of everyone is centered on making money. So, the voice of advertisers seeking to sell unhealthy foods is louder than the voice of those preaching the gospel of good and healthy eating and healthy lifestyle.

Family influences nutrition. The next theme for Research Question 3 was family influences nutrition. Family influences nutrition was mentioned 13 times in eight interviews. For example, Respondent 10 explained familial influence, "I am a woman, I learned about diet through giving attention to such foods, while some I learned from my mother, she told me their importance to the body." Respondent 11 stated, "There are foods that gives energy; I learned about nutritious diet at home and at school. For example, I learned not to eat one type of food like rice or yam every day." Respondent 12 explained, "There are food that when you eat they make you healthy example; fruits and

vegetables, I learnt that from school, my mother and other people including neighbors.”

Respondent 3 mentioned:

A nutritious diet I think is a diet that provides one with nutrients in the body, like carrots, beans, vegetables, fruit, etc. All these items have what they give to the body for health and I learned it from school and from my mother at home.

Respondent 5 indicated, “My mother told me that I need some specific foods to help in controlling my weight.” Respondent 9 also stated:

There are foods that make the body to be healthy. I learnt it from my mother and also on television. My eating mode has changed, I now eat fruits compared to when I was younger. Fruits are healthy foods. I learnt it from my mother and my grandmother.

School provides nutrition knowledge. The next theme for Research Question 3 was school provides nutrition knowledge. School provides nutrition knowledge was mentioned 12 times in eight interviews. Respondent 12 shared, “There are foods that when you eat, they make you healthy, for example; fruits and vegetables, I learned that from school.” Respondent 2 explained:

I think a nutritious diet is one which provides all the nutrients which the body needs. They include carbohydrates, vitamins, proteins, fats, and oil, etc. if we have a balanced combination of these, we get our nutritious diet. I learned this from school.

Respondent 3 mentioned, “A nutritious diet I think is a diet that provides one with nutrients in the body, like carrots, beans, vegetables, fruit, etc. all have what they give to the body for health and I learned it from school.” Respondent 7 said, “Moderately I will say I am a healthy eater. I do my best to see that my family has a balanced diet by eating fruits like oranges. I learned the information in school.” Finally, Respondent 8 indicated, “These [fruits and vegetables] are foods that build our body and protect us from illnesses. I learned from school.”

Women are not influenced to change diet. The next theme for Research Question 3 was women are not influenced to change diet or nutrition. Women are not influenced to change diet or nutrition was mentioned 11 times in four interviews. For example, Respondent 1 mentioned, “I do not feel like too many people influence what I eat.” Respondent 2 also stated, “Frankly, I am hardly influenced to change my diet preference.” Later she added the following:

No one in the home influences my choice. My husband has given me a free hand to determine our meals and I do so to the best of my ability and within available means. Since I have some knowledge of what I need to do to enhance a healthy diet, I apply that knowledge in my choices of meals even for the household

Respondent 3 said:

I think the advertisements on radio, television or magazines exposes us daily to new diets or eating habits and reinforces the adoption and consumption of the new diets. However, I do not change my diet simply because I see them in the media, I

am already used to the ones I consume. As for the health implication of some new diets I consume today, I can only say God has protected me from being harmed by them. So, I don't believe the images I see in the media influences my diet. There is a lot of food advertised on the media, but I don't eat them.

Respondent 4 indicated:

People hardly influence my eating habits or even what I eat. The exception is, when I visit I don't dictate to my host what he or she graciously offers me. As a mark of appreciation and respect, I accept what my host offers me, however, only if it is what I don't consider to be dangerous to my health or my home. I try to cook what will be acceptable to all, no one dictates for me.

Women teach their children about nutrition. The next theme for Research Question 3 was women teach children about nutrition. Women teach children about nutrition was mentioned nine times in nine interviews. Respondent 12 said, "I will teach them [my children] practically by buying all classes of food." Respondent 3 said, "I shall teach my kids about healthy diets while they are still young." Respondent 4 explained her plans to socialize and teach her children, "I would like to teach them about diet when they grow up. I will teach them by stopping them from eating the wrong diet and pointing them toward healthy diet. I will like my family to be healthy." Respondent 7 mentioned, "It is important I teach my kids especially the girls because girls are always together with their mothers during cooking. While together with them, I will explain why we eat certain foods."

Respondent 11 shared:

There is a need to teach them so that they will always eat the right foods either at home or outside so that they grow well and also look strong and healthy. For example, I usually bring the food and tell them its uses in their body and whether to eat more or less of it. They also learn in school.

Respondent 2 explained:

I really would like my children to know about healthy diet and though they are young, I have started teaching them so that they will not face the risks of failed health as a result of what they consume now or in the future. Presently, I draw them closer to me when I prepare meals. I also explain to them why I make certain decisions about the food we eat in the house.

Respondent 5 mentioned the importance of teaching children about nutrition:

It is important because it reduces the high risk of sickness such as diabetes, hepatitis, and high blood pressure and to enable them to grow strong and healthy. I teach them practically by sending them to the market to buy food stuff like milk and noodles.

Respondent 6 shared:

They are young, but I teach them practically. I usually show them foods and tell them why they are supposed to eat it. I explain why it is the food they should eat. Tomorrow when I am not there, they will not try to go for food that is not good.

For example, if my child wakes up in the morning and says he wants to take *garri*, I will not give it to him because it takes time to digest. Tea is supposed to be taken in the morning and I will tell him the reason why he should not take *garri*.

In a final example of this theme, Respondent 8 said:

There is a need so that in my absence they will be able to take good care of themselves when we talk about diet. At times I ask them what we need to eat to hear what they will say so that I tell them the right thing if they are wrong and also tell them the reason why it should be so. I usually consider how I can control what they eat so that there will be no problem now and in the future. I usually let them know that eating only carbohydrates can cause diabetes.

Healthy food may be unavailable. The next theme for Research Question 3 was healthy food may be unavailable. Healthy food may be unavailable was mentioned six times in five interviews. For example, Respondent 1 indicated, “We used to be able to afford milk or eggs and some of the proteins. It is hard for us to get foods that are nutritious.” Respondent 2 said, “It is not easy in this part of the world to observe the rules of nutritious diets strictly, but I am trying and wish others too will try.” In a final example, Respondent 8 explained why healthy food is unavailable:

Concerning food, as at then, our parents ate organic food that has not been processed by a company. Now we are in a time that we have what we call fast foods, canned rice, canned meat, canned *moimoi*, canned beans, etc. and all these foods have chemicals in them.

Women can eat nutritiously with little money. The final theme for Research Question 3 was women can eat nutritiously with little money. Women can eat nutritiously with little money was mentioned twice in two interviews. Respondent 12 explained the following, “No, eating outside is not healthy because I don’t know how the food is cooked. Eating outside consumes a lot of money without satisfaction but with little money, one can prepare a balanced diet.” In the final example of this theme, Respondent 5 shared the following, “My community can easily access food if they have money but even with little resources, they can still access healthy foods like *gwote* with 500 *naira*.”

Consensus emerged that Plateau State, specifically Jos, has many food varieties, and those who choose to eat locally can eat nutritionally. Yet, most people cited financial constraints, even though some of the women admittedly noted that with less than the equivalent of \$2 dollars (500 *naira*), one can eat a balanced diet. When they indicated that healthy food is not available, they were typically comparing 10 or 20 years ago when most people grew their own foods to now, when most foods are processed and packaged. They were also reminiscing on city life compared to rural life. Additionally, some of the women, knowing I came from the West, emphasized that a nutritional-knowledge gap exists. All the women learned about nutrition from their mothers and some got additional training from school or television. Although they often denied their diet was influenced by television, they all indicated that they learned how to cook or get ideas on how to cook some meals from television. All respondents felt a sense of duty to cook and provide meals for their families. The women indicated their interest in teaching their children about healthy food options.

Summary

Research Question 1 was what are the dietary habits of sampled women in Jos, an urban area of the middle belt of Nigeria? The six primary themes related to this research question were (a) Jos has a variety of foods, (b) women decide what to cook and eat, (c) Food consumed has little variety, (d) women grow their own food, (e) Minimal advise by a medical professional to change dietary habits, and (f) women do not eat healthy food.

Research Question 2 was, what are urban Nigerian women's perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet? The seven primary themes related to this research question were (a) nutrition is related to good health, (b) women do not eat local traditional foods, (c) women eat imported and Western food items, (d) nutrition should be balanced, (e) Western foods are processed but appealing, (f) difficult to adopt a completely Western diet in Nigeria, and (g) Western foods are Healthy.

Research Question 3 was, what is the lived experience of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households? The 10 themes related to this research question were (a) women cook to provide nutritious foods or cook to make the food healthier, (b) cost limits the consumption of certain foods, (c) nutritious food is available, (d) media influences nutrition, (e) family influences nutrition, (g) school provides nutrition knowledge, (h) women are not influenced to change diet or nutrition, (i) women teach their children about nutrition, (j) healthy foods may be unavailable, and (k) women can eat nutritiously with little money.

This chapter included a summary of the data analysis and the findings, presented in tables summarizing the identified themes and the frequency of occurrence for the

themes. In addition, I provided examples of the themes. Some themes appeared contradictory, based on the presentation, due to NVivo's inability to apply contextual reasoning. Although NVivo was able to identify patterns in this study, it seemed ideal for Western academic contexts because in this study, it presented a gap in aligning with Nigerian contexts. For example, in the use of the English language, what might seem contradictory to a Western scholar is clear to a Nigerian. Although a theme might seem questionable based on NVivo's pattern, seeming as though Nigerians think Western food is good while saying local food is good, in context, most Nigerians still incorporate staple foods into their daily diet. However, they have a large interest in Western foods and preparation due to convenience, so they apply both types of food in each meal preparation. Instead of making a staple meal from scratch, they use all processed ingredients. The use of language by bilingual English speakers is slightly different in context.

This study was designed to understand the perceptions of local women relating to their diet decision-making process. Their choosing processed convenient snacks or perceiving everything produced in Nigeria as indigenous indicates a gap in knowledge. Such a gap offers an opportunity to design programs that can help curtail the growing malnutrition and food insecurity.

Chapter 5: Discussion

The purpose of this basic qualitative study was to explore the perceptions of women in Jos (an urban city), Nigeria, on indigenous foods and Western dietary influences. The knowledge acquired is intended to help guide the design of viable programs that can address the current health challenges of malnutrition and food insecurity among the populace. It is important to understand how diet decisions impact the health of women and children through first-hand accounts from the indigenous population.

In this chapter, I address the major findings of the study as they relate to the literature on Western dietary influences on indigenous populations, indigenous foods, the role of media in diet choices, what implications may be valuable for legislators, and what role health care providers and educational institutions can play in improving understanding of the importance of intentional choices. Also included in the discussion is the connection between industrialization and choices or motivation related to diet.

Understanding these factors will foster efforts to design programs by the communities that focus on the perceptions of the locals to change the trajectory of malnutrition, food insecurities, and health and healing over time. This chapter concludes with a discussion on the limitations of this study and areas of future research, with a brief summary of the overall findings.

The discussion centers on the findings and future research possibilities to help answer the research questions:

RQ1: What are the dietary habits and demographic characteristics of urban women in an urban city of Nigeria?

RQ2: What are urban Nigerian women's perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet?

RQ3: What is the lived experience of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households?

What motivates women to choose what they cook for their families is multidimensional and comprised six key themes: (a) Jos, Plateau State, Nigeria has a variety of foods; (b) women decide what to cook and eat; (c) nutrition is related to good health; (d) women do not eat local traditional foods; (e) women cook to provide nutritious foods for their families; and (f) cost limits the consumption of nutritious foods. The intention of this study was to understand the perceptions of these women.

Some factors extracted from these themes highlighted how society influences women as individuals and their families: what the women ascribed to and how all these factors helped shape the environment where these women are challenged and expected to adapt. I found how subtly globalization, religion, and culture shape the diet decision-making choices of urban women. In regard to food procurement and preparation, women cited the influence of nutrition and the preferences of their children and husbands, impacting their choices, but predominantly, I found that taste, cost, and convenience emerged as salient in the decision-making process. In regard to the use of outside-the-home food sources, convenience and taste were the main deciding factors. The cost of eating out coupled with not knowing the source of ingredients were the main reasons cited for eating at home, and these factors only emerged among women with children.

Most women denied social factors such as friends and colleagues having any influence on their decision-making process surrounding food choices. In their

perceptions, social factors were minimal contributors to their diet decision-making processes; instead, they cited cost as responsible for most of their choices. The resultant decline in the consumption of indigenous African foods aligns with chronic diseases on the African continent (Raschke & Cheema, 2008). As seen in this study, more than 50% of the women did not perceive themselves to be healthy; yet, they did not associate their health with their everyday diet. Hypertension was the most common diagnosis mentioned, in line with recent studies in Nigeria that confirmed the high prevalence of hypertension in malnourished adults (Rasaki et al., 2018). Some women indicated they have no confirmed diagnosis, but they believed they were not healthy.

Interpretation of the Findings

Most Nigerian women, regardless of background, consume the majority of their meals in the home setting, but the transformative experience of motherhood can play a role in the decision-making process that guides the choice (Raskind et al, 2017). Despite slight variations in the women's backgrounds that influence their life experiences and their diet choices, each of the six themes outlined earlier were mentioned by all 12 interviewees. Sociocultural factors motivated women's choices, albeit subtly in some situations. These themes showed their commonality and also showed how decisions change over time, described in detail in the following section.

Jos, Plateau State has a variety of foods. Africa is home to a rich variety of fruits and vegetables that are endowed with moisture, fats, and protein (Oguntoyinbo et al., 2016). Plateau State has an abundance of fruits, vegetables, proteins, and fats from which to choose (Barau, 2017). Thus, the study finding that Plateau State has a variety of foods aligns with the literature. Barau (2017) stated, "It is undisputable that Plateau State

is the home of fruits and vegetables; these include carrots, cucumber, broccoli, strawberry, soursop, lemon, cabbage, grape, asparagus, and many others” (para 3). Jos produces 90% of the fruits and vegetables consumed in Nigeria (Barau, 2017). All the women mentioned that Plateau State has a variety of foods to choose from. One participant stated, “We are blessed, we have no short supply of a variety of foodstuff.” Two respondents who relocated from Bauchi, a northern state, recounted the wealth of food choices in Plateau State and the opportunities available to consume different foods from those they grew up accessing. Yet, all participants preferred Western options because they were perceived to taste better or make traditional foods taste better when combined. They attested to eating a variety, with emphasis on staple foods. As noted by one respondent, “I eat a variety of foods, but I think the most usual type is *tuwo*, whether it is made of *acha*, *semovita*, corn flour, etc.”

Women decide what to cook and eat. I confirmed that women are given some level of agency in Nigeria when it applies to the diet decision-making process. All the women in this study indicated they have the ability to choose for themselves and their families. They often consider the preferences of their spouses or children, but they ultimately decide what their families consume on a day-to-day basis. This level of empowerment denoted the capability to influence health outcomes for themselves and their families, as well as having control over the future health of generations. As one respondent stated,

I decide most of the foods but at times I ask my husband what he wants to eat. I am very strong-minded; I eat what I want. I cook what my husband likes or the children sometimes but mostly it is what I like.

Men are still the main providers in most homes but when it comes to daily procurement and preparation of meals, women have autonomy.

Nutrition aligns with good health. A nutritious diet relates to overall health.

This study aligned with the literature; women in Jos are knowledgeable about the value of healthy food consumption as an essential source of micronutrients (Banwat et al., 2012). Nutrition relates to good health was mentioned 30 times in 12 interviews; however, only two of the 12 women associated their diet with this outcome. This study contributes to the literature by exposing the gap in knowledge, further affirming the opportunity to effect change using understanding from this first-hand account of local women's understanding of the association between nutrition, health, and daily diet. For example, one respondent indicated she heard speculation about diet's ability to make people sick, but she has not seen it happen to anyone.

Women eat few local traditional foods. Dietary patterns in countries like Nigeria are transitioning from high-fiber, low-protein, low-calorie diets to high-fiber, high-protein, calorie-dense foods (Akarolo-Anthony et al., 2013). Although 10 of the 12 women in this study indicated they prefer local foods because they are ideal and healthier, some defined local foods as items that were not imported. For example, spaghetti manufactured by a Nigerian company is "local food." This study aligned with the literature in the sense that carbohydrates were the main staple food consumed, despite

the indication that they consume local foods. I found that the main staple food is carbohydrate-dense rice and *tuwo (fufu)*. These commonly consumed foods may be nutritionally inadequate (Ayogu et al, 2017). A similar study found that the main carbohydrate foods eaten by Nigerians were rice (48.6%) followed by *fufu* (30.5%) and bread (13.1%; Akarolo-Anthony et al., 2013). Of the women interviewed, 100% ate mostly rice or *tuwo* with *miyan kuka* or okra soup. Interestingly, however, a shared view by these women was highlighted by a respondent who stated, “Nigerian staple foods are nutritious because I cook them in my house like Irish potatoes; this is what is produced here. Nigeria staple foods are vegetables, sweet potatoes, *cocoyam*, and maize which my mother used to plant.”

Women cook to provide nutritious foods for their families. *The Global Nutrition Report* measured the commitment of a nation to nutrition and efforts to assuage malnutrition. In 2016, Nigeria ranked 98th of 132 countries for stunted growth and ranked 172 of 185 countries for the prevalence of anemia in women of reproductive age (Ene-Obong, Onuoha, & Eme, 2017). Of the women, 75% admitted they do not particularly love cooking, but stated that cooking is necessary if one wants to control cost, health, and preparation processes. One respondent stated, “Even if I don’t like to cook, I must consider the health of my family and give healthy diet a priority.” All the women interviewed were working women and admitted that cooking can be challenging, but they indicated they often eat leftovers or purchase snacks outside the house for this reason. These results affirmed women’s role as custodians of nutrition, especially for their nutritionally vulnerable dependents (Gaiha & Kulkarni, 2017).

Cost limits the consumption of healthy foods. Although food variety is not an issue in Jos, Nigeria, most respondents admitted they do not consume daily servings of fruits or vegetables. Participants often cited financial constraints as the reason for lack of adequate consumption of healthier food options. One respondent admitted, “While I know that I need daily servings of fruits and vegetables, I do not always practice it because it is too expensive.” It is true that cost can be a factor in poor settings, but this gap offers an opportunity for effective use of limited resources. The media can be a source of education for women on truly consuming a variety of foods and not the same foods in a variety of ways, which foods to consume in higher proportions, and the importance of consuming fruits and vegetables that are local, indigenous, and in season; Women can be taught how to budget differently; for example, money spent on sugar, fat, and salt can shift to nuts, whole grains, and produce (Herforth et al., 2019).

Carolan (2018), in *The Real Cost of Cheap Food*, cautioned societies on what cheap food afford over time. Packaged convenient food impacts national security, corporate responsibility, government subsidies, food aid, global community markets, and organic farming. Carolan argued that although it might seem these foods are cheap, they impact public health and per-nutrient yield and thus are more expensive. Generations to come will pay the price for choices today; hence, in the long run, what is seemingly cheap is actually more expensive (p. 6). Ultimately, cheap is not always inexpensive; therefore, to reduce the barriers to healthy eating, community women need education on how cheap calories do not translate to healthy, sustainable, or secure (Carolan, 2018).

Results discussed directly answered the research questions and provided themes that described the perceptions of women in Jos, Nigeria, in their diet choices. The study

results showed the relationship of the themes to the theories used in the study, SEM and systems theory, and the literature presented in Chapter 2. Additionally, the grounded-theory concepts denote that the conclusions drawn in this study are grounded in the data.

The women's perceptions of diet decision making support the assertions that women make diet choices in Jos, Nigeria, on an individual, interpersonal, community, organizational, and policy/enabling environment, interrelated and overlapping, with one level influencing another (Dyer, 2015). The respondents often chose meals they liked, even while admitting their husbands, children, and childhood played a huge role in that choice. Most recognized the role of coworkers, friends, and extended families in influencing their decision. They spoke about how staple food and policies that determine the cost of different foods also drive these choices, and drive accessibility and culture. They were reluctant to admit to a role for media in influencing their choices, yet added they learned much about what to eat and how to prepare food from that medium. These findings aligned with the literature, validating that proximal networks such as families and friends heavily influence behaviors. To achieve changes in behavior, strong social networks and policies need to motivate behavior (Sallis et al., 2015).

To improve the diet decision-making processes of women in Nigeria (Jos), multiple changes need to be implemented at various levels. For example, school policies are needed that improve food in the school setting, which will improve purchasing behavior over time. Female empowerment increases access to disposable income, which has the potential to improve eating habits of wives and mothers, which in turn will lead to positive outcomes in improving population health. Additionally, SEM can help health workers better understand how the different layers of influence intersect to shape a

person's food choices. When advising a patient to change their diet, health workers can incorporate women's knowledge, understanding, and influences related to social, cultural, individual, and organizational factors. It is imperative to design culturally appropriate dietary behavior interventions (Caperon et al., 2019).

Even though unhealthy diets link to hypertension, diabetes, and high cholesterol (Caperon et al., 2019), this study could not confirm these assertions because the study is based on perceptions and the women did not perceive themselves to be ill because they do not feel sick. They do not go for regular medical checkups and one respondent added that the knowledge will make her ill, so she would rather not know if she has a chronic ailment. Because chronic diseases often go undiagnosed, future studies can focus on testing the actual health status of these community women. Even though this study filled the gap in existing data by offering the perspectives of women that determine their dietary behavior, the study leaves an opportunity to link these perceptions with their health outcomes. A need for education accompanies the increasing availability and demand for convenient unhealthy foods (Caperon et al., 2019). SEM is broad and understanding of complexities (Robinson, 2008). To change the diet decision-making processes of women in Nigeria, public health mediums should avoid single-level analyses of behaviors. As this study confirmed, drivers of behavior are multilayered.

Systems theory was the second framework used to assess this study. Systems thinking accentuates the crossover among disciplines (Watson et al., 2010). Study findings align with the literature in nutrition, culture, education, and economic status (Shalan, 2009). Systems theory highlighted this finding, presenting thinking as a holistic endeavor (Aliyu & Amadu, 2017). I found diet decision-making processes to be an

interconnectedness of systems. The women's work schedules, number of children, age, social interactions, media engagement, and the environment all influence their diet choices.

I used grounded theory as a study method. The social interaction between the women with their families, city, and coworkers has evolved over time. Respondents were able to distinguish village versus city living, how their diet has evolved compared to their childhood, and how having television and living in the city has influenced their diet. Even though 83% of the women claimed they did not allow anyone to influence their decisions concerning their diet, they admitted they learned about nutrition and how to prepare some meals on television, coworkers suggested quick meals they can make to decrease tardiness, and some shared how friends suggested foods they can try. They did not perceive these agents as influencers.

The younger women who grew up in the city were less likely to prepare traditional foods in their homes and were grateful for convenient fast foods such as ramen noodles, soda, and snacks/cookies. Of the 12 women interviewed, grounded theory was instrumental in developing themes tantamount to their shared experiences. It was clear I reached saturation because the stories were similar. Most of the women had little knowledge of the nutritional significance of their meals; they were motivated by the taste and desire to feel sated. Most of the women chose the foods they ate based on their mother's influence on them as children, their income status, and the time constraint.

The understanding from this study fits the study of diet and choices, relevant because of the high rate of malnutrition and infant mortality in this community; understanding the perceptions of women can guide nutrition policies and educational

campaigns, and address the growing concern for improved nutrition and overall health. With this qualitative knowledge, education should center on these perceptions. Understanding that women highlight cost as a major reason for not eating healthy can shift attention from items that have to be nicely packaged to fruits and veggies that are readily available. Most indigenous fruits fall off trees and rot and vegetables grow wild without need for any special handling. Channeling attention to those items can modify thoughts and motivations (Tossy et al., 2017). This knowledge can sensitize and galvanize the support of the community, especially grandmothers who have a better understanding of these indigenous foods, and policymakers.

Plateau State and Nigeria as a whole need more policies that safeguard the under-5 population, women of childbearing age, and society at large. Enabling environments should promote healthy diets. Schools and worksites can be effective locations to disseminate effective nutrition policies (Mozaffarian, Angell, Lang, & Rivera, 2018). Considering low-cost fruits and vegetables, wellness programs and practical interventions related to nutrition guidelines or tax incentives for workplaces or schools are steps toward health promotion and disease prevention (Mozaffarian et al., 2018).

Limitations of the Study

The following challenges faced this study: As I indicated in Chapter 3, as an indigene of Jos, Plateau State, Nigeria, I may have introduced researcher bias to this study. To minimize this possible researcher bias, I reevaluated the impressions of respondents throughout the study and made a point of challenging my preexisting assumptions. I had the participants review the transcribed data to maintain context.

Systems theory highlights the need to consider perceptions from a multifaceted point of view. From the findings, the diet decision-making process was impacted by lack of education, but was also driven by culture, religion, the political state of the terrain, policies, pecuniary challenges, and urban living. This study only focused on understanding the perceptions of these women without delving into specific concerns and how they can be addressed. I only focused on their diet decision-making processes.

I used purposive sampling, not random sampling, which can be a limitation of the study because I only looked at women who are between the ages of 20 and 30. Looking at older or younger women could have produced a different finding from this study. Likewise, the study only focused on women, muting the voices of the men. This is an opportunity for future studies to hear the voices of the men related to decision-making processes surrounding food in their households.

This study only looked at a small geographic location in Nigeria. This study cannot be directly applied to other women in Nigeria because I only interviewed 12 women and they hailed from only one city in the central part of the country. The study lacks power; hence, these findings do not represent the views of all women in Nigeria.

Although participants' educational level was not an inclusion criterion, given the location, all the women in the study only had a high-school-level education at best. Their educational background is likely a large predictor of their diet choices. Maternal education influences nutrition of her family, immunization rate, engagement in routine health services, and overall malnutrition rate of her household (Kuku-Shittu, Onabanjo, Fadare, & Oyeyemi, 2016).

Recommendations

Building on the results and limitations discussed in this chapter, I recommend the following actions regarding future research and practice:

1. A gap exists in policies that promote and support fruit and vegetable consumption. Such policies can be implemented in the form of educational programming that can result in behavioral change. Programs should be designed with the understanding of local knowledge and perceptions, specifically targeting sociocultural motivators of diet choices.
2. Clearly, most homes budget and focus on the consumption of starchy local staples. Families allocate a very small amount to the purchase of fruits and vegetables and when women indicated they eat a variety, they were considering the change from one starchy meal to another, typically within three or four varieties. Families need to be empowered with knowledge, but the cost is also a driving factor for choice; hence, a need exists to increase the minimum wage and offer more job opportunities, which in turn would increase family overall income. Increased income can drive increased consumption of what is considered luxury items: that is, fruits and vegetables.
3. Farmers should be offered subsidies to encourage them to grow more fruits and vegetables. A tax break can increase production and demand and supply drives the economic market. If the supply of goods is high, it decreases competition and cost, making fruits and vegetables cheaper for families citing cost as a reason for making different choices.

4. Female empowerment can be an asset for improving nutrition and food security in Plateau State, Nigeria. Investing in girl-child education can influence the overall family dynamic over time.
5. A similar study can be conducted on a larger scale, looking at a broader age group, gender, state, country, or continent. A wider understanding can drive government policies at the federal level.
6. Similar studies that are qualitative and offer a voice to the local indigenes are few. Understanding the knowledge and perceptions of the community will influence better educational programs that understand the way people think, thereby involving them in designing solutions to their problems.
7. Eat a variety of the different fruits and vegetables, proteins, and fats available. When one eats a variety of foods, their body has to do things differently to improve metabolism and overall health. The current approach of relying on the same foods potentially results in malnutrition because not only does the body adapt to the routine, resulting in poor functioning of the various mechanics, eating the same foods daily fails to provide the diverse nutrients the body needs to be active and healthy.
8. A need exists for traditional teachings centered on the domestication of indigenous crops to increase awareness, accessibility, and consumption. More importantly, such teachings would protect those crops from becoming extinct.
9. With globalization also comes access to a wide range of information and increased pressure for local communities to take an active role in solving their local problems. Communities can look into traditional ways of farming and

storing food in barns or clay pots for grains. Communities can take ownership of their challenges and develop practical and achievable solutions. Future studies can go beyond looking at perceptions of these women to engaging them in developing solutions to issues relating to malnutrition and food insecurity in their communities.

Implications

Focusing on feeding children what they like could impact their long-term health and, with the growing trend in the direction of more processed convenience foods, this could result in an increased incidence of obesity in the city. Mothers and food preparers have a responsibility to reduce children's exposure to unhealthy foods. These women were highly influenced by their mothers and directly or indirectly, they are influencing their children's long-term diet decision-making processes. Therefore, it is important to provide and develop healthy habits in their children by guiding them to make healthier choices.

This study supports the assertion that starchy staple foods dominate the diet of women in Jos, Nigeria, putting families at risk of micronutrient deficiencies (Kuku-Shittu et al., 2016). Micronutrient malnutrition is difficult to measure in these women because it is hidden hunger (Kuku-Shittu et al., 2016). Even though these families consume these starchy meals to feel satiated, and they do, they are not educated on micronutrients or the dangers associated with micronutrient deficiencies. If left unchecked, micronutrient malnutrition can lead to irreversible physical challenges including mortality (Kuku-Shittu et al., 2016). Few studies addressed food consumption, nutrient intake, and nutrient status of Nigerians, especially related to food diversity and micronutrient malnutrition mortality

(Kuku-Shittu et al., 2016). These women's perceptions highlight the gap in knowledge and need for future research in this area. From the study's results, women perceive themselves to be diversifying their foods if they switch between starches. They do not have a good understanding of balancing macronutrients and micronutrients in their diet for themselves and their families.

Household wealth could impact overall diet diversity when women have autonomy to decide what they feed their families and have disposable income. It is likely these women would exercise their ability to diversify foods. For example, although most women in this study agreed that consuming fruits and vegetables was essential, most cited cost and resources as the deciding factor for not consuming more. Disposable income could align with more frequent consumption of fruits and vegetables.

Women are key agents of change in diet and nutrition. Empowered women who understand micronutrient malnutrition, food diversity, and have disposable resources can lead a considerable decline in overall malnutrition rates in families, especially among children. Access to land or community gardens can also improve the health of people and could, in turn, reduce the number of hungry people nationwide. When women have disposable income, they will be empowered to make better diet choices.

The government can stimulate production and distribution of less expensive indigenous crops including indigenous fruits and vegetables that are nutrient dense. With the growing pandemic of obesity, government can increase tariffs or tax on highly processed foods to discourage consumption. The government can also incentivize nutrition education, food labeling, menu labeling, and clinical counseling by health care providers.

Understanding will help health care providers ascertain if an association exists among these perceptions, malnutrition, and food insecurity. This study, by exploring indigenous women's perspectives, gained understanding of their values, challenges, customs, and attitudes in relation to their decision making surrounding the nutritional value of indigenous foods and Western foods, and how these decisions impact their diet, agricultural practices, and health.

Conclusion

Overall, this qualitative study on the diet decision-making process of women in Jos, Nigeria, achieved its objective. The goal was to highlight the predominant themes from indigenes' first-hand viewpoints on diet choices. This goal bounded the research findings to be more specific and practical for actionable implications. These women are closest to the phenomenon and will be ideal stakeholders when designing community programs to address the gap in knowledge and understanding.

The decision-making process surrounding food choices stems from varying sources of information: personal preference influenced by age, gender, culture, education, income, health status, and nutritional and cooking knowledge; psychological influences such as attitudes about food and health, incentives, motivation, and values; and early life exposures, including the mother's diet during pregnancy, infant-feeding practices, and foods consumed in early childhood. Subconsciously, choices are influenced by wider determinants such as sociocultural patterns gleaned from social networks, television watching, or community norms. The local environment in this study also played an important role in influencing diet. The women in Jos can access a variety of foods, with options for true flexibility in diet plans, but the women do not maximize these.

The study found that most of the women eat a variety of foods but rely on carbohydrate-based *tuwo* and *gwote* for their main food sources, despite the available options. Despite knowledge among the women of the importance of consuming diverse and healthy foods, they have a need to apply this knowledge. Possible modes to improve food choices are use of the media, health workers incorporating nutrition education in clinical counseling, public health workers promoting community-health education and sensitization, and government policies incentivizing production and consumption of healthy food options.

This section concludes this dissertation, with hopes that the findings presented may be used to fuel conversations on diet decision-making processes of women in Nigeria. Of particular interest were women of childbearing age. The hope is that health workers, the legislature in Nigeria, and those around the world will confront and curtail the growing rate of micronutrient malnutrition and food insecurity.

References

- Abubakar, N., Atiku, M. K., Alhassan, A. J., Mohammed, I. Y., Garba, R. M., & Gwarzo, G. D. (2017). An assessment of micronutrient deficiency: A comparative study of children with protein-energy malnutrition and apparently healthy controls in Kano, northern Nigeria. *Tropical Journal of Medical Research*, *20*, 61–65. <https://doi.org/10.4103/1119-0388.198124>
- Adebooye, O. C., & Opabode, J. T. (2004). Status of conservation of the indigenous leafy vegetables and fruits of Africa. *African Journal of Biotechnology*, *3*, 700–705. Retrieved from <https://www.academicjournals.org/AJB>
- Adedeji, I. A., John, C., Okolo, S. N., Ebonyi, A. O., Abdu, H., & Bashir, M. F. (2017). Malnutrition and the intelligence quotient of primary school pupils in Jos, Nigeria. *British Journal of Medicine and Medical Research*, *21*, 1–13. <https://doi.org/10.9734/BJMMR/2017/32504>
- Adediran, O. S., Akintunde, A. A., Opadijo, O. G., & Araoye, M. A. (2015). Dyslipidaemia, Atherogenic Index and urbanization in central Nigeria: Associations, impact, and a call for concerted action. *International Journal of Cardiovascular Research*, *2*, 4. <https://doi.org/10.4172/2324-8602.1000134>
- Akarolo-Anthony, S. N., Odubore, F. O., Yilme, S., Aragbada, O., Odonye, G., Hu, F. ... Adebamowo, C. A. (2013). Pattern of dietary carbohydrate intake among urbanized adult Nigerians. *International Journal of Food Sciences and Nutrition*, *64*, 292–299. <https://doi.org/10.3109/09637486.2012.746290>

- Aliyu, A. A., & Amadu, L. (2017). Urbanization, cities, and health: The challenges to Nigeria—A review. *Annals of African Medicine, 16*, 149–158. https://doi.org/10.4103/aam.aam_1_17
- Alvergne, A., Jenkinson, C., & Faurie, C. (Eds.). (2016). *Evolutionary thinking in medicine: From research to policy and practice*. New York, NY, US: Springer.
- Anetor, G. O. (2015). Knowledge of healthcare professionals on the use of micronutrient and the prevention of micronutrient malnutrition in Ibadan Nigeria. *Asian Journal of Epidemiology, 8*, 9–16. <https://doi.org/10.3923/aje.2015.9.16>
- Antia, B. E., & Bertin, F. D. (2004). Multilingualism and healthcare in Nigeria: A management perspective. *Communication & Medicine, 1*, 107–117. <https://doi.org/10.1515/come.2004.1.2.107>
- Ayogu, R., Edeh, R., Madukwe, E., & Ene-Obong, H. (2017). Commonly Consumed Foods: Nutritional Quality and Contributions to Recommended Nutrient Intakes of Schoolchildren in Rural Southeastern Nigeria. *Food and nutrition bulletin, 38*(1), 65-77. <https://doi.org/10.1177/0379572116689627>
- Babbie, E. R. (2007). *The practice of social research*. Belmont, CA, US: Thomson Wadsworth.
- Baldachin, B. J. (1963). Cardiovascular disease in the African in Matabeleland. *Central African Journal of Medicine, 9*, 463–469. Retrieved from <https://journals.co.za/content/journal/CAJM>

- Banwat, M. E., Lar, L. A., Daboer, J., Audu, S., & Lassa, S. (2012). Knowledge and intake of fruit and vegetable consumption among adults in an urban community in north central Nigeria. *Nigerian Health Journal*, *12*(1), 12–15. Retrieved from <https://www.ajol.info>
- Barau, 2017. Plateau produces 90% of Nigeria's fruits, vegetables, says Commissioner. The SUN. Retrieved from <https://www.sunnewsonline.com/plateau-produces-90-of-nigerias-fruits-vegetables-says-commissioner>
- Basit, T. (2003). Manual or electronic? The role of coding in qualitative data analysis. *Educational Research*, *45*, 143–154. <https://doi.org/10.1080/0013188032000133548>
- Beck, U. (2018). *What is globalization?* Oxford, England: John Wiley & Sons.
- Bello, M. O., Asubonteng, K., Sodamade, A., & Adeniyi, S. (2014). Nutrient potentials of two lesser known leafy vegetables (*Vitex doniana* L. and *Sesamum indicum* L.). *International Food Research Journal*, *21*, 1993–1999. <https://ifrj.upm.edu.my>
- Belotto, M. J. (2018). Data analysis methods for qualitative research: Managing the challenges of coding, interrater reliability, and thematic analysis. *Qualitative Report*, *23*, 2622–2633. Retrieved from <https://nsuworks.nova.edu/tqr/vol23/iss11/2>
- Bernell, S., & Howard, S. W. (2016). Use your words carefully: What is a chronic disease? *Frontiers in Public Health*, *4*, 159. <https://doi.org/10.3389/fpubh.2016.00159>

- Berry, J. W. (2015). Acculturation. In J. E. Grusec & P. D. Hastings (Eds.), *Handbook of socialization: Theory and research* (pp. 520–538). New York, NY, US: Guilford Press.
- Black, M. M. (2003). Micronutrient deficiencies and cognitive functioning. *The Journal of nutrition*, 133(11), 3927S-3931S. <https://doi.org/10.1093/jn/133.11.3927S>
- Boulding, K. E. (1956). General systems theory: The skeleton of science. *Management Science*, 2(3), 197–208. <https://doi.org/10.1287.mnsc.2.3.197>
- Bright, M. A., & O'Connor, D. (2007). Qualitative data analysis: Comparison between traditional and computerized text analysis. *Osprey Journal of Ideas and Inquiry*, 21. Retrieved from https://digitalcommons.unf.edu/ojii_volumes/
- Bronfenbrenner, U. (1979). *The ecology of human development*. Cambridge, MA, US: Harvard University Press.
- Brunsnø, K., Grunert, K. G., & Bredahl, L. (1995). The comparison of food-related lifestyles across countries. *Appetite*, 24(3), 286-287. [https://doi.org/10.1016/S0195-6663\(95\)99871-3](https://doi.org/10.1016/S0195-6663(95)99871-3)
- Burchi, F., Fanzo, J., & Frison, E. (2011). The role of food and nutrition system approaches in tackling hidden hunger. *International journal of environmental research and public health*, 8(2), 358-373. <https://doi.org/10.3390/ijerph8020358>
- Campbell, J. L., Quincy, C., Osserman, J., & Pedersen, O. K. (2013). Coding in-depth semistructured interviews: Problems of unitization and intercoder reliability and agreement. *Sociological Methods & Research*, 42, 294–320. <https://doi.org/10.1177/0049124113500475>

- Caperon, L., Arjyal, A., Puja, K. C., Kuikel, J., Newell, J., Peters, R., ... & King, R. (2019). Developing a socio-ecological model of dietary behaviour for people living with diabetes or high blood glucose levels in urban Nepal: A qualitative investigation. *PloS one*, 14(3), e0214142. <https://doi.org/10.1371/journal.pone.0214142>
- Carfora, V., Caso, D., & Conner, M. (2016). The role of self-identity in predicting fruit and vegetable intake. *Appetite*, 106, 23–29. <https://doi.org/10.1016/j.appet.2015.12.020>
- Carolan, M. (2018). *The real cost of cheap food*. London, England:Routledge.
- Casanave, C. P., & Li, Y. (2015). Novices' struggles with conceptual and theoretical framing in writing dissertations and papers for publication. *Publications*, 3(2), 104–119. <https://doi.org/10.3390/publications3020104>
- Centers for Disease Control and Prevention. (2015, May, 15) Body Mass Index (BMI). Retrieved from <https://www.cdc.gov/healthyweight/assessing/bmi/index.html>
- Centers for Disease Control and Prevention. (2019, August 12) Micronutrient Facts. Retrieved from <https://www.cdc.gov/nutrition/micronutrient-malnutrition/micronutrients/index.html>
- Centers for Disease Control and Prevention. (2019, October 23) About Chronic Diseases. Retrieved from <https://www.cdc.gov/chronicdisease/about/index.htm>
- Cloete, P. C., & Idsardi, E. F. (2013). Consumption of indigenous and traditional food crops: Perceptions and realities from South Africa. *Agroecology and Sustainable Food Systems*, 37, 902–914. <https://doi.org/10.1080/21683565.2013.805179>

- Collyer, T. A. (2018). Three metaphors to aid interdisciplinary dialogue in public health. *American Journal of Public Health, 108*, 1483–1486. <https://doi.org/10.2105/AJPH.2018.304681>
- Commodore-Mensah, Y., Samuel, L. J., Dennison-Himmelfarb, C. R., & Agyemang, C. (2014). Hypertension and overweight/obesity in Ghanaians and Nigerians living in West Africa and industrialized countries: a systematic review. *Journal of Hypertension, 32*, 464–472. <https://doi.org/10.1097/HJH.0000000000000061>
- Corbin, J. M., & Strauss, A. L. (2008). *Basics of qualitative research: Techniques and procedures for developing grounded theory* (3rd ed.). Los Angeles, CA, US: Sage.
- Creswell, J. (1998). *Qualitative inquiry and research design*. Thousand Oaks, CA, US: Sage.
- Creswell, J. (2007). *Qualitative inquiry and research design: Choosing among five approaches* (2nd ed.). Thousand Oaks, CA, US: Sage.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Thousand Oaks, CA, US: Sage.
- Creswell, J. W. (2013). *Qualitative Inquiry & Research Design Choosing among Five Approaches* (3rd ed.). Thousand Oaks, CA SAGE.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. Sage publications. (3rd ed.). Thousand Oaks, CA: Sage
- Cusick, S. E., & John, C. C. (2014). *Micronutrient deficiency and immunity. Nutrition-Infection Interactions and Impacts on Human Health, 39*. Boca Raton, FL: CRC Press

- Darnton-Hill, I., & Nalubola, R. (2002). Fortification strategies to meet micronutrient needs: Successes and failures. *Proceedings of the Nutrition Society*, *61*, 231–241. <https://doi.org/10.1079/PNS2002150>
- Darnton-Hill, I., Webb, P., Harvey, P. W., Hunt, J. M., Dalmiya, N., Chopra, M., ... de Benoist, B. (2005). Micronutrient deficiencies and gender: social and economic costs. *American Journal of Clinical Nutrition*, *81*, 1198S–1205S. <https://doi.org/10.1093/ajcn/81.5.1198>
- Delisle, H., Ntandou-Bouzitou, G., Agueh, V., Sodjinou, R., & Fayomi, B. (2012). Urbanisation, nutrition transition and cardiometabolic risk: The Benin study. *British Journal of Nutrition*, *107*, 1534–1544. <https://doi.org/10.1017/S0007114511004661>
- Demi, S. M. (2014). *African indigenous food crops: Their roles in combatting chronic diseases in Ghana* (Unpublished master's thesis). University of Toronto, Toronto, Canada.
- Denzin, N. K., & Lincoln, Y. S. (Eds.). (2011). *The Sage handbook of qualitative research*. Thousand Oaks, CA: Sage.
- De-Regil, L. M., Peña-Rosas, J. P., Flores-Ayala, R., & del Socorro Jefferds, M. E. (2014). Development and use of the generic WHO/CDC logic model for vitamin and mineral interventions in public health programmes. *Public Health Nutrition*, *17*, 634–639. <https://doi.org/10.1017/S1368980013000554>

- de Sardan, J. -P. O. (2015). Africanist traditionalist culturalism: analysis of a scientific ideology and a plea for an empirically grounded concept of culture encompassing practical norms. In T. de Herdt and J. -P. O. de Sardan (Eds.), *Real governance and practical norms in Sub-Saharan Africa: The game of the rules*. London, England: Routledge. Retrieved from https://www.researchgate.net/publication/280489697_Africanist_traditionalist_culturalism_Analysis_of_a_scientific_ideology_and_a_plea_for_an_empirically_grounded_concept_of_culture_encompassing_practical_norms
- Dolman, R. C., Wentzel-Viljoen, E., Jerling, J. C., Feskens, E. J. M., Kruger, A., & Pieters, M. (2014). The use of predefined diet quality scores in the context of CVD risk during urbanization in the South African Prospective Urban and Rural Epidemiological (PURE) study. *Public Health Nutrition*, *17*, 1706–1716. <https://doi.org/10.1017/S1368980013002206>
- Dufour, D. L., & Piperata, B. A. (2017). Design in biocultural studies of food and nutritional anthropology. In J. Chrzan & J. A. Brett (Eds.), *Food research: Nutritional anthropology and archaeological methods* (pp. 12–15). New York, NY, US: Berghan Books.
- Dyer, J. D. (2015). *Maternal health behavior change: Women's experiences as participants of an mHealth program in Timor-Leste* (Unpublished master's thesis). University of Washington, Seattle, WA, US.
- Echebiri, V. C. (2015). The factors affecting Nigeria's success toward implementation of global public health priorities. *Global Health Promotion*, *22*(2), 75–80. <https://doi.org/10.1177/1757975914538292>

- Eckhardt, C. L. (2006). Micronutrient malnutrition, obesity, and chronic disease in countries undergoing the nutrition transition: potential links and program/policy implications (No. 583-2016-39710). doi 10.22004/ag.econ.55889
- Edhlund, B. M., & McDougall, A. G. (2016). *NVivo for Mac essentials: Welcoming Macusers to the NVivo world*. Stallarholmen, Sweden: Form & Kunskap.
- Effoduh, J. O. (2014). *The economic development of Nigeria from 1914 to 2014*. Nigerian Institute of Advanced Legal Studies. Retrieved from <http://www.casade.org/economic-development-nigeria-1914-2014/>
- Eisenstadt, S. N. (1965). Transformation of social political, and cultural orders in modernization. *American Sociological Review*, 659-673. [https:// doi: 10.2307/2091135](https://doi.org/10.2307/2091135)
- Elo, S., Kääriäinen, M., Kanste, O., Pölkki, T., Utriainen, K., & Kyngäs, H. (2014). Qualitative content analysis: A focus on trustworthiness. *Sage Open*, 4(1), <https://doi.org/10.1177/2158244014522633>
- Eneh, O. C., & Nkamnebe, A. D. (2011). Gender gap and sustainable human development in Nigeria: Issues and strategic choices. *Asian Journal of Rural Development*, 1(1), 41–53. <https://doi.org/10.3923/ajrd.2011.41.53>
- Ene-Obong, H. N., Onuoha, N. O., & Eme, P. E. (2017). Gender roles, family relationships, and household food and nutrition security in Ohafia matrilineal society in Nigeria. *Maternal & child nutrition*, 13, e12506. <https://doi.org/10.1111/mcn.12506>

- Fialkowski, M. K., Okoror, T. A., & Boushey, C. J. (2012). The Relevancy of Community-Based Methods: Using Diet within Native American and Alaska Native Adult Populations as an Example. *Clinical and translational science*, 5(3), 295-300. <https://doi.org/10.1111/j.1752-8062.2011.00364.x>
- Fieldhouse, P. (2013). *Food and nutrition: Customs and culture* (2nd ed.). Dordrecht, The Netherlands: Springer.
- Fila, S. A., & Smith, C. (2006). Applying the theory of planned behavior to healthy eating behaviors in urban Native American youth. *International Journal of Behavioral Nutrition and Physical Activity*, 3, 11. <https://doi.org/10.1186/1479-5868-3-11>
- Flick, U. (2014). *An introduction to qualitative research*. Thousand Oaks, CA, US: Sage.
- Fungo, R., Muyonga, J. H., Kabahenda, M., Okia, C. A., & Snook, L. (2016). Factors influencing consumption of nutrient rich forest foods in rural Cameroon. *Appetite*, 97, 176–184. <https://doi.org/10.1016/j.appet.2015.12.005>
- Furst, T., Connors, M., Bisogni, C. A., Sobal, J., & Falk, L. W. (1996). Food choice: A conceptual model of the process. *Appetite*, 26, 247–266. <https://doi.org/10.1006/appe.1996.0019>
- Gaiha, R., & Kulkarni, V. S. (2017). “Double Burden of Malnutrition” Reexamining the Coexistence of Undernutrition and Overweight Among Women in India. *International Journal of Health Services*, 47(1), 108-133. <https://doi.org/10.1177/0020731416664666>

- Gardner, D. M. (2016). The immense value of qualitative research to pharmacy. *Canadian Pharmacists Journal*, 149(4), 195. <https://doi.org/10.1177/1715163516651881>
- Gharajedaghi, J. (2011). *Systems thinking: Managing chaos and complexity: A platform for designing business architecture*. Amsterdam, The Netherlands: Elsevier.
- Gillespie, S., Haddad, L., Mannar, V., Menon, P., & Nisbett, N. (2013). The politics of reducing malnutrition: Building commitment and accelerating progress. *Lancet*, 382, 552–569. [https://doi.org/10.1016/S0140-6736\(13\)60842-9](https://doi.org/10.1016/S0140-6736(13)60842-9)
- Glanz, K., Rimer, B. K., & Viswanath, K. (Eds.). (2015). *Health behavior: Theory, research, and practice* (5th ed.). San Francisco, CA, US: Jossey-Bass.
- Glaser, B. S., & Strauss, A. (1971). A. (1967). The discovery of grounded theory: Strategies for qualitative research. *New York*, 31-43. New Brunswick, NJ, US: Transaction. Retrieved from http://www.sxf.uevora.pt/wp-content/uploads/2013/03/Glaser_1967.pdf
- Gonçalves, J. G., de Bragança, A. C., Canale, D., Shimizu, M. H. M., Sanches, T. R., Moysés, R. M. A. ... Volpini, R. A. (2014). Vitamin D deficiency aggravates chronic kidney disease progression after ischemic acute kidney injury. *PloS One*, 9, e107228. <https://doi.org/10.1371/journal.pone.0107228>
- Gowshall, M., & Taylor-Robinson, S. D. (2018). The increasing prevalence of non-communicable diseases in low-middle income countries: the view from Malawi. *International Journal of General Medicine*, 11, 255–264. <https://doi.org/10.2147/IJGM.S157987>

- Gracey, M., & King, M. (2009). Indigenous health Part 1: Determinants and disease patterns. *Lancet*, *374*, 65–75. [https://doi.org/10.1016/S0140-6736\(09\)60914-4](https://doi.org/10.1016/S0140-6736(09)60914-4)
- Groenewald, T. (2004). A phenomenological research design illustrated. *International Journal of Qualitative Methods*, *3*, 42–55. <https://doi.org/10.1177/160940690400300104>
- Grunert, K.G., Brunsø, K., & Bisp, S. (1997). Food-related lifestyle: Development of a cross-culturally valid instrument for market surveillance. In L. Kahle, & C. Chiagouris (Eds.), *Values, Lifestyles, and Psychographics* (pp. 337-354).
- Grunert, K. G., Perrea, T., Zhou, Y., Huang, G., Sørensen, B. T., & Krystallis, A. (2011). Is food-related lifestyle (FRL) able to reveal food consumption patterns in non-Western cultural environments? Its adaptation and application in urban China. *Appetite*, *56*, 357–367. <https://doi.org/10.1016/j.appet.2010.12.020>
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field methods*, *18*(1), 59-82. <https://doi.org/10.1177/1525822X05279903>
- Gyekye, K. (2010) African ethics. In E. N. Zalta (Ed.), *Stanford encyclopedia of philosophy (Fall 2011 ed)*. Retrieved from <https://stanford.library.sydney.edu.au/archives/spr2013/entries/african-ethics/>
- Hall, R., & Harvey, L. A. (2018). Qualitative research provides insights into the experiences and perspectives of people with spinal cord injuries and those involved in their care. *Spinal Cord*, *56*, 527. <https://doi.org/10.1038/s41393-018-0161-4>

- Harika, R., Faber, M., Samuel, F., Kimiywe, J., Mulugeta, A., & Eilander, A. (2017). Micronutrient status and dietary intake of iron, vitamin A, iodine, folic acid and zinc in women of reproductive age and pregnant women in Ethiopia, Kenya, Nigeria and South Africa: A systematic review of data from 2005 to 2015. *Nutrients*, 9(10), 1096. <https://doi.org/10.3390/nu9101096>
- Harris, E. M. (2016). Traditional knowledge and the other in alternative dietary advice. In A. Hayes-Conroy & J. Hayes-Conroy (Eds.), *Doing nutrition differently: Critical approaches to diet and dietary intervention* (pp. 151–169). London, England: Taylor & Francis.
- Healy, M., & Perry, C. (2000). Comprehensive criteria to judge validity and reliability of qualitative research within the realism paradigm. *Qualitative Market Research*, 3, 118–126. <https://doi.org/10.1108/13522750010333861>
- Heath, R. L., & Bryant, J. (2013). *Human communication theory and research: Concepts, contexts, and challenges*. Hillsdale, NJ, US: Routledge.
- Herforth, A., Arimond, M., Álvarez-Sánchez, C., Coates, J., Christianson, K., & Muehlhoff, E. (2019). A Global Review of Food-Based Dietary Guidelines. *Advances in Nutrition*. <https://doi.org/10.1093/advances/nmy130>
- Hoepfl, M. C. (1997). Choosing qualitative research: A primer for technology education researchers. *Journal of Technology Education*, 9(1), 47–63. <https://doi.org/10.21061/jte.v9i1.a.4>

- Högler, W., Aguiar, M., Kiely, M., & Tulchinsky, T. (2016). Consensus recommendations for prevention of nutritional rickets: Food fortification and micronutrient supplements for global health. *AIMS Public Health, 3*, 40–48. <https://doi.org/10.3934/publichealth.2016.1.40>
- Horton, S., Shekar, M., & Ajay, M. (2009). *Scaling up nutrition: What will it cost?* Washington, DC, US: The World Bank.
- Howren, A., Cox, S. M., Shojania, K., Rai, S. K., Choi, H. K., & De Vera, M. A. (2018). How patients with gout become engaged in disease management: a constructivist grounded theory study. *Arthritis Research & Therapy, 20*, Article 110. <https://doi.org/10.1186/s13075-018-1608-x>
- Indigenous. (n.d.). *Merriam-Webster's Collegiate Dictionary*. Retrieved November 2, 2018, from <http://www.merriam-webster.com/dictionary/indigenous>
- Jatau, A. A. (2013). Effect of nutrition education programme on food-related-knowledge and attitudes of literate women in Pankshin Community, Nigeria. *Mediterranean Journal of Social Sciences, 4*(15), 35–41. <https://doi.org/10.5901/mjss.2013.v4n15p35>
- Jerome, N. W., Kandel, R. F., & Pelto, G. H. (1980). *Nutritional anthropology: contemporary approaches to diet and culture*. Pleasantville, NY, US: Redgrave.
- John, C., Yilgwan, C., Ige, O., Abok, I., & Okolo, S. (2012). Nutritional status and morbidity in children 0–5 years seen in Jos University Teaching Hospital. *Jos Journal of Medicine, 6*(3), 1–5. Retrieved from <https://www.ajol.info>
- Jones, J., & Smith, J. (2017). Ethnography: Challenges and opportunities. *Evidence-Based Nursing, 20*, 98–100. <https://doi.org/10.1136/eb-2017-102786>

- Kaput, J., van Ommen, B., Kremer, B., Priami, C., Monteiro, J. P., Morine, M. ... West, K. P. (2014). Consensus statement understanding health and malnutrition through a systems approach: The ENOUGH program for early life. *Genes & Nutrition*, 9, 378. <https://doi.org/10.1007/s12263-013-0378-y>
- Kolawole, S. E., & Obueh, H. O. (2013). Relationship between soil contents and plasma levels of selenium, chromium and manganese in healthy adult Nigerians. *African Journal of Biotechnology*, 12(34). <http://dx.doi.org/10.5897/AJB12.107>
- Korenromp, E. L., Adeosun, O., Adegoke, F., Akerele, A., Anger, C., Ohajinwa, C. ... Aminu, F. (2016). Micronutrient powder distribution through maternal, neonatal and child health weeks in Nigeria: Process evaluation of feasibility and use. *Public Health Nutrition*, 19, 1882–1892. <https://doi.org/10.1017/S1368980015002499>
- Kraemer, K., Cordaro, J. B., Fanzo, J., Gibney, M., Kennedy, E., Labrique, A. ... Eggersdorfer, M. (2016). From Science to solutions: Effective deployment of evidence-based science for improved nutrition and successful policy-making at international, national and local levels. In M. Eggersdorfer et al. (Eds.), *Good nutrition: Perspectives for the 21st Century* (pp. 187–196). Basel, Switzerland: Karger.
- Kuddus, A., & Rahman, A. (2015). Affect of urbanization on health and nutrition. *International Journal of Statistics and Systems*, 10, 164–175. <http://www.ripublication.com>

- Kuku-Shittu, O., Onabanjo, O., Fadare, O., & Oyeyemi, M. (2016). *Child malnutrition in Nigeria: Evidence from Kwara State* (Working Paper No. 33). Retrieved from Nigeria Strategy Support System website: https://nssp.ifpri.info/files/2016/08/NSSP-WP-33-Child-Malnutrition-in-Nigeria_July-2016.pdf
- Kung'u, J. K., Owolabi, O., Essien, G., Aminu, F. T., Ngnie-Teta, I., & Neufeld, L. M. (2015). Promotion of zinc tablets with ORS through child health weeks improves caregiver knowledge, attitudes, and practice on treatment of diarrhoea in Nigeria. *Journal of Health, Population, and Nutrition*, 33(1), 9–19. Retrieved from <https://jhpn.biomedcentral.com>
- Kunyanga, C. N., Imungi, J. K., & Vellingiri, V. (2013). Nutritional evaluation of indigenous foods with potential food-based solution to alleviate hunger and malnutrition in Kenya. *Journal of Applied Biosciences*, 67, 5277–5288. <https://doi.org/10.4313/jab.v67i0.95049>
- La Pelle, N. (2004). Simplifying qualitative data analysis using general purpose software tools. *Field Methods*, 16, 85–108. <https://doi.org/10.1177/1525822X03259227>
- Laureate Education. (Executive Producer). (2012). *Bias and listening strategies*. Baltimore, MD: Author.
- Mahwah, NJ: Erlbaum. Grunert, K. G., & Ramus, K. (2005). Consumers' willingness to buy food through the internet: A review of the literature and a model for future research. *British Food Journal*, 107, 381-403

- McAuley, C., & Knopper, L. D. (2011). Impacts of traditional food consumption advisories: Compliance, changes in diet and loss of confidence in traditional foods. *Environmental Health*, 10(1), 55. Doi: <https://doi.org/10.1186/1476-069X-10-55>
- McDavid, J. C., Huse, I., & Hawthorn, L. R. (2013). Key concepts and issues in program evaluation and performance measurement. *Program evaluation and performance measurement. An introduction to practice*. Los Angeles: SAGE Publications, Inc, 3-10. Thousand Oaks, CA: Sage.
- Migdal, J. S. (2015). *Peasants, politics and revolution: Pressures toward political and social change in the Third World*. Princeton, NJ, US: Princeton University Press.
- Miller, D. D., & Welch, R. M. (2013). Food system strategies for preventing micronutrient malnutrition. *Food Policy*, 42, 115–128. <https://doi.org/10.1016/j.foodpol.2013.06.008>
- Minkler, M. (Ed.). (2012). *Community organizing and community building for health and welfare*. Rutgers University Press.x
- Mohiddin, L., Phelps, L., & Walters, T. (2012). *Urban malnutrition: A review of food security and nutrition among the urban poor*. Retrieved from <http://www.iufn.org/wp-content/uploads/2013/09/Nutrition-Works-2012-Urban-malnutrition.pdf>
- Momene, M. (2017). *Exploring the Potential of Home Gardening to Increase Food Access and Enhance Community Development in Low-Income Urban Neighborhoods* (Doctoral dissertation, The Ohio State University). Retrieved from <https://kb.osu.edu/handle/1811/80639>

- Monarrez-Espino, J., Greiner, T., & Hoyos, R. C. (2004). Perception of food and body shape as dimensions of Western acculturation potentially linked to overweight in Tarahumara women of Mexico. *Ecology of Food and Nutrition*, *43*, 193–212. <https://doi.org/10.1080/03670240490446803>
- Monteiro, C. A., Levy, R. B., Claro, R. M., de Castro, I. R. R., & Cannon, G. (2011). Increasing consumption of ultra-processed foods and likely impact on human health: Evidence from Brazil. *Public Health Nutrition*, *14*, 5–13. <https://doi.org/10.1017/S1368980010003241>
- Mozaffarian, D., Angell, S. Y., Lang, T., & Rivera, J. A. (2018). Role of government policy in nutrition—barriers to and opportunities for healthier eating. *Bmj*, *361*, k2426. doi: <https://doi.org/10.1136/bmj.k2426>
- Nair, M. K., Augustine, L. F., & Konapur, A. (2016). Food-based interventions to modify diet quality and diversity to address multiple micronutrient deficiency. *Frontiers in Public Health*, *3*, 277. <https://doi.org/10.3389/fpubh.2015.00277>
- National Population Commission [Nigeria] & ICF International. (2014). *Nigeria demographic and healthy survey 2013*. Abuja, Nigeria: Author. Retrieved from <https://dhsprogram.com/pubs/pdf/FR293/FR293.pdf>
- Nneli, R. O., Nwafia, W. C., & Orji, J. O. (2007). Diets/dietary habits and certain gastrointestinal disorders in the tropics: A review. *Nigerian Journal of Physiological Sciences*, *22*(1-2), 1–13. <https://doi.org/10.4314/njps.v22i1-2.54878>
- Obansa, S. A. J., & Orimisan, A. (2013). Health care financing in Nigeria: Prospects and challenges. *Mediterranean Journal of Social Sciences*, *4*(1), 221–236. <https://doi.org/10.5901/mjss.2013.v4n1>

- Odinye, I. (2012). Western influence on Chinese and Nigerian cultures. *OGIRISI: A New Journal of African Studies*, 9, 108–115. <https://doi.org/10.4314/og.v9i1.5>
- Oguntoyinbo, F. A., Fusco, V., Cho, G. S., Kabisch, J., Neve, H., Bockelmann, W., ... & Benomar, N. (2016). Produce from Africa's gardens: potential for leafy vegetable and fruit fermentations. *Frontiers in microbiology*, 7, 981. <https://doi.org/10.3389/fmicb.2016.00981>
- Ohen, S. B., Umeze, G. E., & Inyang, E. O. (2014). Consumer purchasing behaviour for fruits and vegetables among civil servants in Essien Udim Local Government Area, Akwa Ibom State, Nigeria. *Food Science and Quality Management*, 23, 55–64. Retrieved from <https://iiste.org/Journals/index.php/FSQM>
- Oladele, O. I. (2011). Contribution of indigenous vegetables and fruits to poverty alleviation in Oyo State, Nigeria. *Journal of Human Ecology*, 34, 1–6. <https://doi.org/10.1080/09709274.2011.11906362>
- Olayiwola, K., Soyibo, A., & Atinmo, T. (2004). Impact of globalization on food consumption, health and nutrition in Nigeria. In Food and Agriculture Organization of the United Nations (Eds.), *Globalization of food systems in developing countries* (pp. 99–213). Retrieved from <http://www.fao.org/docrep/pdf/007/y5736e/y5736e01.pdf>
- Owoo, N. S. (2018). Food insecurity and family structure in Nigeria. *SSM—Population Health*, 4, 117–125. <https://doi.org/10.1016/j.ssmph.2017.12.004>
- Owusu-Ansah, F. E., & Mji, G. (2013). African indigenous knowledge and research. *African Journal of Disability*, 2, 30. <https://doi.org/10.4102/ajod.v2i1.30>

- Oyewole, O. E., & Atinmo, T. (2015). Nutrition transition and chronic diseases in Nigeria. *Proceedings of the Nutrition Society*, 74, 460–465. <https://doi.org/10.1017/S0029665115002402>
- Oyibocho, E. O., Irinoye, O., Sagua, E. O., Ogungide–Essien, O. T., Edeki, J. E., & Okome, O. L. (2014). Sustainable healthcare system in Nigeria: Vision, strategies, and challenges. *Journal of Economics and Finance*, 5(2), 28–39. Retrieved from <http://iosrjournals.org>
- Paxton, A., Pillai, A., Phelan, K. P., Cevette, N., Bah, F., & Akabas, S. (2016). Dietary acculturation of recent immigrants from West Africa to New York City. *Face à face Regards sur la Santé*, 13. Retrieved from <http://faceaface.revues.org>
- Penwarden, R. (2015). Don't let your own opinions sneak into your survey: 4 ways to avoid researcher bias [web log]. Retrieved from <https://www.surveymonkey.com/blog/2015/01/14/dont-let-opinions-sneak-survey-4-ways-avoid-researcher-bias/>
- Pittore, K., & Reed, P. (2016). *Business and its role in improving nutrition: Opportunities, challenges, and solutions for Nigeria. Case studies and key messages from the workshop* (Evidence Report No. 174). Retrieved from Institute of Development Studies website: https://opendocs.ids.ac.uk/opendocs/bitstream/handle/20.500.12413/9116/ER174_BusinessanditsRoleinImprovingNutritionOpportunitiesChallengesandSolutionsforNigeria.pdf?sequence=1
- Popkin, B. M. (2009). Global changes in diet and activity patterns as drivers of the nutrition transition. In S. Kalhan, A. M. Prentice, & C. S. Yajnik (Eds.), *Emerging societies-coexistence of childhood malnutrition and obesity* (pp. 1–14). Basel, Switzerland: Karger. <https://doi.org/10.1159/000209967>

- Popkin, B. M., Adair, L. S., & Ng, S. W. (2012). Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition Reviews*, *70*, 3–21. <https://doi.org/10.1111/j.1753-4887.2011.00456.x>
- Rasaki, S. O., Odeigah, L. O., Kasali, F. O., Biliaminu, S. A., Sule, A. G., Musah, Y., & Folorunsho, A. M. (2018). Prevalence and risk factors of hypertension in Nigeria. *Journal of the American Society of Hypertension*, *12*, 268–274. <https://doi.org/10.1016/j.jash.2018.01.009>
- Raschke, V., & Cheema, B. (2008). Colonisation, the new world order, and the eradication of traditional food habits in East Africa: Historical perspective on the nutrition transition. *Public Health Nutrition*, *11*, 662–674. <https://doi.org/10.1017/S1368980007001140>
- Raskind, I. G., Woodruff, R. C., Ballard, D., Cherry, S. T., Daniel, S., Haardörfer, R., & Kegler, M. C. (2017). Decision-making processes shaping the home food environments of young adult women with and without children. *Appetite*, *113*, 124–133. <https://doi.org/10.1016/j.appet.2017.02.027>
- Ravitch, S. M., & Carl, N. M. (2015). *Qualitative research: Bridging the conceptual, theoretical, and methodological*. Thousand Oaks, CA, US: Sage.
- Reeves, S., Albert, M., Kuper, A., & Hodges, B. D. (2008). Why use theories in qualitative research? *BMJ*, *337*, 631–634. <https://doi.org/10.1136/bmj.a949>
- Reid, R. J. (2011). *A history of modern Africa: 1800 to the present* (Vol. 7). Oxford, England: John Wiley & Sons.
- Roberts, L. (2017). Nigeria's invisible crisis. *Science*, *356*, 18–23. <https://doi.org/10.1126/science.356.6333.18>

- Robinson, T. (2008). Applying the socio-ecological model to improving fruit and vegetable intake among low-income African Americans. *Journal of Community Health, 33*, 395–406. <https://doi.org/10.1007/s10900-008-9109-5>
- Robrecht, L. C. (1995). Grounded theory: Evolving methods. *Qualitative Health Research, 5*, 169–177. <https://doi.org/10.1177/104973239500500203>
- Rouse, L. (2012). Evaluating qualitative research: Are we judging by the wrong standards. *JEPS Bulletin*. Retrieved from <https://blog.efpsa.org/2012/07/01/evaluating-qualitative-research/>
- Rubin, H. J., & Rubin, I. S. (2011). *Qualitative interviewing: The art of hearing data*. Thousand Oaks, CA, US: Sage.
- Rudestam, K. E., & Newton, R. R. (2015). *Informed consent and other ethical concerns. Surviving your dissertation*, 313-332. Thousand Oaks, CA: SAGE
- Sablah, M., Baker, S. K., Badham, J., & De Zayas, A. (2013). ‘FAN the SUN brighter’: Fortifying Africa Nutritionally (FAN)—the role of public private partnership in Scaling Up Nutrition (SUN) in West Africa. *Proceedings of the Nutrition Society, 72*, 381–385. <https://doi.org/10.1017/S002966511300342X>
- Sadorsky, P. (2018). Shifts in energy consumption driven by urbanization. *Oxford Handbook of Energy and Society*, 179. <https://doi.org/10.1093/oxfordhb/9780190633851.013.17>
- Saldaña, J. (2015). *The coding manual for qualitative researchers* (3rd ed.). Thousand Oaks, CA, US: Sage.

- Sallis, J. F., Owen, N., & Fisher, E. (2015). Ecological models of health behavior. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior: Theory, research, and practice* (pp. 43–64). New York, NY, US: John Wiley & Sons.
- Saltzman, A., Birol, E., Wiesman, D., Prasai, N., Yohannes, Y., Menon, P., & Thompson, J. (2014). *2014 Global Hunger Index: The challenge of hidden hunger*. <https://doi.org/10.2499/9780896299580>
- Save the Children. (2015). *State of the Nigerian children 2015: Children left behind in Nigeria*. Retrieved from <https://nigeria.savethechildren.net/sites/nigeria.savethechildren.net/files/library/State%20of%20Nigerian%20children%20report.pdf>
- Scotch, N. A. (1963). Sociocultural factors in the epidemiology of Zulu hypertension. *American Journal of Public Health and the Nation's Health*, *53*, 1205–1213. <https://doi.org/10.2105/AJPH.53.8.1205>
- Seidman, I. (1998). *Interviewing as qualitative research: A guide for researchers in education and the social sciences* (2nd ed.). New York, NY, US: Teachers College.
- Shaalán, Ashraf. "3rd African Nutrition Epidemiology Conference." *Ann Nutr Metab* *54* (2009): 236-249. Retrieved from <https://search.proquest.com/openview/1e612daac8ecd425da9aabce71d4168b/1?pq-origsite=gscholar&cbl=32607>

- Shrimpton, R., du Plessis, L. M., Delisle, H., Blaney, S., Atwood, S. J., Sanders, D. ... Hughes, R. (2016). Public health nutrition capacity: Assuring the quality of workforce preparation for scaling up nutrition programmes. *Public Health Nutrition*, 19, 2090–2100. <https://doi.org/10.1017/S136898001500378X>
- Singh, R. P., Singh, A., & Srivastava, V. (Eds.). (2016). *Environmental issues surrounding human overpopulation*. IGI Global. <https://doi.org/10.4018/978-1-5225-1683-5>
- Smith, J. A., & Osborn, M. (2004). Interpretative phenomenological analysis. In G. M. Breakwell & Wiley Interscience Online Service (Eds.) *Doing social psychology research* (pp.229–254). Malden, MA, US: BPS Blackwell.
- Sodjinou, R., Fanou, N., Deart, L., Tchibindat, F., Baker, S., Bosu, W. ... Regional Nutrition Working Group. (2014). Region-wide assessment of the capacity for human nutrition training in West Africa: Current situation, challenges, and way forward. *Global Health Action*, 7(1), 23247. <https://doi.org/10.3402/gha.v7.23247>
- Sohn, S. H., Ko, E., Oh, B. G., Kim, J., Choi, E., Kim, S. H. ... Schröder, H. (2009). 3rd African Nutrition Epidemiology Conference. October 13–16, 2008, Cairo, Egypt. *Annals of Nutrition and Metabolism*, 54, 236–249.
- Sosa, M., Cardinal, P., Contarini, A., & Hough, G. (2015). Food choice and emotions: Comparison between low- and middle-income populations. *Food Research International*, 76, 253–260. <https://doi.org/10.1016/j.foodres.2014.12.031>
- SOS Children's Village's International. (n.d.) *SOS children's village Jos*. Retrieved from <https://www.sos-childrensvillages.org/where-we-help/africa/nigeria/jos>

- Spencer, L., Ritchie, J., Lewis, J. & Dillon, L. (2003) *Quality in Qualitative Evaluation: A framework for assessing research evidence*. Retrieved from: <http://www.uea.ac.uk/edu/phdhkedu/acadpapers/qualityframework.pdf>
- Spruill, N., Kenney, C., & Kaplan, L. (2001). Community development and systems thinking: Theory and practice. *National Civic Review*, 90(1), 105–116. <https://doi.org/10.1002/ncr.90110>
- Statovci, D., Aguilera, M., MacSharry, J., & Melgar, S. (2017). The impact of Western diet and nutrients on the microbiota and immune response at mucosal interfaces. *Frontiers in Immunology*, 8, 838. <https://doi.org/10.3389/fimmu.2017.00838>
- Stephens, C., Porter, J., Nettleton, C., & Willis, R. (2006). Disappearing, displaced, and undervalued: a call to action for Indigenous health worldwide. *The lancet*, 367(9527), 2019-2028. [https://doi.org/10.1016/S0140-6736\(06\)68892-2](https://doi.org/10.1016/S0140-6736(06)68892-2)
- Stetsiuk, K. (2015). *The business concept of healthy food restaurant in Moscow* (Bachelor's Thesis). JAMK University of Applied Sciences, Jyväskylä, Finland.
- Stevens, P. (2017). Diseases of poverty and the 10/90 gap. In P. Stevens (Ed.), *Fighting the diseases of poverty* (pp. 154–168). New York, NY, US: Routledge.
- Steyn, N. P., & Mchiza, Z. J. (2014). Obesity and the nutrition transition in Sub-Saharan Africa. *Annals of the New York Academy of Sciences*, 1311(1), 88–101. <https://doi.org/10.1111/nyas.12433>
- Strauss, A., & Corbin, J. (1998). *Basics of qualitative research: Techniques and procedures for developing grounded theory*. Thousand Oaks, CA Sage

- Temple, N. J., & Burkitt, D. P. (Eds.). (2012). *Western diseases: Their dietary prevention and reversibility*. Berlin, Germany: Springer Science & Business Media. (Original work published 1994)
- Toromade, S. (2019). 6.8m Nigerians slip into extreme poverty in 12 months as total figure rises to 93.7m. *Pulse.ng*, June, 5. Retrieved from <https://www.pulse.ng/news/local/68m-nigerians-slip-into-extreme-poverty-in-12-months/flldb3t>
- Tossy, T., Brown, I. T., & Lowe, A. (2017). Doing classic grounded theory research in information systems: Trust in emergence. In T. Tossey (Ed.), *Information technology integration for socio-economic development* (pp. 284–305). Hershey, PA, US: IGI Global.
- Trowell, H. C., & Burkitt, D. P. (Eds.). (1981). *Western diseases: Their emergence and prevention*. Cambridge, MA, US: Harvard University Press.
- Uchendu, F. N., & Abolarin, T. O. (2015). Corrupt practices negatively influenced food security and live expectancy in developing countries. *Pan African Medical Journal*, 20, 110. <https://doi.org/10.11604/pamj.2015.20.110.5311>
- United Nations Children's Fund. (2009). *What are the Social Ecological Model (SEM), Communication for Development (C4D)*. Retrieved from https://www.unicef.org/cbsc/files/Module_1_SEM-C4D.docx

- Uzochukwu, B., Mbachu, C., Onwujekwe, O., Okwuosa, C., Etiaba, E., Nyström, M. E., & Gilson, L. (2016). Health policy and systems research and analysis in Nigeria: Examining health policymakers' and researchers' capacity assets, needs and perspectives in south-east Nigeria. *Health Research Policy and Systems, 14*, Article 13. <https://doi.org/10.1186/s12961-016-0083-6>
- Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice, 6*(5), 100. <https://doi.org/10.5430/jnep.v6n5p100>
- von Bertalanffy, L. (1968). *General system theory: Foundations, development, applications*. New York, NY, US: George Braziller.
- Vorster, H. H., Kruger, A., & Margetts, B. M. (2011). The nutrition transition in Africa: Can it be steered into a more positive direction? *Nutrients, 3*, 429–441. <https://doi.org/10.3390/nu3040429>
- Watson, G. H., Edmund, M., Ellifson, V., Reidenbach, R. E., Chadha, R., Kalra, J., ... Newton, B. (2010). Breaking from the pack. *Quality Progress, 43*(3), 26–31. Retrieved from <http://asq.org>
- Wells, K. (1995). The strategy of grounded theory: Possibilities and problems. *Social Work Research, 19*, 33–37. <https://doi.org/10.1093/swr/19.1.33>
- Were, J. L. (1998). *Central Africa: Nigeria*. Retrieved from <https://www.worldwildlife.org/ecoregions/at1010>

- Wilson, R. L., Gummow, J. A., McAninch, D., Bianco-Miotto, T., & Roberts, C. T. (2018). Vitamin and mineral supplementation in pregnancy: Evidence to practice. *Journal of Pharmacy Practice and Research*, 48, 186–192. <https://doi.org/10.1002/jppr.1438>
- World Health Organization. (2017). *The double burden of malnutrition: Policy brief*. Retrieved from <https://www.who.int/nutrition/publications/doubleburdenmalnutrition-policybrief/en/>
- Yagboyaju, D. A. (2019). Food and national security in Nigeria: A study of the interconnections. In A. Akinola, & H. Wissink (Eds.), *Trajectory of land reform in post-colonial African states* (pp. 29–41). Cham, Switzerland: Springer. https://doi.org/10.1007/978-3-319-78701-5_3
- Yang, L. (2014). The effect of Western diet culture on Chinese diet culture. In *Proceedings of the International Conference on Education, Language, Art and Intercultural Communication*. Paris, France: Atlantis Press. Retrieved from <https://download.atlantis-press.com>
- Yin, R. K. (2013). *Case study research: Design and method* (5th ed.). Thousand Oaks, CA, US: Sage.
- Zamawe, F. C. (2015). The implication of using NVivo Software in qualitative data analysis: Evidence-based reflections. *Malawi Medical Journal*, 27, 13–15. <https://doi.org/10.4314/mmj.v27i1.4>
- Zhao, L., Zhang, X., Shen, Y., Fang, X., Wang, Y., & Wang, F. (2015). Obesity and iron deficiency: A quantitative meta-analysis. *Obesity Reviews*, 16, 1081–1093. <https://doi.org/10.1111/obr.12323>

Zoakah, A. I., Idoko, L. O., Okoronkwo, M. O., & Adeleke, O. A. (2000). Prevalence of malnutrition using Z-scores and absolute values in children under five years of age in Utan Village, Jos, Plateau State, Nigeria. *East African Medical Journal*, 77, 123–126. <https://www.ajol.info>

Zoellick, R. B. (2010). Democratizing development economics.

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Appendix A: Permission to Use the Figure

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Appendix B: Interview Protocol Questions: Research Question 1

RQ1– What are the dietary habits of sampled women in Jos, an urban area of the middle belt of Nigeria?

1. Tell me a little bit about yourself? (Age, marriage status, number of children)
2. What is your educational background? Who decides what you eat in your home?
3. Can you tell me how living in the city of Jos has affected your life? What was life like when you were growing up?
4. Please tell me how you manage food and eating for yourself and your family? Give me an example. Are all the days the same?
5. Where do you normally buy your food? How easy is it for you to get quality nutritious food options?
6. From your experience, what kind of things make it difficult to eat healthy foods? What do you think about your community and its access to food in general?
7. How important is it for you to eat and feed your family a nutritious diet?
8. How healthy do you perceive yourself to be?
 - Give me some examples of how you came to that conclusion.
 - Has a doctor or other health professional ever talked to you about your diet or eating habit?
9. Have you made a conscious effort to try to grow your own food or eat locally produced foods?
10. Do you have any questions or suggestions you wish to share?

Appendix C: Interview Protocol Questions: Research Question 2

RQ2– Qualitative: What are urban Nigerian women’s perceptions of nutrition leading to the adoption of a Western-based diet instead of a traditional Nigerian diet?

1. What are your perceptions of a nutritious diet? Where did you learn this information about nutritious diet?
2. How important is it to you to teach your children about diet? How do you teach them?
3. What are some cultural practices or family beliefs that affect your dietary choices?
4. What do you think of fruits and vegetable? What has been your experience in getting daily servings of fruits and vegetables?
5. Can you describe the foods that you usually eat? Give me an example of a typical day.
6. What is your perception of imported foods? Give me some examples. How often do you consume imported foods in a week?
7. Where do you usually eat most of your meals? If at home, where else do eat besides home? Give me some examples
8. What foods do you tend to eat most often? Do you choose different foods when you eat outside the home? Why?
9. In your perception, how do other people influence what you eat? What are the decisions based on? (Example: Preferences of others in the household, self-preference, health considerations)
- 10 Do you have suggestions or any questions?

Appendix D: Interview Protocol Questions: Research Question 3

RQ3– Qualitative: What is the lived experience of nutrition and dietary choices among urban Nigerian women who are food decision makers in their households?

1. Tell me a little bit about your childhood and how it might have influenced your diet choices as an adult.
2. Would you describe yourself as a healthy eater? Why? What kind of eater will you like to be? Where did you learn this information from?
3. Do you perceive eating outside the house to be healthier than cooking your own food? Do you perceive eating outside cheaper? Why? Please give me some examples
4. Can you describe how religious beliefs affect your dietary choices?
5. What do you consider normal or staple Nigerian foods? How have you come to think this way? Why?
6. Do you have ways you make traditional Nigerian foods healthier? examples?
7. There's a lot of advertisement on TV and in magazines about food. What do you think of this? Will you say these images have impacted your dietary habits?
8. How does the way that you eat compare with that of people you know? Describe how you think these dietary patterns have changed over the years
9. Do you enjoy cooking? What are your perceptions on how you can feed your family a healthy meal even if you do not love to cook?
10. Is there anything else you'd like to share?

Appendix E: Poster Soliciting Interest to Participate in the Study

PARTICIPANTS NEEDED FOR RESEARCH IN *PUBLIC HEALTH*

We are looking for volunteers to take part in a study of
*The Dietary Decision-Making Process of Women in Nigeria who are between the ages of
20 and 30 years old*

As a participant in this study, you would be asked to: Take part in an in-depth face- to
face interview about your diet choices.

Your participation is **entirely voluntary** and would take up approximately one hour of
your time for a maximum of two occasions. By participating in this study, you will help
us to understand how food choices are impacting the health of Nigerians and how we can
design better educational programs in the future

There will be no financial remuneration or incentive in appreciation for your time

To learn more about this study, or to participate in this study,

please contact:

Principal Investigator:

Gachomo Mapis



This study is supervised by the Research Participant Advocate at my university at +1-
612-312-1210

This study has been reviewed by Walden University's Institutional Review Board.

Appendix F: List of Original Broad Codes

Respondent	Diet	Eating background	Educational background	Food	Habit s	Health	Healthy eater	Healthy foods	Little bit	Nutritious diet	Nutritious food
1	1	0	1	1	0	2	1	0	1	1	0
2	4	0	1	4	1	0	1	1	1	0	1
3	1	0	0	2	0	0	1	1	2	1	0
4	4	1	1	4	2	1	2	1	1	0	0
5	7	1	1	0	1	2	2	0	1	5	0
6	5	3	1	9	3	2	2	2	1	3	1
7	4	2	1	4	3	1	2	0	1	2	2
8	2	1	1	10	2	2	1	3	1	2	1
9	0	2	1	6	1	0	1	0	1	0	2
10	2	0	1	4	1	0	2	1	1	1	1
11	2	0	1	8	1	0	1	1	1	1	2
12	1	1	1	3	2	1	1	1	1	1	1