Barriers to Recreational Walking Among Older Adults in Maitama, Abuja Nigeria

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ABSTRACT

Recreational walking is a vital form of physical activity that supports healthy ageing, social participation, and mental well-being among older adults. Yet, in many urban areas of the Global South particularly in high-income neighbourhoods such as Maitama in Abuja, Nigeria the walkability needs of ageing populations remain underexplored. This study aimed to identify and examine the barriers that hinder older adults from engaging in recreational walking in Maitama, with the overarching goal of contributing to more inclusive, age-friendly urban planning. To achieve this, two research objectives were pursued: (1) to investigate the various physical, environmental, and spatial barriers that impede recreational walking among older adults in Maitama, and to examine how these barriers shape their attitudes and experiences; and (2) to explore the influence of cultural perceptions, prevailing social norms, and individual attitudes on their walking habits. Guided by an interpretivist paradigm, this qualitative study employed semi-structured interviews with 19 older residents and one focus group discussion involving five participants aged 50 and above. Data were thematically analysed using a combined inductive–deductive approach, and spatial mapping techniques were employed to locate and contextualise reported barriers across key Maitama streets such as Gana, Nile, and Panama. The study identified 33 interrelated barriers, including inadequate pedestrian infrastructure, poor street lighting, environmental discomfort (e.g., excessive heat, lack of shade), and restrictive socio-cultural norms that discourage older adults from walking. These factors were found to undermine walkability, reduce independence, and diminish opportunities for physical and social engagement. By uncovering these barriers and documenting older adults lived experiences, the research successfully fulfilled its aim and objectives. This study contributes original empirical insights into the mobility challenges faced by older populations in affluent African urban settings, an area previously under-researched. It underscores the need for urgent investment in age-sensitive infrastructure, inclusive planning practices, and the

reshaping of cultural narratives surrounding ageing and physical activity. Such measures are essential for fostering equitable, health-promoting environments that support active ageing in Nigeria and similar contexts across sub-Saharan Africa.

Chapter 1 Introduction

1.1. Introduction

Globally, the promotion of active ageing has become a public health imperative as populations across both developed and developing nations grow older. Among various forms of physical activity is the recreational walking that stands out as a simple, low-cost, and accessible mode of exercise that can significantly enhance the physical, mental, and social wellbeing of older adults (Rudnicka et al., 2020).

The World Health Organisation (WHO,2019) underscores the importance of regular physical activity such as recreational walking in preventing and managing non-communicable diseases (NCDs), improving mental health, and enhancing the quality of life among older populations. Unlike structured or vigorous exercise, walking is uniquely adaptable to the physical capabilities of older adults, making it an ideal means of promoting mobility, autonomy, and social engagement. In urban contexts, particularly, access to safe, appealing environments for recreational walking can be a determinant of how regularly older adults walk (McPhee et al., 2016). However, despite its benefits, recreational walking remains underutilised due to a combination of individual, physical, environmental, and societal barriers, an issue that becomes especially pronounced in urban areas of the globe.

In Nigeria, a notable demographic transition is underway, and this phrase highlights that Nigeria's population profile is changing, and this has important implications for planning, healthcare, and urban development especially in places like Maitama, Abuja, where older adults are becoming a more visible part of the community (Akokuwebe & Okunola, 2015). With advancements in healthcare and changing population dynamics, the proportion of The number of Nigerians aged 50 and above is steadily increasing. According to the National Population Commission and international projections, this ageing trend is expected to intensify in the coming decades, posing both challenges and opportunities for urban planning, healthcare,

and social policy. Abuja, the Federal Capital Territory exemplifies this shift, with areas like Maitama experiencing a visible concentration of older adults due to its affluence, security, and residential appeal (Rotimi, 2024).

However, the urban infrastructure in Maitama, while modern in design, often overlooks the specific needs of its ageing residents. Despite Maitama's status as a high-income neighbourhood, older adults may still struggle with walking due to poor pedestrian infrastructure, safety concerns, limited green spaces, and sociocultural factors that discourage outdoor activity. These challenges call attention to the urgent need for targeted research and interventions that address the health and mobility of older people in this context (Blamah et al., 2021). Given the growing ageing population, ensuring that older adults can safely and Enjoyably engaging in recreational walking is critical for promoting active ageing and reducing the burden on healthcare systems.

Although global literature has documented the benefits of walkable environments and the factors that impede walking among older adults, research in Nigeria remains sparse, particularly in high-density urban centres like Abuja. Studies in the Nigerian context have largely focused on general health outcomes or access to healthcare, with minimal attention paid to everyday physical activity such as recreational walking (Cerin et al., 2017). More specifically, Maitama, despite being an elite district with well-planned spaces, lacks empirical investigations into how its older residents engage with the built environment.

The few available studies often overlook the intersection of ageing, urban design, and lifestyle, especially through the lens of qualitative inquiry. This leaves a significant knowledge gap concerning the lived experiences of older adults in Maitama, the barriers they face when walking for leisure, and the broader implications for urban health planning in Nigeria. By

addressing this gap, this study contributes a detailed, context-specific understanding to both Nigerian and international discourses on ageing, health, and walking.

This research is significant in several respects. Firstly, it provides a contextualised understanding of the unique challenges faced by older adults in Maitama, which has often been excluded from mainstream discourse due to assumptions of affluence and adequate infrastructure. Secondly, it highlights how barriers to recreational walking are not only physical or environmental but also deeply embedded in social norms, cultural perceptions, and individual attitudes.

Through a qualitative, interpretivist approach, this study explores the subjective experiences of older residents, revealing insights that quantitative methods might overlook (Bridges et al., 2010). The findings have the potential to inform evidence-based urban planning, public health interventions, and geriatric policy formulation aimed at promoting inclusive and age-friendly cities in Nigeria. By making older adults visible in discussions about urban mobility and health, the study challenges existing paradigms and advocates for inclusive development that supports ageing in place, active lifestyles, and holistic wellbeing.

The primary aim of this study is to investigate the barriers that hinder recreational walking among older adults in Maitama, Abuja, Nigeria, to identify pathways for increasing participation in this beneficial activity (Oyeyemi et al., 2019). In doing so, the study seeks to answer the following key research questions: What factors commonly hinder recreational walking among older adults in Maitama, Abuja, Nigeria including physical, environmental, and spatial obstacles and how do these factors impact their attitudes and experiences towards walking?

Also, in what ways do cultural beliefs, social norms, and personal outlooks affect the recreational walking habits of older adults in Maitama, Abuja, Nigeria? By addressing these

questions, the study offers a foundation for practical interventions such as the redesign of pedestrian infrastructure to enhance walkability, the implementation of age-friendly public space policies; the promotion of community-based walking programmes; and the use of social campaigns to shift cultural perceptions around ageing and physical activity (Odeyemi, 2021). The aim is to empower older adults in Maitama to engage in regular recreational walking, thereby enhancing their health, self-sufficiency, and social inclusion.

In 2022, approximately 51.6% of U.S. adults aged 65 and older reported engaging in leisure walking within the past seven days (Zytnick et al., 2021). The statistic indicated that nearly half of U.S. adults aged 65 and older did not engage in leisure walking within a seven-day period, highlighting significant barriers to physical activity among older adults. Common impediments include health concerns such as pain and chronic conditions, lack of motivation, fear of falling, and environmental obstacles like inadequate access to safe walking areas (Sallis et al., 1985). Addressing these barriers is crucial to promote healthier lifestyles and improve the overall well-being of the aging population.

Nigeria, with an approximate population of 230 million people is ranked the most populous country in Africa with annual growth rate of 2.39% and her population amounts to 2.82% of the world population ranking Nigeria as the 6^{th} most populous country in the world (Modibbo et al., 2021). A systematic review and meta-analysis revealed that about 58% of Nigerian adults did not engage in sufficient physical activity on a weekly basis in 2020, equating to nearly 50 million individuals (Adegoke & Oyeyemi, 2011). This high prevalence of physical inactivity poses considerable public health challenges, increasing the risk of noncommunicable diseases and highlighting the need for targeted interventions to promote active lifestyles across the nation (Kohl et al., 2012).

The table below shows the age structure of Nigeria from 50 years and above.

Table 1 showing age structure in Nigeria

Age Group	Percentage of Population	Source
50-54	3.07%	United Nations,2022
55-59	2.13%	United Nations,2022
60-64	1.79%	World Bank,2022
65-69	1.39%	United Nations,2022
70-74	1.10%	World Bank,2022
75-79	0.74%	United Nations,2022
80 years and above	0.69%	World Bank,2022

The age structure of Nigeria's population aged 50 years and above highlights the critical barriers to recreational walking among older adults in Maitama, Abuja, underscoring the need for tailored interventions (Odeyemi et al., 2024). Individuals aged 50-59, who make up 5.19% of the population, are transitioning to retirement and beginning to face age-related health issues that impede their mobility and willingness to engage in physical activities like walking (Nnamani, 2019).

Those aged 60-69, comprising 3.18%, are early retirees increasingly reliant on healthcare and social services, highlighting the necessity for well-maintained, safe walking paths to promote physical activity and community engagement. As we move to older age groups, such as those aged 70-79 (1.84%) and 80 years and above (0.69%), there is a growing dependency on healthcare, with intensified needs for safe, accessible environments to facilitate recreational walking (Balogun, 2021). These observations highlight the significance of tackling physical

obstacles, establishing strong social support networks, and constructing an age-friendly infrastructure to improve the quality of life and foster the health and well-being of older individuals generally, including those in Maitama, Nigeria (Humpel et al., 2002)

According to age structure of Nigeria, The population of elderly adults is approximately 50 years and older and has an approximate population of 10% of the entire population of Nigeria which is estimated to be 230 million (Pontianus & Oruonye, 2021). It is important to state that Nigeria is divided into six geopolitical zones: North-East ;21.2%, approximately 46.3 million people, North- West; 23.6%, approximately 51.4 million, North -Central; 20.8%, approximately 45.5 million people, South-East;15.4%, approximately 33.4 million people, South -South; 12.2%, approximately 26.6 million people and lastly South-West; 17.8%, approximately 38.7 million people (Chiaka et al., 2024; Jaiyeola & Bayat, 2020) .

Walking is a widely recognised form of physical activity which offers numerous health advantages. It is a simple exercise that is available to individuals of all ages and can be done at any time and location without the need for specific equipment or facilities. (Lee & Buchner, 2008; Marselle et al., 2013). It is noteworthy to mention that although walking is commonly seen as a simple and attainable form of physical activity suitable for people of varying ages, certain individuals facing physical challenges or disabilities may necessitate adjustments or possess limitations that impact their capacity to participate in walking as typically described, often requiring specialised walking aids (Hammel et al., 2015; Litman & Blair, 2017).

Recreational and utilitarian walking are two separate types of walking with differing objectives and motivations (Doescher et al., 2014; Kang et al., 2017; Mirzaei et al., 2018). Recreational walking refers to the act of walking primarily for leisure, pleasure, or physical activity, without a specific destination or utilitarian purpose. (Shay et al., 2003). It is frequently experienced in outdoor environments, parks, or places with beautiful views, and is defined by a leisurely speed

and an emphasis on unwinding, physical activity, or appreciating the environment. (Jensen & Guthrie, 2006; Zhang & Qian, 2024).

Utilitarian walking, conversely, entails walking to fulfil a utilitarian function or address requirements, such as traveling to work, running errands, or arriving at locations such as schools or supermarkets (Choi, 2012; Litman, 2008; Mondal et al., 2021; Spoon, 2005). The main objective of utilitarian walking is to reach a specific destination or accomplish a task, as opposed to placing emphasis on leisure or physical exercise (Kang et al., 2017). Although people often get confused with the two types of walking, it becomes clearer according to (Lee et al., 2021) stated that recreational walking and utilitarian walking differ in purpose, motivation, context, and health outcomes.

First**,** recreational walking is primarily performed for leisure, exercise, or social interaction, whereas utilitarian walking is undertaken for practical purposes like commuting to work, school, or shops. Second, motivation for recreational walking often includes stress relief, enjoyment, and fitness, while utilitarian walking is driven by necessity or convenience (Shay et al., 2003). Third**,** contextually, recreational walking typically occurs in parks, trails, or neighbourhoods, while utilitarian walking happens in urban environments and involves destinations and Lastly**,** health research suggests recreational walking may be more strongly associated with sustained physical activity levels and mental health benefits due to its voluntary nature, while utilitarian walking contributes significantly to daily energy expenditure, particularly in walkable cities.

To increase older adults' engagement in recreational walking, this study examines the obstacles that prevent older adults in Maitama, Abuja, Nigeria from going for walks. According to the study by Odeyemi (2021) explores how engaging older adults in Nigeria can help assess and improve their neighbourhood environments to better support physical activity such as

recreational walking. By involving older adults directly in identifying barriers and suggesting improvements, the research highlights the value of their insights in creating age-friendly, activity-promoting communities. The approach empowers older adults and ensures that interventions are grounded in lived experiences, fostering healthier and more inclusive urban planning (King et al., 2020).

The decline in older adults' participation in recreational walking is attributed to poor condition of the road, inadequate pedestrian infrastructure, crime rate, inadequate security and chronic health conditions (Oyeyemi et al., 2012). Going by these statements' it becomes imperative to conduct a study on barriers to recreational walking among older adults (50 years and above), to increase older adults' participation in recreational walking.

The prevalence of cardiovascular diseases in Nigeria is estimated to be 11.4% and high blood pressure which is a major risk factor of cardiovascular diseases is affecting approximately 28.9% of the older adult's population. Thus, the need for older adults' participation in recreational walking to reduce cardiovascular diseases (Adeloye et al., 2015).

Recreational walking aids weight management, reducing the risk of obesity-related CVDs and improves insulin sensitivity, reducing the risk of developing type 2 diabetes, a significant CVD risk factor (Carbone et al., 2019; Welsh et al., 2024).

Maitama is one of the most beautiful districts in Abuja thus, the choice as the study area. It is an urban area with a mix of residential and commercial properties such as hotels, parks and

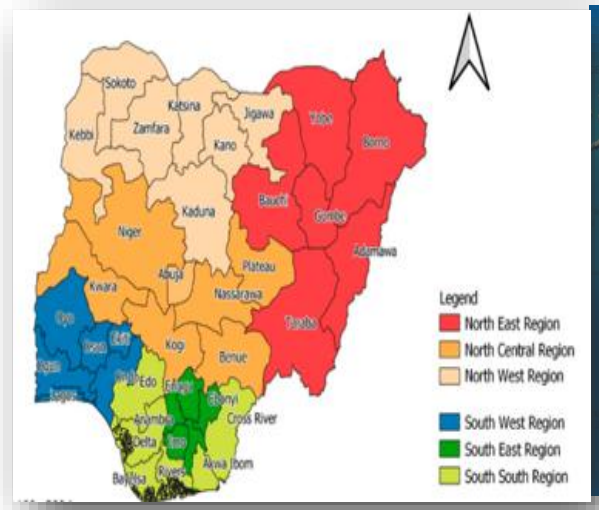


Figure 2 Map of Nigeria

Figure 1 Map of the world Showing map of Africa and indicating map of Nigeria.

foreign embassies. Some of the notable streets in Maitama are Aguiyi Ironsi street, Akure street, Borno street among many others. (Abubakar, 2014). Figure 1 presents a world map highlighting Africa and Nigeria, while Figure 2 displays a map of Nigeria showing its six geo-political zones. Together, these figures provide contextual geographical information that situates Maitama, Abuja, within a broader regional framework, enabling consideration of global, continental, and national factors that may influence barriers to recreational walking among older adults in the area. Abuja, the Federal Capital Territory, is in the North-Central geo-political zone of Nigeria. Other states within this zone include Niger, Kwara, Kogi, Nasarawa, Plateau, and Benue (Kwaja, 2017).

The entire population of Abuja as of 2024 is estimated to be over 7 million people while Maitama is estimated to be approximately,200 ,000 people as of 2022 (Aluya, 2007; Lawal et al., 2024). Considering the land area of Maitama, it spans approximately 12.8 square kilometres' making it a very big district in Abuja (Aga, 2009). Maitama District is widely known to be populated with diplomats, top embassy officials, among the city's other affluent

residents, as well as the business enterprise (Aga, 2009). The Maitama District is served by road networks, and the lovely neighbourhood is home to several amazing restaurants and eat-out spots. Aside from offering an extensive and fantastic menu of food, most of the restaurants and eat-out spots in Maitama are beautifully decorated. Maitama offers a classy exterior, complete with well-pruned flower plants (Anomohanran, 2013; Olajuyigbe et al., 2014).

Major key features and attractions of the district include the headquarters of the Nigerian Ministry of Petroleum Resources, the Nicon Luxury Hotel (formerly known as Le Méridien Hotel), and the Transcorp Hilton Abuja, which play a major role in the operation of any commercial and administrative district of the city (Oyeniyi, 2011). This statement is important to recreational walkers, particularly older adults, because it highlights the presence of prominent commercial and administrative hubs in Maitama, Abuja, which can impact their walking experience.

These features are likely to increase traffic congestion and noise pollution, making walking less pleasant. Also, to create pedestrian-unfriendly infrastructure, such as wide roads and lack of sidewalks, attract large crowds, potentially intimidating or overwhelming older adults and influence urban planning decisions, prioritizing vehicular traffic over pedestrian accessibility.

Understanding these factors can help identify barriers to recreational walking between older adults in Maitama, Abuja, and inform strategies to mitigate them. However, since Maitama's urban environment is characterised by commercial and administrative activities, this may pose challenges for recreational walking among older adults. Factors such as heavy traffic, inadequate pedestrian infrastructure, and safety concerns could deter older adults from engaging in walking activities (Leung et al., 2021).

1.2 Statement of the Problem

Recreational walking offers numerous health benefits for older adults, yet participation rates among this demographic remain low in Maitama, Abuja, Nigeria (Olokesusi et al., 2019). Despite its potential advantages, various barriers impede older adults from engaging in recreational walking activities. These barriers encompass physical, environmental, spatial, cultural, and social factors that collectively inhibit their willingness and ability to partake in such activities (Aneshensel et al., 2016).

Understanding these barriers is important for devising effective strategies to enhance the participation of older adults in recreational walking (Franco et al., 2015; Schutzer & Graves, 2004). However, a comprehensive exploration of these barriers and their interactions with individual perceptions and societal norms within the context of Maitama, Abuja, Nigeria, is lacking regarding recreational walking (Makama, 2018; Muhammed, 2017) .Therefore, the need arises to investigate these barriers systematically to uncover insights that can inform targeted interventions aimed at overcoming these obstacles and promoting recreational walking among older adults in this region.

The main problem addressed in this research is the identification and examination of the different barriers that impede the engagement of older adults in recreational walking activities in Maitama, Abuja, Nigeria. By understanding the nature and impact of these barriers, interventions can be developed to foster a more conducive environment that encourages and facilitates recreational walking among older adults, thereby promoting their overall health and well-being.

1.3 Research Aim and Objectives

Two research objectives were created to accomplish this goal. To increase the number of older individuals who walk for enjoyment in Maitama, Abuja, Nigeria, the study intends to investigate the barriers that stand in their way.

1. Investigate the various physical, environmental, and spatial barriers that impede recreational walking among older adults in Maitama, Abuja, Nigeria, and examine how these barriers impact their attitudes and experiences towards walking.

2. Explore the impact of cultural perceptions, prevailing social norms, and individual attitudes on the recreational walking habits of older adults.

1.4 Research Questions

1. What factors commonly hinder recreational walking among older adults in Maitama, Abuja, Nigeria, including physical, environmental, and spatial obstacles, and how do these factors impact their attitudes and experiences towards walking?

2. In what ways do cultural beliefs, social norms, and personal outlooks affect the recreational walking habits of older adults in Maitama, Abuja, Nigeria?

1.5 The Significance of the study

Identifying the most prevalent physical obstacles that hinder recreational walking for older adults in Abuja, Nigeria holds importance due to its ability to tackle existing difficulties and lead to numerous favourable results (Oviedo et al., 2017; Oyeyemi et al., 2019). The importance of acknowledging and overcoming obstacles to recreational walking is essential for creating public spaces that are more accessible and inclusive for elderly individuals. (Nelischer & Loukaitou-Sideris, 2023; Phillips et al., 2013; Stafford & Baldwin, 2018).

Understanding these difficulties may lead to urban planning and design strategies that cater to the requirements of older adults, guaranteeing that sidewalks, parks, and pedestrian walkways are suitable for their age (Lavery et al., 1996; Scharlach & Lehning, 2015; Williamson & Dunham-Jones, 2021) Leisurely walking plays a vital role in promoting healthy aging. By recognising and addressing obstacles, older adults are more comfortable to participate in

consistent physical activity like recreational walking, leading to enhanced physical and mental wellness (Belza et al., 2004; Crombie et al., 2004; McPhee et al., 2016).

Another important aspect of this study is the promotion of an active lifestyle among older adults through recreational walking, which has beneficial long-term effects on health. These effects include lowering the risk of chronic illnesses, improving cardiovascular health, and contributing to mental well-being (Dunn et al., 1998; Reiner et al., 2013). Furthermore, the inclusion of barriers information is highly valuable for public health efforts. Utilising this data, public health organizations and decision-makers can develop focused initiatives and strategies aimed at enhancing physical activity such as recreational walking participation among the older adults, ultimately improving overall public health. (Owen et al., 2007; Sallis et al., 2012).

Knowing the physical obstacles experienced by older adults can be a driving force for enhancements in infrastructure. This encompasses the improvement of street lighting, better sidewalk conditions, and the development of safe and accessible environments tailored to the requirements of older pedestrians (Cerin et al., 2017).

Furthermore, advocating for recreational walking has the potential to generate financial savings within the healthcare industry. Elevated levels of physical activity, specifically through recreational walking, could alleviate the impact of long-term illnesses and age-related medical issues, ultimately leading to decreased healthcare expenses for both individuals and the broader community (McPhee et al., 2016; White et al., 2016).

In brief, recognising the typical obstacles to leisurely walking among older adults in Abuja, Nigeria, holds great importance, not just for the well-being of older people but also for the wider community and public health (Akosile et al., 2014). By confronting these barriers, urban planners, policymakers, and public health experts can help generate more comprehensive,

dynamic, and healthier surroundings for older adults, thereby enhancing their overall standard of living (Van Hoof et al., 2018).

1.6 Scope and Limitations of the study

The research aims to explore the barriers which prevent aged individuals in Maitama, Abuja, Nigeria from engaging in recreational walking. This will be done through a comprehensive examination of physical, spatial, cultural, and social factors (Abubakar, 2012). This geographical focus allows for a targeted examination of the unique challenges faced by older adults within this specific urban context. By inquiring into these various barriers, the research aims to provide a comprehensive understanding of the factors hindering participation in recreational walking among this demographic group (Buffel et al., 2012).

Furthermore, the study seeks to expatiate how these barriers intersect with the perceptions and experiences of recreational walking among older adults. By exploring the subjective dimensions of walking behaviour, the research aims to uncover the ways in which barriers shape individuals' attitudes, motivations, and engagement with recreational walking activities. This qualitative aspect of the study enhances its depth and richness, allowing for a detailed analysis of the relationship between the barriers and individual experiences (Salvo et al., 2018).

Moreover, the study recognizes the significance of cultural and social factors in shaping older adults' recreational walking behaviour. By examining cultural perceptions, prevailing social norms, and individual attitudes, the research seeks to contextualise the observed barriers within broader socio-cultural frameworks. This approach acknowledges the complexity of human behaviour and highlights the importance of considering cultural sensitivity in designing interventions to promote recreational walking among older adults (Mathews et al., 2010).

However, the study is subject to some limitations that may impact on the generalisability and reliability of its findings. Firstly, the specific focus on Maitama, Abuja, Nigeria, limits the

extent to which the findings can be extrapolated to other geographic regions or demographic groups. Additionally, the size and diversity of the sample population may influence the comprehensiveness and representativeness of the results, potentially limiting their applicability to broader contexts (Ali & Yusof, 2011).

Moreover, the subjective nature of perceptions and experiences related to recreational walking introduces the possibility of bias in the data collected. Cultural sensitivity is also a concern, as the complexity of cultural factors may not be fully captured within the scope of the study.

Addressing these limitations will be important for enhancing the validity and reliability of the study's findings and recommendations. Strategies such as triangulation of data sources, careful consideration of cultural details, and rigorous methodological approaches can help mitigate these limitations and strengthen the robustness of the research outcomes. Additionally, acknowledging the contextual specificity of the findings will be essential in informing targeted interventions and policies aimed at improving the participation of older adults in recreational walking activities.

1.7. Structure of the thesis

A summary of the chapters is provided in this section. Chapter 1 (Introduction) remains the opening chapter and clearly articulates the research context, problem, objectives, questions, justification, scope, and limitations of the study. Chapter 2 presents the Methodology and follows immediately after the Introduction to foreground the interpretivist qualitative approach underpinning the study. This chapter has been expanded to include detailed justifications for methodological decisions, sampling methods, data collection, and ethical considerations.

Chapter 3 is the Literature Review, which discusses the historical and urban planning context of Abuja, urban development planning in Maitama, planning and public health policy, and barriers to recreational walking, with an emphasis on both global and Nigerian contexts.

Chapter 4, titled Mapping, offers a spatial analysis of Maitama and Abuja as a whole. This chapter also provides the environmental context by identifying infrastructure, land use patterns, and walkability features relevant to older adults. Chapters 5 and 6 present findings from the survey interviews and focus group discussions, respectively. These chapters provide insights into the lived experiences of individuals through interviews and offer in-depth qualitative insights into group experiences via focus group discussions.

Chapter 7, the Discussion, synthesises findings from the Mapping, Survey, and Focus Group chapters on relation to the theoretical framework and existing literature. It examines points of convergence and divergence across data sources, drawing out policy and planning implications. The Conclusion remains the final chapter, updated to summarise key insights, contributions, and limitations, while suggesting directions for future research.

Chapter 2 Research Methodology

2.1. Introduction

Research methodology refers to the systematic, theoretical analysis of the methods applied within a field of study. It involves the principles, techniques, and procedures researchers use to collect, analyse, and interpret data to answer research questions or test hypotheses (Greenwood, 2008). Research methodology concerns the philosophical assumptions, study design, and choice of methods used to gather and analyse data (Kirongo & Odoyo, 2020). It ensures that research is conducted in a rigorous, valid, and reliable manner. Methodology encompasses both qualitative and quantitative approaches and justifies why certain methods are selected over others, explains how data will be handled, and provides a framework for interpreting findings in the context of the research problem (Bryman, 2016; Creswell & Poth, 2016).

A qualitative research approach was adopted for this study on barriers to recreational walking among older adults in Maitama, Abuja, Nigeria. This approach was selected to gain an in-depth understanding of the personal experiences, perceptions, and social contexts influencing recreational walking among older adults in Maitama (Mohajan, 2018). It is particularly suited for exploring complex, subjective phenomena such as physical, built environmental, spatial, cultural, and social barriers, enabling the researcher to capture rich, contextualised insights that quantitative methods may overlook (Ochieng, 2009).

Through methods such as mapping, interviews, and observations, qualitative research facilitates exploration of nuanced meanings and lived realities, aligning with the study's interpretivist philosophy and its aim to understand walking behaviours from participants' perspectives. This process also provides a framework to ensure the research adheres to scientific principles of objectivity, validity, and ethical considerations while contributing to knowledge advancement within the discipline (Sciences et al., 2017).

The previous chapter laid a comprehensive foundation for this study by presenting the research problem, clearly articulating the aim, and outlining specific research objectives and questions. These elements collectively framed the scope and significance of the study, highlighting the need to explore the influence of physical, environmental, spatial, social, and cultural barriers on the walking behaviour of older adults in Maitama, Abuja, Nigeria.

Building on this foundation, the present chapter outlines the methodological approach adopted to achieve the research aim and systematically address each research objective. It details the research design, data collection tools, participant selection criteria, and data analysis procedures, all aligned with the identified research questions. By establishing a coherent link between the study's conceptual framework and its practical execution, this chapter ensures that the methodology is rigorously aligned with the study's aim and provides a reliable pathway for generating valid and meaningful insights.

Recreational walking is a low-cost form of exercise with numerous health benefits. Promoting regular walking among older adults is important as it helps prevent chronic diseases, manage existing health conditions, and support mental and emotional well-being (Capalb et al., 2014). Several physical and environmental barriers to recreational walking have been identified, such as poor road conditions, inadequate pedestrian infrastructure, crime, traffic, poor weather, and unattractive scenery. Social environmental barriers include lack of walking companions, fear of dogs or traffic, and gardening responsibilities. However, many of these barriers are context-specific and may vary by country and level of urbanisation (Pitt, 2019).

This study was exploratory in nature and aimed to investigate the barriers to recreational walking among older adults in Maitama, Abuja, focusing on individuals aged 50 years and above. The justification for using 50 years as a threshold is that, as people age, they often face unique health challenges and mobility issues affecting their physical activity levels (Ageing et

al., 2008). Understanding the specific barriers faced by those aged 50 and above can help tailor interventions to promote healthier lifestyles within this demographic.

Engaging in regular physical activity such as walking is crucial for maintaining health and preventing age-related diseases. Focusing on this age group emphasises the importance of recreational walking in managing chronic conditions and improving overall well-being (McPhee et al., 2016).

By studying the barriers to recreational walking among older adults, policymakers and urban planners in Maitama can develop targeted strategies and infrastructure improvements that specifically address the needs of this population (Abubakar, 2012). Such initiatives might include the creation of safe walking paths, accessible parks, and community-based programmes designed to encourage walking. These efforts can significantly enhance older adults' quality of life by providing opportunities to stay active and socially engaged, thereby supporting their overall health and well-being (Edwards & Tsouros, 2006).

This qualitative study was conducted remotely, using observational mapping, in-depth interviews, and focus group discussions. Participants were selected through purposive sampling. Data collected were analysed using both thematic and content analysis.

The findings revealed numerous physical and social environmental barriers hindering recreational walking among older adults in Maitama. These barriers were identified at individual, household, and community levels. At the individual level, poor health and age were the most frequently reported barriers. Lack of social support was the primary barrier at the household level, while safety and security were the most reported barriers at the community level. These findings shed light on the diverse challenges faced by older adults when engaging in recreational walking in Maitama, Abuja.

2.2. Research Philosophy

Research philosophy refers to the set of beliefs and assumptions about the development of knowledge. It underlines the methodology, and methods researchers use in their studies and influences how they interpret data and draw conclusions (Williamson & Johanson, 2017). Research philosophy encompasses the patterns and perspectives that guide the choice of research methods and techniques, impacting the overall approach to a research project (Fellows & Liu, 2021).

In this study, the interpretivism is used. Interpretivism is a research philosophy that highlights understanding the subjective experiences and social contexts of individuals (Chowdhury, 2014). Unlike positivism, which seeks to uncover generalisable truths through objective measurement and analysis, interpretivism delves into the nuanced meanings and understandings that people assign to their experiences and social realities (Dubé & Paré, 2003; Park et al., 2020).

Subjective meaning gives the understanding of the personal and subjective interpretations individuals give to their experiences while contextual understanding keeps emphasizing the social, cultural, and environmental contexts that shape these experiences. Interpretivism often employing qualitative research methods such as interviews, focus groups, and observational method to gather in-depth insights (Fossey et al., 2002; Hennink et al., 2020).

This study investigates barriers to recreational walking among older adults in Maitama, a district in Abuja, Nigeria. Maitama is known for its affluence, greenery, and planned infrastructure, which provides a unique setting for such research. However, like any urban

environment, it has its own set of challenges and barriers that might affect older adults' engagement in recreational walking (Ezeamaka & Oluwole, 2016).

Using an interpretivist approach in this context involves understanding how older adults in Maitama perceive and experience barriers to recreational walking. The aim is not just to identify these barriers objectively but to explore the deeper meanings and personal narratives behind these perceptions (Mahmooda, 2024).

2.3. Research Design

This research adopted a qualitative study design using Mapping method, in-depth interviews and focus group discussions. Several studies have employed this design as a means of exploring people's experiences, beliefs, behaviours, and culture. Focus group discussions permit interaction and conversation flow among participants, allowing shared understanding and different perspectives to emerge on the topic in question (Milena et al., 2008; O. Nyumba et al., 2018).

Participants were selected through a purposive sampling technique. Using a purposive sampling technique to select participants for the study on barriers to recreational walking among older adults in Maitama offers several advantages. Targeted selection allows researchers to deliberately choose individuals who are most relevant to the study's objectives. In this case, it ensures that participants are specifically those aged 50 years and above, are the focus of the study on recreational walking barriers (Etikan et al., 2016).

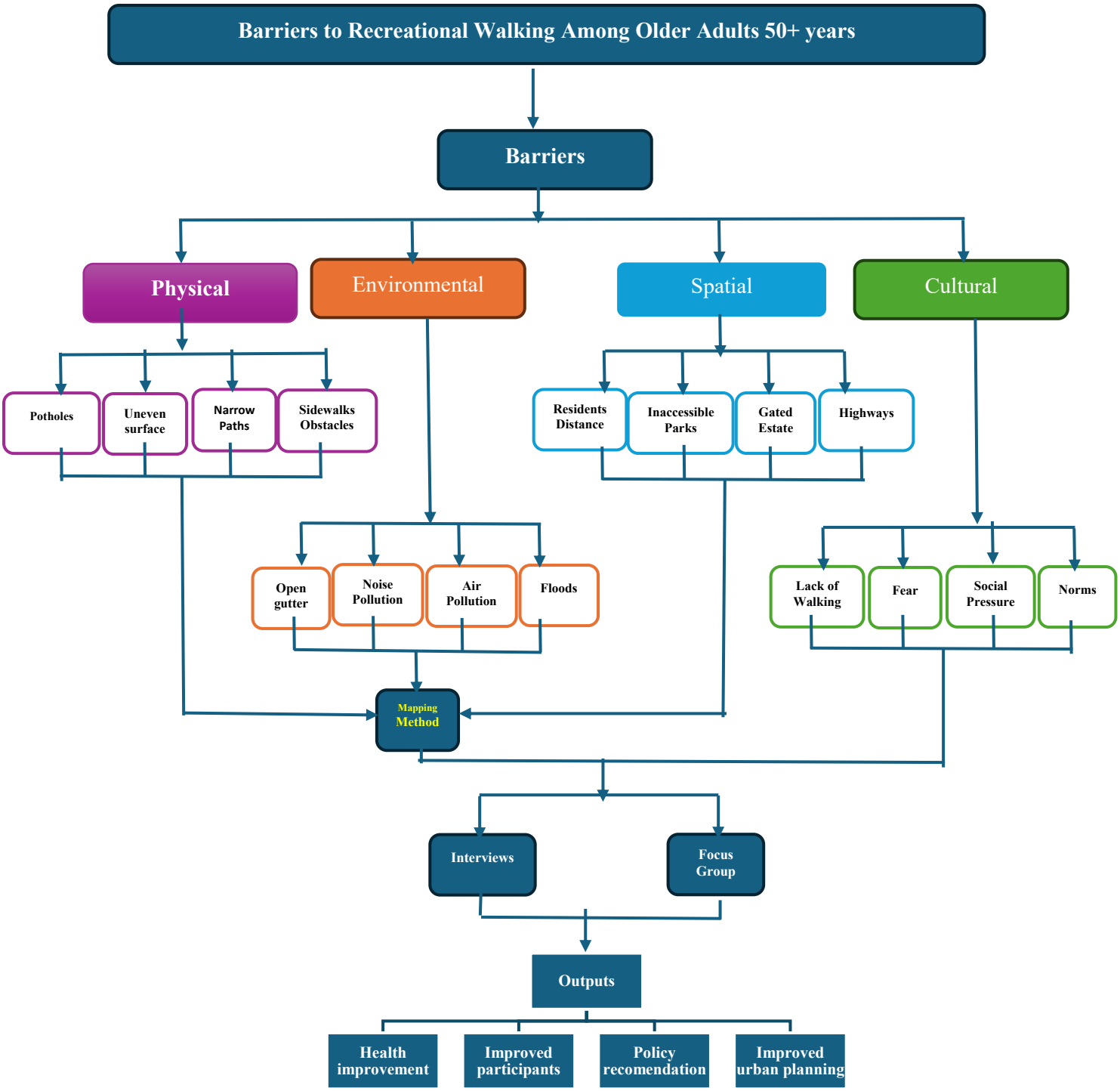
Additionally, rich data collection is another benefit of purposive sampling. By selecting participants who have specific characteristics or experiences related to the research topic, this approach can lead to more in-depth and detailed data (Campbell et al., 2020). This method provides deeper insights into the unique barriers and facilitators of recreational walking among older adults in Maitama, enabling a more comprehensive understanding of the issues at hand.

Efficiency and flexibility are additional advantages of this method. Purposive sampling is efficient in terms of time and resources, as it focuses on individuals who are most likely to provide valuable information, thereby streamlining the data collection process. Furthermore, it allows for flexibility in adjusting the sample as the study progresses. If initial findings suggest new directions or specific subgroups of interest, researchers can adapt their sampling strategy to include these new insights, ensuring that the study remains relevant and comprehensive (Rai & Thapa, 2015).

Enhanced validity is achieved by intentionally selecting participants with direct experience of the phenomenon being studied, making the data collected more pertinent and reflective of the specific issues related to recreational walking barriers in the targeted demographic (Lim, 2024). The qualitative study design, through its use of focus group discussions, aligns with previous research that has made use of this method to delve into the lived experiences, cultural beliefs, social actions, and norms of individuals. It is a widely recognised approach that facilitates an environment where participants can engage in dialogue, leading to the sharing of insights and diverse perspectives on the given subject matter.

The process of purposive sampling followed a simple sampling technique. Initially, three out of the ten streets in Maitama were selected. The decision to target specific streets aimed to ensure a comprehensive collection of data from a variety of locations within the study area (Rai & Thapa, 2015). Subsequently, six groups were purposefully chosen from the three identified streets in Maitama, encompassing both male and female residents who were 50 years old and older. It is important to note that Maitama is a district that accommodates the most influential and affluent individuals in Nigeria, thereby making it an area of exclusive stature.

2.3.1 Design Flow Chart



2.4. Mapping of Study area

The mapping process began by establishing the geographic scope of Maitama District within the context of the Abuja city master plan. Maitama is a high-income, low-density district characterised by a mix of residential, diplomatic, commercial, and green spaces (Ukoha, 1995). The focus of the mapping exercise was to identify key areas where older adults reside, as well as the main walking routes they are likely to use. This included formal paths such as sidewalks and parks, and informal paths along both major and minor roads (Fang et al., 2016). The initial scoping also highlighted locations where barriers to recreational walking were known or expected to exist, including busy intersections, sloped terrain, and undeveloped land.

Base maps were developed using multiple data sources. Satellite imagery such as those from OpenStreetMap and the Federal Capital Territory (FCT) Development Control provided the foundational spatial data (McRoberts, 2011). These were supplemented by field visits and site reconnaissance, which were critical for verifying mapped features and capturing ground realities not evident in digital data. Additional inputs came from urban planning documents and land use plans related to the Abuja Master Plan. The maps featured key elements such as road networks, public green spaces like Millennium Park, pedestrian infrastructure (including sidewalks, crossings, and footbridges), natural barriers such as water bodies, and institutional and commercial land uses that influence walkability.

To identify the actual walking routes used by older adults, the study relied on local knowledge, community informants, and online video call observations. Both formal paths, such as paved park trails, and informal routes, such as footpaths through undeveloped plots or roadside verges, were recorded.

The spatial analysis phase identified and mapped different physical- environmental barriers to recreational walking. These barriers were determined through field observation. Key issues included broken or narrow sidewalks, lack of pedestrian crossings or traffic signals at major

junctions, and frequent encroachments on walkways by parked cars, street vendors, or construction materials (Evans, 2009). Maitama's naturally hilly terrain also created sloped areas that posed mobility challenges, particularly for older adults. Poorly maintained green spaces, overgrown vegetation, and inadequate street lighting further reduced the safety and appeal of walking, especially during early mornings or evenings. Accessibility problems were noted in recreational areas where benches, toilets, and shaded rest areas were either absent or poorly maintained. Each identified barrier was geolocated and categorized based on its severity and frequency.

To validate the mapped data, community engagement was conducted through focus groups and interviews with older residents (O. Nyumba et al., 2018). These sessions provided firsthand accounts of walking experiences, with participants confirming the presence and impact of the identified barriers. Survey responses were also overlaid onto the map to reveal perceived levels of safety, comfort, and accessibility across different areas. Additionally, the findings were cross-referenced with planning guidelines such as pedestrian infrastructure standards set by the Federal Capital Development Authority (FCDA) to highlight areas where existing conditions did not meet policy expectations.

The final mapping outputs included a series of layered thematic maps and spatial visualisations (Slocum et al., 2022). These comprised an overview map of Maitama showing walking routes, parks, and infrastructure, as well as hotspot maps that indicated locations where barriers were most concentrated. Additional thematic maps illustrated sidewalk conditions, street lighting coverage, steep terrain zones, and accessibility of parks. These spatial representations helped make visible the often-overlooked structural inequalities and infrastructural gaps that hinder recreational walking. By presenting these issues in a clear and systematic visual format, the mapping exercise provided valuable insights into how Maitama's built environment influences the walking experiences of older adults.

2.5. Sampling Method

Sampling method is the process of selecting a subset of individuals or items from a larger population to make inferences about that population. The goal is to obtain a representative sample that accurately reflects the characteristics of the larger group, allowing researchers to draw conclusions without studying the entire population (Levy & Lemeshow, 2013). Since the research is about knowing the barriers to recreational walking in Maitama, Abuja, Nigeria.

Purposive Sampling was used to select participants based on specific criteria such as must be older adults,50 years and above and residents in Maitama, Abuja to ensure that the study captured a wide range of experiences and perspectives. This method is a non-Probability Sampling Methods in Selecting individuals based on the researcher's judgment about who would be most useful or representative (Campbell et al., 2020).

The justification for choosing this sampling method over others is that researchers often need to gain deep, detailed understanding of a specific phenomenon such as the barriers faced by older adults in Maitama, which requires insights from individuals who have direct experience or special knowledge about it. In addition, Purposive sampling allows the selection of participants who are most likely to provide detailed and rich information, ensuring that the data collected is highly relevant to the research questions (Moser & Korstjens, 2018).

2.4.1. Identification of participants

In this study, participants were purposefully identified and selected based on criteria aligned with the research objectives, which sought to explore the barriers to recreational walking among older adults in Maitama, Abuja. The participants comprised individuals aged 50 years and above, residing in the Maitama district, and capable of reflecting on their walking experiences within their neighbourhood. This age group was targeted because it represents the population most affected by physical, environmental, and socio-cultural barriers to walking,

and their perspectives are central to understanding the challenges and enablers of active ageing in urban Nigerian settings.

Participants were drawn from those who had previously taken part in the survey phase of the study. This approach ensured continuity and depth, as these individuals were already familiar with the 33 identified barriers and could engage meaningfully in further qualitative exploration through interviews and focus group discussions. The selection process was guided by the principles of purposive sampling, with attention to demographic diversity including gender, socio-economic status, living arrangements (e.g., living alone, with family, or in multi-generational households), and differing mobility levels (including those with and without assistive devices). This diversity was essential in capturing a wide range of lived experiences and how various personal and environmental factors intersect to shape attitudes toward walking.

Recruitment was facilitated through community leaders within the Maitama area. Initial contact was made through community leaders who assisted in identifying eligible participants and encouraging their involvement. Ethical considerations, including informed consent and voluntary participation, were strictly adhered to throughout the process. Participants were fully briefed about the purpose of the research, the confidentiality of their responses, and their right to withdraw at any time without consequence.

Selecting participants with varied yet relevant characteristics, the research ensured that the data collected would be rich, contextually grounded, and reflective of the broader social realities affecting older adults in Maitama. Their narratives provided critical insights into how urban planning, infrastructure, cultural attitudes, and policy neglect can converge to restrict the mobility and wellbeing of ageing populations. This targeted identification of participants strengthened the validity and depth of the study's qualitative findings.

2.4.2 Justification for purposive sampling

Purposive sampling, also referred to as judgemental or selective sampling, is a non-random technique in which participants are deliberately chosen based on specific characteristics that are relevant to the research (Patton et al., 2015). This approach is particularly suited to qualitative research, where the objective is to gain deep insights into phenomena or experiences, rather than to generalise findings across a broader population (Tong et al., 2007). In this study, which explores the barriers to recreational walking among older adults in Maitama, Abuja, purposive sampling was selected to ensure that participants had direct and meaningful experience with the barriers under investigation and could provide rich, detailed accounts.

In the context of this research, purposive sampling made it possible to recruit older adults who had previously already acquainted with the barriers to recreational walking. This prior engagement allowed participants to reflect more deeply and provide contextual interpretations of the issues raised. The method also supported the inclusion of individuals with diverse backgrounds and lived experiences, considering factors such as gender, levels of mobility, household composition, and socio-economic circumstances. These dimensions were important in understanding the multifaceted nature of walking barriers and how they interact with broader social and personal conditions (Creswell, 2013).

Furthermore, purposive sampling aligned with the exploratory goals of the study by enabling a focused and detailed examination of how physical- environmental, cultural, and social obstacles influenced participants' experiences and perceptions of walking (Ames et al., 2019).This was particularly relevant to investigating the emotional and psychological effects of these barriers, as well as their cumulative impact on behaviour and wellbeing.

By carefully selecting individuals who met specific inclusion criteria, the study captured detailed, context-rich data that informed a comprehensive analysis. In qualitative research, where the emphasis is on depth rather than breadth, purposive sampling is a reliable and effective strategy for uncovering patterns and meanings that may otherwise be overlooked (Etikan et al., 2016).

2.6. Data Collection Method

The study employed a qualitative research approach to investigate the barriers to recreational walking among older adults including Maitama, Abuja, Nigeria (Moran et al., 2014). This approach is particularly suited to understanding complex phenomena that involve human behaviour, perceptions, and social contexts. The justification for using qualitative research approach and not quantitative method includes the following according to Van Cauwenberg et al., (2012).

2.6.1. In-depth understanding

According to studies by (Mack, 2005) and Austin and Sutton (2014) qualitative methods allow for an in-depth exploration of the barriers to recreational walking among older adults by using techniques such as observations, interviews and focus groups, the study can gather detailed data that provides a rich understanding of the participants' experiences and perspectives anywhere including Maitama.

2.6.2. Contextualisation

One of the justifications for using qualitative methods is that it enables the researcher to consider the social and cultural context in which older adults live and how this context influences their behaviours and perceptions (Hennink et al., 2020). This is particularly important in Maitama, where cultural and social norms may play a significant role in shaping older adults' attitudes towards recreational walking. In Maitama, cultural and social norms can

significantly influence older adults' attitudes towards recreational walking. For example, in some cultures such as Hausa, walking may be seen as a low-status activity, only done by those who cannot afford cars and in some social circles, older adults may be discouraged from walking due to concerns about safety or dignity (Salamone, 2009).

2.6.3. Participant voices

Qualitative methods give voice to the participants themselves, allowing them to share their stories, experiences, and perspectives in their own words (Fossey et al., 2002). This helps to ensure that the study accurately captures the barriers to recreational walking as perceived by older adults in Maitama.

2.6.4. Flexibility

Qualitative methods are flexible and can be adapted to suit the research context. For example, this study used different data collection techniques, such as observations, to triangulate the data from in depth interviews and focus group discussions to increase the validity of the findings (Mack, 2005).

2.6.5. Exploratory nature

Exploratory studies, whose aim is to better understand a phenomenon like obstacles to leisure walking among older persons, are ideally suited for qualitative approaches (Cheng et al., 2019). The objective of this study is to investigate the obstacles that older persons in Maitama face when going for leisurely walks, and qualitative methodologies offer a perfect means of achieving this goal. (Frank et al., 2022).

By using qualitative methods, the study can gather rich, detailed data that provides a comprehensive awareness of the obstacles that Maitama's senior citizens face when going for walks for leisure. This will help to identify effective strategies for promoting physical activity

and improving the health and well-being of older adults in this community (Chaudhury et al., 2014).

Since the research targets the hurdles to recreational walking between the aged individuals in Maitama, Abuja, to enhance their participation in this activity. Qualitative approach was used to conduct in-depth interviews, focus group discussions, and observational mapping exercises to understand how barriers manifest within the socio-cultural, economic, and environmental context of Maitama (Burgess-Allen & Owen-Smith, 2010).

A purposive sampling method was used to recruit 20 participants, aided by community leaders and word-of-mouth referrals. Recruiting a moderate number of participants (20) strikes a balance between obtaining sufficient data and managing resource constraints such as time, budget, and personnel. It allows researchers to conduct thorough data collection and analysis within feasible limits (Patrick et al., 1998). Data collection involved audio recording and verbatim transcription which was shared with the participants to check if they are happy with the representation of what they said and then followed by analysis through thematic and content analysis to identify recurring patterns.

Two research objectives were formed 1. To investigate the prevalent physical, environmental, and spatial barriers hindering recreational walking among aged individuals in Maitama, Abuja, Nigeria, and to examine how these barriers influence their perceptions and experiences of walking ,2. To examine the influence of cultural perceptions, prevailing social norms, and individual attitudes on the recreational walking behaviour of older adults in Maitama, Abuja, Nigeria. For the first objective, the researcher used observational method which was conducted remotely with the assistance of some trained personnel that based in Maitama, Abuja, Nigeria. Observational method is particularly useful for capturing real-life behaviours and experiences as they naturally occur, providing insights into participants' actions, reactions, and

environmental influences. Observational study was analysed using content analysis. With this, the researcher was able to identify common physical, spatial and environmental barriers such as poorly maintained sidewalks, lack of pedestrian crossings, inadequate lighting, and presence of hazards like uneven surfaces or traffic congestion and this was Cross-examined by In-depth interviews.

The data collected from in-depth interviews was analysed using qualitative method (thematic analysis). This analysis identified recurring themes, patterns, and variations in participants' experiences and perceptions (Joffe, 2011). In addition to this, In-depth interviews were conducted on the second research objective to examine the influence of cultural perceptions, prevailing social norms, and individual attitudes on the recreational walking behaviour of older adults in Maitama, Abuja, Nigeria. Insights into older adults' subjective experiences, attitudes, and coping strategies in response to identified barriers, including feelings of safety, comfort, and accessibility while walking was cross examined with Focus group discussions and analysed with thematic analysis.

In conducting an observational study remotely for examining physical, environmental, and spatial barriers to recreational walking among older adults in Maitama, Abuja, Nigeria, this was done with technology means ‘smart phone’. Although sometime in October 2023, the researcher had visited Maitama and know the areas to focus on. Apart from this, the researcher did a thorough preparation and planning, involving familiarization with the area's geography through online maps and Google earth, as well as defining specific areas of interest where recreational walking occurs, or barriers are expected. Utilising remote observation tools such as Google Maps allows for visual exploration of the study area, supplemented by google earth and street view features to assess the physical environment, pedestrian infrastructure, and relevant landmarks. Additionally, virtual site visits through online tours, videos, and

engagement with residents via social media platforms provide firsthand insights into walking conditions and perceived barriers.

Data collection and analysis entail developing a structured observational mapping protocol to document key elements like sidewalk conditions, obstacles, and environmental hazards. Screen capture tools and annotation software on the smart phones facilitated the recording and annotation of observations from online maps, and virtual tours, which are then organized and categorised according to identified barriers. Content analysis techniques were subsequently applied to systematically analyse the data, extracting meaningful insights into the barriers' impact on recreational walking.

Personal safety and internet connectivity were important considerations during data collection, as unstable network connections in Nigeria can disrupt the smooth conduct of online interviews.

Environmental factors such as the quality of walking paths, presence of benches, availability of shade, and traffic conditions. Safety concerns, including crime and traffic hazards. In all, observations were documented through detailed field notes and focused on both the physical environment and social behaviours.

Similarly, In-depth interviews provided a platform for older adults to express their personal experiences, perceptions, and challenges related to recreational walking. This method allowed for a deeper exploration of individual motivations and barriers. Twenty older adults were recruited using purposive sampling to ensure a diverse representation and each interview lasted approximately 30 minutes that followed a semi-structured format. This format included predefined questions to guide the conversation while allowing flexibility for participants to discuss their personal experiences regarding the following: Personal walking routines and experiences, Perceived benefits of recreational walking, Challenges and barriers encountered,

Social and cultural attitudes towards walking and lastly, suggestions for improving walking conditions and facilities.

Interviews were audio-recorded through google meet and transcribed verbatim for analysis. Focus group discussions captured the collective views and foster interactive dialogue among participants. This method highlighted shared experiences and social dynamics that influence walking behaviours. A focus group was conducted with five older adults, selected to represent a mix of backgrounds and experiences. The discussion lasted for one hour and was moderated by the researcher using a guide to steer the conversation. The guide ensured that all relevant topics were covered while allowing for organic dialogue.

Data Collection discussion was audio-recorded and transcribed for subsequent analysis. The qualitative research approach, incorporating observations, in-depth interviews, and focus group discussions, provided a nuanced and comprehensive understanding of the barriers to recreational walking among older adults in Maitama, Abuja, Nigeria (Craig et al., 2021). By employing purposive sampling, inductive analysis, and triangulation, the study captured the intricate interplay of environmental, social, and cultural factors that influence recreational walking behaviours. These insights are essential for developing targeted interventions to promote physical activity such as recreational walking and improve the well-being of older adults in the community.

Triangulation of data was done to enhance the credibility and reliability of the findings, triangulation was used by combining multiple data collection methods; observational, In-depth interviews and focus group discussions (Santos et al., 2020). This approach allowed for cross-verification of data, ensuring that the findings were well-rounded and robust. Different methods provided corroborative evidence, strengthening the validity of the findings.

2.7. Data Analysis Method

Data analysis in qualitative research involves a process of examining and interpreting non-numerical data to uncover patterns, themes, or concepts that reflect participants' experiences, perceptions, and behaviours. Unlike quantitative research, which relies on numerical data and statistical tools, qualitative research focuses on rich, detailed descriptions that provide deeper insights into the phenomena under investigation (Tenenbaum, 2024). This approach allows researchers to capture the complexity of human experiences and behaviours that are not easily quantifiable, offering a nuanced understanding of the research topic.

For Research Objective 2: Explore the impact of cultural perceptions, prevailing social norms, and individual attitudes on the recreational walking habits of older adults.

which sought to explore the barriers to recreational walking among older adults in Maitama, Abuja, thematic analysis was employed. Thematic analysis is widely regarded as one of the most flexible and systematic methods in qualitative research for identifying, analysing, and interpreting patterns or themes within the data (Terry et al., 2017). It provides a rigorous yet adaptable approach to examining qualitative data, helping to uncover underlying meanings and connections between different barriers. By identifying themes, thematic analysis facilitated a deeper understanding of the complex interrelations among various barriers, including social, cultural, physical, and psychological factors. For instance, through the thematic analysis of interview and focus group transcripts, themes related to safety concerns, age-related marginalisation, and lack of infrastructure were identified and explored in greater detail.

In contrast, content analysis was used to analyse Research Objective 1: Investigate the various physical, environmental, and spatial barriers that impede recreational walking among older adults in Maitama, Abuja, Nigeria, and examine how these barriers impact their attitudes and experiences towards walking.

The aim of this objective is to identify and explore the physical, environmental, and spatial barriers that hinder recreational walking among older adults in Maitama, Abuja, Nigeria, while also examining how these barriers influence their attitudes and overall experiences towards walking. Content analysis is a well-established method for systematically categorising and quantifying the occurrence of themes, words, or concepts within qualitative text data. This method enabled the researcher to generate a clear, structured overview of the most common barriers, allowing for a quantitative aspect to emerge from the qualitative data (Krippendorff, 2018). Through this process, the researcher was able to systematically count and analyse the presence of certain phrases or references related to common themes, such as physical infrastructure issues and social exclusion. The content analysis not only helped to identify which barriers were most frequently cited but also provided insight into the relative importance of these barriers in the participants' daily experiences.

Both thematic and content analysis are crucial tools in qualitative research, each serving different purposes while complementing one another. Thematic analysis allowed for an

in-depth exploration of complex issues and provided a framework for understanding the interpersonal and emotional aspects of barriers to walking, while content analysis contributed to a clearer understanding of the prevalence and significance of each barrier across the population of older adults in Maitama. Together, these methods ensured that both the breadth and depth of the barriers to recreational walking were captured, providing a comprehensive view of the issues faced by this population.

By using these two complementary methods, this study was able to triangulate findings from different sources (e.g., mapping, interviews and focus groups,) and achieve a more robust, multifaceted understanding of the barriers to recreational walking among older adults. This approach also ensured that the subjectivity and context of participants' experiences were

preserved, while also providing a foundation for identifying potential solutions and recommendations that are rooted in the real-life experiences of older adults in Maitama.

Following the completion of the interviews and focus group discussions, the data were transcribed verbatim and analysed using a thematic analysis approach, in line with Braun and Clarke's (2006).Coding formed with the aid of NVivo 12 which is a central part of this analysis and was used to systematically organise and interpret qualitative data, allowing for the identification of patterns and themes related to the barriers experienced by older adults in engaging in recreational walking in Maitama, Abuja.

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2.8. Barriers to Recreational Walking in Other Contexts

Salvo et al. (2018) explores barriers to recreational walking, focusing on both urban and rural settings, with an emphasis on the challenges faced by older adults in low- and high-income countries. Drawing from empirical studies, the aim is to contextualise the barriers to walking in Maitama, Abuja, Nigeria, and justify the use of a multi-method approach of collecting data, incorporating observational mapping, interviews, and focus group discussions (FGDs).

The empirical evidence provided in this section demonstrates the effectiveness of these methods in capturing diverse perspectives on the environmental, social, and personal factors that influence walking behaviours.

2.8.1. Comparative Analysis of Walking Barriers in Urban and Rural Areas

In urban areas, the availability of services and amenities is often counterbalanced by significant challenges that affect older adults' ability to walk for recreation. The major among these are traffic and safety concerns, a lack of pedestrian-friendly infrastructure, and high levels of

environmental pollution. In high-density urban environments, traffic presents a notable barrier to walking (Giles-Corti, 2006).

Older adults frequently avoid walking in areas with heavy vehicular activity due to safety risks and inadequate pedestrian provisions. Studies conducted in cities such as New York, London, and Lagos demonstrate that poorly designed intersections, fast-moving traffic, and a lack of safe pedestrian crossings reduce the willingness of older adults to participate in walking activities (Cervero, 2013; Haq & Schwela, 2012).

Observational mapping, as well as qualitative data gathered from interviews and focus group discussions, confirm that such environmental conditions have a direct impact on walking behaviour among older individuals. In addition to traffic-related issues, the scarcity of green spaces and pedestrian-oriented infrastructure in many urban settings further restricts opportunities for recreational walking (Evans & Jones, 2011). In Lagos, for example, the prioritisation of vehicular infrastructure has significantly reduced the availability of public parks and walkable pavements (Daramola, 2024).

Similar patterns are observed in cities such as Mumbai and Nairobi, where urban planning decisions tend to favour motorised transport systems over the needs of pedestrians. As a result, these environments often become unfriendly or even hostile to walking, especially for older adults with limited mobility (Cheshmehzangi & Thomas, 2016). Furthermore, urban areas frequently experience high levels of noise and air pollution, which serve as additional deterrents to outdoor physical activity.

Older adults, particularly those with chronic health conditions, these environmental stressors contribute to a reluctance to engage in regular walking. Studies in New York and London have highlighted how pollution-related concerns, when combined with health vulnerabilities, lead

to a significant decline in recreational walking among older people (Oliveira et al., 2020). In contrast, rural areas present a different, yet equally significant, set of barriers to recreational walking.

Although these regions typically offer more open space and lower traffic volumes, they often lack the infrastructure required to support safe walking. In many low-income rural communities, paved roads, pedestrian pathways, and designated crossing points are absent, posing serious risks for older adults, especially those with mobility impairments (Yendra et al., 2024). The lack of basic infrastructure is compounded by social isolation and limited access to social support networks, which reduces the motivation for physical activity among the elderly.

Research conducted in Kenya and South Africa indicates that the absence of walking companions, community engagement, and social encouragement can significantly discourage older adults from walking regularly (Rosenberg et al., 2011). Additional constraints in rural areas include exposure to harsh weather conditions and limited access to essential amenities, such as shops, health centres, and recreational facilities. These limitations not only reduce the frequency of walking but also make the activity less appealing and more physically demanding.

In rural regions of Sub-Saharan Africa, the combination of poor recreational infrastructure and extreme climate conditions such as prolonged heat, heavy rains, or dusty terrains serves to discourage older adults from walking for leisure or exercise (Zuniga-Teran et al., 2020). These findings underscore the importance of understanding context-specific barriers, whether in urban or rural settings, to develop effective interventions that promote safe and accessible walking environments for ageing populations.

2.8.2. Barriers in Low- and High-Income Countries

In low-income countries, barriers to recreational walking are often shaped by broader structural and socio-economic limitations. Poor infrastructure remains a pervasive challenge. In countries

like Nigeria, India, and Kenya, urban development tends to prioritise motorised transport, leaving pedestrian expansion of road networks has consistently overlooked the needs of pedestrians, making walking hazardous for older adults with inadequate space and safety features. For example, in Lagos, the expansion of road networks has consistently overlooked the needs of pedestrians, making walking hazardous for older adults(Zuniga-Teran et al., 2020). Economic constraints further exacerbate these challenges. Older adults in these regions may lack the financial means to access parks or leisure facilities.

Walking, while often essential for transportation, is rarely recreational, particularly in rural areas where mobility is shaped by necessity rather than choice (Berg & Ihlström, 2019).Cultural and social norms also influence walking behaviours. In certain rural areas of India and Nigeria, walking for leisure is viewed as unnecessary or even inappropriate, especially for older women. These cultural expectations act as subtle but powerful deterrents to physical activity among older adults (Rosenberg et al., 2011). As a result, walking is often limited to utilitarian purposes, and recreational walking is virtually absent in many communities.

In contrast, high-income countries, despite having superior infrastructure, still present several barriers to walking among older adults. One such issue is urban sprawl. In suburban areas of the United States and Europe, dispersed development and a heavy reliance on cars restrict walking opportunities. Research from Los Angeles and suburban London highlights how the lack of pedestrian infrastructure and long distances between destinations discourage recreational walking among older residents (Pemberton, 2022). Health conditions also pose a significant barrier. Chronic illnesses such as arthritis and cardiovascular disease are common in older populations and limit physical activity, even in walkable environments (Patel et al., 2017).

Safety concerns, particularly related to crime, further hinder walking in some urban environments. Older adults may avoid outdoor activity due to fears of robbery or assault, especially in high-crime neighbourhoods. This perceived lack of safety contributes to physical inactivity among older populations in otherwise developed and accessible environments.

2.8.3. Justification for the Use of Methods.

To comprehensively understand the complex and context-specific barriers to recreational walking, a mixed-methods approach incorporating observational mapping, interviews, and focus group discussions is essential (Wheeldon & Faubert, 2009). These methods, when used in combination, offer the benefit of triangulation, enhancing the validity and reliability of findings.

Observational mapping provides objective data on environmental conditions, such as sidewalk quality, traffic patterns, and the presence or absence of green spaces. Meanwhile, interviews and FGDs capture subjective insights from older adults and community members, revealing how they perceive and experience their physical surroundings (Walker & Hiller, 2007). This combination of methods allows researchers to capture both macro and micro-level perspectives. While observational mapping focuses on larger systemic and spatial factors, interviews and FGDs explore personal experiences, social dynamics, and cultural influences (Rosenberg et al., 2011).

The ability to link structural barriers with lived experiences makes this approach particularly powerful. Furthermore, in diverse and resource-constrained settings, these methods offer a context-sensitive framework for interpreting how environmental and social barriers converge to shape walking behaviours (Amaya et al., 2024). In conclusion, this section has explored the multifaceted barriers to recreational walking in both urban and rural contexts, as well as in low- and high-income countries.

Empirical studies from cities like New York, London, Lagos, and Nairobi demonstrate the value of integrating observational mapping with qualitative methods such as interviews and FGDs. These approaches offer a comprehensive understanding of the environmental, social, and cultural factors that influence older adults' walking behaviours (Mogo, 2016). By situating the study of Maitama, Abuja, Nigeria, within this broader global framework, the research is grounded in both empirical rigor and contextual relevance. This methodological approach ensures that the study's findings are not only locally meaningful but also contribute to wider discourses on age-friendly environments and active ageing.

2.9. Ethical Application

Ethical integrity was upheld throughout all stages of this study, particularly given its focus on older adults, a population often considered vulnerable in research contexts. The study adhered strictly to established ethical guidelines for research involving human participants, including principles of voluntary participation, informed consent, confidentiality, anonymity, and the minimisation of harm and times that were convenient and accessible for participants (Sciences et al., 2017).

This approach ensured comfort, privacy, and flexibility. Special care was taken to prevent emotional or psychological distress, particularly when discussing sensitive topics such as health limitations, mobility challenges, or experiences of exclusion. All data were anonymised during transcription, with pseudonyms used to safeguard participant identities (Allen & Wiles, 2016).

Data were securely stored in encrypted files, accessible only to the researcher, and managed in accordance with the University of Sheffield data protection policy and relevant international ethical standards (Kallahalla et al., 2003). The research also took account of the cultural and social context of Maitama. Engagement with local gatekeepers, including residents'

associations and community leaders, was carried out to ensure cultural sensitivity and ethical conduct during participant recruitment and data collection.

Through this ethically robust approach, the study protected the dignity, autonomy, and safety of all participants while upholding the academic and ethical standards necessary for high-quality qualitative research (Purvis & Crawford, 2024).

Chapter 3 Literature Review

3.1. Introduction

The literature review serves to establish the theoretical and empirical foundation for this study, which explores the barriers to recreational walking among older adults in Maitama, Abuja. Walking is increasingly recognised as a vital form of physical activity, especially among older adults, due to its accessibility, low cost, and broad health benefits, including improved cardiovascular health, mobility, mental wellbeing, and social engagement (Lee & Buchner, 2008; WHO,2019). Despite these benefits, participation in recreational walking remains limited in many urban contexts, often due to a range of environmental, infrastructural, social, and personal factors.

This chapter critically examines existing literature on the determinants of walking behaviour among older adults, with a focus on recreational walking (Francis, 2014). It begins by contextualising the study within the historical and urban planning evolution of Abuja, including the specific layout and characteristics of Maitama District. It further explores relevant Nigerian planning and public health policies that shape opportunities and constraints for physical activity.

Following this, the review synthesises global and local research on environmental barriers, social influences, health-related concerns, and age-specific limitations that affect recreational walking (King et al., 2019). Particular attention is given to the socio-cultural context of Nigeria, which informs attitudes toward ageing, mobility, and outdoor physical activity.

By consolidating findings across multiple disciplines: including urban planning, public health, and social psychology, this chapter highlights key gaps in knowledge and underscores the importance of context-sensitive, interpretivist approaches. The review ultimately sets the stage

for the empirical investigation, demonstrating the need to explore older adults lived experiences of walking in Maitama to inform inclusive and health-supportive urban planning strategies.

3.2 Historical and Urban Planning Context of Abuja

Abuja, the capital city of Nigeria, was officially designated as the Federal Capital Territory (FCT) in 1976 and became the seat of government in 1991, replacing Lagos. The decision to relocate was driven by the need for a more centrally located and neutral territory that could accommodate Nigeria's ethnically and religiously diverse population (Mabogunje, 1977). As a planned city, Abuja was developed based on a Master Plan created in 1979 by the International Planning Associates (Matos Wunderlich), which promoted a hierarchical urban structure, decentralization, spatial equity, and environmental sustainability (Femi, 2012; Lemer, 2019).

Unlike organically evolved cities, Abuja was conceived and executed as a purpose-built capital. The Master Plan, produced by a consortium including Wallace, McHarg, Roberts and Todd, was influenced by modernist planning ideals that emphasized functional zoning, structured hierarchies, environmental conservation, and decentralization of services and population density.

The plan divided the city into phases and districts. The Central Area was reserved for government functions, while residential, commercial, and institutional areas were distributed across other districts. Maitama, located in Phase 1, was specifically planned as a high-income residential and diplomatic zone. It features wide boulevards, green spaces, and controlled development to preserve its exclusivity and aesthetic quality (Adeponle, 2013).

The design aimed to reflect modern urban living with an emphasis on order, calmness, and environmental care. Open spaces and green buffers were integral to the city's design, envisioned as tools for environmental management and public well-being (Ojo, 2025). These

spaces theoretically support outdoor recreational activities, including walking. However, Abuja's development has encountered implementation challenges.

Despite efforts to prevent the unregulated growth seen in other Nigerian cities, issues such as uneven development, poor enforcement of zoning laws, informal settlements, and encroachment on green spaces have emerged (Aduwo et al., 2016). Even in a well-maintained district like Maitama, there are gaps in pedestrian infrastructure. While streets are generally paved and landscaped, features such as continuous sidewalks, resting benches, shaded walkways, clear signage, and pedestrian crossings are inconsistently provided. Inadequate street lighting on residential roads also poses safety concerns, particularly for older adults and those with mobility challenges (Shaibu et al., 2024).

Vehicular dominance in urban transport planning remains a significant issue. The road network prioritises cars, offering limited support for non-motorised transport. This car-centric model diminishes the usability of public spaces for walking and reduces opportunities for spontaneous neighbourhood movement (Mokitimi & Vanderschuren, 2017).

Figure 3 presents a map of Abuja's built-up area from Phase 1 to Phase 4, illustrating the progressive expansion of low-density, car-oriented development that perpetuates a predominantly car-centric urban form. Notably, as the city has extended particularly in the later phases the design of road networks has prioritised vehicular movement, with minimal consideration for pedestrian infrastructure.

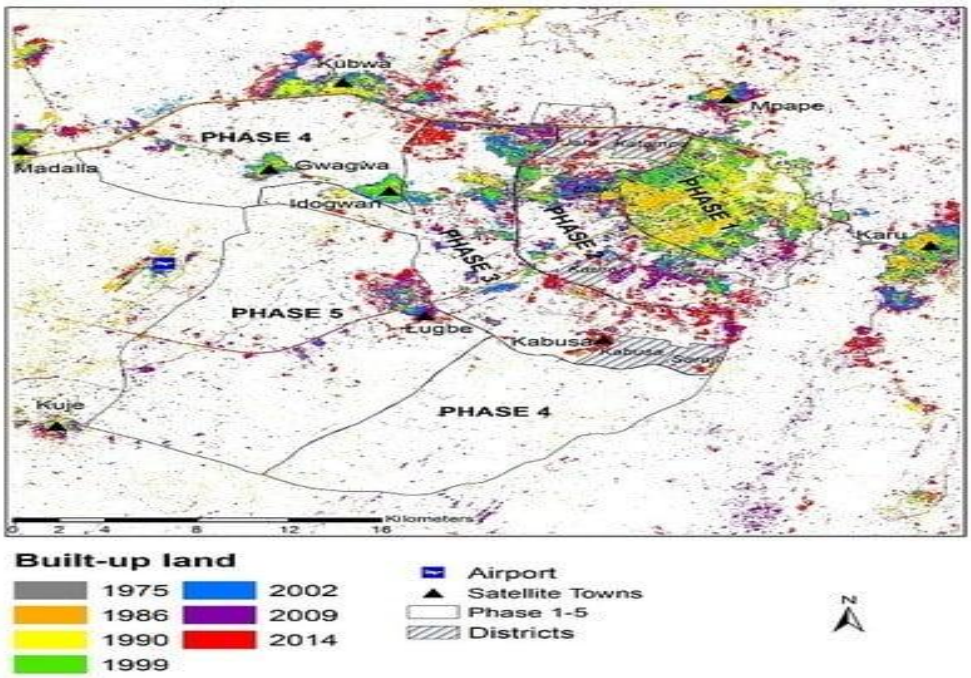

Figure 3 Showing phase i-iv

In spite of Abuja's low population density and wide spatial layout, the disconnect between land use and transport planning has led to urban fragmentation and reduced walkability. Understanding this historical and planning context is crucial to this research (Razak, 2016).The original vision of Abuja, while ambitious, has yielded mixed outcomes for older adults in Maitama, navigating the built environment and face real challenges.

Large plot sizes and spatial segregation contribute to long travel distances, while the lack of age-friendly infrastructure limits the potential for recreational walking. This context provides a lens through which physical and policy barriers to walking can be critically examined and highlights the broader implications of urban planning for health, mobility, and inclusive access in contemporary Abuja (Abubakar, 2014).

These spatial and infrastructural shortcomings underscore the disconnect between Abuja's planning ideals and the lived realities of its residents particularly older adults in Maitama.

Although the district benefits from a structured layout and relatively high-quality environment, persistent barriers such as distance, poor walkability, and inadequate pedestrian amenities hinder regular recreational walking (Mahmooda, 2024).

Addressing these challenges requires a more inclusive planning approach that prioritises age-friendly design, promotes active mobility, and reimagines public spaces as accessible, safe, and supportive environments for older populations.

3.3 Planning and Public Health Policy in Nigeria

Planning and public health policies in Nigeria have historically evolved in response to urbanisation, population growth, and socio-economic challenges. Urban planning in Nigeria is regulated primarily by the Urban and Regional Planning Act (URP Act) of 1992, which provides the legal framework for spatial planning across the federal, state, and local government levels (Wahab & Agbola, 2017).

The Act mandates the preparation of physical development plans, but its implementation has been hampered by inadequate funding, bureaucratic delays, and poor enforcement mechanisms (Olujimi, 2011). While major cities like Abuja have benefited from centralised planning frameworks, the disconnect between policy formulation and ground-level realities often undermine efforts to create inclusive and health-promoting environments (Bonzo & Gyimah).

Nigeria's health policy landscape is shaped by the National Health Policy of 2004 and revised in 2016, which articulates the government's commitment to improving the health and quality of life of its citizens (Adesola et al., 2024; Obalum et al., 2023). However, this policy has traditionally focused more on curative health services than on preventive strategies, such as promoting active lifestyles through urban design (Oyibocha et al., 2014; Scott-Emuakpor, 2010).

Only recently has the integration of non-communicable disease (NCD) prevention into urban planning discourse begun to gain traction. Sedentary lifestyles, associated with urbanisation and poor infrastructural planning, have contributed significantly to the rise of NCDs, especially among older adults (Oluyinka et al., 2024).

Regardless of Abuja's image as a planned city, public health considerations have not been fully mainstreamed into its urban development strategy. Policies that support walkable communities, age-friendly infrastructure, and access to recreational spaces remain fragmented or absent. Initiatives such as the National Policy on Ageing, 2018 recognise the importance of mobility and social participation for older adults but lack clear mechanisms for implementation within urban settings (Mbam et al., 2022).

Likewise, the National Physical Development Plan and state-level urban policies rarely incorporate health equity or age-sensitive planning. The result is that neighbourhoods like Maitama, although well-resourced, may still fall short in delivering the pedestrian infrastructure, safety, and environmental conditions required to support regular recreational walking among older adults (Sani, 2022).

A more effective integration of urban planning and public health policy is needed to address the barriers older adults face in engaging in recreational walking. This includes fostering intersectoral collaboration between urban planners, public health professionals, and community stakeholders (Peace et al., 2013). Aligning health objectives with urban policy such as through walkability audits, participatory planning, and community-driven design can help create environments that support physical activity and healthy ageing.

3.3 Historical Trajectory of Planning and Public Health Policies in Nigeria

The trajectory of planning and public health policy in Nigeria reflects a complex interplay of historical legacies, governance paradigms, and shifting development priorities. Over the past

century, the country has witnessed various waves of policy evolution from colonial urban control to post-independence developmentalism, structural adjustment, and contemporary aspirations for sustainability and inclusion (Adesola et al., 2024).

Even though, recreational walking, especially among older adults has seldom been foregrounded in national discourse. Instead, policy attention has alternated between economic growth, infrastructure expansion, and healthcare delivery, with little regard for the everyday mobility of ageing populations. This section critically examines the sequence of key planning and public health policies to expose the gaps, silences, and opportunities in creating walkable environments for older Nigerians.

3.3.1 Colonial and Early Post-Colonial Urban Planning (1900s–1970s)

Colonial-era urban planning in Nigeria was fundamentally exclusionary, designed to serve imperial objectives rather than foster inclusive urban growth. The Town and Country Planning Ordinance of 1946, modelled after British statutory planning, established the legal basis for town planning schemes but entrenched spatial segregation between European quarters and African settlements. Planning was used as a tool for control and order, with public health narrowly interpreted as sanitation and disease containment (Popoola et al., 2023).

In the early decades after independence, Master Plans for cities like Lagos, Ibadan, and Kaduna perpetuated colonial spatial ideologies. These plans adhered to modernist paradigms characterised by zoning, functional separation, and suburban expansion. While they sought to accommodate urban growth, they did so through car-dependent layouts that marginalised pedestrian movement.

In conclusion, older adults especially those with declining physical abilities are significantly affected by spatially unfriendly environments. Features such as long distances between

essential services, inadequate sidewalks, and a lack of rest infrastructure undermine their ability to walk safely, comfortably, and independently.

3.3.2 National Physical Development Plan (NPDP) – 1981 (Draft)

The NPDP was a pioneering attempt to create a coordinated spatial strategy for Nigeria. While it identified regional disparities and aimed to improve connectivity, its technocratic focus on urban hierarchy and economic nodes meant that social dimensions such as inclusive access, ageing, and mobility justice were overlooked (Oni, 2015).

Recreational walking was implicitly marginalised within its development logic, which equated infrastructure with roads and vehicles, rather than human-scale environments (Carmona, 2021). Moreover, the lack of implementation mechanisms turned it into a blueprint with little practical bearing on urban form or walkability outcomes.

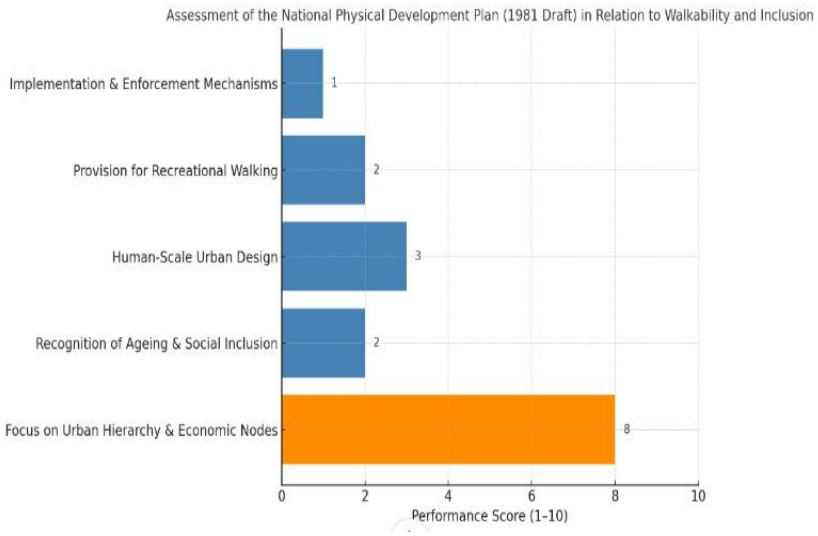

Figure 4 Assessment of physical development plan of 1981

The graph, figure 4, illustrates the limitations of the 1981 Draft National Physical Development Plan (NPDP) in promoting inclusive, walkable environments. While the plan emphasised urban hierarchy and economic connectivity (scoring high in that area), it severely underperformed in recognising ageing populations, supporting human-scale design, or facilitating recreational walking. Its weakest point was the absence of concrete implementation mechanisms, which rendered its goals largely theoretical and disconnected from on-ground urban form and walkability outcomes.

3.3.3 Abuja Master Plan – 1979

The creation of Abuja was a bold effort to build a new capital free from the congestion and sprawl of Lagos. The Abuja Master Plan, developed by International Planning Associates, was ambitious in scope, proposing a decentralised, landscaped city structured around hierarchical districts and green buffers.

However, the city's development was heavily influenced by American planning ideals, prioritising automobile mobility over the pedestrian experience. Maitama, one of the earliest districts, was conceived as a diplomatic and elite enclave, characterised by wide road reserves, minimal street-level activity, and low-density plots. Figure 5 illustrates the phased development of the city, with Maitama located within Phase One of the 1979 Master Plan.

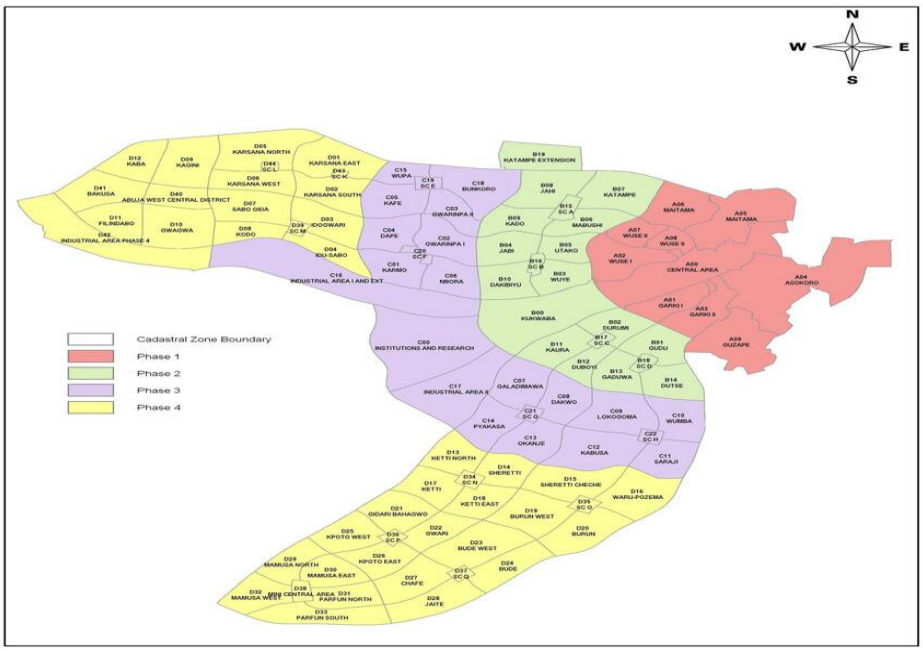

Figure 5 Abuja Master plan showing phases

Although the plan contained theoretical elements of open space and landscape integration, in practice these served aesthetic rather than functional purposes. For older adults, the result has been an environment that is visually open but physically inaccessible walkways are discontinuous, street furniture is absent, and shade is insufficient, making routine walking for leisure or exercise a challenge.

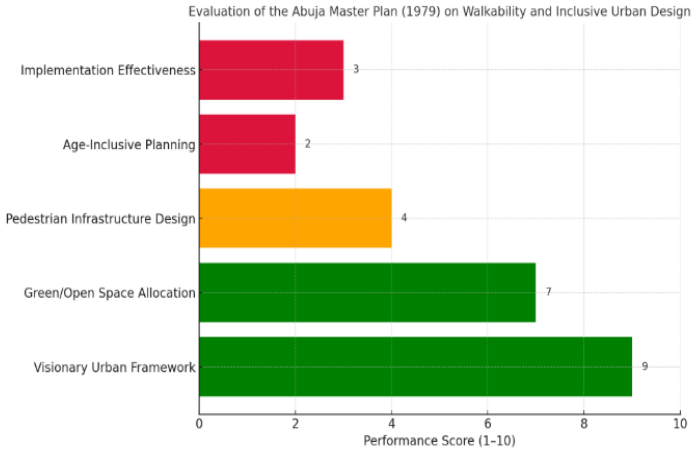

Figure 6 Evaluation of Abuja Master plan of 1979

Figure 6 presents an evaluation of the Abuja Master Plan (1979) across five key dimensions related to walkability and inclusive urban design. While the plan scores highly for its visionary urban framework and commitment to green and open spaces, it performs poorly in terms of pedestrian infrastructure and age-inclusive planning. The effectiveness of its implementation remains limited, underscoring the gap between planning ideals and on-the-ground realities particularly in supporting recreational walking for older adults.

3.3.4 National Health Policy – 1988

The National Health Policy of Nigeria is the principal framework that guides the development, implementation, and regulation of health services across the country. It outlines the government's vision, goals, and strategic direction for achieving universal health coverage (UHC)**,** improving health outcomes, and ensuring equitable access to quality healthcare for all Nigerians (Eboreime et al., 2017).

Adopted in a period dominated by primary health care ideals, the 1988 National Health Policy reflected Nigeria's alignment with global public health agendas of the time. Its emphasis was on curative services and maternal-child health, with no conceptual link between urban design and wellness (Fofah, 2021).

Recreational walking was not considered a preventive health strategy, nor was the built environment recognised as a determinant of health. The narrow-medicalised view of health that dominated this era precluded considerations of active ageing or community-based mobility enhancements (Balogun, 2021).

3.3.5 National Housing Policy – 1991 (Revised in 2006 and 2012)

The National Housing Policy of Nigeria is a government policy structure aimed at addressing the country's housing needs by promoting access to affordable, decent, and secure shelter for

all Nigerians, particularly low- and middle-income groups. It sets out goals, strategies, and institutional frameworks for the development, financing, regulation, and maintenance of housing across the country (Aribigbola, 2008).

Initially formulated to address Nigeria's significant housing deficit, the 1991 National Housing Policy prioritised quantity over quality. Consequently, estate layouts illustrated in Figure 7 privileged motorable access and plot coverage over community liveability or walkability. As shown in the figure, the layout focuses solely on vehicular movement, with little or no provision for pedestrian circulation. This design approach may discourage older adults residing within such estates from engaging in recreational walking due to concerns about road safety and the risk of being struck by vehicles.

Revisions in 2006 and 2012 began to acknowledge concepts such as "liveable communities" and "sustainable housing," but these remained aspirational. The absence of design guidelines for pedestrian paths, parks, or age-sensitive features like ramps and benches meant that older adults continued to face significant mobility constraints within residential environments.

Figure 7 Showing estate layout without considering pedestrian walkway

3.3.6 National Urban Development Policy – 1992 (Revised in 2012)

The National Urban Development Policy (NUDP) was one of the earliest efforts to provide a holistic framework for Nigeria's rapidly urbanising population. Its 1992 version highlighted infrastructure and environmental management but was vague on issues of urban equity or inclusion (Fagbemi, 2017).

The 2012 revision responded to challenges like slum proliferation and sustainability yet failed to articulate a pedestrian-first or age-friendly agenda. While the policy acknowledged the value of pedestrian infrastructure in principle, it lacked actionable guidelines, monitoring frameworks, or intersectoral coordination to bring these aspirations to fruition especially in affluent but auto-oriented districts such as Maitama (Zubairu, 2020).

3.3.7 National Policy on Ageing – 2018 (Operationalised in 2021)

The National Policy on Ageing was a major milestone, signalling formal recognition of older adults within national policy. It adopts the principles of active ageing, advocating for social participation, autonomy, and accessible infrastructure. However, it remains largely a declarative policy, with minimal integration into physical planning or transportation regulations (Mbam et al., 2022).

Its operationalisation has been hindered by poor inter-ministerial coordination and lack of budgetary support. For urban contexts like Maitama, the policy's potential remains untapped; walking infrastructure remains unaligned with ageing needs due to the absence of technical guidelines and local implementation structures (Abubakar et al., 2022).

3.3.8 National Health Policy – 2016 (Second Edition)

The 2016 National Health Policy (Second Edition) marked a notable shift in Nigeria's public health framework. It embraced a life-course approach to health, acknowledging that well-being is shaped not only by healthcare access and individual behaviours but also by broader environmental and social determinants (Nwankwo, 2023).

This inclusive lens was a departure from previous disease-specific or curative-focused health policies. Within this framework, the policy recognised the escalating burden of non-communicable diseases (NCDs), particularly those linked to physical inactivity, poor diets, and urban lifestyle changes (Obada et al., 2024).

Importantly, the policy identified physical activity as a fundamental component of preventive healthcare and healthy ageing, promoting exercise and movement as vital for longevity and quality of life. It also acknowledged the need for supportive environments to enable healthy behaviours. However, the document fell short of operationalizing this recognition (Bai-Tachia & Anchovur, 2017). It provided no concrete directives for how environmental or spatial planning agencies such as ministries responsible for urban development, housing, or transportation should contribute to shaping health-supportive environments.

This omission reveals a critical institutional disconnect. By failing to define inter-sectoral roles or establish mechanisms for collaboration between the health sector and urban planning bodies, the policy inadvertently maintained the siloed structure of policy implementation. As a result, health promotion remains largely the responsibility of the Ministry of Health, with little input from agencies that shape the built environment, where health behaviours like walking are either facilitated or hindered (Otorkpa et al., 2024).

For older adults, this gap is particularly significant. Recreational walking is often influenced by walkability, access to safe green spaces, quality pedestrian infrastructure, and protection

from urban hazards. Without explicit urban design mandates or partnerships in the policy, environmental barriers such as poor sidewalks, insecurity, and distance from recreational areas continue to go unaddressed in health planning (Adede et al., 2024). This limits the effectiveness of the policy's preventive health ambitions, particularly in urban centres like Abuja where rapid development often overlooks the needs of ageing populations.

Table 2 below outlines the key gaps in the 2016 National Health Policy (Second Edition) regarding promoting recreational walking among older adults. While the policy commendably adopts a life-course approach and recognises physical activity as essential for healthy living, it fails to translate this into actionable strategies related to the built environment.

The absence of clearly defined roles for the urban planning, transport, and housing sectors undermines efforts to create supportive, walkable environments. As a result, older adults remain underserved, as the policy does not address structural barriers such as inadequate pedestrian infrastructure, safety concerns, or limited access to green spaces all of which are critical for enabling active ageing through recreational walking.

In summary, while the 2016 National Health Policy made progress by recognising physical activity and environmental health as public health priorities, its failure to institutionalise walkability and cross-sector urban-health integration represents a missed opportunity for promoting active ageing and inclusive mobility.

Table 2 Gaps in the 2016 National Health Policy in Promoting Recreational Walking for Older Adults

	Policy Element	Stated Intention	Gap/Implication for Older Adults
1	Life-Course Health Approach	Recognises health is shaped by environmental and social determinants	Lacks specific strategies for translating this recognition into walkable, age-friendly neighbourhoods
2	Recognition of Physical Activity	Identifies *physical* activity as key to NCD prevention and healthy ageing	No guidance on how to modify physical environments to enable safe recreational walking for older adults
3	Environmental Support for Health	Mentions need for supportive environment	Fails to define or institutionalise urban design contributions to walkability or active ageing
4	implementation Strategy	Health sector-led, behavioural focus	Overlooks built environment factors that constrain or support physical activity
5	Vulnerable Population Focus	Emphasises inclusion and equity	Omits gerontological concerns such as slower mobility, safety needs, and access to public spaces.

3.3.9 National Strategic Health Development Plan II (2018–2022)

The NSHDP II was a key operational context for implementing the health policy. It identified physical inactivity as a risk factor for NCDs and called for health promotion through behavioural change.

However, like earlier frameworks, it treated physical activity as an individual choice rather than something shaped by the built environment. It did not incorporate urban design principles, nor did it collaborate with spatial planning institutions. This lack of integration severely limits the policy's effectiveness in promoting walking among older adults, whose behaviour is highly constrained by environmental conditions (Briggs, 2023).

3.3.10 National Policy on Physical Activity and Sedentary Behaviour – Draft 2021

This draft policy is perhaps the most progressive effort to date in linking physical activity with urban planning. It explicitly recognises the need for walkable cities and proposes interventions at the level of transport, urban design, and community planning. If enacted, it could establish a multisectoral foundation for active living (Adekanye, 1975).

However, the policy's effectiveness will depend on the extent to which it is harmonised with land use regulations, building codes, and age-friendly design principles. For older adults in Maitama and beyond, its implementation could mean the difference between sedentary isolation and active engagement (Ige & Akinbogun, 2025).

3.3.11 Analysis: Gaps and Disconnects

Despite the breadth of Nigeria's policy landscape, a disjuncture persists between policy rhetoric and spatial reality. Planning, health, and ageing policies are fragmented, each addressing aspects of mobility without a shared framework. There is an absence of an institutional mechanism to coordinate planning with public health or social protection. As a result, policies either ignore the role of physical space in shaping behaviour or remain at the level of principle without regulatory force (Croke & Ogbuoji, 2024).

The consistent omission of older adults from urban policy frameworks has left their mobility needs unaddressed, especially in neighbourhoods like Maitama where infrastructure is skewed toward motorised elites. Moreover, there is no legal or policy architecture that treats walking as a right or prioritises pedestrians as users of urban space. Without universal design standards or enforcement capacity, aspirations for walkable cities remain elusive. This institutional vacuum perpetuates environments that discourage recreational walking among the very populations who could benefit most (Cobbinah & Finn, 2024).

3.3.12 Conclusion: Toward a New Paradigm

Reversing this trajectory requires a fundamental reorientation of policy around wellbeing rather than just productivity. Walkability must be treated not as a by-product but as a core planning goal, embedded in land-use policy, building codes, transport frameworks, and health promotion strategies. The National Policy on Ageing must be operationalised through concrete urban design standards, while the Draft Physical Activity Policy should be enacted with binding regulatory mechanisms (Zubairu, 2020). Crucially, implementation must be decentralised, enabling local governments and planning authorities to tailor interventions to specific urban contexts.

In Maitama, where wide roads and gated compounds dominate, age-friendly design interventions such as continuous pavements, traffic calming, rest zones, and shade-providing vegetation can make walking viable again. As the subsequent chapters will show, the challenges faced by older adults in Maitama are symbolic of a broader systemic failure one that only a cross-sectoral, equity-driven planning approach can begin to resolve (Odeyemi et al., 2024).

3.4 Overview of Recreational Walking in Maitama

Maitama, a high-income district located in the northwestern part of Abuja, Nigeria's Federal Capital Territory (FCT), is characterised by its low-density layout, extensive greenery, diplomatic presence, and relatively well-maintained infrastructure. It is often regarded as one of the most affluent and aesthetically appealing areas of Abuja, with a combination of residential, governmental, and recreational land uses.

Figure 8 illustrates the aesthetic appeal of Maitama, which appears attractive for recreational walking. These spatial and environmental characteristics suggest a potentially conducive

setting for such activity, particularly for older adults seeking health-enhancing, low-impact physical exercise.

Despite Maitama's physical assets, such as tree-lined streets, walkable road shoulders in some areas, and proximity to green zones and recreational parks the district presents a complex landscape for recreational walking. Field observations and preliminary stakeholder interviews reveal that recreational walking is not yet fully integrated into the lifestyle of many older adults in the area. While some residents, particularly among the expatriate and elite local populations, engage in morning or evening walks, this practice is not widespread and is often limited to specific neighbourhoods with better infrastructure or perceived safety.

Key urban features such as wide roads, gated residential enclaves, and limited public pedestrian pathways have shaped patterns of mobility that prioritise automobile use. Additionally, urban design choices like the absence of continuous sidewalks, poor street lighting, and lack of pedestrian crossings pose safety and accessibility challenges for older adults. Furthermore, the presence of vehicular traffic, limited benches or resting points, and the scarcity of designated walking trails reduce the comfort and attractiveness of walking as a leisure activity. Social and cultural norms also influence walking behaviour in Maitama.

Recreational walking is sometimes perceived as an activity for those who lack personal transport or formal employment, which can discourage its uptake among certain socio-economic groups. For older adults, especially women, concerns about appearance, security, and physical vulnerability further compound the decision to walk for leisure. Nonetheless, Maitama does have some notable opportunities for promoting walking, such as the presence of parks like the Millennium Park and parts of the Katampe Hills, which attract occasional walkers and hikers.

These spaces, however, are often underutilised due to lack of awareness, poor maintenance, or access constraints for certain residents. In summary, while Maitama possesses several spatial features that could support recreational walking, the practice remains limited among older adults due to a combination of infrastructural, environmental, cultural, and policy-related factors.

Understanding these local dynamics is essential to designing targeted interventions that promote age-friendly, walkable urban environments in the district.

*Figure **8** Showing beautiful location in Maitama*

3.5. Benefits of Recreational Walking

One of the easiest and most efficient types of physical activity is walking for leisure. It has several advantages, including bettering physical health as well as mental and emotional health, fostering social interaction and maintaining the environment.

In Maitama, Abuja, a district known for its lush greenery and scenic landscapes, the potential benefits of recreational walking are particularly significant (Lee & Buchner, 2008). The researcher explores deeply into these advantages, emphasising how encouraging walking in Maitama can improve citizens' quality of life and foster a stronger and more organised.

3.5.1 Physical Health Benefits

Walking for leisure is a low-impact workout with several physical health advantages. Frequent walking lowers blood pressure strengthens the heart, and lowers the risk of heart disease and stroke, all of which contribute to improved cardiovascular health. It also aids in weight management by burning calories and improving metabolism, which is essential in combating obesity, a growing concern in many urban areas (Iwane et al., 2000).

In Maitama, where residents have access to well-maintained parks and pathways, walking can be an accessible and enjoyable way to stay active. For older adults, in particular, walking is a safer alternative to more strenuous forms of exercise. It helps maintain mobility, flexibility, and muscle strength, which are crucial for preventing falls and injuries. By promoting regular walking, Maitama can help its residents lead healthier lives and reduce the burden of chronic diseases (Muhammed, 2017).

3.5.2 Psychological Well-being

Beyond physical health, recreational walking has profound effects on mental health and psychological well-being. Walking in natural settings, such as the green spaces of Maitama, can reduce stress, anxiety, and depression. The act of walking stimulates the release of endorphins, which are natural mood lifters, and provides a meditative experience that can help clear the mind and improve focus (Hossain et al., 2024; Kelly et al., 2018).

The serene environment of Maitama, with its tree-lined streets and tranquil parks, offers an ideal backdrop for walking. This connection to nature can enhance the therapeutic benefits of walking, promoting a sense of calm and relaxation. For many residents, a daily walk can be a crucial part of maintaining mental health, offering a break from the stresses of modern life and an opportunity to reflect and recharge (Muhammed, 2017).

3.5.3. Social Interaction and Community Building

Recreational walking also serves as a powerful tool for social interaction and community building (Wood et al., 2010). Walking paths and parks in Maitama can become social hubs where residents meet, converse, and build relationships. This social aspect is particularly important in fostering a sense of community and belonging, which can enhance overall well-being and create a supportive social network.

In Maitama, organised walking groups and community events can further encourage social interaction. These initiatives can bring together people of all ages and backgrounds, promoting inclusivity and reducing social isolation. For older adults and newcomers to the area, these social opportunities are invaluable in helping them integrate into the community and build meaningful connections (Mahmooda, 2024).

3.5.4. Environmental Sustainability

Promoting recreational walking in Maitama also aligns with goals of environmental sustainability. Walking is a zero-emission mode of transportation that can reduce the reliance on cars, thereby decreasing air pollution and traffic congestion (Glazener & Khreis, 2019). In a rapidly growing city like Abuja, encouraging walking can contribute to a healthier environment and a more sustainable urban development model.

The green spaces and pedestrian-friendly infrastructure in Maitama are key assets in this regard. By prioritizing the maintenance and expansion of these spaces, the local government can create a more walkable environment that encourages residents to choose walking over driving. This shift can lead to cleaner air, quieter streets, and a reduction in the city's carbon footprint, benefiting both current and future generations (Ogunsola, 2016).

3.5.5. Economic Benefits

Litman (2004) stated that a healthier population translates to reduced healthcare costs, as regular physical activity helps prevent chronic diseases and reduces the need for medical

interventions. Additionally, a walkable community can boost local businesses, as pedestrians are more likely to visit shops, cafes, and markets than those who drive through the area. In Maitama, enhancing the walkability of commercial areas can attract more foot traffic, support local businesses and stimulate economic activity.

Investments in pedestrian infrastructure, such as well-lit sidewalks, benches, and signage, can make walking more appealing and accessible, encouraging more residents and visitors to explore the area on foot (Obiadi et al., 2019).

3.5.6. Safety and Accessibility

Ensuring that walking is safe and accessible for all residents is crucial. This includes maintaining sidewalks, controlling vegetation, and providing adequate lighting (Southworth, 2005). In Maitama, where overgrown vegetation can obstruct pathways, regular maintenance is essential to keep walking routes clear and safe. Implementing features such as ramps and handrails can also make walking more accessible for older adults and individuals with disabilities (Onokala, 2015).

Addressing these safety and accessibility concerns, Maitama can create an inclusive environment that encourages walking for everyone. This not only enhances individual well-being but also fosters a sense of equality and community spirit. Overall, recreational walking offers a multitude of benefits that can significantly enhance the quality of life for residents of Maitama, Abuja.

Improving physical health and psychological well-being to fostering social interaction, promoting environmental sustainability, and boosting the local economy, the advantages of walking are far-reaching. Prioritising the maintenance and development of pedestrian-friendly infrastructure, Maitama can harness these benefits, creating a healthier, more connected, and sustainable community. Encouraging recreational walking is a simple yet powerful strategy

that can lead to profound positive changes for individuals and the broader community (Razak & Galadima,2014).

3.6. Barriers to Recreational Walking Among Older Adults

Barriers to recreational walking has been defined by many authors such as Saelens and Handy in different context. According to Saelens and Handy (2008), barriers to recreational walking encompass spatial and infrastructural issues, like long distances to parks and fragmented pedestrian pathways, which reduce the accessibility and convenience of walking for recreation (Giles-Corti et al., 2009; Loukaitou-Sideris, 2006; Saelens & Handy, 2008).

Similarly, Giles-Corti et al. (2009) define barriers to recreational walking as obstacles in the physical environmental barriers such as poorly maintained sidewalks, lack of pedestrian crossings, and insufficient lighting , that prevent individuals from engaging in walking for leisure or exercise and also, barriers to recreational walking include social and psychological factors, such as fear of crime or social norms that discourage outdoor activities, which hinder people's willingness to participate in recreational walking (Loukaitou-Sideris, 2006)

Several barriers mentioned to recreational walking among older adults is likely to be like Maitama, Abuja, Nigeria, and have been identified. These barriers include physical, environmental, spatial and cultural barriers. All these barriers hinder older adults from participating actively in recreational walking.

In Maitama, Abuja, several physical environmental barriers significantly impact older adults' ability to engage in recreational walking. Poorly maintained sidewalks and pathways present challenges, such as cracked pavements and uneven surfaces, which pose risks of tripping or falling (Bashir et al., 2021). The absence of sidewalks in certain areas forces older adults to share the road with vehicular traffic, heightening the danger of accidents.

These infrastructure deficiencies create an unsafe walking environment that deters older adults from participating in recreational walking activities, highlighting the need for targeted maintenance and infrastructure improvements to ensure safer walking conditions (Phillips et al., 2013).

Physical environmental barriers also play a crucial role in limiting recreational walking among older adults. Physical environmental barriers to recreational walking refer to features of the built environment that discourage or prevent individuals especially older adults from walking for leisure. These barriers are mainly infrastructural in nature such as pedestrian walkways, drainage and street lighting. Lack of pedestrian walkways along walking routes exacerbates the discomfort caused for older adults to walk freely, while poor drainage systems lead to waterlogged pathways during the rainy season.

Addressing these environmental challenges through the provision of pedestrian walkways and improved drainage systems can help create more favourable conditions for older adults to engage in recreational walking (John et al., 2025).

Spatial barriers further impede older adults' participation in recreational walking in Maitama (Akubueze, 2013). The layout of the urban environment of Maitama, including long distances between residential areas and recreational spaces, can make walking impractical for older adults (Choi, 2012; Makama, 2018) . Additionally, the presence of physical obstacles such as busy highways and busy roads without adequate pedestrian crossings can disrupt walking routes and limit accessibility (Ferrer & Klein, 2015).

The design of neighbourhoods with numerous cul-de-sacs or dead ends can also hinder connectivity, making it difficult for older adults to find continuous walking paths. Implementing urban planning strategies that promote connectivity and provide safe, direct walking routes is essential to overcoming these spatial barriers (Woldeamanuel et al., 2020).

Cultural barriers also affect the engagement of older adults in recreational walking in Maitama (Sulyman & Iorliam, 2016). The cultural belief and perceptions about aging and physical activity can influence older adults' willingness to participate in recreational walking (McPherson, 1994). In some cases, older adults may feel discouraged from walking due to societal expectations that they should limit physical exertion or because of a lack of culturally appropriate walking groups or programs (Dergance et al., 2003).

Addressing these cultural barriers requires community outreach and the promotion of positive attitudes toward aging and physical activity like recreational walking. Creating inclusive and supportive environments that encourage older adults to engage in recreational walking can help foster a culture of active living and improve their overall well-being (Kahn et al., 2002).

In summary, addressing the various barriers to recreational walking among older adults in Maitama requires a comprehensive approach that includes infrastructure improvements, environmental adaptations, urban planning enhancements, and cultural shifts. By tackling these barriers, Maitama can create a more supportive and inclusive environment that encourages older adults to engage in recreational walking, promoting their health, social engagement, and overall quality of life.

3.6.1. Physical Environmental Barriers to Recreational Walking Among Older Adults

Physical barriers to recreational walking refer to obstacles or hindrances that directly impact an individual's ability or willingness to engage in walking for leisure or exercise (Pan et al., 2009). These barriers can be diverse and can arise from various aspects of the environment (Rimmer et al., 2004).

Sallis et al. (2011) define Physical barriers as a tangible obstacle in the built environment, including the absence of sidewalks, presence of high-traffic roads without pedestrian

pathways, and inadequate lighting, which deter people from participating in recreational walking.

3.6.1.1 Poorly Maintained Sidewalks

Rhoads et al. (2023) described sidewalks as a vital component that facilitate walking, reduce accidents, and link various urban areas, fostering economic and social benefits. Generally, poorly maintained sidewalks present significant barriers to recreational walking, particularly for older adults who often rely on these pathways as their primary routes for exercise and leisure (Barnett et al., 2017; Van Cauwenberg et al., 2012).

In Maitama, Abuja, poorly maintained sidewalks present significant barriers to recreational walking, particularly for older adults. Cracked pavements, potholes, and uneven surfaces are common issues that increase the risk of trips and falls, posing serious safety concerns (Akubueze, 2013).

Additionally, the lack of continuous, well-maintained pathways forces pedestrians to navigate alongside vehicular traffic in some areas, further deterring recreational walking (Machingaidze, 2021; Nordgård, 2024). These conditions not only make walking physically challenging but also create a sense of insecurity, particularly for older adults who may already have mobility issues (Yen et al., 2014).

Addressing these infrastructure deficiencies through regular maintenance and repair initiatives is crucial for enhancing the walkability of Maitama and ensuring that all residents, especially older adults, can engage in recreational walking safely and conveniently (Olokesusi et al., 2019). Literarily, a poorly maintained, narrow and uneven sidewalks at Musawa street Maitama, Abuja show that. there is possibility of discouraging older adults from walking at leisure because of these mentioned factors and to align with what other researchers such as Alfonzo and Lee have done in the past (Alfonzo, 2005).

According to the study conducted by Alfonzo (2005). She explored the impact of sidewalk quality on walking decisions, with a particular focus on vulnerable populations in the United States. The qualitative method and purposive sampling methods were used to research into the factors that influence whether individuals choose to walk or not in urban environments.

Alfonzo employed qualitative method to gather in-depth insights into the walking behaviours of individuals. This method allowed her to capture detailed personal experiences and perceptions regarding sidewalk conditions. Purposive sampling was chosen to ensure that the study included a diverse range of participants, particularly those considered vulnerable due to age, physical limitations, or other factors (Campbell et al., 2020).

This approach ensured that the voices of those most affected by sidewalk quality were adequately represented, providing a comprehensive understanding of how poor sidewalk conditions deter walking. Her findings revealed that the condition of sidewalks significantly affects the likelihood of walking, especially among groups such as the older adults, and those with mobility impairments (Alfonzo, 2005).

Her findings were that the quality of sidewalks impacts the decision to walk, especially among vulnerable populations. Older adults are more likely to avoid walking if sidewalks are in poor condition, as they are at a higher risk of tripping and falling.

Alfonzo's findings emphasise the critical importance of maintaining high-quality sidewalks to promote walking, especially for vulnerable populations. Ensuring that sidewalks are well-maintained, safe, and accessible can significantly enhance the walkability of urban environments and encourage more people to engage in regular physical activity (Alfonzo, 2005).

Similarly, Lee (2016) also investigated the influence of sidewalk conditions on physical activity such as recreational walking in urban areas in South Korea. Utilizing an observational

study design and systematic sampling, the researchers aimed to assess how the quality of sidewalks affected residents' engagement in physical activities, particularly walking. Their findings also align with Alfonzo (2005) indicated that poor sidewalk conditions serve as a significant barrier to physical activity in urban settings.

Lee (2016) employed an observational study design, systematically sampling various urban areas to evaluate the conditions of sidewalks and their use by pedestrians. This approach allowed them to systematically record the physical state of sidewalks, such as surface quality, continuity, and the presence of obstacles, and to observe the walking behaviours of urban residents. Systematic sampling ensured a representative selection of different urban environments, providing a comprehensive overview of sidewalk conditions across the city (Lee 2016).

The study highlighted that poorly maintained sidewalks significantly deterred physical activity among urban residents. Issues such as cracks, uneven surfaces, and physical obstructions were commonly observed and reported as factors that discouraged walking. The following key points were noted:

1.Safety Concerns: Poor sidewalk conditions heightened the risk of trips and falls, making walking a less attractive option, particularly for vulnerable populations such as the elderly and children.

2.Accessibility Issues: Obstacles and uneven surfaces created accessibility challenges, particularly for individuals with disabilities, limiting their ability to use sidewalks effectively.

3.Reduced Walking Frequency: Residents were less likely to engage in regular walking activities when sidewalks were in poor condition, leading to lower overall levels of physical activity.

Lee findings underscore the importance of maintaining high-quality sidewalks to encourage walking and other forms of physical activity. They suggest that urban planning and public health initiatives should prioritize sidewalk maintenance and improvements to foster a more active and healthy urban population.

Studies from Dinye and Amoako (2023) in Ghana and Senegal provides significant insights into the correlation between sidewalk disrepair, walking frequency, and accident risk. Utilizing an observational study design and simple random sampling and both authors meticulously examined how the condition of sidewalks impacts pedestrian behaviour and safety. It was identified that there is a clear correlation between sidewalk disrepair and reduced walking frequency among urban residents. Sidewalks that were cracked, uneven, or obstructed discouraged people from walking, leading them to opt for alternative modes of transport. This reduction in walking frequency was particularly evident in areas with the most severe sidewalk disrepair.

Poorly maintained sidewalks posed significant safety hazards, contributing to a higher incidence of pedestrian accidents (Zegeer et al., 2001). Uneven surfaces, potholes, and other obstacles increased the risk of trips and falls, particularly for vulnerable populations such as the older adult (Bennett et al., 2021).

Bennett et al. (2021) revealed that the impact of sidewalk disrepair was disproportionately felt by vulnerable populations. Older adults, children, and people with disabilities were more likely to be affected by poor sidewalk conditions, as they rely more heavily on smooth and safe pathways for mobility. The study highlighted the increased accident risk and decreased mobility faced by these groups, underscoring the importance of maintaining sidewalks to ensure equitable access to urban spaces.

3.6.1.2. Uneven Surface

An uneven surface as a physical barrier refers to any walking or travel surface that is not level or smooth, presenting various degrees of irregularity that can impede movement. This can include a range of surface conditions such as cracked pavement, rough terrain and slopes (Li et al., 2006).

Uneven surfaces pose substantial physical barriers to recreational walking, primarily owing to safety concerns. The consequence of tripping and falling is worsened on such terrain, particularly for older adults, and individuals with mobility impairments or balance issues (Wang et al., 2021). This risk is heightened for those with visual impairments or reduced spatial awareness, as navigating these surfaces demands heightened attention and can induce anxiety from the overall enjoyment of recreational walking (Brielmann et al., 2022; Phillips et al., 2013).

Additionally, safety risks, uneven surfaces increase physical strain and fatigue. Walking on these surfaces requires more energy as the body continuously adjusts to maintain balance, leading to quicker tiredness and discouraging longer or more frequent outings. The additional strain on joints and muscles, especially the ankles, knees, and hips, can worsen conditions like arthritis or cause new injuries, making recreational walking less appealing and more painful for many individuals (Chang, 2024; Evans, 2009).

Accessibility issues further give multiple challenges posed by uneven surfaces. Older adults without any mobility challenges often find these surfaces particularly difficult to navigate, which significantly limits their access to recreational walking areas (Yen et al., 2014). This barrier reduces the inclusivity of public spaces, hindering community participation and engagement. Addressing these issues through regular maintenance, design improvements, and accessible alternatives can enhance safety and enjoyment for all walkers (Itair et al., 2023).

Uneven pavements, characterized by cracks, potholes, and other surface irregularities, pose significant hazards for pedestrians, particularly for vulnerable groups such as the older adults. These hazards not only discourage walking but also increase the risk of falls, leading to potential injuries and a subsequent decline in physical activity levels. The presence of uneven surfaces discourages people from choosing walking as a mode of transportation or a form of exercise. When pedestrians are confronted with cracked and uneven sidewalks, they may opt for other, less physically demanding forms of transportation, such as driving or taking public transport. This shift away from walking has broader public health implications, as regular walking is associated with numerous health benefits, including improved cardiovascular health, weight management, and mental well-being (Lavery et al., 2013).

Moreover, Uneven pavements significantly increase the risk of falls, which can result in injuries ranging from minor scrapes and bruises to severe fractures and head injuries. For the older adults, falls can have long-term consequences, including a loss of independence, increased medical costs, and a decreased quality of life. Research indicates that smooth, well-maintained sidewalks are essential for preventing falls and ensuring that pedestrians can walk safely and confidently (Lee et al., 2013)

In the context of Maitama, Abuja, uneven surfaces also significantly impede recreational walking due to safety concerns such as falling and tripping mostly among the older adults (Muhammed, 2017). According to a study published in the journal of Constructing wellbeing, deconstructing urban mobilities in Abuja, Nigeria , uneven surfaces are significant barrier to recreational walking in Abuja, Nigeria, accounting for approximately 35% of accidents related to walking in the city .The study ,which surveyed 1000 residents in Abuja including Maitama, found that 60% of respondents reported encountering uneven surfaces while walking,45% reported tripping or falling due to uneven surfaces and 35% reported injuries resulted from falls including sprains, strains and fracture (Oviedo et al., 2017). According to the observation by

the researcher at Lake Chad crescent Maitama, Abuja, there are some uneven surfaces noticed along the road thereby making recreational walking difficult. People walking were seen trying to manoeuvre their way to avoid fall and this align with Yen et al., (2014).

Oyeyemi et al. (2019) recently conducted study on uneven surface as a physical environmental barrier to recreational walking in Nigeria. He highlighted the impact of poorly maintained pedestrian pathways on accessibility and safety. The narrow and uneven footpaths in Abuja create significant barriers for pedestrians, affecting their ability to move safely and efficiently. This problem is particularly critical in areas with high foot traffic, where the inadequate infrastructure can lead to accidents and discourage walking.

The study underscores the need for well-designed and maintained pedestrian pathways to improve overall mobility and enhance transport efficiency in Abuja. The study from Maitama, Abuja also aligned with the studies of Ferrer et al. (2015) and Wennberg et al. (2009) on physical environmental barriers to recreational walking among older adults. These barriers include poor pavement conditions, inadequate crossing facilities, high curbs, and uneven or slippery surfaces.

However, at Nashir Street Maitama, the road encourages recreational walking as there is a clear separation of vehicular way from pedestrian way with good vegetations.

3.6.1.3. Lack of Pedestrian

Lack of pedestrian infrastructure describes to be the absence of or inadequacy of facilities and design elements that support safe and efficient pedestrian movement in an urban or rural area (Martin, 2006). This deficiency can have major effects for the safety, accessibility, and overall quality of life for residents and visitors (Van Herzele & Wiedemann, 2003).

Lack of pedestrian infrastructure poses substantial safety concerns, as the absence of proper sidewalks, crosswalks, and pedestrian signals forces individuals to walk on roads or cross

streets at unsafe points, evidently increasing the risk of vehicle-related accidents (Ogombe, 2016).

Poorly lit areas, insufficient barriers between pedestrians and traffic, and inadequate maintenance of pathways exacerbate these hazards, particularly at night or during adverse weather conditions (Zegeer, 2002). These unsafe walking environments not only threaten physical safety but also deter people from engaging in routine walking activities (Foster & Giles-Corti, 2008).

In Maitama, some areas lack pedestrian infrastructure that increases safety concerns and forcing residents to navigate streets without proper sidewalks, crosswalks, or signals, increasing the risk of accidents involving vehicles. Moreover, inadequate lighting, and neglected pathway maintenance further worsen these hazards, especially during nighttime or adverse weather conditions, deterring usual walking activities and threatening physical safety.

Maitama receives the largest number of infrastructural funds in the city, more attention must be given to the development of its pedestrian infrastructure to reduce the pedestrian accidents that occur in the district (Ibe et al., 2023) Across the wider city of Maitama, the focus of the government on traffic-related issues has been in relation to motor vehicle driving.

Many pedestrian-related issues continue to be neglected even though walking is the primary mode of transportation utilised by residents within the city, while also being the core source of all other transportation methods (Aule et al., 2023).

The district of Maitama is one of the most developed districts in Abuja. It is home to several government institutions and many embassies. As a result, it hosts many government officials and diplomats who live and work in the district (Blamah et al., 2021). When walking around and observing the city, it is clear to see that Maitama is one of the most infrastructurally developed and well-maintained districts in Abuja.

However, when a more critical examination of the district's infrastructure is conducted, it becomes clear that many areas of the district lack proper pedestrian sidewalks (Aule et al., 2023). It is very risky and dangerous to walk around, especially when examining the accidents recorded in the city. Maitama is home to most of the pedestrian road accident cases in the federal capital, even though Maitama is one of the wealthiest and abundant in infrastructure compared to all other districts of the city (Uhegbu & Tight, 2021).

According to Shuni et al. (2021) the rise in pedestrian accidents in Maitama, Abuja, from the first quarter of 2021 onwards, with the highest occurrences in the first and second quarters of 2022, poses significant barriers to recreational walking among older adults. The increased risk of accidents, particularly during high-risk periods such as Sundays and early in the week, deters older adults from engaging in outdoor activities like walking.

The trend of accidents trending upwards until 2022 and the slight decrease in 2023 underscores the ongoing safety concerns, necessitating targeted interventions to mitigate risks and ensure safer pedestrian environments. Older adults may feel apprehensive about walking in areas with high accident rates, limiting their access to recreational spaces and affecting their overall well-being.

Addressing these safety concerns through improved pedestrian infrastructure, increased visibility, and targeted safety campaigns is crucial to promoting recreational walking and enhancing the quality of life for older adults in Maitama, Abuja. At Borno Street, Maitama there was no define pedestrian walkways and this will affect recreational walking for the fear of having accident when walking.

3.6.1.4 Obstacles Obstructing Walking Routes

Various obstacles, such as parked cars, debris, construction materials, or overgrown vegetation, can obstruct walking routes and impede older adults' mobility (Zegeer, 2002). These obstacles may force older adults to deviate from their intended walking paths or navigate around them,

disrupting the continuity of their walking experience and potentially deterring them from walking altogether (Cevallos, 2020). Relating what Zegeer and Cevallos investigated to Maitama, Abuja, Nigeria. There are some obstructions on walkways at Bendel street, Maitama and some cars are parked along the walkways.

3.6.2. Spatial Barriers to Recreational Walking

Spatial barriers to recreational walking are obstacles related to the spatial arrangement, design, and physical layout of environments that hinder or discourage individuals from engaging in walking for leisure or exercise (Cho & Rodríguez, 2015). These barriers can involve issues of distance, connectivity, accessibility, and the overall spatial configuration of urban and suburban areas (Guagliardo, 2004). Spatial barriers to recreational walking can significantly impact the walkability of Maitama, Abuja, by hindering or discouraging individuals from engaging in walking for leisure or exercise (TINI, 2018).

These barriers encompass various issues related to the spatial arrangement, design, and physical layout of the environment (Edwards & Tsouros, 2006). In Maitama, distance and proximity play crucial roles in influencing recreational walking. Large gaps between residential areas and recreational spaces, such as parks and trails, can make walking less feasible (Blamah et al., 2021). Similarly, the scattering of essential amenities like restrooms, benches, and water fountains too far apart can discourage longer walks, limiting the accessibility and attractiveness of walking routes (Lee et al., 2009).

Connectivity issues also pose challenges to recreational walking in Maitama (Olokesusi et al., 2019). Fragmented pathways, characterized by a lack of continuous and connected pedestrian walkways, disrupt walking routes and discourage pedestrians from exploring the area on foot (Maigo, 2018; Martínez et al., 2019). Furthermore, urban designs featuring numerous dead ends or cul-de-sacs limit direct walking routes and connectivity, impeding the flow of pedestrian traffic within the community.

Physical barriers such as highways, railroads, or large bodies of water further obstruct direct walking routes, making it difficult for residents to navigate the area on foot (Cozens & Hillier, 2008). Accessibility is another critical aspect that influences recreational walking in Maitama. Limited access points to parks or recreational areas can restrict accessibility, preventing individuals from easily accessing walking spaces (Femi, 2012).

Insufficient pedestrian crossings over busy roads or intersections also pose challenges, making it difficult for individuals to access walking areas safely (Tournier et al., 2016). Infrastructure and design deficiencies aggravate spatial barriers to recreational walking in Maitama. Poor sidewalk infrastructure, including the lack of sidewalks or poorly maintained sidewalks, presents a significant barrier to walking, especially in areas with high pedestrian traffic (Olokesusi et al., 2019).

Moreover, high levels of vehicular traffic and the lack of pedestrian-friendly infrastructure discourage walking, contributing to safety concerns for pedestrians (Soni & Soni, 2016). Land use and urban planning decisions also impact recreational walking in Maitama (Amadi & Ndi, 2016).

Single-use zoning, where areas are zoned for a single use without nearby commercial or recreational spaces, limits opportunities for walking by reducing the availability of destinations within walking distance (Chriqui et al., 2018). Additionally, urban sprawl, characterized by low-density, sprawling development patterns, increases distances between destinations, making walking impractical for residents (Bhatta, 2010).

Spatial barriers to recreational walking generally, encompass various issues related to distance, connectivity, accessibility, infrastructure and design, land use and urban planning, and perceived barriers (Evans, 2009; Sugiyama, Cerin, et al., 2014). Addressing these barriers through comprehensive urban planning and design strategies that prioritize pedestrian

connectivity, accessibility, and safety is essential to promote recreational walking and enhance the walkability of Maitama. By creating pedestrian-friendly environments and removing obstacles to walking, Maitama can encourage healthier lifestyles, greater community engagement, and enhanced quality of life for its residents.

3.6.3. Cultural perception of recreational walking in Maitama, Abuja

Cultural perceptions significantly influence attitudes towards recreational walking in various communities, including Maitama, Abuja. These perceptions shape whether walking is viewed as a desirable activity or a low-status one, affecting how often and in what contexts people engage in walking. In affluent areas like Maitama, owning and driving a car is often a status symbol, leading to the perception that walking is done out of necessity rather than choice. Higher-income residents might prefer indoor, private, or exclusive venues for exercise, such as gyms and private clubs, which are seen as more prestigious than walking (Adama, 2020; Blamah et al., 2021).

Additionally, professionals might associate walking with a less professional image, interpreting the sight of someone in business attire walking as an indication of lacking personal transport or economic means (Alfonzo, 2005).In Maitama, Abuja, Nigeria, there are three major ethnic groups: Hausa, Yoruba, and Igbo with different cultural values and beliefs that significantly influence their participation in recreational walking (Agboola et al., 2016; Okoye et al., 2020).

The Hausas in Nigeria are the least likely to participate in recreational walking. This is influenced by historical associations with nobility and horse riding, which lead to viewing walking as a low-status activity. These cultural differences underscore the need for tailored approaches to promote physical activity across different ethnic groups (Bender & Clark, 2011). By understanding and respecting these cultural nuances, health promotion efforts can be more effective in encouraging recreational walking among all ethnic groups in Maitama, Abuja, Nigeria.

Cultural norms and values influence whether walking is seen as a viable recreational activity. In some cultures, walking is traditionally associated with necessity rather than leisure, and this perspective can persist if modern recreational walking has not been widely adopted or promoted (Giles-Corti & Donovan, 2002). Cultural preferences for other forms of exercise or social activities can also overshadow walking as a recreational choice. If there is a lack of awareness about the health benefits of walking, residents might not consider it a viable form of exercise, further perpetuating its low status.

Addressing these perceptions requires a multifaceted approach. Promoting awareness through health and wellness campaigns, improving infrastructure to create pedestrian-friendly environments, and integrating walking into cultural and community events can help shift perceptions. Encouraging community leaders and influencers to champion walking, enhancing pedestrian safety with better infrastructure, and organizing inclusive community programs can make walking a more accepted and valued activity.

Also, addressing these various factors, Maitama can shift cultural perceptions and make recreational walking a more accepted and valued activity, enhancing the overall health and well-being of its residents. The pattern of recreational walking in Maitama might thus be linked to the expressions of status and elegance. In high-income areas, walking may be viewed as a leisure activity, while car ownership could be associated with lower socio-economic status, thus influencing the prevalence of walking within the community.

Furthermore, the predominantly urban nature of Maitama is conducive to walking, and the presence of some recreational facilities and green spaces may also influences the choice of walking as a recreational activity. This goes to show that the socio-economic, cultural, and environmental factors significantly impact residents' choices and participation in recreational walking in the Maitama Abuja.

Moreover, the expectations to prioritise rest over physical exertion is common. In many cultures, including those prevalent in Maitama, older adults are often expected to prioritise rest and relaxation over physical exertion. This age-related culture stems from a protective instinct, aiming to prevent older individuals from overexerting themselves and potentially risking injury. However, this well-meaning expectation can inadvertently discourage older adults from engaging in beneficial physical activities like walking.

Walking is a necessary kind of regular physical activity for older persons to maintain their health and mobility. Despite these advantages, the belief held by society that older people should take it easy, and this can result in a sedentary lifestyle, which raises the risk of chronic illnesses including obesity, diabetes, and cardiovascular disease (King & King, 2010).

In Maitama, promoting the message that recreational walking and other forms of moderate physical activity are safe and beneficial for older adults is crucial. Community programs and educational campaigns can help shift these age-related norms, encouraging older adults to incorporate walking into their daily routines (Chukwu, 2023).

In some culture, gender significantly impact recreational walking behaviours, particularly among older women. In many traditional societies, women are expected to prioritise domestic duties and caregiving responsibilities over personal leisure activities. This expectation can severely limit the time available for women to engage in recreational walking. A study by Brown et al. (2020) found that women often face time constraints due to domestic responsibilities, which reduces their participation in physical activities. In Maitama, older women may feel guilty or face societal disapproval if they prioritize walking over household chores or caregiving duties.

To address this barrier, community initiatives could promote the idea that recreational walking is not only beneficial for personal health but also enhances one's ability to fulfil domestic roles

effectively. Programs that offer group walking activities for women, potentially combined with caregiving support, could encourage more older women to participate. Added to this, in some cultures, recreational walking may be perceived as a Westernised activity, unfamiliar or even unnecessary in the local context. This cultural norm can create a barrier to walking, as older adults may view it as inconsistent with their cultural practices or as an activity not intended for their demographic.

Research indicates that cultural perceptions significantly influence health behaviours (Vaughn et al., 2009). In Maitama, promoting recreational walking within the cultural context is essential. This might involve highlighting traditional forms of walking or integrating walking into community events and festivals, making it more culturally relevant and acceptable. In Maitama, Abuja, cultural norms and perceptions may influence older adults' views on recreational walking (Akubueze, 2013). Some possible cultural barriers to walking in Maitama include:

1. Perception of walking as a Westernised activity: Older adults may view walking for recreation as a foreign concept, not traditionally part of Nigerian culture.

2. Unfamiliarity with walking for leisure: In Maitama, walking may be primarily associated with transportation or work, rather than leisure or exercise.

3. Cultural emphasis on rest and relaxation: Older adults may prioritise rest and relaxation over physical activity, due to cultural values emphasising age-related rest.

4. Limited cultural role models: Few older adults in Maitama may engage in recreational walking, making it seem less acceptable or desirable.

Safety concerns are a significant barrier to recreational walking for older adults. In Maitama, worries about crime, traffic, or harassment can deter individuals from walking, especially

during early morning or late evening hours. This barrier is particularly relevant for older adults, who may feel more vulnerable to these threats.

A study by Foster et al. (2014) highlights that perceived safety is a critical determinant of physical activity among older adults. To address this, local governments and communities in Maitama can implement measures such as improving street lighting, increasing police patrols, and creating safe pedestrian pathways. Ensuring that walking routes are safe and secure can significantly encourage older adults to engage in recreational walking. Maitama, Abuja, has faced security challenges, including Boko Haram attacks and high crime rates, which can impact safety norms and concerns about crime, traffic, or harassment.

Between 2015 and 2018.Abuja experienced several Boko Haram attacks, including a 2015 bombing in Nyana,2016 attack on the National Assembly, and a 2018 attack on the Army Day celebrations John et al. (2025) & Bello (2021).

The prioritisation of family responsibilities culture over personal leisure also contribute negatively to recreational walking habits. Older adults often prioritise family responsibilities over personal leisure activities (Iwasaki, 2007). This norm can limit the time and energy available for recreational walking. In many cultures, including those in Maitama, older adults are expected to provide support and care for their families, which can take precedence over their health and well-being.

Research by Evenson et al. (2015) indicates that family obligations can be a significant barrier to physical activity. To overcome this, communities can create family-inclusive cultural walking programs, encouraging older adults to walk with their family members. This approach not only promotes physical activity but also strengthens family bonds and integrates walking into the daily lives of older adults.

3.7. Developed Countries Perspectives

3.7.1. Introduction

Recreational walking is widely promoted in developed countries as a low-cost, accessible form of physical activity that supports healthy ageing. However, older adults in these contexts still face notable barriers, despite policy frameworks that often encourage active ageing and walkable communities (Eckstrom et al., 2020; Mitten et al., 2018).

This section explores the common physical environmental, spatial, and cultural related barriers to recreational walking in three developed countries: the United Kingdom, United States, and Japan. These countries were selected for their contrasting urban forms, ageing demographics, and public health frameworks, offering insights that may inform context-sensitive strategies in Nigeria.

3.7.2. United Kingdom perspective

Physical environmental barriers such as poor pavement quality, uneven surfaces, and inadequate lighting often deter older adults from walking recreationally (Koshoedo et al., 2009).

Additionally, concerns over antisocial behaviour and limited access to toilets and resting places in public spaces reduce older people's confidence and comfort outdoors. Social isolation, especially among single older adults in urban areas, further limits the motivation to engage in walking for pleasure. While age-friendly initiatives have been launched, such as "Walking for Health," uptake is uneven due to mobility impairments and transportation access (de Koning et al., 2015; Irvine et al., 2022).

3.7.3. United States perspective

Safety, Suburban Design, and Health Conditions in the US, sprawling suburban neighbourhoods with limited pedestrian infrastructure pose a major challenge. Wide roads without sidewalks, car-centric planning, and low-density housing discourage walkability

(Jackson, 2003). Safety concerns such as traffic speed, street crime, and inadequate crosswalks further limit outdoor activity.

Chronic health conditions like obesity, arthritis, and diabetes are prevalent in ageing populations, compounding physical limitations and reducing outdoor mobility. Despite awareness campaigns and the proliferation of age-friendly communities, many older adults lack access to safe and supportive environments for walking (Geller, 2003; Stoker et al., 2015).

3.7.4. Japan perspective

Ageing Infrastructure and Cultural Norms Japan, with one of the oldest populations in the world, places high value on pedestrian-oriented neighbourhoods. Nevertheless, physical barriers such as steep terrain, narrow walkways, and ageing infrastructure (e.g., outdated railings or stairs) are common, particularly in older parts of cities and rural areas (Cervero et al., 2017).

Cultural expectations of modesty and independence may also discourage some older adults from participating in group walking or asking for assistance. Despite advanced public health systems, issues like loneliness and caregiving responsibilities also reduce time and energy available for recreation (Tsubouchi et al., 2021; Zhang & Yamamoto, 2017).

3.7.5. Lessons for Nigeria

Across these three developed nations, common barriers include:

1.Inadequate pedestrian infrastructure despite policy intentions

2.Safety concerns (from traffic or crime)

3.Health-related limitations and social isolation

4.Disparities in access to walking-supportive environments

The experiences of the United Kingdom, United State of America, and Japan suggest that even well-resourced countries struggle with aligning urban design and public health goals with older

adults' real-life experiences. For Nigeria, these insights highlight the need to go beyond policy and master plans to ensure walkability, safety, and social support, especially in districts like Maitama.

3.7.6. Summary

This section demonstrated that developed countries, despite having structured public health systems and urban planning frameworks, face persistent challenges in supporting recreational walking among older adults. These challenges stem from a complex interaction of physical design, safety, cultural belief, and ageing related conditions. Nigeria can adapt these lessons through context-specific urban policies that actively involve older residents in the planning and evaluation of walkable environments.

While developed countries generally have better infrastructure, there are still significant barriers related to urban planning. In many urban areas, the built environment may not be conducive to recreational walking due to issues such as high-density traffic, limited green spaces, and poorly designed pedestrian pathways (Sallis et al., 2016). However, efforts to create walkable communities through urban planning and the development of pedestrian-friendly spaces are more prevalent in developed countries

In developed countries with temperate climates, seasonal variations can impact recreational walking. Harsh winters with snow and ice can make walking hazardous, while hot summers can deter outdoor activities (Tucker & Gilliland, 2007). These weather-related barriers necessitate the provision of alternative indoor walking facilities, such as shopping malls and community centres.

In many developed countries, there is a growing recognition of the importance of physical activity for older adults. However, societal attitudes towards ageing can still influence the participation of older adults in recreational walking. Ageism and stereotypes that associate

aging with physical decline can discourage older adults from engaging in regular walking (Sciences et al., 2020).

Social isolation is a significant issue among older adults in developed countries. While there are more organised walking groups and community programs, older adults who lack social support and companionship may be less likely to participate in recreational walking (Barnett et al., 2017). Community engagement and social networks play a crucial role in promoting physical activity among older adults.

Chronic health conditions and mobility issues are common barriers to recreational walking in developed countries as well. Older adults with conditions such as cardiovascular disease, arthritis, and respiratory issues may find it challenging to engage in regular walking (Paterson & Warburton, 2010). Access to healthcare services and rehabilitation programs can mitigate these barriers, but disparities in healthcare access still exist.

Also, mental health issues, including depression and anxiety, can significantly impact the willingness of older adults to engage in recreational walking. Cognitive decline and conditions such as dementia also pose barriers, as they can affect the ability to navigate and engage in outdoor activities safely (Kelly et al., 2018).

Both Nigeria and developed countries such as United Kingdom and Japan where chronic health conditions and mobility issues are significant barriers to recreational walking among older adults. The prevalence of chronic diseases and the need for proper management are common challenges that impact physical activity levels (Durstine et al., 2013).

Understanding the barriers to recreational walking among older adults in different contexts is crucial for developing effective interventions to promote physical activity and improve health outcomes (Moran et al., 2014). While there are common challenges related to health conditions,

environmental factors, and socio-cultural influences, the specific barriers vary significantly between Maitama, Abuja, Nigeria, and developed countries (Bethancourt et al., 2014).

Addressing these barriers requires a multifaceted approach that includes improving infrastructure, enhancing access to healthcare, promoting positive cultural attitudes towards aging, and fostering community support. By addressing these challenges, we can create more supportive environments for older adults to engage in recreational walking and improve their overall well-being.

3.8. Summary of the Literature

The aim of the literature is, therefore, to examine barriers to recreational walking for older adults residing in an urban community in Maitama, Abuja, Nigeria (Ukoha & Beamish, 1997). Purposive sampling was employed and written semi-structured in-depth interviews /focus group discussions documented participant responses.

The results could be used to identify the barriers faced by older adults to improve their participation in recreational walking. Promoting an understanding of the societal, economic, social, and individual factors associated with the development of stimuli, these study findings could lead to the adoption of tailored policy recommendations and the creation of structured research-led community interventions to enhance urban recreation support.

The results may serve as the foundation for additional research in other cities, providing light on the difficulties older persons encounter in Nigerian and other metropolitan populations. Furthermore, this research has wide-ranging implications that could influence practice and policy pertaining to improving older individuals' health and well-being, not only in Nigeria but also in other comparable metropolitan situations globally. The results of this study pave the way for additional lines of inquiry and initiatives geared towards encouraging active ageing and raising older individuals' standard of living in urban environments.

In the end, this study's conclusions may have a significant impact on how healthy, active lifestyles are understood and promoted in urban environments not just in Nigeria but in other urban populations across the globe. The study's insights may influence the creation of focused plans and regulations that cater to the requirements of older individuals living in cities, thereby improving their general well-being and standard of living.

Furthermore, the knowledge gathered from this study may be a useful starting point for future investigations and studies on the promotion of physical activity in urban environments, including walking for leisure purposes and healthy ageing. Overall, this study has the potential to shape future approaches to health promotion and community support for older adults in urban areas, both in Nigeria and in similar environments globally.

Findings from the literature suggested that a lack of awareness of suitable places to walk was the major barrier to recreational walking in this community. Fear and actual reports of harassment and assault from the community, as well as activities of animals and reptiles on the recreation trail, also emerged. Concern among the older adults for a safe, friendly environment free from animal and reptile attacks cannot be ignored.

However, findings from FGD reported how they all desire to walk around their neighbourhoods and to do so safely, receiving moral and practical support from family members as well as from other peers walking at the same activity level as an incentive. Most barriers to recreational walking identified were environmental, such as inclement weather. Concern about poor nighttime visibility from poor street lighting recommendations formed part of policy and environmental-related strategies to promote recreational walking in this selected community. Personal obligation, as well as family and state funding, is also important, and theoretical implications were considered within the context of the social ecological model.

The study's results also revealed that access to well-maintained walking paths could increase motivation and willingness to engage in recreational walking. Additionally, the presence of well-kept, clean, and aesthetically pleasing walking trails could positively influence the decision to walk more frequently and for longer durations.

Creating a sense of community and belonging through walking groups and events was also highlighted as a potential way to overcome some of the barriers identified in the study. Overall, the research findings underscore the importance of addressing environmental and social factors to promote and support recreational walking in the community.

3.9. Gaps in the Literature

Although walking has been widely acknowledged as an essential element of active ageing and public health promotion, particularly in later life, the academic discourse remains largely concentrated on high-income countries, especially in North America, Europe, and parts of Asia. These regions have produced substantial empirical evidence on how built environment factors, pedestrian infrastructure, and policy frameworks facilitate or hinder walking among older adults. In contrast, sub-Saharan Africa is notably underrepresented in this body of knowledge, resulting in a geographic and contextual bias that limits the generalizability of existing theories and interventions.

Moreover, within the limited African literature, there is a prevailing emphasis on utilitarian walking as a means of transport to access basic services such as markets, schools, or health centres. Leisure-based or recreational walking, which plays a vital role in maintaining physical, mental, and social well-being in later life, is often overlooked. This lack of attention obscures the specific challenges faced by older adults who wish to walk for enjoyment, fitness, or social interaction, particularly in urban areas undergoing rapid socio-spatial transformation.

In the Nigerian context, this gap is further compounded by a lack of interdisciplinary research bridging urban planning, public health, and gerontology. Urban development policies rarely consider the needs of older residents, and there is little empirical inquiry into how age-related vulnerabilities interact with inadequate pedestrian infrastructure, land use patterns, neighbourhood safety and changing social dynamics. For example, issues such as the absence of continuous sidewalks, poor lighting, lack of resting places, and fear of crime are seldom examined through the lens of ageing or recreational mobility.

Additionally, existing studies tend to adopt quantitative, top-down approaches that fail to capture the subjective experiences, perceptions, and coping strategies of older adults. This presents a significant methodological gap, as it limits the understanding of how older people interpret and respond to their environment in relation to recreational walking. There is a scarcity of research employing qualitative, place-based methods that prioritize the voices of older adults and foreground their lived realities within specific socio-cultural and spatial contexts.

This thesis directly responds to these empirical and conceptual lacunae by investigating recreational walking among older adults in Maitama, Abuja, a setting descriptive of elite urban development in Nigeria, yet one that remains understudied in relation to ageing and mobility.

Through an interpretivist, qualitative research design involving mapping, surveys, and focus groups, this study uncovers the complex interplay of environmental, physical, and socio-perceptual barriers that restrict walking for pleasure. In doing so, it contributes original, context-sensitive insights to global conversations on age-friendly cities, spatial justice, and inclusive urban health planning.

Chapter 4 Mapping

4.1. Introduction

Mapping, is defined as method of data collection, involves the visual representation and spatial analysis of physical environments to identify patterns, relationships, and barriers within a given context (Wheeldon & Faubert, 2009). It allows researchers to systematically document and interpret the built environment, infrastructure, land use, and movement pathways, often using tools such as layout plans, satellite imagery, and GIS (Brail, 2001).

In qualitative research, especially in urban and mobility studies, mapping helps contextualise participant experiences, supports triangulation of data, and reveals spatial inequalities or constraints that may not be immediately evident through interviews or surveys alone (Nisi et al., 2023).

This chapter provides a detailed spatial and environmental foundation for the study, situating the case of Maitama within the broader urban context of Abuja. Recreational walking is not only shaped by individual attitudes and health conditions but also by the built environment in which walking occurs. Therefore, understanding the layout, accessibility, and condition of urban infrastructure is critical to identifying the opportunities and constraints older adults face when attempting to walk for leisure (Owen et al., 2004).

The mapping component serves as a bridge between the theoretical and policy discussions in the preceding literature review and the empirical findings presented in the subsequent chapters. It visualises the physical realities of Maitama by analysing layout plans and comparing them with current spatial patterns and conditions using photographic satellite imagery (Hooper et al., 2021). These visual tools allow for the identification of discrepancies between planned designs and actual development, revealing both formal and informal adaptations of the urban space over time.

The aim of this chapter is to spatially locate the study area within Abuja's broader planning and develop framework to analyse how Maitama's spatial configuration such as its roads, pedestrian pathways, land use, and public spaces either supports or hinders walkability for older adults. This is particularly relevant given the original intention behind Abuja's master planning, which envisioned a highly structured, accessible, and inclusive urban environment. In practice, however, Maitama presents a mix of planned order and emerging spatial dysfunctions that directly impact older residents' mobility and autonomy.

The methodology for this mapping exercise was carefully designed to translate the study's qualitative data on barriers to recreational walking into spatial representations. This process involved multiple stages, combining fieldwork, survey and focus group findings, and geospatial techniques. The aim was to ensure that the barriers identified by participants were accurately mapped within the physical layout of Maitama. The spatial representations also served to validate participant perceptions and to present these barriers in a format that could inform future policy and urban design decisions.

Three primary data sources informed the mapping process. First, survey responses from older adults highlighted common barriers and often referenced specific streets or landmarks. Second, focus group discussions offered deeper context, with participants describing challenges linked to neighbourhoods, intersections, or facilities. Statements such as "the road near the market is too busy" or "there's no walkway near the clinic" were noted and coded for their spatial relevance. Third, direct field observations and photographic documentation were conducted in some part of Maitama. These visits allowed the researcher to verify reported barriers and capture physical evidence of issues such as broken pavements, poor lighting, missing signage, and traffic congestion.

To effectively visualise the barriers, a range of tools and techniques were employed. A detailed street-level base map of Maitama provided the foundation, showing roads, green spaces, institutions, and commercial areas. Each of the 33 identified barriers was categorised by type such as infrastructural, safety, or environmental and assigned specific geolocations. These were determined using participant descriptions, nearby landmarks, and GPS coordinates recorded during site visits. The barriers were then manually plotted using digital mapping tools such as Google Earth, QGIS, and ArcGIS. In cases where GIS was not used, annotated maps were created digitally to show the approximate locations of each barrier. Selected photographs were geotagged and used to complement the mapped findings.

In this research, participant selection was purposively designed to ensure that the mapping of barriers to recreational walking reflected the lived experiences and spatial realities of older adults in Maitama. Participants were selected based on their age (50 years and above), long-term residency in Maitama, and their ability to provide rich, location-specific insights about their walking habits and challenges. This targeted selection ensured that the voices of those most affected by walking barriers directly shaped the mapping process.

During interviews and focus group discussions, participants were asked to identify specific locations where they regularly walked or avoided walking due to physical, environmental, or spatial obstacles. They frequently referenced streets, landmarks, and zones that lacked

sidewalks, had broken pavements, or were unsafe due to traffic or isolation. These locations

included areas like Yedseram Street, Panama Street, IBB Boulevard, and the surroundings of the Maitama Shopping Complex. These references were carefully recorded and geolocated to guide on-the-ground image collection and the subsequent creation of a diagrammatic map.

The information provided by participants informed which streets and public spaces were photographed or viewed using satellite and street-view imagery. This helped to visually validate their accounts and capture real-time evidence of the barriers they described such as debris blocking paths, lack of green shade, potholes, missing sidewalks, or areas perceived as inaccessible due to security presence. In this way, the mapping was not conducted in isolation but was directly shaped by participant narratives, grounding spatial analysis in the realities of older residents.

Moreover, the mapping helped triangulate qualitative findings by visually confirming the spatial distribution and nature of reported barriers. For example, if multiple participants mentioned poor sidewalk conditions on Fraser Street, this area was prioritized for visual documentation. This reciprocal process, where participant input informed mapping and mapping reinforced participant accounts enhanced the validity and contextual richness of the research.

For clarity, the barriers were grouped into five thematic categories: pedestrian infrastructure deficits (e.g., broken sidewalks, blocked paths), traffic and road safety issues (e.g., lack of crossings, high-speed vehicles), environmental and climatic barriers (e.g., limited shade, poor drainage), security and safety concerns (e.g., dark or isolated areas), and aesthetic or social deterrents (e.g., noise, litter, harassment). Each group was represented on the map with distinct symbols and colours. Short descriptive labels were added to each mapped point to explain the specific nature of the barrier observed or reported.

Ethical considerations were carefully observed throughout the mapping process. Field observations were conducted respectfully, without entering private properties or restricted areas. Photographs taken during site visits excluded identifiable individuals unless prior consent was given. Furthermore, all data used in mapping preserved the anonymity of

participants from the surveys and focus groups. No personal information was displayed on the maps or associated visuals. This approach ensured that the spatial outputs were accurate, respectful, and ethically responsible.

To this end, the chapter begins with an overview of Abuja's historical and planning context before narrowing focus to Maitama's structural layout. This is followed by the presentation of three official layout plans that guided the district's development, each overlaid with Google Earth satellite images to highlight current spatial realities.

These visual comparisons are further supplemented by field-based spatial analysis that

identifies thirty-three specifics physical, environmental, and spatial barriers encountered by older adults during recreational walking. The chapter concludes by interpreting how these barriers influence pedestrian behaviour and inform the wider discussion on age-friendly urban design in Nigeria.

Figures 9 and 10 show Abuja Master Plan and satellite image of Maitama which was designed to guide the development of Nigeria's new capital city as a symbol of national unity and modern urbanism. It emphasised a hierarchical, decentralized layout structured around four development phases, with Phase 1 forming the administrative and residential core. The plan featured strict zoning, a grid-based road network, and distinct land use areas administrative, residential, commercial, and diplomatic connected by wide boulevards and green buffers. While it aimed to promote order, functionality, and environmental harmony, its implementation has often favoured motorised transport and elite interests, leading to spatial fragmentation and challenges for inclusive.

Figure 9 Layout od Abuja mater plan

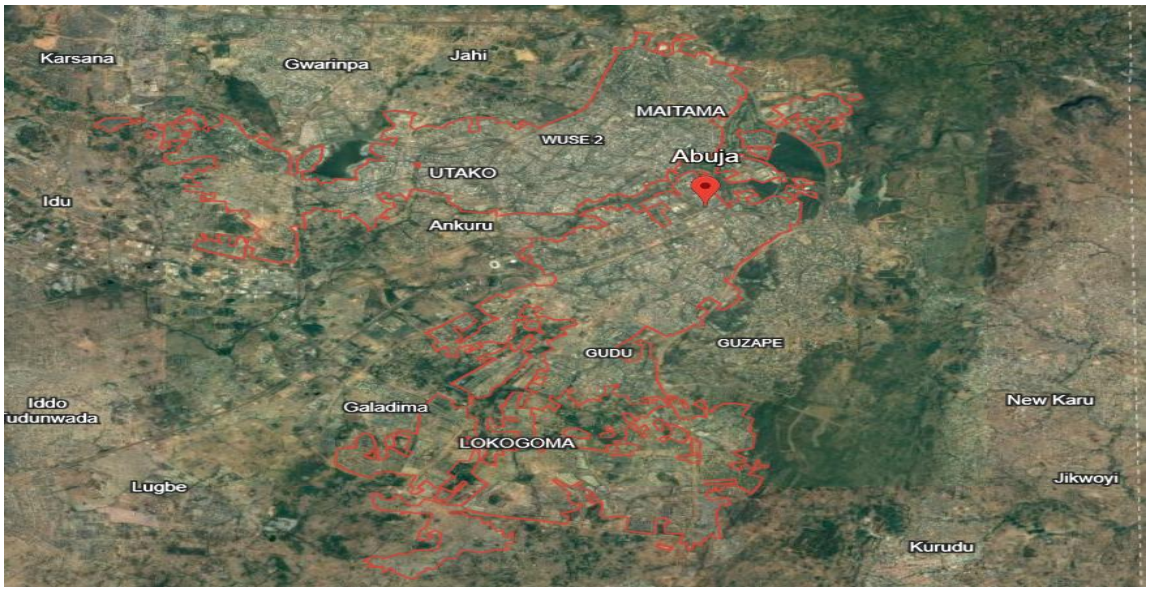

Figure 10 Satellite Image of Maitama

4.2. The Urban Context of Abuja

Abuja is organised into four development phases figure 11, with Phase 1 being the most developed and formally planned. Within this phase lies Maitama District, one of the city's most affluent residential areas. Maitama was designed with a formal grid street network, broad

boulevards, and designated green corridors intended to promote aesthetic appeal and efficient mobility. The district houses numerous embassies, government buildings, and elite residential compounds, offering a perception of exclusivity and order.

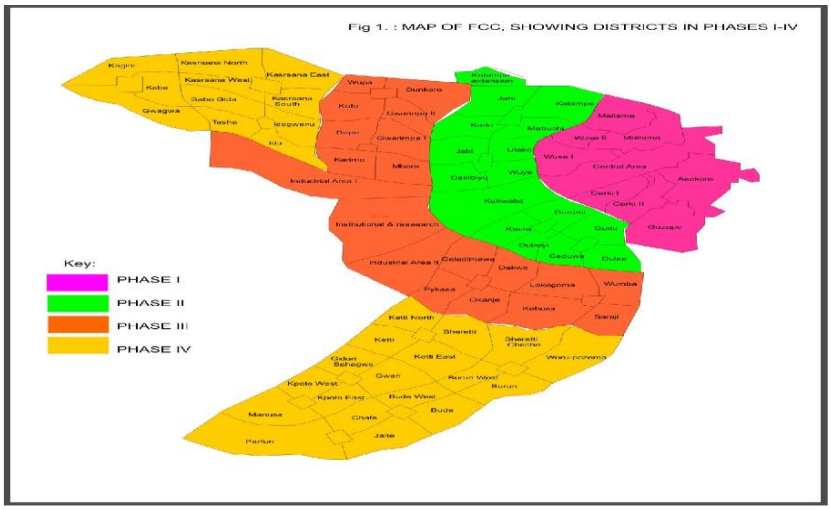

Figure 11 Map showing the phases of Abuja

Despite Abuja's modernist design philosophy, urban development over the past four decades has diverged significantly from the original blueprint. The city has experienced rapid population growth, speculative land development, and weak institutional enforcement of land use and building regulations. These pressures have resulted in spatial fragmentation, encroachment on planned green spaces, and the proliferation of informal settlements at the urban periphery.

Abuja Phase 1 represents the core of Nigeria's purpose-built capital city, planned in the 1970s to embody modernity, order, and decentralization from Lagos. Designed by Kenzo Tange Associates, it was envisioned as a model for efficient urban form, with distinct districts designated for administrative, residential, diplomatic, and commercial functions. Districts

within Phase 1 such as Maitama, Asokoro, Wuse II, Garko, and the Central Area were laid out according to principles of zoning, low-density planning, and a hierarchical road network.

Figure 12 shows the four development phases of Abuja highlights the city's spatial hierarchy, with Phase 1 home to Maitama being the most developed and formally structured**.** While this phase benefits from planned infrastructure, the emphasis on low-density zoning, wide roads, and exclusive institutional uses contributes to barriers to recreational walking among older adults. Compared to less formal phases, Phase 1's rigid layouts, high-security zones, and vehicle-oriented design limit pedestrian permeability, discourage casual walking, and reduce access to inclusive public spaces issues that older residents in Maitama consistently raised during interviews and focus groups.

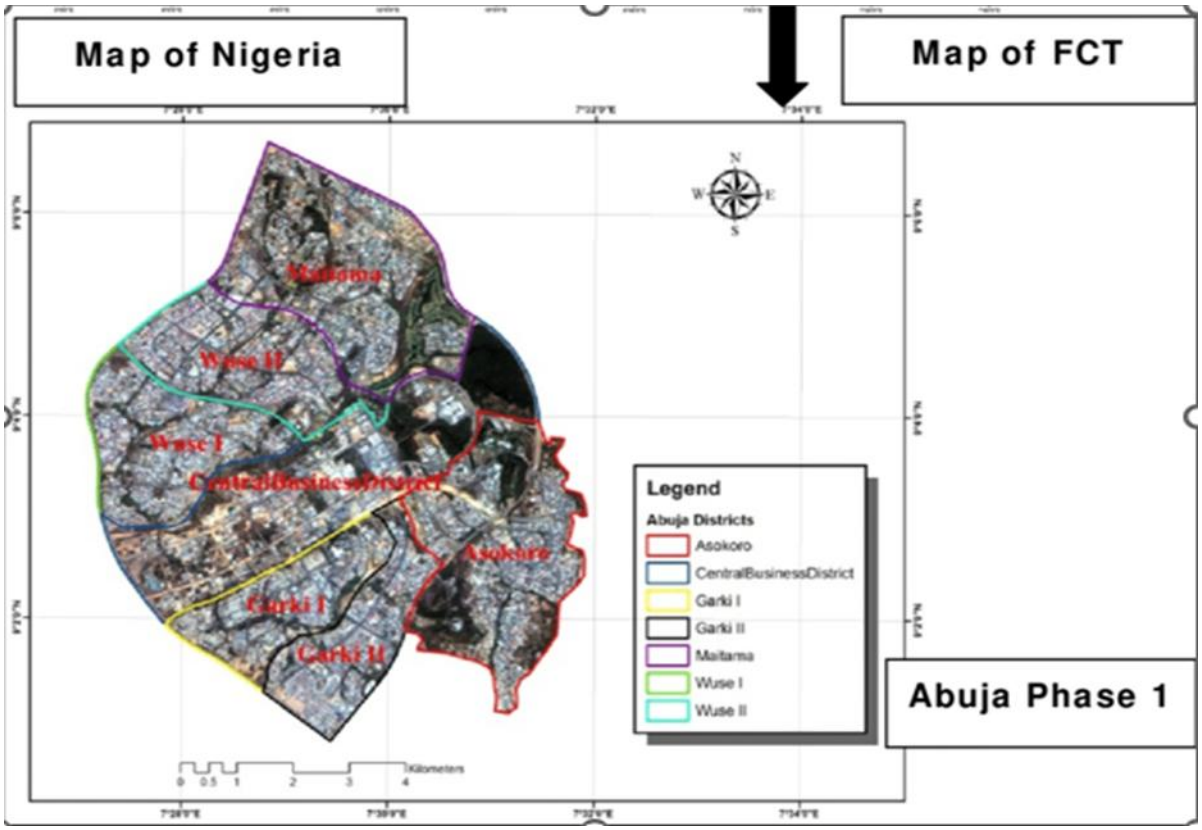

Figure 12 Showing Abuja phase 1

Maitama was developed as a high-income residential enclave with wide boulevards, generous plots, and formal street layouts. On paper, Phase 1 reflects a vision of clarity and spatial rationality, but in practice, this has not translated into equitable or accessible urban environments.

Despite its well-planned appearance, Phase 1 has become increasingly fragmented and exclusionary, especially for non-motorised users. The rigid separation of land uses and emphasis on car-oriented design have produced environments with long blocks, oversized roads, and limited pedestrian infrastructure. Older adults face numerous challenges due to broken pavements, absent sidewalks, poor shading, and lack of seating or public toilets. Gated communities, embassies, and walled compounds further restrict movement, creating spatial discontinuities that force detours or discourage walking altogether. These barriers are especially evident in Maitama, where security-driven urbanism, high walls, and limited street life compound the experience of spatial disconnection.

Mapping exercises conducted in this study triangulated with participant interviews and focus groups revealed 33 distinct physical, environmental, and spatial barriers to recreational walking in Maitama. These include structural issues like uneven pavements and missing crossings.

Environmental concerns such as excessive noise, and flooding; and spatial exclusions caused by high-security zones, fragmented paths, and the dominance of car infrastructure. Participants identified specific locations such as IBB Boulevard, Gana Street, Mississippi Street, and Amazon Street as sites where these barriers are most visible. By integrating digital tools with on the ground photographic documentation, the mapping process made it possible to visualise how Phase 1's master-planned order conceals systemic inaccessibility for vulnerable groups like older pedestrians.

In conclusion, Abuja Phase 1 exemplifies the contradictions of formal urban planning that privileges car ownership and security over human-scale inclusivity. While Maitama and its surrounding districts may appear affluent and organized, the lived experience for older residents are marked by disconnection, restriction, and infrastructural neglect. These realities underscore the need to rethink Abuja's planning ethos moving from car-centric, zoned models toward integrated, age-friendly, and pedestrian-oriented urban design. Enhancing walkability in Phase 1, especially in residential districts like Maitama, will require both physical retrofitting and policy reforms aimed at restoring the right to the city for older adults.

In Maitama, while physical infrastructure remains relatively intact compared to other districts, subtle forms of spatial inequality and exclusion persist. Wide roads and low-density housing reduce walkability, while security walls, lack of continuous sidewalks, limited public transportation connectivity, and poor maintenance of pedestrian discouraged recreational walking.

These patterns reflect broader challenges in Abuja's urban governance a disconnection between formal planning and lived realities. For older adults and other vulnerable groups, the environment in Maitama often discourages recreational walking, despite the district's apparent orderliness. Physical and spatial barriers though sometimes subtle cumulatively erode the public realm's inclusivity and usability.

The mapping exercise conducted as part of this study helped to uncover barriers, demonstrating how even in a formally planned district, everyday spatial practices and overlooked urban details contribute to mobility challenges for non-motorised users, particularly older adults.

4.3. Locating the Case Study Area, Maitama District

Maitama is one of Abuja's most prominent districts, home to diplomatic missions, government institutions, and affluent residential areas. It was selected as the case study area due to its advanced infrastructure, formal planning, and the notable contrast between its design intentions and its current everyday use. Figure 13 shows the map outlining the boundaries of the study area within Maitama, situating it within the broader urban fabric of Phase 1 Abuja (Figure 22). These images help to contextualise the study area and highlight zones relevant to pedestrian movement, such as parks, commercial centres, healthcare facilities, and religious institutions.

The spatial arrangement and land use zoning, guided by Abuja's Master Plan, have a significant impact on recreational walking experiences in Maitama. The rigid separation of land uses means that essential destinations such as parks, religious institutions, and commercial centres are often located far apart. This discourages walking due to the long distances involved and the lack of mixed-use vibrancy that typically supports a pedestrian-friendly environment.

Figures 14 and 15, which show the distance of residents to parks and a view of Maitama Amusement Park respectively, illustrate the spatial disconnect between residential areas and recreational green spaces. Although Maitama has several parks including the BMT African Garden (Figures 16 and 17) their accessibility is constrained by wide roads, limited pedestrian crossings, and poor sidewalk infrastructure. These physical barriers make recreational walking difficult, particularly for older adults who may have mobility limitations.

Figures 18 and 19, showing the layout and approach view of the Spanish Embassy, demonstrate how high-security institutional zones contribute to a sense of spatial exclusion. The presence of fortified fences, surveillance systems, and restricted access disrupts the continuity of pedestrian routes. These elements not only fragment the urban landscape but also generate psychological barriers that make casual walking feel unsafe or unwelcome.

Similarly, Figure 20 shows the layout of the Maitama Central Mosque, while Figure 21 offers a street-level view. Despite being important community landmarks, religious institutions in Maitama are often set back from the road, surrounded by fences, and accessed primarily via vehicular driveways. These design choices prioritise car access and create large, uninviting spaces that offer little to no support for pedestrians such as shaded seating, wayfinding signs, or resting areas for older adults.

Furthermore, commercial centres are typically enclosed and disconnected from the street network, accessible mainly through driveways and large car parks rather than integrated pedestrian paths. The result is a utilitarian urban form that caters more to vehicle movement than to human-scale interaction. This layout, as shown in Figures 20 and 22, discourages slow, recreational engagement with the space and significantly limits the opportunities for older adults to walk for leisure or health.

Overall, while Maitama appears to be a well-planned and aesthetically appealing district, the realities on the ground evidenced by the maps and images highlight substantial physical and spatial barriers that hinder recreational walking. For older adults, these barriers compromise safety, comfort, and accessibility, ultimately contributing to a car-dominated urban experience and reducing opportunities for active ageing and social inclusion.

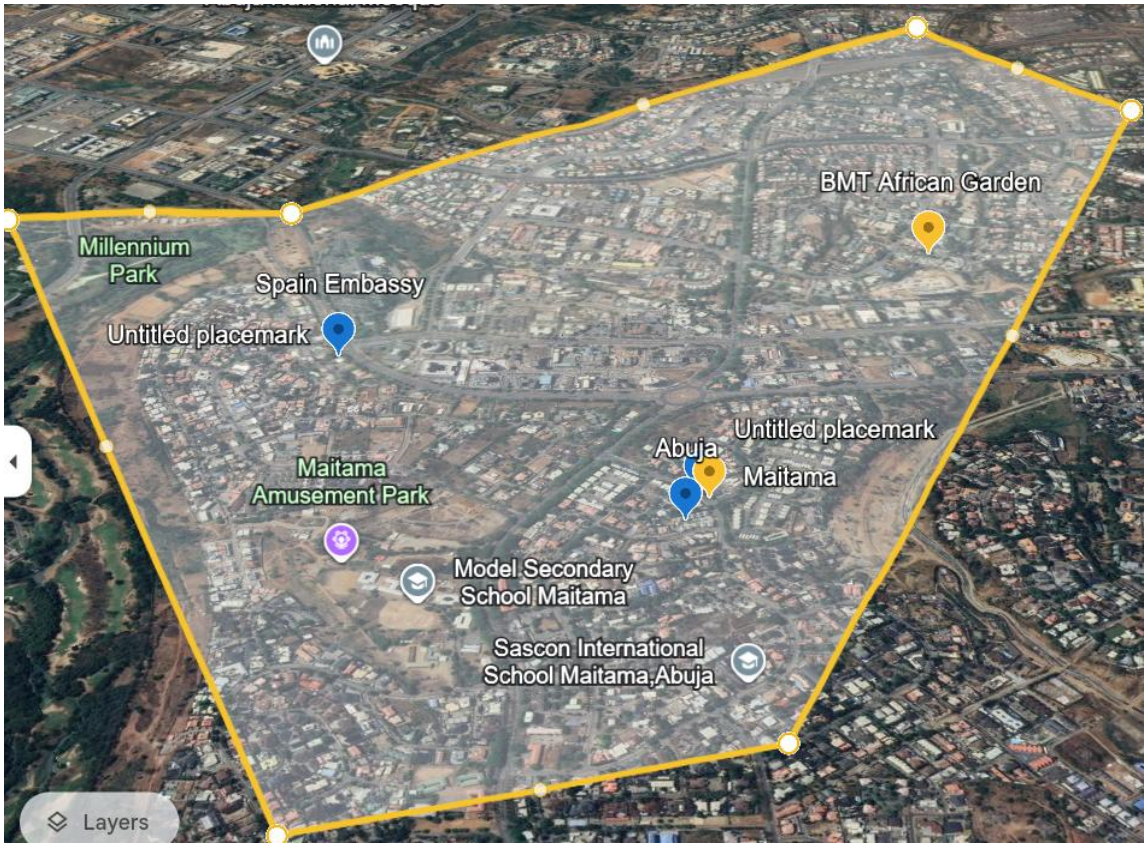

Figure 13 Map showing the boundary of the study area in Maitama

Figure 14 distance of residents to park

Figure 15 view of Maitama park

Figure 16 BMT African garden Layout

Figure 17 view of BMT garden

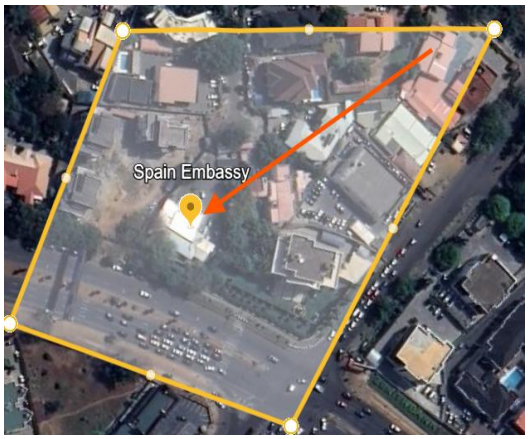

Figure 18 Map showing Spain Embassy

Figure 19 Map showing approach view of Spain Embassy

Figure 20 Map showing Maitama central Mosque

Figure 21 View showing Maitama central Mosque

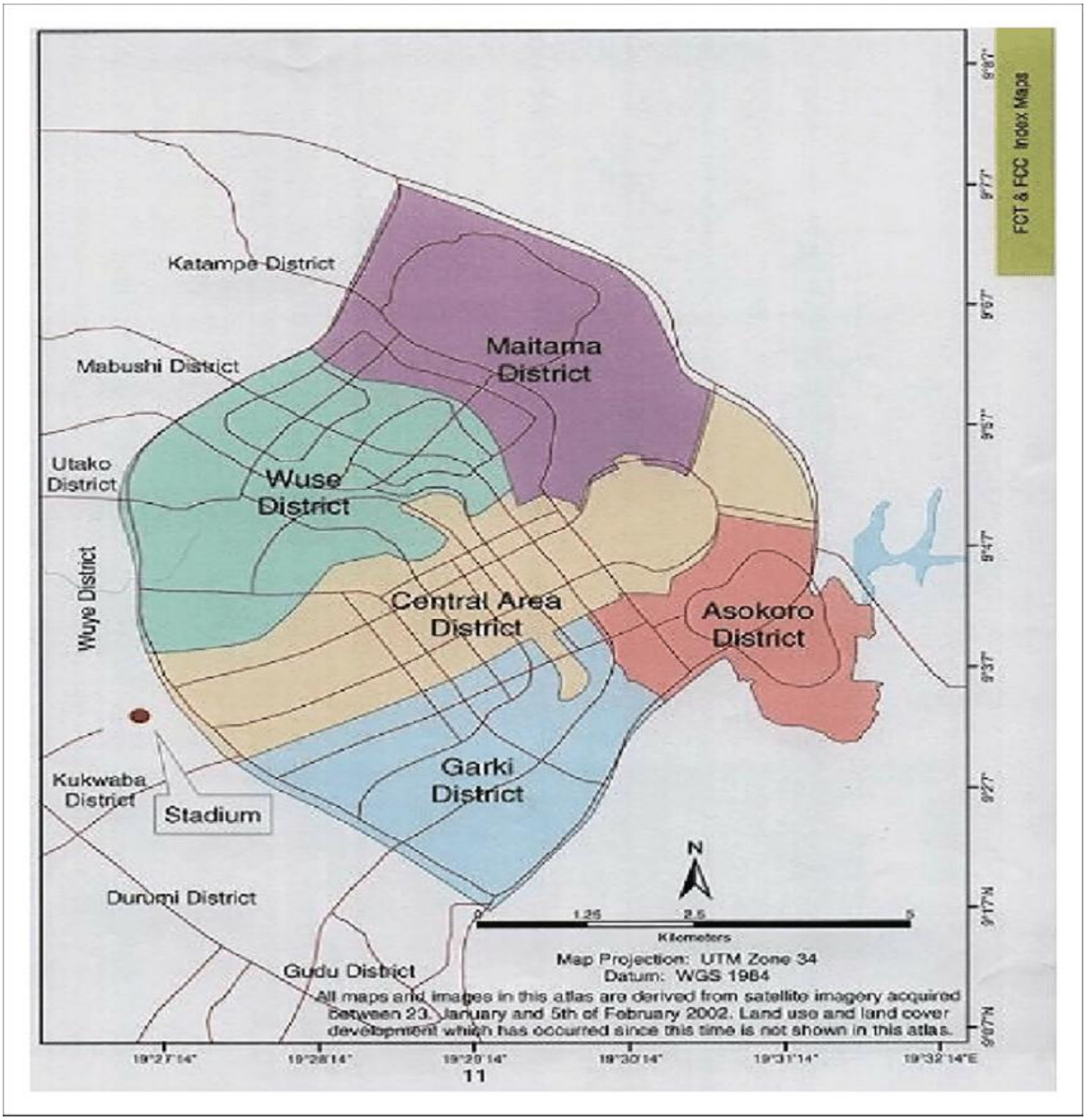

Figure 22 Map showing Urban Layout of Maitama Phase 1

4.4. Mapping the Layout Plans and Satellite Comparisons.

The original layout plans for Maitama focusing on residential, institutional, and mixed-use areas are presented. Each is accompanied by corresponding satellite imagery (sourced from Google Earth) to allow for comparative spatial analysis. The images illustrate how actual development aligns or deviates from the original plans. For instance, changes in green space allocation, unplanned building extensions, or blocked pedestrian routes are revealed through

this side-by-side visual approach. The overlaying of key walking routes and landmarks also helps identify areas of high or low pedestrian accessibility.

The residential layout in Maitama (see Figures 23 and 24), characterised by low-density housing, cul-de-sacs, and high-security gated compounds along streets such as Gana Street and Amazon Street, restricts pedestrian flow and overall connectivity. While the area is serene and visually appealing, with abundant greenery, the lack of continuous pavements and the prevalence of dead-ends significantly limit route options for older adults seeking recreational walks. As a result, many are often compelled to walk along, exposed, and unsafe road shoulders.

Figure 23, which shows the residential layout, and Figure 24, providing an approach view of Maitama, are important in illustrating how the spatial configuration and physical features of the neighbourhood create barriers to walkability. The images underscore the disconnect between the aesthetic quality of the environment and its functional accessibility for pedestrians especially older adults. Despite the visual appeal, the poor pedestrian infrastructure discourages safe, regular walking and contributes to a car-dependent urban design that excludes those with limited mobility.

Figure 23 Map showing residential Layout

Figure 24 showing approach view, Maitama

The institutional layout (see Figures 25 and 26), dominated by institutional buildings and government offices along streets like Aguiyi Ironsi Street and Shehu Shagari Way, introduces significant spatial and psychological barriers. High fences, restricted access zones, and a heavy security presence result in interrupted pedestrian routes and discourage casual walking, due to limited openness and a prevailing sense of exclusion from public space.

Figure 25 institutional Layout in Maitama

Figure 26 View of institutional building in Maitama

Figures 25 and 26 illustrate the institutional layout and a view of institutional buildings in Maitama, while Figures 27 and 28 present the mixed-use layout and an aerial view of mixed-use development in the area. These images collectively show a blend of commercial and institutional land use, including prominent areas such as the Maitama Shopping Complex and IBB Boulevard, which offer some potential for walkable access to amenities.

However, this potential is significantly undermined by poor pedestrian infrastructure. Despite the presence of diverse land uses that could support walkability, wide roads, inadequate pedestrian crossings, and fragmented or poorly maintained sidewalks make navigating these areas challenging particularly for older adults. The aerial and street-level views highlight how urban design in Maitama tends to prioritise vehicular movement over pedestrian safety and comfort.

These physical and spatial conditions reduce the accessibility, safety, and overall appeal of recreational walking for older residents. Older adults are more vulnerable to falls, require safe crossing points, and benefit from smooth, continuous walkways all of which are lacking in

these mixed-use and institutional zones. As a result, opportunities for engaging in safe and enjoyable walking are limited, discouraging physical activity and reinforcing car dependency, ultimately contributing to social exclusion and reduced quality of life among older adults.

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Figure 27 Mixed use Layout, Maitama

Figure 28 Aerial view of mixed use in Maitama

4.5. Identified Physical environmental, and Spatial Barriers

Based on the mapping analysis, specific physical- environmental, and spatial barriers to recreational walking for older adults in Maitama have been identified. These barriers are organised thematically below

4.5.1. Physical -Environmental Barriers

Physical-environmental barriers refer to tangible, external conditions in the built and natural environment that hinder recreational walking, particularly for older adults. These barriers include poor sidewalk infrastructure, a lack of pedestrian crossings, uneven or broken pavements, inadequate lighting, potholes, and the presence of physical obstacles such as parked cars or open drains (Kou et al., 2021).

Debris blocking roads and the presence of potholes represent significant physical barriers to recreational walking among older adults in Maitama, Abuja (Figures 29 and 30). Many participants in interviews and focus groups reported encountering construction waste, sand

piles, broken tiles, and scattered refuse, particularly along streets such as Mississippi Street and Danube Street.

These obstructions force pedestrians especially older adults to step onto the road or navigate unstable surfaces, increasing the risk of trips, falls, and accidents (Figures 29 and 30). Similarly, potholes, which are common along lesser-maintained streets, disrupt walking rhythm, create water puddles after rainfall, and pose mobility challenges for those with joint pain or balance difficulties.

These conditions reduce the safety, comfort, and overall appeal of walking for leisure, often discouraging older adults from walking altogether and reinforcing a car-dominated, exclusionary urban environment.

Poor sidewalk infrastructure significantly hinders recreational walking, particularly for older adults who require safe and accessible pathways. Interviews and focus group discussions consistently highlighted broken pavements, missing sidewalks, and obstructed walkways as recurring challenges (Figures 31 and 32). Participants noted that areas such as Yedseram Street,

Panama Street, Fraser Street, and the vicinity of IBB Boulevard often lack continuous pedestrian paths, forcing walkers to share space with vehicles or to navigate uneven surfaces.

Figure 29 Uneven walkway

Figure 30 Obstruction (debris)

Figure 31 Yedseram street, Maitama

Figure 32 lack of pedestrian walkway at Yedseram

Figure 33 IBB Boulevard, Maitama *Figure 34 showing lack of pedestrian crossing*

One participant described the sidewalks near IBB Boulevard as "non-existent in some parts," while another expressed concern about "being forced onto the road" due to parked cars and debris obstructing the walkways (Figures 33 and 34). These accounts are supported by field photographs and mapping evidence, confirming that despite Maitama's formal urban planning, the sidewalk infrastructure remains fragmented. Additionally, potholes and uneven surfaces (Figures 35 and 36) further compromise the usability of these pathways.

Figure 33 shows the layout of IBB Boulevard as captured from Google Earth, while Figure 34 highlights the absence of pedestrian crossings. Figure 35 illustrates the presence of potholes, and Figure 36 shows uneven surfaces along the walkway.

These physical and spatial deficiencies present significant barriers to recreational walking for older adults. The lack of continuous, accessible pavements, combined with safety hazards such as potholes and uneven surfaces, reduces the confidence and mobility of older individuals. Being forced to walk on the road due to blocked or poorly maintained sidewalks increases the risk of accidents and discourages routine, leisurely walking. The absence of

pedestrian crossings further worsen these challenges, making it difficult for older residents to navigate their neighbourhood safely and independently.

Figure 35 potholes

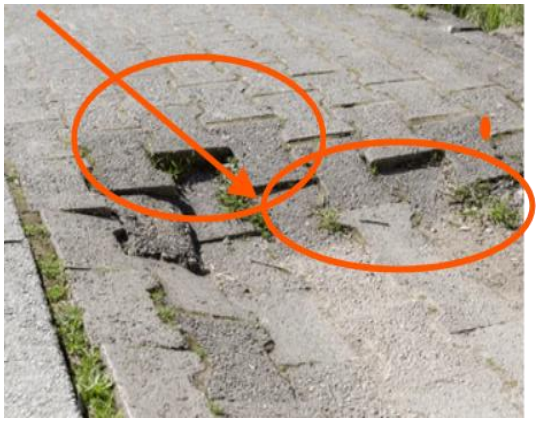

Figure 36 showing uneven surface

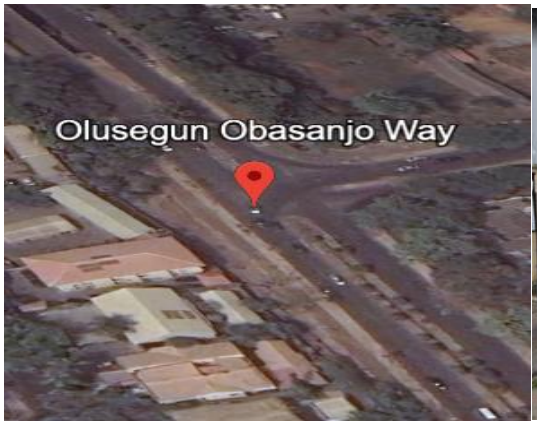

Figure 37 Olusegun Obasanjo way

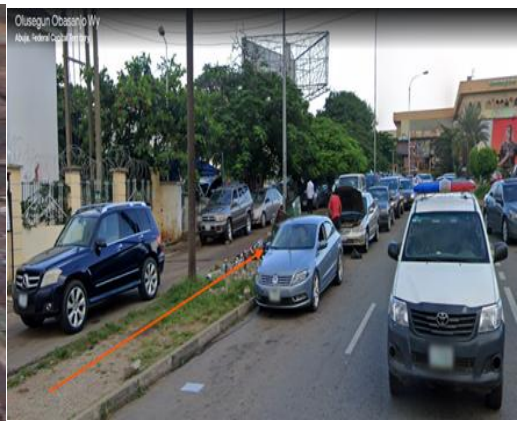

Figure 38 traffic congestion

Additionally, environmental factors illustrated in Figures 37, 38, 39, and 40 such as high traffic volumes, air and noise pollution, poor urban planning, and a lack of green or shaded walking areas, further discourage walking. In Maitama, Abuja, these conditions compromise the safety, comfort, and accessibility of walking environments, thereby reducing older adults' ability and motivation to engage in regular recreational walking.

Figure 37 presents the layout of Olusegun Obasanjo Way as captured from Google Earth, providing an overview of the road's structure and surrounding environment. Figure 38 visualises traffic congestion along this route, highlighting the high volume of vehicular activity that poses a risk to pedestrian safety. Figure 39 illustrates poor urban planning, evidenced by the presence of refuse waste on the sidewalk, which obstructs pedestrian movement and contributes to an unpleasant walking environment. Figure 40 depicts the absence of zebra crossings at Olusegun Obasanjo Way in Maitama, further exacerbating the difficulty of safely crossing the road.

These issues collectively represent significant barriers to recreational walking among older adults. The heavy traffic and lack of designated pedestrian crossings increase the risk of accidents and reduce the confidence of older individuals to walk in the area. The presence of waste on pedestrian pathways not only creates physical obstructions but also contributes to health concerns and discomfort. Moreover, the absence of age-friendly urban design reflects a lack of inclusive planning, thereby discouraging older adults from engaging in regular outdoor walking for leisure or exercise.

Figure 39 poor urban planning

Figure 40 lack of zebra crossing

4.5.2. Spatial and Urban Design Barriers

Spatial and urban design barriers refer to how the layout and organisation of urban spaces limit the ease and attractiveness of recreational walking, especially for older adults. These barriers include distance to parks, car-dominated street designs, lack of pedestrian-friendly routes, poor connectivity between neighbourhoods' and insufficient public spaces designed for walking or relaxation (Evans, 2009).

The significant distance between some residential areas in Maitama and the Maitama Amusement Park negatively affects recreational walking, particularly for older adults who may prefer easily accessible leisure destinations (see Figs. 41, 42, 43, and 44). Streets such as Ontario Crescent, Panama Street, and Fraser Street are located far from the park and require navigating long, indirect routes with poor pedestrian infrastructure and limited shading. This discourages walking as a means of access, making the park feel disconnected from the neighbourhoods it is intended to serve.

Figures 41 to 44 are presented to visually illustrate how spatial and environmental factors contribute to barriers to recreational walking among older adults in Maitama, Abuja. Figure 41, which shows the distance of residences to the park, highlights accessibility challenges, as long or unsafe walking distances can discourage older adults from visiting the park regularly. Figure 42 displays the entrance gate of Maitama Park, drawing attention to issues of visibility, signage, and perceived safety, which can influence willingness to enter the park.

Figure 43, showing the inside of the park, reflects on the quality of internal pathways, maintenance, and available walking space, which are critical for ensuring comfort and safety for older walkers. Lastly, Figure 44 captures the play area within the park, indicating a lack of age-appropriate infrastructure, which may make older adults feel excluded or suggest that the

park caters primarily to children, thereby reducing its appeal as a recreational walking destination for older users.

Interviews revealed that older residents from these areas often avoid the park altogether due to the long, unsafe, and uncomfortable walking journey, highlighting a spatial mismatch between residential zones and public recreational spaces.

In areas such as Maitama, Abuja, fragmented land use, long walking distances between destinations, and the poor integration of walking paths into the urban landscape (see Fig. 45) can discourage walking by making it inconvenient, unsafe, or uninviting. These design shortcomings limit opportunities for older adults to engage in regular recreational walking within their neighbourhoods.

Figure 45 visually demonstrates the urban barriers that hinder walkability, helping to contextualise how the built environment contributes to reduced physical activity among older residents.

Figure 41 distance of residents to park

Figure 42 gate to Maitama park

Figure 43 inside of Maitama park

Figure 44 play area in the park

Figure 45 Urban Design Barriers

Chapter 5 Survey (Interviews)

5.1. Introduction

This chapter presents the findings from the semi-structured survey conducted with older adults residing in Maitama, Abuja. The aim of the survey was to identify the range and nature of barriers to recreational walking, drawing on participants lived experiences. This chapter details the demographic profile of participants, categorises the 33 identified barriers, and discusses the relative significance of each barrier based on frequency and depth of participant responses. The findings form the empirical basis for the subsequent focus group discussions in Chapter 6 and the broader analysis in Chapter 7.

5.2. Overview of Survey Method

The survey employed a semi-structured format to enable both consistent data collection and flexible, participant-led elaboration. A purposive sampling approach was used to recruit 20 older adults aged 50 and above, residing in Maitama. Participants were selected to reflect diversity in gender, and socio-economic background. Surveys were conducted online using google meet in English with responses recorded and transcribed for analysis. The survey tool was designed based on insights from the literature review and the mapping analysis conducted in Chapter 4.

5.3. Participant Demographics

In all, 20 participants participated, 16 were female and 4 males. The age range was between 50 and 70 years, with the average age being 60. Participants came from a range of occupational backgrounds, including retired civil servants, professionals, and traders. Most participants reported living in Maitama for more than 10 years. While all respondents were physically able to walk independently, 1 reported having mild to moderate mobility issues due to age-related conditions.

5.4 Key Themes and Barriers Identified

Analysis of the survey responses uncovered a complex interplay of factors affecting older adults' ability and willingness to engage in recreational walking in Maitama, Abuja. A total of 33 distinct barriers were identified, which have been grouped into four overarching thematic categories: *(*1) Physical- Environmental Barriers, (2) Safety and Security Concerns, Cultural barriers, and (4) spatial and Planning barriers. These categories reflect both tangible, spatial features of the urban environment and intangible, socially constructed factors that shape walking practices.

This thematic grouping was guided by both inductive coding of participant responses and deductive alignment with literature on age-friendly urban design, walkability, and active ageing. The findings demonstrate that the barriers experienced are not isolated, but deeply interconnected, often compounding one another to produce cumulative disadvantage (Adlakha et al., 2021). Each thematic category is discussed below with illustrative examples and direct quotes from participants.

5.4.1 Physical- Environmental Barriers

This category encompasses the material features of the urban landscape that hinder walking for pleasure. The most frequently cited issues included damaged or non-existent sidewalks, open drainage channels, lack of curb ramps, and absence of shaded pathways or resting areas. For older adults, these physical features present both mobility challenges and safety risks.

Participants expressed that the uneven surfaces and broken pavements posed a constant threat of falling, particularly for those with declining balance or vision. Additionally, the absence of pedestrian-focused amenities such as benches, public toilets, or drinking water sources made longer walks physically exhausting.

"I don't walk far anymore because the road is rough. I'm afraid of tripping and falling." – Female, 65

5.4.2 Safety and Security Concerns

Many participants raised concerns about their personal safety when walking in Maitama. These concerns were both real and perceived, and they significantly influenced decisions about where, when, and whether to walk at all.

Key issues included:

1.Fear of mugging or harassment, especially in secluded or poorly lit areas
2.Presence of stray dogs or mentally ill individuals wandering without supervision
3.Speeding vehicles and lack of pedestrian crossings
4.Poor enforcement of traffic regulations, leaving pedestrians vulnerable

Several participants described avoiding walking at dusk or dawn due to fear of crime. Others spoke of avoiding specific streets altogether. Notably, women were more likely to cite harassment and verbal abuse as deterrents.

"There are some places I just can't pass again. Too many boys hanging around. I don't feel safe." – male, 66

Traffic safety emerged as a major theme, with participants emphasizing that drivers rarely yield to pedestrians and that crosswalks were either missing or ignored.

5.4.3. Cultural Barriers

Beyond physical and safety concerns, many barriers were rooted in deeply entrenched social attitudes and cultural expectations. Recreational walking among older adults was often perceived as deviating from social norms, particularly in an affluent area like Maitama where car ownership is widespread. Participants frequently reported stigma associated with walking. It was viewed as a sign of poverty, aimlessness, or physical decline.

"If they see me walking, they think I have no car. It's shameful in this area." – Male, 55

Gendered expectations also emerged, with women reporting more scrutiny or judgment for walking alone in public. In addition, ageism the belief that older adults should stay indoors or avoid public exposure further discouraged recreational walking.

Religious and cultural beliefs were also relevant in some cases, particularly where walking involved passing through or lingering in mixed-gender public spaces.

5.4.4. Spatial and Planning Barriers

The final thematic category relates to broader structural and spatial features of Maitama that either discourage or fail to support recreational walking. These include car-centric planning, disconnected pedestrian networks, and limited access to green or public spaces.

Participants observed that sidewalks, where they existed, were often interrupted by driveways, overgrown vegetation, or commercial encroachments, creating fragmented and unsafe walking routes. Several noted that the distances between amenities such as shops, clinics, and parks were too long to be comfortably covered on foot, especially without rest stops.

Furthermore, lack of signage, poor maintenance of public parks, and obstruction by construction sites were all cited as additional deterrents.

"They plan everything for cars. Where is the place for walking people?" – Male, 59

Participants also noted that no one seemed responsible for maintaining pedestrian spaces, and they expressed frustration at the absence of government attention to walkability in policy or urban design.

5.4.5 Intersections and Compounding Effects

It is important to emphasise that these barriers often overlap and reinforce each other. For example, an elderly woman without a car might face physical challenges due to broken sidewalks, social stigma for walking, fear of harassment, and lack of nearby destinations, all which compound to discourage even short outdoor activity. This intersectional reality

highlights the need for an integrated, multi-level response to address walkability in an age-friendly and inclusive manner.

Chapter 6 Focus Group Discussion

6.0. Introduction

A focus group discussion (FGD) is a qualitative research method involving a structured yet open-ended conversation with a small group of individuals, typically between five and ten participants. It is facilitated by a trained moderator whose role is to guide the discussion using a semi-structured set of questions or prompts. The primary aim is to explore participants' views, perceptions, and experiences on a specific topic, encouraging open interaction and the exchange of diverse perspectives (Akyıldız & Ahmed, 2021).

In the context of this study on barriers to recreational walking among older adults in Maitama, Abuja, FGDs provided an effective means of delving into the lived realities of older individuals beyond what could be captured through survey alone (Yayeh, 2021). Participants were selected based on relevant shared characteristics: such as age (50+), past involvement in the survey, and residency within Maitama to ensure that the discussion reflected localised experiences and conditions. The group setting, which was designed to be familiar and non-threatening, enabled participants to reflect more deeply on their day-to-day walking practices, express concerns openly, and relate to the experiences of others (Escalada & Heong, 2014).

A key strength of using FGDs in this study lay in their capacity to capture how environmental, infrastructural, and socio-cultural factors intersect to shape older adults' walking behaviours. Through moderated group dialogue, it became clear not only what barriers were present such as poor sidewalks or lack of security but also how these barriers were collectively interpreted, navigated, and sometimes normalised by participants.

The discussions revealed social expectations about ageing, cultural constraints on physical activity, and community-level dynamics, which would have been difficult to uncover through quantitative methods alone.

With participants' consent, all focus group sessions were audio-recorded, transcribed verbatim, and analysed thematically. This method allowed for the identification of patterns and the emergence of core themes: such as safety concerns, infrastructural neglect, and socio-economic disparities in access to walkable environments. These themes provided depth and nuance to the broader survey findings, reinforcing the value of FGDs in complementing and expanding upon quantitative data.

Overall, the use of FGDs in this research proved particularly appropriate, as older adults often represent an under-consulted population in urban planning and public health discourses. By facilitating shared reflection and dialogue, FGDs enabled participants to articulate them in their own words, offering rich, contextual insights into the challenges of recreational walking in Maitama. These findings serve as a critical foundation for informing age-friendly urban interventions and inclusive mobility policies in Nigeria's urban settings.

This chapter presents findings from the focus group discussions conducted with older adults in Maitama, Abuja. The focus group method was employed to validate, elaborate on, and critically reflect upon the survey findings discussed in Chapter 5. The interactive nature of the discussions allowed participants to co-construct meanings, clarify nuances, and debate the contextual relevance of identified barriers. This aligns with the interpretivist approach underpinning this research, which prioritizes participants lived experiences and shared meanings.

6.1 Overview of Focus Group Design

In all, a total number of 5 people in just a group were conducted and, each comprising participants who had previously taken part in the survey. The groups were balanced for gender and included a mix of mobility levels, household types, and socio-economic status. Each session lasted approximately 90 minutes and followed a semi-structured guide derived from the 33 barriers identified in the survey. Discussions were conducted in English only. All sessions were audio recorded and transcribed verbatim for thematic analysis.

6.2 Reframing the 33 Barriers: Group Insights

The focus group reaffirmed the 33 barriers identified in the survey, but provided greater depth regarding their interrelations, emotional effects, and perceived solutions. Barriers were discussed not only as physical constraints but also as reflections of broader socio-political neglect and age-related marginalisation. A key insight that emerged was how multiple barriers often intersect simultaneously, compounding their impact. For example, poor pavement quality was not only seen as a safety hazard but became a source of anxiety when combined with the lack of street lighting and the fear of crime (Paine, 2021). As one participant put it, *"Even if I want to walk in the evening when it's cooler, the roads are broken, and there is no light. You can fall or meet bad people. So, we just stay at home."* This quote reflects how infrastructure and safety issues combine to restrict mobility, especially during preferred walking times.

Participants also discussed the emotional and psychological effects of these barriers, many of which were not fully captured in the survey. There was a sense of frustration, abandonment, and invisibility. Several participants expressed that their needs were consistently overlooked by urban planners and policymakers. One remarked, *"They build everything for young people or people with cars. But what of us? We still live here too."* This comment highlighted how age-related marginalisation is embedded in the physical landscape, reinforcing feelings of exclusion and irrelevance.

The focus groups also brought attention to the social implications of walkability or the lack thereof. Poor infrastructure was linked to reduced social interaction and increased isolation. One participant shared, *"Before, I used to walk and greet neighbours, go to the mosque, small shopping. Now, because of the gutter open and no proper path, I don't go out much. I miss that connection."* This shows how the barriers have ripple effects that go beyond mobility, affecting mental wellbeing and social participation.

In terms of perceived solutions, participants offered practical suggestions but expressed doubt about whether authorities would listen. Many called for basic interventions such as fixing pavements, covering drains, installing benches, or improving security patrols that would significantly improve their walking environment. Yet there was also scepticism about implementation. One participant noted, *"We have talked and talked. They don't hear us. But maybe if many people speak together, they will do something."* This points to a desire for collective advocacy and participatory planning, underscoring the need for more inclusive approaches in urban development.

6.2.1 Physical-Environmental Barriers as Symbols of Exclusion

Participants often described physical environmental hazards not simply as inconveniences, but as signs of disregard for older adults.

"They don't think of us when they build these roads. It's like we're invisible." *(FG, Male, 55).*

Several participants emphasised that walking paths, benches, and shaded areas were perceived as "luxuries for the rich or young" rather than public amenities for all.

6.2.2. Fear and Safety: A Barrier Beyond the Physical

While survey participants reported fear of crime, focus group discussions revealed how this fear shaped time of movement, route selection, and overall confidence:

"We now walk only in groups or not at all." *(FG, Female, 66)*

"Even when I want to walk, my children say 'Mama, a beg don't go alone!'" *(FG, Female, 69)*

This fear was heightened by poor lighting, absence of security patrols, and a lack of trust in police response.

6.2.3 Walking as Socially Conditional

Participants reflected on how cultural perceptions framed walking as inappropriate for older or affluent individuals. The notion that "walking is for those who can't afford cars" was frequently echoed.

"When I walk, people ask: 'Madam, has your driver gone on strike?'" *(FG, Female, 70)*

Some participants also noted gendered expectations:

"As a woman, if you walk too far, they say you're wandering... it's not proper." *(FG, Female, 63)*

6.2.4 Infrastructural and Policy Disconnect

A recurring theme was the perceived lack of urban planning that caters to older pedestrians. Participants questioned whether the city's priorities aligned with their needs:

"They plan for cars, not for people like us." *(FG, Male, 68)*

Focus groups also raised the issue of maintenance — even when sidewalks existed, they were poorly maintained or obstructed.

6.3 Summary of Focus Group Findings

The focus groups affirmed the multi-layered nature of barriers to recreational walking. Physical environmental, cultural, and spatial barriers overlap and complement one another, particularly

for older adults with limited mobility or cultural constraints. Participants called for more inclusive planning and recognised that walking is not only a health activity, but a right tied to dignity and visibility in urban space.

Chapter 7 Discussions and Findings

This chapter presents a critical synthesis of the qualitative findings derived from interviews, focus group discussions (FGDs), and participatory mapping exercises conducted with older adults in Maitama, Abuja. Framed within an interpretivist paradigm, it explores the embodied, emotional, and symbolic dimensions of walking, moving beyond infrastructural assessments to question how older adults experience and make sense of their urban environment.

Participants' voices are foregrounded to illustrate how physical, environmental, and spatial barriers are encountered, interpreted, and navigated in daily life. Mapping data is used to spatialise these barriers and expose urban design choices that perpetuate exclusion. Relevant literature is interwoven to validate, contrast, or extend these findings. Together, the data illuminate the entanglement of ageing, mobility, power, and place in a city that is both visibly affluent and structurally exclusionary.

The study sample consists of 19 respondents and a focus group discussions comprising five people, all of whom are older adults (aged 50 years and above) facing various health and environmental challenges that impact their walking habits. The health conditions among these respondents are diverse, with several common issues significantly affecting their mobility.

Across interviews and FGDs, a recurring theme emerged: older adults framed walking not merely as a health-promoting activity, but as a fundamental right, tied to autonomy, visibility, and urban citizenship. For many, walking signified dignity, self-worth, and the freedom to participate in public life.

"It's not about exercise. It's about feeling human, free to go where I want."

(Interview 8, Female, 71)

"When I walk outside, I feel alive. Like I still belong in this city."

(Interview 3, Male, 69)

"They don't think of us when they build these roads. It's like we're invisible."

(FG3, Male, 68)

"We walk not for fitness, but to be seen and to feel normal."

(FG5, Female, 67)

These expressions reverberate with Burholt et al. (2020) theory of environmental ageism, where spatial neglect is a form of social exclusion. Likewise, Joy (2020) highlight the "right to the city" as central to older adults' inclusion yet routinely denied through planning practices.

The mapping method highlighted the symbolic violence of infrastructural absence. Gana Street and Shehu Shagari way, affluent, high-traffic zones revealed multiple deficits: broken sidewalks, missing crossings, potholes Figures 46 and 47. These spaces, while visibly modern, silently exclude non-driving older adults. Mapping thus anchors the emotional and symbolic claims of participants in concrete spatial evidence.

Figure 46 Path holes in middle

Figure 47 Lack of pedestrian crossing

Moreover, barriers to walking were rarely singular. Poor physical infrastructure often triggered emotional stress and social withdrawal, particularly among those with declining mobility or vision.

"If I don't look down every second, I'll fall into a ditch or hit a stone. That's not walking, that's stress."
(Interview 4, Male, 66)

"The pavement is for decoration either blocked, broken, or missing."
(Interview 6, Female, 73)

"I must look down every second or I trip."
(FG2, Female, 66)

"Even when I try, I can't enjoy it. There's no place to walk safely."
(FG4, Male, 65)

These insights confirm Kahlmeier et al. (2010), who note how micro-barriers cracks, curbs, uneven surfaces are magnified in risk for older adults. Such stressors undermine both mobility and confidence.

On Yedseram Street, fig 48 and fig 49. Mapping recorded six distinct hazards within just 200 metres open drains, sand piles, missing kerbs, and narrow walkways. The sheer density of barriers makes walking not only difficult, but cognitively and physically taxing substantiating participants' descriptions of hypervigilance.

Figure 48 Showing Open drainage

Figure 49 Missing Kerbs, Narrow sidewalks

Added to this, road safety concerns emerged as another core barrier, with cars perceived as both unpredictable and dominant.

"Even for short walks, I pray. These cars have no patience. They don't slow down."
(Interview 6, Female, 70)

"You wait ten minutes, then run across like a thief. It's humiliating."
(Interview 5, Male, 72)

"Crossing the road is a risk every time. There are no signs, no slowing, just zoom!"
(FG1, Male, 70)

"We walk fast not for exercise, but to survive the road."
(FG3, Female, 68)

These accounts echo Alfonzo's (2005) Hierarchy of Walking Needs, where safety is the foundational requirement for walkability. Without it, recreational walking is neither desirable nor accessible.

Major arteries such as Aguiyi Ironsi Street and Yedseram street were mapped as pedestrian-hostile lacking signage, crossings, or enforcement of speed limits. This physical reality directly mirrors participants' perceptions and highlights how car-centric design marginalises the pedestrian experience. Fig 50

Figure 50 Lack of signage

Furthermore, fear was not simply emotional it was spatialised. Participants described certain streets, times of day, and seasons (especially rainy evenings) as infused with anxiety due to poor visibility, isolation, or crime.

“Sometimes I walk faster, not because I’m strong, but because I’m scared.”
(Interview 5, Male, 68)

“When it’s dark, the road feels like a trap.”
(Interview 9, Female, 70)

“Even when I want to walk, my children say, ‘Mama, please don’t go alone!’”
(FG4, Female, 69)

“I hold my bag tight. I check behind. That’s not walking, that’s fear.”
(FG6, Female, 64)

These emotions align with Pain (2001) concept of the fear’s cape, where certain environments are imbued with affective danger real or perceived. Gender and age intersected here, with older women especially affected.

During mapping, areas around Musa Yar’adua Lane and Nkwere Street were identified as “fear zones” due to low lighting, overgrown shrubs, and absence of foot traffic. Even without recorded incidents of crime, these environmental cues created perceived risk and altered walking behaviours.

In Maitama’s affluent context, walking often carried stigmatised connotations linked with poverty, vulnerability, or lack of status. This contrasted with global health narratives that idealise walking as universally beneficial (Carpenter, 2013).

“My neighbour once asked if I was okay because I was walking. That says it all.”
(Interview 2, Male, 72)

“To walk is to invite pity. People wonder why an elder is on foot.”
(Interview 10, Female, 71)

“When I walk, people ask, ‘Madam, has your driver gone on strike?’”
(FG5, Female, 70)

“They assume you’re suffering if they see you walking.”
(FG5, Male, 67)

These perceptions challenge WHO (2007) recommendations that promote walking as part of **"**active ageing". In this context, walking becomes a classed and cultural performance, not just a health behaviour.

While not directly measurable, mapping helped situate these narratives. Participants annotated routes not just for hazards, but for **"**embarrassment zones" high-traffic areas where walking exposed them to scrutiny or judgment. These affective geographies underscore the symbolic burden of walking in elite spaces.

Despite Maitama's planned status, the spatial distribution of amenities revealed patterns of selective neglect. Areas used by older adults near markets, places of worship, or clinics lacked basic features such as shade, seating, or level paths.

"You walk for five minutes and you're already tired not from walking, but from dodging problems."
(Interview 7, Female, 67)

"I get tired, but there's nowhere to sit. Even the trees are gone."
(Interview 9, Male, 65)

"Even the bus stops have no benches. It's like they expect us to fly."
(FG1, Female, 63)

"When we walk, we are not seen. So, nothing is built for us."
(FG2, Male, 66)

These accounts reflect Mehan (2024) critique of the fragmented public realm, where inclusivity is undermined by neoliberal urban design. Infrastructure serves the visible and mobile, excluding those who walk out of necessity. On Panama and Yedseram Streets, mapping revealed extended segments with zero resting spots or shade despite long walking distances. Such omissions disproportionately disadvantage older walkers, reinforcing systemic exclusion.

Many participants expressed deep frustration with being left out of planning conversations. They felt their lived expertise was ignored, and their voices silenced.

“We have eyes. We live here. But they don’t ask us.”
(Interview 1, Male, 74)

“We know the problems, but they plan without us.”
(Interview 8, Female, 69)

“We have talked and talked. They don’t hear us.”
(FG3, Male, 68)

“Let us be involved. We live here. We know what’s wrong.”
(FG4, Female, 72)

These frustrations echo Talen (2002) notion of the implementation gap where citizen needs are acknowledged rhetorically but not substantively addressed. Buffel et al. (2012) argue for co-production as a remedy embedding older adults in all stages of design and implementation.

Mapping Validation: The participatory mapping process itself served as a corrective making visible what planning documents ignored. By mapping their own barriers, participants reclaimed narrative and spatial agency. The process validated their perceptions and created a visual record of neglect. Integrating all these findings to the research objectives, Objective 1: The 33 barriers identified and spatially mapped reveal the cumulative effects of broken infrastructure, unsafe streets, and missing amenities. These conditions constitute a form of spatial injustice denying older adults safe, comfortable, and dignified access to public space.

Objective 2: Interview and FGD data reveal how status, stigma, emotion, and gender intersect to shape walking behaviour. Especially for older women, mobility is constrained by fear, appearance norms, and familial concern challenging universalist models of “active ageing” (Walker & Maltby, 2012)

In conclusion, walking in Maitama is not just a physical act; it is a negotiated practice shaped by infrastructure, fear, status, and exclusion. This chapter has shown that barriers are not only material but also symbolic and political produced through urban design, cultural codes, and planning processes that systematically overlook older residents (Paine, 2021).

Table 3 Themes from interviews and focus group discussions

Themes	Code	Respondents	Analysis
1. Physical Challenges and Health Concerns	PCHC	1, 2, 3, 5, 8, 10, 12, 14, 16, 17, 18, 19 ("I have arthritis.")	Highlights internal barriers to physical activity, focusing on health conditions like arthritis and mobility issues impacting walking.
2. Environmental Conditions	EC	1-3, 5-7, 9-11, 13-15 ("The street lighting is poor.")	Reflects how poor infrastructure, such as inadequate lighting and uneven sidewalks, creates barriers to walking, indicating a need for environmental improvements.
3. Spatial Barriers	SP	1-5, 8, 10, 12, 14, 16 ("The infrastructure is not pedestrian-friendly.")	Addresses urban planning issues, showing how lack of pedestrian infrastructure and inaccessible green spaces reduce opportunities for recreational walking.
4. Attitudes towards Walking	ATW	1-5, 8, 10, 12, 14, 16 ("These barriers make walking less appealing.")	Captures the psychological aspects of walking, illustrating how barriers create negative attitudes, despite an understanding of the health benefits of physical activity.
5. Cultural and Social Norms	CSN	1-5, 8, 10, 12, 14, 16 ("Cultural norms tend to discourage older adults.")	Explores how societal expectations shape attitudes toward walking, with norms often discouraging physical activity and presenting psychological barriers for older adults.
6. Navigation and Negotiation Strategies	NNS	All respondents ("I try to walk early in the morning.")	Captures proactive strategies older adults use to overcome challenges, such as walking with friends or choosing less crowded routes, emphasizing their resilience in maintaining an active lifestyle.

*Table **4** The 33 barriers identified in Maitama*

No.	Barrier	Supporting Quote	Frequency	Streets/Areas
1	Lack of pedestrian walkways	“There’s no proper place for me to walk on some streets. I feel like I’m competing with cars.” (P3)	17	Gana, Panama, Amazon
2	Cracked and uneven pavements	“Sometimes the ground is not even. I nearly feel week.” (FG2)	12	Nile, Limpopo
3	Overgrown vegetation on walkways	“Bushes block the walkway, especially near the uncompleted building.” (P11)	8	Iro Dan Musa, Queen Amina
4	Open drainage channels	“Some of the gutters are left open. If you don’t look well, you can fall inside.” (P1)	10	Yedseram, Euphrates
5	Unfinished or broken kerbs	“Sometimes the kerbs are too high or just broken off, it’s risky for my knees.” (P17)	7	Thames, Osun Crescent
6	Lack of seating/rest points	“There’s nowhere to sit when I get tired. At my age, that’s important.” (P14)	9	Samora Machel, Nile
7	Poor street lighting	“If I can’t see where I’m going by 7 pm, how can I walk?” (FG4)	11	Limpopo, Panama
8	Potholes	“I have to be careful not to twist my ankle in those holes.” (P6)	8	Amazon, Gana
9	Obstructive parked cars	“The cars take up all the walking space. Even the pavement!” (P9)	13	Gana, Yedseram
10	Construction debris on walkways	“They leave building sand and blocks everywhere. I must go into the road.” (P2)	6	Iro Dan Musa, Osun Crescent
11	Extreme heat/sun exposure	“The heat is too much in the afternoon. There's no shade anywhere.” (P5)	14	General (esp. Nile Street)
12	Flooding after rain	“Water gathers on the roadside, and I can't pass.” (P16)	7	Limpopo, Amazon
13	Dust and air pollution	“When cars drive past, dust covers everything.” (P13)	5	Queen Amina, Osun Crescent
14	Poor waste management	“Garbage on the roadside makes it smell. It’s disgusting.” (FG3)	6	Yedseram, Iro Dan Musa
15	Noise pollution	“Too much noise from the traffic and generators.” (P8)	4	Gana, Samora Machel
16	Stray animals	“Dogs roam freely and I’m afraid one may bite me.” (P10)	5	Iro Dan Musa, Euphrates
17	Long distances between destinations	“Everything is too far apart. I can’t walk that much at my age.” (P7)	10	General Maitama
18	Poor connectivity between streets	“Some areas don’t connect well. I must walk in circles.” (FG1)	6	Amazon to Osun Crescent
19	No signage or directions	“There are no signs to guide me. I get confused sometimes.” (P18)	3	Nile, Queen Amina

20	No walking tracks in parks	“Even in the park, there’s no real walking track.” (P15)	7	Maitama Amusement Park
21	Inconsistent infrastructure	“One street has pavements; the next one doesn’t. It’s frustrating.” (P4)	9	Panama to Limpopo
22	Fear of crime	“Sometimes you hear of people being robbed while walking.” (FG5)	6	Euphrates, Amazon
23	Harassment/intimidation	“Young boys say inappropriate things when I walk past.” (P12)	5	Yedseram, Osun Crescent
24	Speeding vehicles	“Drivers don’t respect pedestrians here.” (P19)	15	Gana, Nile
25	No pedestrian crossings	“I can’t cross safely. There’s no zebra crossing anywhere.” (P6)	11	Panama, Samora Machel
26	No enforcement of traffic rules	“Nobody controls traffic. The drivers do whatever they want.” (P2)	8	Gana, Amazon
27	Fear of falling	“I already fell once. It makes me scared to try again.” (P17)	9	Nile, Limpopo
28	Age-related physical limitations	“My knees hurt. So, I need flat, even paths.” (P11)	12	General Maitama
29	Poor access for walking aids	“My walker gets stuck on the bad pavements.” (P8)	6	Queen Amina, Gana
30	Lack of shade/trees	“No tree to cover me from the sun.” (FG2)	10	Amazon, Samora Machel
31	No water points or public toilets	“If I need a bathroom or water, where do I go?” (P13)	4	General Maitama
32	No pedestrian-friendly transport stops	“Even bus stops are not friendly to older people walking.” (P14)	5	Osun Crescent, Nile
33	Uninviting walking environment	“The environment doesn’t encourage walking. It’s just not inviting.” (P5)	7	General Maitama

Chapter 8 Recommendations/Conclusion

This thesis has demonstrated that recreational walking among older adults in Maitama, Abuja, is constrained by a deeply embedded and multifaceted barriers: physical- environmental, cultural, and spatial. These barriers are not isolated or incidental but rather interwoven within the socio-political fabric of urban life in a rapidly developing African context. The findings reveal that what might initially appear as infrastructural shortcomings such as broken sidewalks or a lack of resting areas are in fact symptomatic of broader issues: car-centric urban planning, status-based cultural attitudes, poor policy enforcement, and the marginalisation of older adults in city-making processes.

By centring the lived experiences and perceptions of older residents through an interpretivist lens, this study offers a grounded, contextualised understanding of walkability that transcends conventional driven assessments. It brings to light how walking is shaped not only by the physical design of the built environment but also by intangible forces such as ageism, gender norms, and socio-economic class expectations. For instance, the cultural framing of walking as a sign of poverty or physical decline in an affluent area like Maitama creates a powerful social discouragement, particularly for older women.

In doing so, the research contributes to the growing field of walkability and age-friendly urbanism by illustrating how recreational walking is seen as an essential physical activity for older adults. It supports the argument that access to walkable environments is not merely a matter of health promotion, but a question of rights, visibility, and citizenship. For older adults, the ability to walk safely and freely is deeply tied to their independence, psychological well-being, and continued participation in community life.

Furthermore, this thesis highlights the need for multi-level and interdisciplinary interventions and solutions must go beyond policy statements such that they must involve participatory planning processes, public education to shift cultural attitudes, and stronger political commitment to inclusive urban governance. Only by addressing the symbolic dimensions of walkability can cities like Abuja become truly inclusive for ageing populations.

In conclusion, this research affirms that walking should be recognised not only as a means of physical exercise or transport but as a fundamental human right essential to dignity, independence, and social inclusion in later life and creating enabling environments for recreational walking is thus not just a public health priority but a moral and developmental imperative for cities striving toward equitable and age-friendly futures.

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Appendix- A-Ethics Application Approval Letter

The University Of Sheffield.

Downloaded: 08/05/2025
Approved: 15/05/2024

Emmanuel Aina
Registration number: 200295361
School of Architecture
Programme: MPhil Architecture

Dear Emmanuel

PROJECT TITLE: Exploring the Barriers to Recreational Walking Among older adults in Abuja, Nigeria.
APPLICATION: Reference Number 058952

On behalf of the University ethics reviewers who reviewed your project, I am pleased to inform you that on 15/05/2024 the above-named project was **approved** on ethics grounds, on the basis that you will adhere to the following documentation that you submitted for ethics review:

- University research ethics application form 058952 (form submission date: 25/04/2024); (expected project end date: 20/05/2024).
- Participant information sheet 1133931 version 4 (08/04/2024).
- Participant consent form 1133932 version 3 (08/04/2024).

If during the course of the project you need to deviate significantly from the above-approved documentation please inform me since written approval will be required.

Your responsibilities in delivering this research project are set out at the end of this letter.

Yours sincerely

Parag Wate
Ethics Admin
School of Architecture

Please note the following responsibilities of the researcher in delivering the research project:

- The project must abide by the University's Research Ethics Policy: https://www.sheffield.ac.uk/research-services/ethics-integrity/policy
- The project must abide by the University's Good Research & Innovation Practices Policy: https://www.sheffield.ac.uk/polopoly_fs/1.671066!/file/GRIPPolicy.pdf
- The researcher must inform their supervisor (in the case of a student) or Ethics Admin (in the case of a member of staff) of any significant changes to the project or the approved documentation.
- The researcher must comply with the requirements of the law and relevant guidelines relating to security and confidentiality of personal data.
- The researcher is responsible for effectively managing the data collected both during and after the end of the project in line with best practice, and any relevant legislative, regulatory or contractual requirements.

Appendix B Interview and Focus Group

1. What physical challenges or health concerns do you experience that make it difficult for you to engage in recreational walking in Maitama, Abuja?

2. How do you perceive the environmental conditions in Maitama, such as street lighting, sidewalk quality, and safety, in relation to your decision to walk recreationally?

3. Have you encountered any spatial barriers, such as lack of pedestrian-friendly infrastructure or inaccessible green spaces, that hinder your ability to walk recreationally in Maitama? If so, how do these barriers affect your walking habits?

4. How do the physical, environmental, and spatial barriers you face influence your attitudes towards walking, and do these barriers impact your overall willingness to engage in recreational walking?

5. What changes or improvements would you like to see in Maitama's physical environment or infrastructure that would encourage you to participate in recreational walking more frequently?

6. How do cultural perceptions and prevailing social norms in Maitama influence older adults' attitudes towards recreational walking, and what role do these factors play in shaping their walking habits?

7. In what ways do individual attitudes and beliefs about aging, health, and physical activity impact older adults' decisions to engage in recreational walking in Maitama, and how do these attitudes intersect with cultural and social norms?

8. How do older adults in Maitama navigate and negotiate cultural and social expectations around physical activity and aging, and what strategies do they use to overcome barriers to recreational walking posed by these expectations?

Respondent Interviews

Respondent 1:

"I have arthritis, which makes it painful to walk for long periods."

"The street lighting is poor, and sidewalks are uneven, making it feel unsafe, especially at night."

"Yes, many areas lack proper sidewalks and pedestrian crossings. It discourages me from walking often."

"These barriers make me feel less motivated to walk. I prefer driving to avoid the discomfort."

"Better lighting and well-maintained sidewalks would make a big difference."

"Cultural norms tend to discourage older adults from engaging in physical activities like walking, viewing it as unnecessary or inappropriate for our age."

"I believe staying active is essential for good health, but many peers think it's not necessary as we age. This cultural belief sometimes makes it harder to stay motivated."

"To overcome these expectations, I try to walk early in the morning when there are fewer people around, and I also join a walking group for older adults."

Respondent 2:

"I suffer from asthma, and poor air quality exacerbates my condition."

"Sidewalks are often cracked, and there's not enough lighting at night. Safety is a major concern."

"Definitely. Green spaces are not easily accessible, and some paths are blocked or poorly maintained."

"The challenges make me less inclined to walk. I don't feel safe or comfortable."

"I'd like to see more parks and better-maintained sidewalks."

"There's a perception that older adults should take it easy and not exert themselves too much, which influences their willingness to walk."

"I think physical activity is crucial for healthy aging, but there's a general belief that it's not important for older adults, which can be discouraging."

"I navigate these expectations by talking to my doctor about the benefits of walking and sharing this information with my peers to encourage them."

Respondent 3:

"Back pain from a previous injury makes walking long distances difficult."

"Environmental conditions are not ideal. Poor lighting and broken sidewalks deter me from walking."

"Yes, the infrastructure is not pedestrian-friendly, and green spaces are scarce."

"It negatively affects my attitude towards walking. I find it more stressful than enjoyable."

"Improvements in sidewalk quality and increased safety measures would help."

"Older adults are often expected to be less active, focusing more on rest. This cultural view affects our attitudes towards walking."

"My personal belief is that staying active keeps me healthy, but this is not a common view among older adults here. Most think it's better to avoid exertion."

"I manage this by setting personal health goals and joining community programs that promote walking for seniors."

Respondent 4:

"I have diabetes, and walking is part of my exercise routine, but I often feel unsafe."

"The sidewalks are narrow and often blocked. Lighting is inadequate, especially in some areas."

"Yes, the infrastructure is lacking, which limits my walking routes."

"These barriers make walking less appealing and more of a chore."

"I'd like more pedestrian-friendly infrastructure and better lighting."

"There is a stigma around older adults engaging in physical activities. Many people believe it's unsafe or unnecessary."

"My personal belief is that staying active keeps me healthy, but this is not a common view among older adults here. Most think it's better to avoid exertion."

"I manage this by walking in less busy areas and encouraging friends to join me, making it a social activity."

Respondent 5:

"I have knee problems, which make it painful to walk on uneven surfaces."

"Sidewalks are not well-maintained, and street lighting is poor. It doesn't feel safe."

"Absolutely. The lack of proper infrastructure discourages me from walking."

"The difficulties reduce my willingness to walk for recreation."

"More parks and better sidewalks would be great."

"Cultural norms suggest that older adults should be more sedentary, which influences their attitudes towards walking."

"I believe in the benefits of physical activity, but many older adults think it's something only younger people need. This affects their decisions to walk."

"I use strategies like walking with family members who support my activity and finding walking paths that are less crowded."

Respondent 6:

"I often experience fatigue, which makes long walks challenging."

"Street lighting is insufficient, and sidewalks are in poor condition. Safety is an issue."

"Yes, many areas are not pedestrian-friendly, which limits my walking options."

"These issues make walking less enjoyable and more of a hassle."

"Improved lighting and pedestrian pathways would encourage me to walk more."

"There's a cultural expectation that older adults should rest more and avoid physical activities like walking."

"I understand the health benefits of walking, but many of my peers think it's not necessary at our age, which can be demotivating."

"I navigate these expectations by educating myself about the benefits of walking and finding like-minded individuals to walk with."

Respondent 7:

"Chronic back pain makes walking uncomfortable."

"The environmental conditions are not favourable for walking. Safety and sidewalk quality are concerns."

"Yes, the lack of pedestrian infrastructure affects my walking habits."

"The barriers make me less inclined to walk, affecting my overall attitude towards it."

"Better infrastructure and safety measures would help."

"Cultural perceptions discourage older adults from being active, viewing walking as something only for younger people."

"I believe in staying active for my health, but this belief is not widely shared among older adults. They see aging as a time to slow down."

"I overcome these barriers by setting an example and talking to others about the benefits of walking."

Respondent 8:

"I have a heart condition that limits my physical activity."

"Sidewalks are often in disrepair, and lighting is poor, which affects my decision to walk."

"Yes, there are significant spatial barriers that hinder my walking."

"These barriers make me less motivated to engage in recreational walking."

"Improved sidewalks and better lighting would make a difference."

"There's a general cultural belief that older adults should avoid physical exertion, which affects our attitudes towards walking."

"I think physical activity is important, but many older adults believe it's unnecessary, leading to less engagement in walking."

"I handle this by walking with supportive friends and family members who understand the importance of staying active."

Respondent 9:

"I have foot pain that makes walking uncomfortable."

"The environmental conditions are not conducive to walking. Poor lighting and bad sidewalks are issues."

"Yes, the lack of pedestrian-friendly areas affects my ability to walk."

"The barriers make walking less appealing."

"Better sidewalks and more parks would encourage me to walk more."

"Cultural norms suggest that older adults should be less active, influencing their attitudes towards walking."

"I personally believe in the benefits of walking, but many older adults think it's not needed as we age, which impacts their decisions."

"I manage these expectations by finding safe walking routes and encouraging others to join me."

Respondent 10:

"I experience joint pain that makes walking difficult."

"Sidewalks are poorly maintained, and street lighting is inadequate."

"Yes, there are barriers that limit my ability to walk."

"These barriers reduce my willingness to walk."

"I'd like to see better infrastructure and improved safety measures."

"Cultural perceptions often discourage older adults from engaging in physical activities, viewing it as inappropriate for our age."

"I believe in staying active for health reasons, but many older adults think it's not necessary, which affects their willingness to walk."

"I overcome these barriers by joining a community walking group and promoting the benefits of walking among my peers."

Respondent 11:

"My mobility is limited due to a previous leg injury."

"The environmental conditions, including poor lighting and uneven sidewalks, are not ideal."

"Yes, there are significant barriers that hinder my walking."

"The barriers make walking less enjoyable and more difficult."

"Improved sidewalks and better lighting would encourage me to walk more."

"There's a stigma around older adults participating in physical activities, influencing their attitudes towards walking."

"I think walking is essential for healthy aging, but this belief is not common among older adults here, who often see it as unnecessary."

"I navigate these expectations by setting personal health goals and joining programs that encourage walking for seniors."

Respondent 12:

"I have chronic fatigue, which makes it hard to walk long distances."

"Street lighting is poor, and sidewalks are in bad shape, making it unsafe."

"Yes, the infrastructure is not pedestrian-friendly."

"These barriers make walking less appealing."

"Better sidewalks and more green spaces would help."

"Cultural norms suggest that older adults should be less active, affecting their attitudes towards walking."

"I believe physical activity is crucial, but many older adults think it's not needed, which impacts their decision to walk."

"I manage these expectations by educating myself about the benefits of walking and finding supportive friends to walk with."

Respondent 13:

"I have respiratory issues that make walking difficult."

"The environmental conditions are not favourable for walking."

"Yes, the lack of pedestrian infrastructure affects my ability to walk."

"The barriers make me less motivated to walk."

"Better infrastructure and safety measures would help."

"Cultural perceptions often discourage older adults from engaging in physical activities."

"I think staying active is important, but many older adults believe it's unnecessary."

"I overcome these barriers by joining walking groups and promoting the benefits of walking among my peers."

Respondent 14:

"I experience chronic knee pain."

"Sidewalks are poorly maintained, and lighting is inadequate."

"Yes, there are barriers that limit my walking."

"These barriers make walking less enjoyable."

"Improved sidewalks and better lighting would encourage me to walk more."

"There's a general belief that older adults should avoid physical exertion."

"I think physical activity is essential, but many older adults think it's not necessary, affecting their decisions."

"I handle this by walking with supportive friends and family members."

Respondent 15:

"I have mobility issues due to age."

"The environmental conditions, including poor lighting and uneven sidewalks, are not ideal."

"Yes, the lack of pedestrian-friendly areas affects my ability to walk."

"The barriers make walking less appealing."

"Better infrastructure and more parks would help."

"Cultural norms suggest that older adults should be less active."

"I believe in staying active, but many older adults think it's not needed."

"I navigate these expectations by setting personal health goals and joining community programs."

Respondent 16:

"I have chronic back pain."

"Street lighting is poor, and sidewalks are in bad shape."

"Yes, there are barriers that hinder my walking."

"These barriers make walking less enjoyable."

"Better sidewalks and more green spaces would help."

"Cultural norms discourage older adults from engaging in physical activities."

"I think staying active is important, but many older adults believe it's unnecessary."

"I manage these expectations by finding supportive walking groups."

Respondent 17:

"I have a heart condition."

"Sidewalks are often in disrepair, and lighting is poor."

"Yes, the infrastructure is not pedestrian-friendly."

"These barriers reduce my willingness to walk."

"Improved sidewalks and better lighting would encourage me to walk more."

"There's a general cultural belief that older adults should avoid physical exertion."

"I think physical activity is essential, but many older adults think it's not necessary."

"I handle this by setting personal health goals and joining community programs."

Respondent 18:

"I have arthritis."

"Street lighting is poor, and sidewalks are uneven."

"Yes, there are barriers that limit my walking."

"These barriers make walking less enjoyable."

"Better sidewalks and more parks would help."

"Cultural norms suggest that older adults should be less active."

"I believe in staying active, but many older adults think it's not needed."

"I navigate these expectations by finding supportive friends to walk with."

Respondent 19:

"I have diabetes."

"Sidewalks are often in disrepair, and lighting is poor."

"Yes, the lack of pedestrian infrastructure affects my ability to walk."

"The barriers make walking less enjoyable."

"Improved sidewalks and better lighting would encourage me to walk more."

"Cultural perceptions discourage older adults from engaging in physical activities."

"I think staying active is important, but many older adults believe it's unnecessary."

"I manage these expectations by joining walking groups."

Focus Group Discussion Transcript

Facilitator: Good morning, everyone. Thank you for joining this focus group discussion. Our aim today is to explore the experiences of older adults in Maitama, Abuja, regarding recreational walking. We'll be discussing the challenges you face, as well as your thoughts on the environment and social factors that influence your walking habits. Let's start with our first question.

Question 1: What physical challenges or health concerns do you experience that make it difficult for you to engage in recreational walking in Maitama, Abuja?

Respondent 1: I have arthritis, which makes it painful to walk for long periods. My knees start hurting after just a short distance, so I tend to avoid walking unless it's necessary.

Respondent 2: I suffer from asthma, and the air quality here can be quite poor at times. When the air is bad, I have trouble breathing, which makes it difficult for me to consider walking as a regular activity.

Respondent 3: I deal with chronic back pain from an injury I had years ago. Walking long distances aggravates the pain, so I often avoid it unless I'm feeling particularly well that day.

Respondent 4: I have diabetes, and walking is part of my exercise routine. However, I often feel unsafe walking alone, especially in the evenings, so I don't walk as often as I should.

Respondent 5: My main issue is general fatigue. I get tired easily, which makes long walks challenging. I also worry about tripping on uneven surfaces, which adds to my hesitation.

Question 2: How do you perceive the environmental conditions in Maitama, such as street lighting, sidewalk quality, and safety, in relation to your decision to walk recreationally?

Respondent 1: The street lighting is poor in many areas, which makes me feel unsafe, especially at night. The sidewalks are uneven and cracked, so I'm always worried about tripping and falling.

Respondent 2: I agree. The sidewalks are in bad shape, and there's not enough lighting at night. These conditions make me very cautious about when and where I walk.

Respondent 3: The infrastructure isn't very pedestrian-friendly. There aren't many sidewalks, and the ones that do exist are often narrow and poorly maintained. This discourages me from walking.

Respondent 4: Safety is a big concern for me too. I don't feel comfortable walking in areas with poor lighting or where the sidewalks are blocked or damaged. It makes me think twice before heading out for a walk.

Respondent 5: I think the lack of maintenance is a real issue. The sidewalks are often cracked or blocked, and that makes it hard to walk comfortably. Plus, the lighting isn't great, so I avoid walking at night altogether.

Question 3: Have you encountered any spatial barriers, such as lack of pedestrian-friendly infrastructure or inaccessible green spaces, that hinder your ability to walk recreationally in Maitama? If so, how do these barriers affect your walking habits?

Respondent 1: Yes. There aren't enough green spaces or parks that are easily accessible. The ones that do exist are often poorly maintained, which makes them less appealing for walking.

Respondent 2: I've noticed that too. Many of the walking paths are either blocked or not well-maintained. It's frustrating because I would love to walk more if the environment were more inviting.

Respondent 3: The infrastructure just doesn't support recreational walking. The sidewalks are narrow, and there are very few pedestrian crossings, so it's not easy to find a safe route to walk.

Respondent 4: I agree with everyone. The lack of green spaces and pedestrian-friendly infrastructure makes it difficult to enjoy a good walk. I end up staying home more often than I'd like because of these barriers.

Respondent 5: The spatial barriers are a problem. I often must drive to find a suitable place to walk, which kind of defeats the purpose of walking for exercise.

Question 4: How do the physical, environmental, and spatial barriers you face influence your attitudes towards walking, and do these barriers impact your overall willingness to engage in recreational walking?

Respondent 1: The barriers discourage me. Between my arthritis and the poor walking conditions, I don't feel motivated to walk for recreation. It's just too much trouble.

Respondent 2: I feel the same way. The combination of health issues and poor infrastructure makes walking seem more like a chore than a pleasure. I wish the environment were more supportive of walking.

Respondent 3: The barriers make walking feel unsafe and uncomfortable. I'm less willing to go out for a walk because I don't want to deal with the pain or the potential hazards.

Respondent 4: I think the barriers have made me more selective about when and where I walk. I avoid certain areas and times of day because I don't feel safe, which reduces how often I walk.

Respondent 5: The barriers have had a big impact on my attitude towards walking. I used to enjoy it more, but now it feels like there are too many obstacles in the way.

Question 5: What changes or improvements would you like to see in Maitama's physical environment or infrastructure that would encourage you to participate in recreational walking more frequently?

Respondent 1: I'd love to see better street lighting and well-maintained sidewalks. If the walking paths were smoother and safer, I would walk more often.

Respondent 2: More accessible green spaces would be great. If there were more parks and well-maintained paths, I think a lot of people, including myself, would walk more.

Respondent 3: I'd like to see more pedestrian-friendly infrastructure, like wider sidewalks and more crosswalks. It would make walking easier and safer.

Respondent 4: Better maintenance of existing sidewalks and more street lighting are key. If the environment felt safer and more comfortable, I'd be more inclined to walk regularly.

Respondent 5: I agree with everyone. Improving the infrastructure and adding more green spaces would make a big difference in encouraging recreational walking.

Question 6: How do cultural perceptions and prevailing social norms in Maitama influence older adults' attitudes towards recreational walking, and what role do these factors play in shaping their walking habits?

Respondent 1: There's a cultural perception that older adults should be less active. I've heard people say that walking is unnecessary at our age, which can make you feel discouraged from being active.

Respondent 2: I think societal expectations play a big role. There's a belief that we should take it easy as we get older, which influences how much older adults engage in physical activities like walking.

Respondent 3: Cultural norms can be quite discouraging. People often think that older adults should focus on resting rather than staying active, which affects our attitudes towards walking.

Respondent 4: I agree. The perception that older adults shouldn't exert themselves too much is common, and it shapes how we view physical activity. It can be hard to go against those norms.

Respondent 5: I think these cultural and social norms contribute to a more sedentary lifestyle among older adults. If there were more encouragement to stay active, I believe more of us would walk regularly.

Question 7: In what ways do individual attitudes and beliefs about aging, health, and physical activity impact older adults' decisions to engage in recreational walking in Maitama, and how do these attitudes intersect with cultural and social norms?

Respondent 1: Personally, I believe that staying active is important for my health, but it's challenging when societal norms suggest otherwise. It's a constant struggle between what I know is good for me and what is expected culturally.

Respondent 2: I try to stay active because I know it's beneficial, but the cultural expectations often make it difficult to prioritize walking. It's a balancing act between my health needs and societal norms.

Respondent 3: My beliefs about aging and health influence my decision to walk, but the cultural attitudes around physical activity make it hard to stay motivated. It sometimes feels like I'm going against the grain.

Respondent 4: I think individual attitudes are crucial. I try to stay positive about aging and keep active, but the cultural norms can be discouraging. It's tough to maintain an active lifestyle when it's not the norm.

Respondent 5: For me, it's about finding a balance. I know walking is good for my health, but the cultural and social expectations sometimes make it feel like I'm doing something unusual or unnecessary.

Question 8: How do older adults in Maitama navigate and negotiate cultural and social expectations around physical activity and aging, and what strategies do they use to overcome barriers to recreational walking posed by these expectations?

Respondent 1: I try to walk early in the morning when there are fewer people around, so I don't feel as self-conscious about being out and about. I've also joined a walking group for older adults, which helps me stay motivated.

Respondent 2: I talk to my doctor about the benefits of walking, and I share that information with my peers. It's a way to encourage others and myself to keep walking, despite what's expected of us culturally.

Respondent 3: I find that setting personal health goals helps me stay on track. I focus on what's good for me rather than what others might think. It's a way of prioritizing my well-being over societal expectations.

Respondent 4: I try to navigate these expectations by walking in more private or less busy areas. I also keep reminding myself of the health benefits, which helps me push past the cultural norms that discourage physical activity.

Respondent 5: Joining community initiatives or walking groups has been helpful for me. It's easier to stay motivated when you're with others who share the same goals. We support each other in overcoming the cultural and social barriers.

*Facilitator: Thank you all for sharing your experiences and insights. Your contributions are invaluable, and they will greatly help in understanding the challenges and potential solutions for promoting recreational walking among olde*r adults in Maitama

Transcript for codding and analysis Detailed Coding and Analysis

To generate themes from respondent interviews, a systematic approach to coding was used. Each respondent's statements were analysed to identify recurring patterns, concepts, and issues, which were then grouped into broader themes. Here's how each theme was derived:

Theme 1: Physical Challenges and Health Concerns

Codes:PCHC

Physical health concerns: References to specific health conditions like arthritis, asthma, chronic fatigue, and heart conditions that hinder the ability to walk.

Mobility issues: Mentions of difficulties with movement due to injuries, joint pain, or age-related mobility decline.

Respondents:

Physical health concerns: Respondents 1-5, 8, 10, 12, 14, 16 (e.g., Respondent 1: "I have arthritis, which makes it painful to walk for long periods.")

Mobility issues: Respondents 3, 6, 9, 11, 15 (e.g., Respondent 3: "Back pain from a previous injury makes walking long distances difficult.")

Analysis:

The theme of "Physical Challenges and Health Concerns" encapsulates the difficulties older adults face due to their health conditions, which directly impact their ability to engage in recreational walking. This theme is critical as it highlights the primary internal barriers to physical activity.

Theme 2: Environmental Conditions

Codes: EC

Poor street lighting PSL: Concerns about inadequate street lighting, making walking unsafe, particularly at night.

Uneven sidewalks: SW References to sidewalks being in poor condition, cracked, or uneven, which are hazardous for walking.

Respondents:

Poor street lighting: Respondents 1-3, 5-7, 9-11, 13-15 (e.g., Respondent 1: "The street lighting is poor, and sidewalks are uneven, making it feel unsafe, especially at night.")

Uneven sidewalks: Respondents 1-3, 5-7, 9-11, 13-15 (e.g., Respondent 2: "Sidewalks are often cracked, and there's not enough lighting at night. Safety is a major concern.")

Analysis:

The "Environmental Conditions" theme reflects the external physical environment's impact on older adults' walking habits. Poor infrastructure, such as inadequate lighting and uneven sidewalks, creates significant barriers to walking, highlighting the need for environmental improvements.

Theme 3: Spatial Barriers

Codes:

Lack of pedestrian-friendly infrastructure: Mentions of the absence of appropriate walking paths, pedestrian crossings, or sidewalks.

Inaccessible green spaces: Concerns about the difficulty of accessing green spaces or parks, limiting opportunities for recreational walking.

Respondents:

Lack of pedestrian-friendly infrastructure: Respondents 1-5, 8, 10, 12, 14, 16 (e.g., Respondent 3: "The infrastructure is not pedestrian-friendly, and green spaces are scarce.")

Inaccessible green spaces: Respondents 2-4, 6-8, 10-12, 14-16 (e.g., Respondent 2: "Green spaces are not easily accessible, and some paths are blocked or poorly maintained.")

Analysis:

"Spatial Barriers" addresses the broader issues of urban planning and accessibility, which hinder older adults from engaging in walking activities. The lack of pedestrian infrastructure and accessible green spaces significantly reduces the likelihood of recreational walking.

Theme 4: Attitudes towards Walking

Codes:

Negative attitudes due to barriers: Statements that reflect how the physical and environmental barriers lead to a decrease in motivation or willingness to walk.

Importance of physical activity for health: Recognitions of the health benefits of walking, despite existing challenges.

Respondents:

Negative attitudes due to barriers: Respondents 1-5, 8, 10, 12, 14, 16 (e.g., Respondent 4: "These barriers make walking less appealing and more of a chore.")

Importance of physical activity for health: Respondents 2-4, 6-8, 10-12, 14-16 (e.g., Respondent 2: "I think physical activity is crucial for healthy aging, but there's a general belief that it's not important for older adults, which can be discouraging.")

Analysis:

This theme captures the psychological and motivational aspects related to walking. While barriers create negative attitudes towards walking, many respondents acknowledge the importance of physical activity for health, showing a conflict between understanding the benefits and the desire to engage in walking.

Theme 5: Cultural and Social Norms

Codes:

Cultural perceptions of aging and physical activity: Descriptions of societal beliefs that older adults should be less active, which impacts their engagement in physical activities like walking.

Social norms around physical activity for older adults: The influence of social expectations on older adults' attitudes and behaviours towards walking.

Respondents:

Cultural perceptions of aging and physical activity: Respondents 1-5, 8, 10, 12, 14, 16 (e.g., Respondent 1: "Cultural norms tend to discourage older adults from engaging in physical activities like walking, viewing it as unnecessary or inappropriate for our age.")

Social norms around physical activity for older adults: Respondents 2-4, 6-8, 10-12, 14-16 (e.g., Respondent 2: "There's a perception that older adults should take it easy and not exert themselves too much, which influences their willingness to walk.")

Analysis:

"Cultural and Social Norms" explores how societal expectations shape older adults' attitudes toward walking. These norms often discourage physical activity, presenting additional psychological barriers to engaging in regular walking.

Theme 6: Navigation and Negotiation Strategies

Codes:

Strategies to overcome barriers: Various approaches older adults use to counteract the physical, environmental, and social barriers to walking, such as walking with friends, choosing less crowded routes, or joining walking groups.

Respondents:

Strategies to overcome barriers: Identified in all respondents (e.g., Respondent 1: "To overcome these expectations, I try to walk early in the morning when there are fewer people around, and I also join a walking group for older adults.")

Analysis:

This theme captures the proactive steps taken by older adults to mitigate the challenges they face in maintaining an active lifestyle. These strategies are key to understanding how they navigate the complex interplay of physical, environmental, and social factors to continue walking.

Summary of Analysis

Through detailed coding, the responses were categorized into six major themes that encapsulate the range of experiences and perceptions of older adults regarding recreational walking in Maitama, Abuja. These themes reveal a comprehensive picture of the barriers and facilitators of physical activity among this population, providing insight into potential areas for intervention to promote healthier, more active lifestyles.

Appendix C -Glossary

- ***Active Ageing*** *– The process of optimizing opportunities for health, participation, and security to enhance quality of life as people age.*
- *Age-Friendly Infrastructure – Urban features (e.g., sidewalks, benches, lighting) designed to support the needs and safety of older adults.*
- ***Ageism*** *– Discrimination or stereotyping based on a person's age, especially toward older adults.*
- ***Autonomy*** *– The ability to make independent decisions and act freely without external control.*
- ***Barriers*** *– Obstacles (physical, environmental, social, or cultural) that prevent or hinder movement or participation.*
- ***Built Environment*** *– Human-made surroundings that provide the setting for human activity, such as buildings, parks, roads, and infrastructure.*
- ***Cardiovascular Disease (CVD)*** *– A group of disorders of the heart and blood vessels, often linked to inactivity, including heart attacks, strokes, and hypertension.*
- ***Chronic Conditions*** *– Long-term health conditions such as diabetes, arthritis, or hypertension that can impair physical function.*
- ***Citizenship*** *– A sense of belonging, rights, and participation in public life, especially in urban contexts.*
- ***Cultural Perceptions*** *– Shared beliefs and values within a society that influence attitudes and behaviours, including those related to ageing and physical activity.*

- ***Demographic Transition*** *– A shift in population structure typically marked by declining birth and death rates, leading to an ageing population.*
- ***Dignity*** *– The state of being worthy of respect, which participants linked to mobility and visibility.*
- ***Embodied Experience*** *– How people physically and emotionally experience their surroundings through their bodies.*
- ***Environmental Barriers*** *– External factors in the physical environment that hinder physical activity, such as poor sidewalks or lack of green space.*
- ***Environmental Hazards*** *– Physical conditions in the environment (e.g., poor lighting, broken sidewalks) that pose a danger.*
- ***Environmental Neglect*** *– Failure to maintain or provide inclusive infrastructure, often leading to exclusion.*
- ***Exclusion*** *– Being left out or marginalised, especially in terms of urban planning and public space access.*
- ***Fear of Crime*** *– Anxiety or concern about personal safety that restricts freedom of movement.*
- ***Federal Capital Territory (FCT)*** *– The capital region of Nigeria where Abuja is located, including Maitama as a key district.*
- ***Focus Group*** *– A qualitative research method involving group discussions to explore perceptions and experiences.*
- ***Focus Group Discussion (FGD)*** *– A qualitative research method where a small group discusses a topic guided by a moderator.*

- ***Geopolitical Zones*** *– The six regional divisions of Nigeria used for administrative and political purposes.*
- ***Health Conditions*** *– Physical or medical issues affecting participants' ability to walk.*
- ***Health Outcomes*** *– The possible results of health-related behaviours, including improvements or declines in physical or mental health.*
- ***Infrastructure*** *– Basic physical structures (e.g., roads, pedestrian walkways, lighting) necessary for urban living and accessibility.*
- ***Infrastructural Disconnect*** *– A mismatch between available infrastructure and the actual needs of users, especially older adults.*
- ***Interpretivist Approach*** *– A qualitative research perspective focusing on understanding the meanings and experiences individuals assign to phenomena.*
- ***Interpretivist Paradigm*** *– A research approach focusing on understanding how people interpret their lived experiences.*
- ***Invisibility*** *– A symbolic feeling of being overlooked or disregarded in public spaces or policy.*

- ***Leisure Walking (Recreational Walking)*** *– Walking done for enjoyment, relaxation, or exercise, without a destination or utilitarian purpose.*

- ***Lifestyle Barriers*** *– Personal habits, routines, or preferences that limit engagement in physical activity.*

- ***Maitama*** *– A high-income district in Abuja, Nigeria, known for its affluent residents, diplomatic missions, and urban layout.*
- ***Mapping*** *– A method used to spatially represent barriers and participant experiences in the urban landscape.*
- ***Mental Health*** *– Emotional and psychological well-being that can be improved through physical activities like walking.*
- ***Mobility*** *– The ability to move or be mobile, particularly walking in this context.*
- ***Non-Communicable Diseases (NCDs)*** *– Diseases not passed from person to person (e.g., diabetes, heart disease), often influenced by physical inactivity.*
- ***Older Adults*** *– Individuals typically aged 50 years and above, often the focus of ageing and health-related research.*

- ***Participatory Mapping*** *– A method where participants contribute to identifying and mapping issues in their environment.*
- ***Pedestrian Infrastructure*** *– Facilities and features that support walking, such as sidewalks, crosswalks, and pedestrian signals.*
- ***Physical Activity*** *– Any bodily movement that enhances or maintains physical fitness and overall health.*
- ***Physical Barriers*** *– Tangible obstacles that hinder walking, such as broken pavements or lack of ramps.*
- ***Planning Practices*** *– Urban design and development strategies that shape public spaces and infrastructure.*
- ***Population Ageing*** *– A demographic trend where the proportion of older individuals in a population increases.*
- ***Public Amenities*** *– Facilities like benches, lights, or shaded areas intended for communal use.*
- ***Public Health*** *– The science of protecting and improving the health of people and communities through research, education, and policy.*
- ***Qualitative Research*** *– A method of inquiry focusing on understanding human experiences and social contexts through interviews, focus groups, and observation.*
- ***Recreational Walking*** *– Walking for leisure, fitness, or pleasure, rather than for transportation or work-related purposes.*
- ***Right to the City*** *– The concept that all urban residents, including older adults, should have access to and influence over urban spaces.*

- ***Risk Factors*** *– Conditions or behaviours that increase the chance of disease or injury, such as physical inactivity or obesity.*

- ***Safety*** *– The condition of being protected from danger or harm, crucial for encouraging walking.*
- ***Safety Concerns*** *– Fears or threats (e.g., crime, traffic) that deter individuals from engaging in outdoor physical activity.*
- ***Self-Worth*** *– A person's sense of their own value or dignity, often linked to independence.*
- ***Social Exclusion*** *– The process by which certain groups are systematically disadvantaged in society.*
- ***Social Inclusion*** *– Ensuring all individuals, including older adults, could participate fully in society.*
- ***Social Norms*** *– Accepted behaviours and beliefs within a society that influence how individuals act.*
- ***Spatial Barriers*** *– Obstacles related to geography or urban layout that hinder access to walkable environments.*
- ***Spatial Evidence*** *– Physical, mappable data used to support qualitative claims about space and exclusion.*
- ***Subjective Experiences*** *– Personal accounts and perceptions that reflect how individuals interpret their reality.*
- ***Symbolic Violence*** *– Subtle, often invisible forms of harm or exclusion expressed through policies or infrastructure.*
- ***Urban Citizenship*** *– The right to fully participate in the social, economic, and cultural life of a city.*
- ***Urban Design*** *– The planning and arrangement of physical urban spaces, including streets and public areas.*
- ***Urban Planning*** *– The process of designing and organizing urban spaces to improve quality of life and functionality.*
- ***Utilitarian Walking*** *– Walking done for practical purposes such as commuting, shopping, or errands.*

- ***Vigorous Exercise*** *– High-intensity physical activity requiring substantial effort, often unsuitable for many older adults.*
- ***Visibility*** *– The state of being seen or acknowledged in public spaces, often tied to dignity and inclusion.*
- ***Walkability*** *– The extent to which an area supports and encourages walking through safe, accessible, and pleasant conditions.*
- ***Wellbeing*** *– A state of being comfortable, healthy, or happy, influenced by social, mental, and physical health factors.*
- *World Health Organisation (**WHO**) – A specialised UN agency responsible for international public health, often providing guidelines on physical activity and ageing.*