UNIVERSITY OF NAIROBI

FACULTY OF BUILT ENVIRONMENT AND DESIGN

DEPARTMENT OF ART AND DESIGN

ASSESSING THE LEVEL OF ACCESSIBILITY OF MEMORIAL PARKS BY THE VISUALLY IMPAIRED: A case study of Bomb Blast Memorial Park, Nairobi.

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NAOMI NEKESA

Supervised by; Dr. Munene Michael and Dr. Betty Karimi

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University of Nairobi

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DECLARATION

I declare that this is my original work and the study has not been presented in any otheruniversity for examination.

Signature..... Date.08.09.22

NAOMI NEKESA WANJALA

B51/37323/2020

DEPARTMENT OF ARTS AND DESIGNUNIVERSITY OF NAIROBI

Recommended by the supervisor

Signature..... Date.08.09.2022

SUPERVISOR

DR. MUNENE MICHEAL, PhD

Recommended by the supervisor

Signature..... Date.08/09/2022.

SUPERVISOR

DR BETTY KARIMI MWITI, PhD.

Recommended by the Chairman department of Arts and Design

Signature..... Date.08/09/2022.

for Chairman

DR. Maina Samwel, PhD.

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DEDICATION

This paper is dedicated to the VI individuals who keep on fighting daily for their rights of access and inclusivity to be met.

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I would like to acknowledge my lecturers who have been a greater part of this project from the beginning, i.e Dr. Micheal Munene, PhD, Dr. Betty Karimi Mwiti, PhD and Dr. Lilac Osanjo, PhD. I would also like to acknowledge my colleagues who have been supportive throughout this period of research i.e Mr. Charlse Ouma, Ms. Prudence Chepng'eno, Ms. Mercy Sila, Mr. Andrew Koila, Mr. Kevin and Mr. Wachira Samwel.

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ABSTRACT

The inclusive design was a concept of late Architect Ronald Mace. Inclusivity is all about developing products and environments that can accommodate everybody regardless of their age, gender or ability status. Inclusivity of the visually impaired community has been corruptedlargely especially in public environments. Inclusive environments for the visually impaired means that the environment should be free from different types of barriers and limitations that may hinder them from performing their tasks in the most effective way possible. Visual impaired people require assistive technology such as cane, service animals, braille signage, tactile surface, even steps/provision of ramps, change of color for those with low vision so thatthey may recognize change of the environment. This research aimed at finding different barriers that may affect the visually impaired as they use public spaces especially parks and in this case the Bomb Blast Memorial Park. Most of the nations in the world have not applied inclusive design in parks. US government has however made laws on provision of accessible parks but has still not met the standard. Africa is comingup with South Africa being the first nation in Africa to introduce accessibility in parks. South Africa has experimented on one botanical garden and it has turned out to help people with different abilities access the park, especially the blind. It is believed that making contact with nature can help improve the wellbeing of an individual and also help in improving one's health at the same time. Giving a chance to the disabled communities to access these facilities means that they aregoing to have lesser trips to the hospitals because they can now connect with nature. The research data was collected by use of questionnaires, guided interviews, observations and google forms and the analysis of data will be descriptive. Data was then be analyzed and presented.

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ABBREVIATIONS

ADA- Americans with Disabilities Act

BBI – Blind Broke Individuals

KSB –Kenya Society for the Blind

PWD- Persons/people with Disabilities

UD- Universal Design

VI – Visually Impaired

WHO – World Health Organization

CHAPTER ONE
INTRODUCTION

1.1 Background Information

Disability, in accordance to Americans with Disabilities Act (ADA, 1980) means an individualwho has physical or mental impairment that consequently limits their ability to do various major life activities. There are disabilities that were enacted as disabilities and a law was written toward it. These disabilities include; deafness, blindness, intellectual disability whether partially or completely, missing limbs or mobility disorder that require the use of a wheelchair, crutches, autism, cancer, cerebral palsy, diabetes, epilepsy, HIV/ADS, multiple sclerosis, muscular dystrophy, major depressive disorder, bipolar disorder, down syndrome, hyperactivity disorder among others. Disability is considered disability when it prevents someone from doing what they want or what they need to do. These condition results from many different factors of which are not limited to; hereditary conditions, pre-birth complications, injury, diseases, chemical imbalances or from environmental issues at times.

According to the information provided by the WHO (2010), disability is a universal public health issue. About 15% of the world's population, which amounts to about 1 billion people, experience disability of some kind. Low income countries have a higher number of their population being disabled, 18% of the population compared to 11.3% of the population in the countries in the west. The statistics involves 93 million children under the age of 14 and 720 million adults. One in every seven people is disabled.

According to the data provided by the WHO (2012) there are 285 million people of the world'spopulation who are experiencing blindness. 39 million people are totally blind and 246 millionpeople have low vision 90% of the blind population are the elderly. 90% of the blind are fromlow income countries. A person is considered blind if their vision cannot be improved even with the use of spectacles.

The total population of the disabled the number of the visually impaired forms 25% about a decade ago. According to the recent statistics of 2019 by the Kenya National Bureau of

Statistics there are 0.9 million Kenyans that have disabilities. The break down shows that 400,000 have mobility disorders, 320,000 have visual disability, 200,000 having cognition impairment, 150,000 of the people having hearing disability. Then the rest have the various disabilities.

(Munene, 2012), states that there are four different levels of visual function which are; normalvision, moderate visual damage, severe visual damage and total blindness. Loss of sight especially when one is used to having vision is equated to loss of a loved one. One grieves as if mourning death. This means that such persons should be accorded with emotional support through their grieving process before it matures to depression or anxiety disorders. These people do not need special treatment because this to them is considered discrimination. They only need that the barriers be removed so that they can access services and goods independentlyjust as any other 'normal' individual.

Everyone at some point in life experiences disability whether temporarily or permanently. There are only few who are lucky to age without experiencing disability of any form. Disabilityin the world has raised concern because of the discrimination that the people experience in their day to day activities. Most of the disabled people experience violence, prejudice, mistreatment and also care barriers. The disabled people have no or rather lesser access to the infrastructure and facilities both public and private. Statistics show that most people that experience disabilityhave no or less access to education, health services, water and sanitation, safe working conditions and clean environment. This has in turn increased their risk of vulnerability to otherhealth conditions, poverty, increased cost of living and even fewer work opportunities becauseof lack of education or interrupted education.

(Sylvie, 2021), in her article accessibility and inclusivity in the built environment, states that auniversal design is an important condition for a design to be considered perfect. There are sevenmain principles of universal design which included equitable use, flexibility in use, simple andintuitive use, perceptible information, tolerance of error, low physical effort and size and spacefor approach and use (Woodward, 2017). (Sylvie, 2021) continues to state that, the design of environments should be usable by all people to the greatest limit

possible without need for adaptation or specialized design. This will enable the less able to do anything they want withoutseeking for special care or attention.

(PLANTIER-ROYON, n.d), a technical adviser on accessibility states that a barrier free environment is a key factor for social inclusion of people with special needs. Furthermore, other people that will greatly be benefited in the society from facilitated accessibility include, infants, aged and persons who have temporary mobility.

(STEINFELD & MAISEL, 2012) state that there are always need to create boundaries whetherin a space within a building or in a space without the building (landscapes). These boundaries are helpful. Human beings whether knowingly or unknowingly create boundaries for themselves. These boundaries can either be private which are used exclusively by one person, others are used by a few people and then the public that are used by everyone This is where the designers come in to ensure that they define these boundaries.

The task lies on the designers toensure that they can create boundaries that adapt to needs and wants of everyone without coming up with specialized spaces. These definitions must be so clear that they help everyonenavigate with comfort from one particular zone to another especially people living with disabilities (PWDs). Designers need to understand that moving independently without need of any assistancein any given environment can boost the health both psychological and physiological, creativity, socialization and interaction/relation of people with disabilities. Aesthetics or cost should notbe the main factors that determine how a space should be. The main aim should be to achieve functionality. The famous quote of the 20th century "form follows function" should be put intoplay.

Falta (1976) as cited in the article a review of the current accessibility legislation in Kenya in 1992, by Nicky Nzioki, Agnes Maganjo, Catherine Kariuki, state that, 1970 emerged as a decade for people with disability. They came together in different parts of the universe demanding recognition of their presence, needs and liberties. In addition, their distress was based on known civil liberties principles such as equal opportunities, non-discrimination,

integration and normalization. It was argued, that their lives were acutely obstructed by social,political, economic and physical barriers thereby curtailing their full participation in the societal issues and also reducing them to subjects of sympathy and welfare beneficiaries thus suffered isolation and abjection.

Accessibility handled from the inception of design of a building or landscape will go a long way in helping those with disabilities and also those that are "normal" to cope well in life. In generating inclusive parks there are various laws that have been put in place. The Americanwith Disability Act of 1960 for example has made it a law that if any facility is built without inclusiveness or in such a way that it keeps people who are less advantaged out then it will beclosed and license confiscated. In the United States many spaces including parks have adaptedinclusive design. In parks, in the olden days, people were not allowed to enter the parks with service animals, people with disability were kept out because workers never knew how to handle them inside the parks and in some parks the barriers were just too many. Inception of technology and training of staff, retrofitting of the parks has made it easier for most people regardless of their ability to move independently through the parks and also experience the natural environment.

1.2 Statement of the Problem

Inclusivity has been a big challenge especially in the structures that were developed long beforelaws were put in place. Paul Morell states that the construction industry should always consideraccessibility in its projects. Its main goal should be welcoming the largest number of people who coming in different guises into businesses, buildings or landscapes and designing the buildings/landscapes to accommodate all people regardless of their ability status safely into these structures, (Buildings, 2021). Laws on inclusivity have been greatly violated. Therefore,significant physical environmental barriers remain a great challenge: for example, steep gradients, steps/stairs, uneven/ slippery surfaces and inadequate signage.

This has made people living with disability disadvantaged in terms of education, employment, income, housing and leisure, in addition to facing higher living costs. In Kenya, however, most though not all mothers/parents consider a person born with any form

of disability as a curse. They therefore keep them far from people by confining them in one place for fear of 'shame'. It is absurd that instead of structuring the built environment for thesepeople to be included in all activities including leisure activities it's the other way round. Thesepeople are kept out. They therefore are not included in the recreational activities like nature walks, boat riding, skating and many other outdoor activities that any individual who is normal can do.

Equality to all is a key factor. The disabled cannot attain equality if they cannot access important services such as office services, lecture halls, hotels and recreational spaces etc. TheEquality Act 2010, of UK, necessitates employers and bodies providing services to anticipate the need for reasonable adjustments so as not to exploit the disabled people; this is significant notonly to the occupiers of buildings but also to the planning and building control process, (Mrs Maria Miller, 2017). However, if equality in the landscapes/parks is not considered it is not thegovernment, the planners, project managers who will be affected but the people living with disability will be the one's suffering because of lack of access. Designers/ landscape architects/architects and other practitioners that are a part of construction industry in Kenya develop designs that are mostly aesthetical without considering function ofany given space. This has kept many people who are less abled out of these spaces. People living with disability can help a nation develop its economic status as they improve themselvestherefore the need to give them equal opportunities by removing obstacles on their way.

1.3 Objectives

i. To establish the principles and practice of accessible and inclusive design for Memorial Parks with special reference to the visually impaired.
ii. To assess the extent Bomb Blast Memorial Park has applied accessible and inclusive design for the visually impaired.
iii. To suggest strategies for total implementation of accessible and inclusive design for the visually impaired in Bomb Blast Memorial Park.

1.4 Research Questions

i. How does the principles and practice of accessible and inclusive design for Memorial Parks with special reference to the visually impaired?
ii. How has Bomb Blast Memorial Park applied accessible and inclusive design for thevisually impaired?
iii. What strategies for total implementation of accessible and inclusive design for thevisually impaired in Bomb Blast Memorial Park can be issues?

1.5 Hypotheses

Ho1. There are principles and practice of accessible and inclusive design for Memorial Parks with special reference to the visually impaired.

Ho2. Bomb Blast Memorial Park has applied accessible and inclusive design for the visually impaired.

Ho3. There are suggested strategies for total implementation of accessible and inclusive designfor the visually impaired in Bomb Blast Memorial Park.

1.6 Significance/ Justification of the Study

This research will be significant to the government of Kenya in their quest to come up with memorial parks that promote equality and in turn make it a law for the construction industry to provide built environment that are accessible to all.

The people living with disability will be taken care of accordingly in this case, the blind/VIs.

The research will help the designers/architects/project managers to come up with open spaces that are inclusive regardless of one's ability.

The research will be beneficial to the visually impaired who use Bomb Blast Memorial Park or those whowish to visit in the near future or any other public space like stadiums, museums etc. will be developed to fit everybody (universal design).

The research will be of great importance to the disabled community especially the visually impaired whether they come in as visitors or part of the employees that will be stationed at the Bomb Blast Memorial Park as they will be able to connect with nature just like any other normal sighted human being thereby ensuring that their mental and physical health is improved.

Any other party that would like to further research on the disability accessibility and universaldesign whether it's the government, activists, researchers or the general public. Bomb Blast Memorial Park is located at the Nairobi CBD at the junction of the Moi and Haile Selassie Avenue. It comprises of a garden that has been landscaped, a memorial wall commemorating those who have lost their lives, a fountain of water, visitors center and a sculpture made from the debris of the blast.

1.7 Scope of the Study

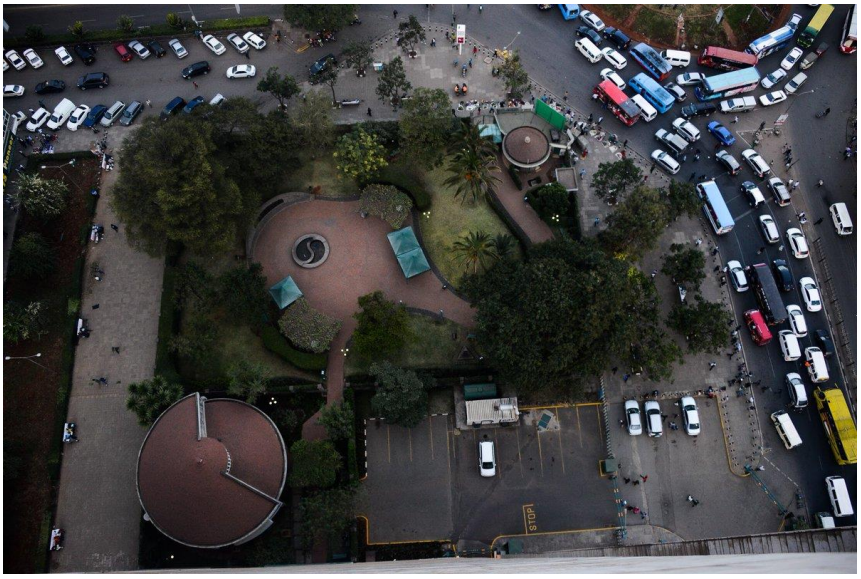

Figure 1: Bomb Blast Memorial Park, Nairobi

(Kenya West, 2018)

The scope of this study will be Bomb Blast Memorial Park. Staff that are at the Bomb Blast Memorial park willbe tasked to answer questionnaires. The visually impaired that use Bomb Blast frequently for their social activities will be interviewed. Those who frequent the Bomb Blast and are considered "normal/able" will also help to fill in some questionnaires. The researcher will useobservation to note if the terrain of Bomb Blast really fit all individuals especially the blind.Designers/project manager's/landscape architects will be interviewed so as to get to understandhow they did come up with the design and if they have put into consideration people living with disabilities especially the blind.

1.8 Limitation of the Study

The study was done at the Kenya Society for the blind and the researcher experienced various challenges including; few respondents, the researcher expected to find a larger number of respondents especially at the Kenya Society for the Blind (KSB) but unfortunately they were a hand full.

Secondly, the blind use their ink pad to sign using their fingerprint due to lack of this knowledge the researcher found it hard to direct them to sign using pen. At the county government who were also part of the stakeholders in this research, it was hard to find respondents since most a time they were in the field.

The researcher also expected to interview guards and staff at the Bomb Blast Memorial park and unfortunately they were too busy for the questions.

1.9 Assumption of the Study

It was assumed that all the respondents will understand and answer all the questions correctlywithout fear of intimidation.

It was assumed that there will be a large number of the visually impaired people at Bomb Blast Memorial park and that they will come out and participate fully in this research.

It was assumed that those people that are considered not to have any form of disability will also participate fully in this research and give their opinion on how they cope with the people that live with visual impairment.

It was also assumed that the government will use this study to change or retrofit the structuresat the Bomb Blast Memorial park to be universally fit for all and hence promote inclusivity and equality.

1.10 Definition of Terms

Accessibility; (NC StateUniversity, 2022) defines disability as the state in which the disabled are accorded the same environment, interaction, information as people who are abled in the society.

Built environment; human-made surroundings that provide the setting for human activity, ranging in scale from buildings and parks or green space to neighborhoods and cities that can often include their supporting infrastructure, such as water supply, or energy networks, (Definitions, n.d). In this case a build environment means the building where people/ studentsgo in to access educational services.

Disability; is defined as the inability to perform in a way that is considered normal for a humandue to a limitation in function or structure and it id thus already conceived of as such an exception (WHO, 1980)

Environmental barriers; refers to inaccessible buildings, infrastructure or informal systems.

Equality; (WBDG-Accessible-Committee, 2019)**,** define accessibility as Providing equal access means ensuring all individuals can make use of buildings and facilities, programs and services, employment opportunities, and technology. It also means offering all users the sameprovisions for privacy, security and safety.

Impairment; (ACC, 2018) defines impairment as an abnormality or loss of either psychological, physiological or anatomical structure or function.

Inclusivity; (The-Construction-Wiki, 2021) magazine, gives the definition of inclusivity as a process that ensures that all buildings and places and spaces can be easily and comfortably accessed and used by everyone.

Structure; something such as a house, tower, bridge and in this case a building that is built byputting parts together and that usually stands on its own, (Merriam-Webster, n.d).

Universal Design; It is significant to some people but in the end benefits all people if it is adapted. (NYGAARD, 2018) define universal design as designing product and environment insuch a way that is usable for all without needing specialized adaptations.

Visually Impaired; (Salvin, 2016) , states that Visual Impairment as a term used by experts to describe a person who has experienced any form of vision loss whether partial vision loss or experiencing blindness.

CHAPTER TWO
LITERATURE REVIEW

2.1 Introduction

This chapter explains what other researchers have done in the same field. This section of the study will deal with the barriers in the built environment, audio navigation available in the builtenvironment, availability of aids to help improve accessibility of the visually impaired individual around Uhuru Gardens.

2.2 Disability and Accessibility Challenges for Visually Impaired

(WHO, 2021) in their finding on research of the visual impairment found out that there are different causes of eye problems which are; cataracts, trachoma, diabetes retinopathy, glaucoma, corneal opacity, age-related muscular degeneration and uncorrected refractive errors. Some of these causes can be corrected at an early stage either by surgery or introduction to spectacles. These causes become worse and affect one's eye to the extent of bringing aboutblindness. Depending on the literacy of the eye, eye structure, eye disease, affordability of treatment of eye problem and also availability of personnel that are qualified severe effects ofthe causes of eye problems can be prevented from the onset.

There are different difficulties that people with visual impairment experience in their daily activities. Children may experience delayed motion. Those that are at school going age may experience poor grades. Adults who experience visual impairment are challenged in so many ways in the society. Most of them experience social isolation and are at a higher risk of depression and anxiety, falls and fractures and even being moved early into the home of the aged if they are not exposed to proper care.

Challenges faced by the visually impaired in the open spaces/public parks are many. Most of these challenges may be caused by either lack of knowledge of inclusive design or ignorance of the designers/planners/access artists/ landscape artists and many more stakeholders that are involved in designing open spaces. These challenges included inaccessibility due to lack of information, discrimination because of their inability to see by the staff working around the park. The staff may lack technical know-how on how to

handle these people and so for fear of it they back off and sometimes turn them away. Lack of maps that shows them how the terrainof the new environment looks. Lack of audio instructions that help the blind quickly accessdifferent paths in the park. Lack of braille instructions to help the visually impaired like any other normal person gather information of the park's provision.

2.3 Accessible Design for the Visually Impaired in Memorial Parks

Visually impaired people are whole dependent on other senses to gain information. They use smell, touch/feel and hearing to gain information that is in their surroundings. People need to use eyes for spatial cognition. Since the visually impaired do not use their eyes it takes a whilefor them to develop a cognizant of their spaces especially new spaces they are introduced to.

In the olden days, there was the use of people, guide dogs, white cane to help the blind navigatethrough places without being affected by the barriers on the way. Through the years with improved technology, there has also been improved aids that can assist the blind to navigate through their paths.

Guide dogs were trained from when they are two years old. By the time they are nine years they have attained their maximum training and are ready to be dispatched into the 'world' to help the blind. They however, come at a high price and hence cannot be afforded by many. Apart from dogs, there are other animals that can be used to provide the same services such as the horses in the UK and service monkeys in the USA.

White cane, on the other hand, is very popular. They are cheap and so most of the people thatwere blind could/can afford them. They are long enough to help the user to detect some of the barriers atleast a distance away so that they could avoid them. They have improved over the years whereby they have been in cooperated with sound systems that send information to the ear of the blindperson so that they are not affected by any barriers.

Caregivers are also there to help the blind in navigation. However, it is difficult for them to follow them where they go often because these caregivers also have other duties to attend to and therefore the need to train the blind to move independently.

The inception of technology has seen the disabled community improve their lives and live moreindependently without needing a lot of care from the caregivers or any other aid like the whitecane or the guide dog or any other materials for aid. The smartphones have come with a lot ofpros for the disabled community and the new technology at large. They are fitted with apps that allow the blind to navigate through their paths without needing too much assistance. Technology has seen to it that even artificial eyes are developed that are used to help the blind see. The device which is known as Argus II sends data from a glass mounted camera to around3 by 5 millimeters grid of electrodes at the back of the eyes (SERVICK, 2019). It is estimatedthat around 350 blind people in the world now use it. Though it is still under research becauseit has not been much effective. The researchers pointed out that they need to raise the photoreceptors signal and send more clear signal to the back of the eye so the blind will not have a problem seeing.

Radio Frequency Technology or Global Positioning System that is used to identify the locationof someone. These systems have been integrated into almost all daily activities of people. Theyhave been incorporated in mobile phones, cars etc and therefore have been of much help. Though the same system has not been applied to the location of an individual inside the house.RFID according to (Keeratiwintakorn, 2008) is a navigation system that will help the blind to move from one place to another within the shortest path. Moreover, if the person gets lost it will then calculate the route to the same destination.

2.4 Inclusive Design for the Visually Impaired in Memorial Parks

(FLETCHER, 2006)**,** defines inclusive design as design of spaces or buildings that can be useful to everyone regardless of their ability status. Good design means that everyone can enjoytheir surroundings, can communicate well, can hear what the next person is saying and can move from one point to another with much ease. Inclusive design has however had been centered on the environment and products, (Donahne & Gheerawo, 2009). Donahne

and Gheerawo continue to state that inclusive design should be included in other aspects like technology. The world is changing rapidly; people also have to adapt quickly to the change. Inclusive design means thoughtful design, bringing everyone together before deciding to change an environment. Inclusivity does not necessarily mean one should work with one particular group of people to make their life easier, for instance, making the life of the disabledeasier. This will bring about exclusion to many other people in the society and so when it comesto inclusivity all parties must be consulted.

(BURTON & MITCHELL, 2006) in their statement, justify that inclusive design is simply universal design. Inclusive design is significant in ensuring that people with disability and theaged are accommodated in the same environment with those that are normal. Universal designis not a new way of developing designs, rather it is a different approach to ideas and design plans. There are seven main principles for a design to be considered universal. These principlesinclude; equitable use meaning the design should be able to cater for people of different abilities. Flexible in use is another principle of universal design. This indicates that the designshould accommodate a wide range of preferences or abilities for example an adjustable chair to accommodate those that are short and those that are tall when adjusted to the comfortable height ofwhichever individual

Simple and intuitive use. This principle depicts that when a designer is designing they should make the item of plan be understandable by anyone regardless of theirknowledge background, experience of the user, language skills of the user or the concentrationlevel of the user. Perceptible information. The design can communicate effectively to the user regardless of the sensory or ability status. Tolerance for error. The design minimizes danger or any unintended accidents. Low physical effort. The design should be non-strenuous, effective andcomfortable for the user. Size and space for approach and use, they should be appropriate regardless of a person's body size, posture or ability.

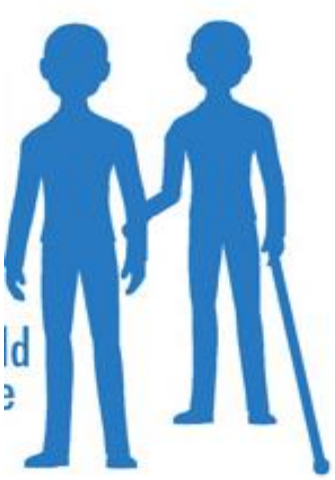

Figure 2: Guide person and dog for the VI
(Owncham, 2013)

2.5 Barriers that Inhibits Accessibility of the Visually Impaired in Memorial Parks

(SANFORD, 2012) in his book of design for the ages emphasizes that every living organismtry as much as possible to fight barriers on the way. Every living organism interacts with theenvironment around them. Interaction with the environment means one has to move from aplace to another to search for new information, deliver information or maybe just move foradventure. Our ability to interact with the environment is inherent with different features thatan individual has e.g. height, strength or intelligence but also the extent to which a person canresist environmental challenges and the extent to which the environment supports one to reachtheir goal.

Imrie (2001) as cited by Dr. Munene on the research of caregivers as aids states that barriers like communication, environmental, social and economic makes people living with disability not to live the quality of life they desire as any other person considered normal. (BigRentz, 2019) magazine states that designing buildings or spaces to accommodate people of various needs can make a space universal for all visitors. It continues to advice that any space planned should consider people with vision loss/visual impairment. It is easier for people experiencing vision loss to navigate through their homes because they do understand every corner. It is, however, challenging for the blind to move from one place

to another peacefully because of the uncertain hazards that they can experience as they move along. Though there are assistive devices like the cane, service dogs, etc it is essential for the designers to make theoutdoor environment easily accessible for the blind without fearing that they will experience unforeseen hazards. (MADELEINE RAINS, 2013), states that barriers have the full potential in causing stigmatization and social oppression to the disabled community.

(ABBAS RIAZI, 2016), research on the barriers that affect the blind, he found out that all thatparticipated in his research experienced some form of difficulty especially in the outdoor environment. Additionally, he found out that there were no tactile ground indicators, difficultyin reading road signages, unable to read road street names, fear of falling because they walkedwith uncertainty of the hazards or dangers on their way, walking into glass doors, crossing thestreets and the Arial barriers posed a greater risk to the blind community.

(USAMA, BADAWY, MUAIN, & AZIZ, 2020), they give some inhibitors to universal designas, obstructions, parking, furniture, signage, curb ramps and pathways.

2.6 Theoretical Framework

There are different theories that have been described by different individuals in their quest todevelop environment that are safe and inclusive to the people with visual impairment. (Bandukha, Holloway, Berthouse, & Singh, 2020), in their theory suggested these four stepstowards creating inclusive outdoors for the visually impaired;

i. Understanding the desire for outdoor leisure
ii. Understanding how outdoor leisure is achieved
iii. Exploring the barriers and enablers
iv. Developing themes

Natural environments inclusive of parks provides leisure and opportunities for activities like recreation, socialization and physical activities of different kinds. Current suggestions to improve accessibility and opportunities for engagement for a diverse audience include

accessible wayfinding signage and maps, sensory gardens and parks, and multisensory play areas. While such recommendations would improve the accessibility of natural environment, in many cases, these are costly solutions and therefore are often ignored. Most of the effort hasbeen in training the visually impaired from moving from one point to another. Technology hasalso been put in place like android apps like Clew and Wayfindr have provided a great help tothe visually impaired people. Other assistive instances include the blind squares and soundscapes. All these and many more are the efforts that have been introduced to help the visually impaired to live at least a normal independent lifestyle. However, the leisure needs ofthese people have not been considered because much research has not been incorporated in this. This has made it harder for people with visual disabilities to visit leisure environmentssuch as parks because of fear of many obstructions and barriers.

2.7 Conceptual Framework

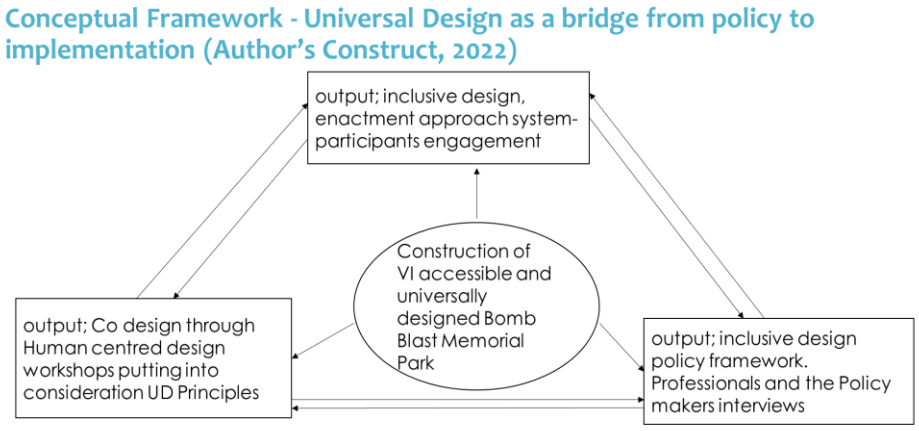

Figure 3: Explains how variables relate

(Source; Researcher)

Dependent variable being inclusive design. It solely depends on the affected party for anything to be designed in such a way that people using it cannot be affected by any form ofhindrance as they move along in open spaces. Universal design solely depends on the

visualimpaired so as to craft items in the park and routes in a way that will make them included.

This will go a long way in promoting their health and wellbeing even as they connect with nature. If this would be done not only in Uhuru Park but also other botanical gardens and parks in Kenya, then this will be a healthy nation.

Intervening variable which can also be referred to as a moderator variable being accessibility.In inclusive design it's all about helping people to be access the environment without introducing barriers for other people who use the same facilities/spaces.

2.8 Strategy to come up with open spaces that the visually impaired can use

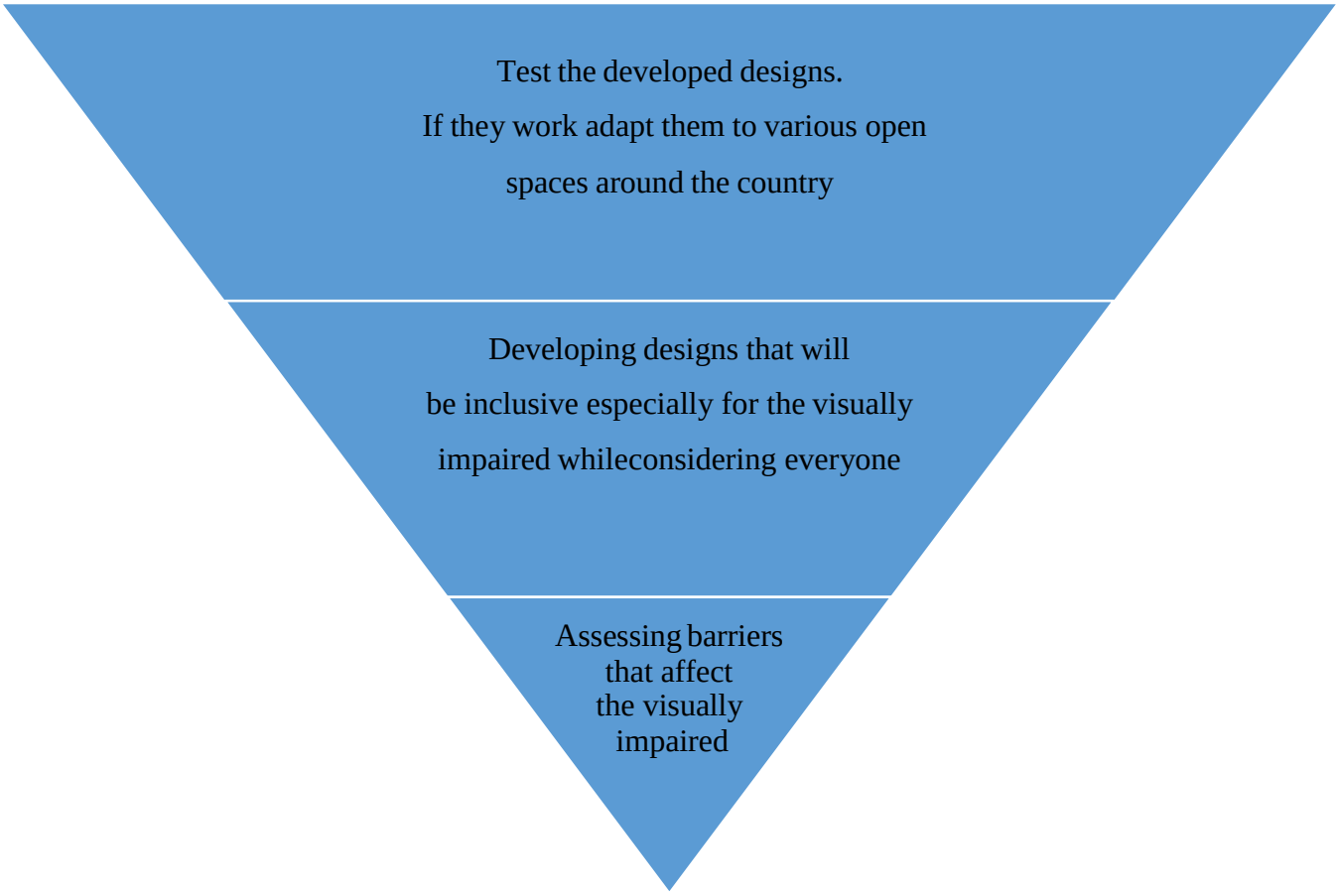

Figure 4: Strategies on how to provide solution for UD

2.9 Exemplar- Cape town

Kirstenbosch Gardens in South Africa serves as an example of where universal design has beenapplied. Though not in all aspects but most of its coverage has had features that can be used byanyone. These features include tactile grounds, well position or colored signage, provision of ramps and stairs to help one transition from a lower ground to a higher level ground, provisionof maps at the entrance of the garden, adjustable gates and audio systems for the visually impaired though they are rented.

Figure 5: Garden path
(Xinhua, 2020)

The tactile feature of the ground will enable the visually impaired to understand that the roughsurface is the center and the softer is towards the edge of the path.

Figure 6: Entrance door

(Xinhua, 2020)

The entrance gate is accessible to anyone with any ability because they can swing.

Figure 7: Information and directions through the garden

(Xinhua, 2020)

This is the signage information provision at the park. The B sign at the top of the signage information represents the braille. This can be the provision of audios instructions to the blindprovided they rent the gadget at the entry point.

Figure 8: Map

(Xinhua, 2020)

This is the map of the garden and anyone can look at it before moving to other areas of the garden so as to understand the terrain of the garden before starting the journey of navigation through it.

Figure 9: Information about dangerous plants

(Xinhua, 2020)

The different color of the signage will attract a person with low vision. Using red color automatically shows danger sign and triggers one's psychology so that they may be more carefully moving towards that part of the garden.

Figure 10: Braille instructions

(Xinhua, 2020)

Information written in braille language on one side and normally on the other side.

Figure 11: Hand rail Provision of hand rails.

(Xinhua, 2020)

Figure 12: Provision of braille trail

(Xinhua, 2020)

Figure 13: A person using braille to get to know the plants available at the section of the garden.

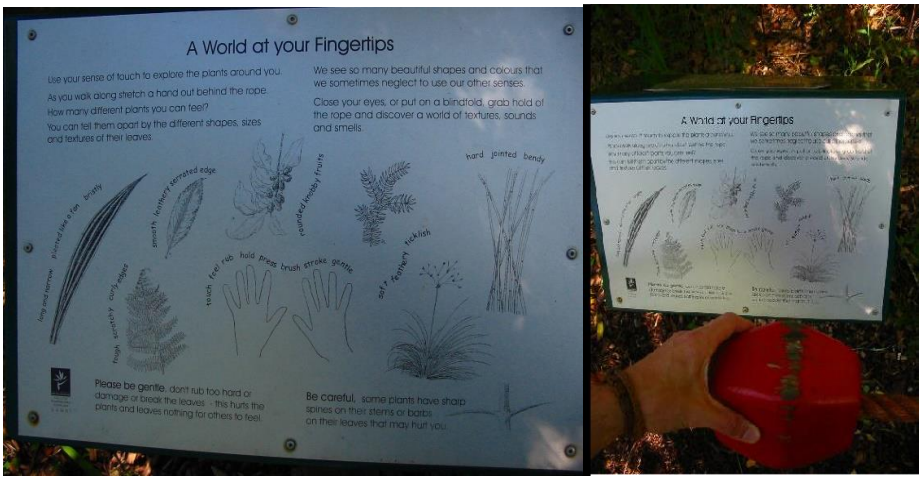

Figure 14: Sense of touch to help the visually impaired to understand nature/ to movecloser to nature.

(Xinhua, 2020)

Figure 15: Instructions

(Xinhua, 2020)

Provision of these instructions means that a person can move independently around the gardenwithout the need for a guide.

2.10 Summary

In summary, this chapter explains how it is difficult to expect the visually impaired to fit into the surroundings without their needs being catered for. Those that are visually impaired have abilities like any other normal person only that their ability to see is either low or none. The designers/environmental architects/planners/spatial designer's/access artists can come togetherto make the life of a visually impaired person simpler. They can do this even as they put into consideration other people with other forms of disability so that they do not isolate anyone in their way as they make inclusive environment for the visually impaired.

Inclusive design is not only about the visually impaired but it's about everyone. Everyone at some point in life will enjoy the benefits of inclusive design. This is because people are likelyto experience some form of restrained mobility whether it comes from loss of sight due to oldage, loss of legs due to accidents, cognitive disorders etc. Everyone needs to understand that they can move around without fear of inhibitors or obstructions on their paths. Thus when everyone is included especially in the built environment life is easier as everyone can move around independently without need for help from others and their life is much simpler.

South Africa is the first African Nation to give provision for the braille instructions for the visually impaired. This means that if south Africa can do this then the inclusivity topic is one of a major concern. Everyone regardless of age, ability or gender can be included in any givenspace provided their requirements are catered for. An example of Kirstenbosch Gardens wherethe visually impaired individuals have been included all through shows that they can move independently without needing any help and so they can also feel the satisfaction of nature.

Uhuru Memorial park can also adapt the same inclusive measure to ensure that after its renovation everyone and anyone can move through it without needing help or be in need of aslittle help as possible.

CHAPTER THREE
RESEARCH METHODOLOGY

3.1 Introduction

This chapter solely describes the instruments that will be used to collect data, the sample population to be used and how data will finally be analyzed after the collection.

3.2 Research Design

The design used in this research was descriptive design. (Voxco, 2022), states that descriptive research design is a type of research that aims to systematically describe a situation, phenomenon, or population. It specifically helps to answer the questions what, when, where, how regarding the research problem. It involved going out to get the captions of the Bomb Blast Memorial Park, interviewing of people with Visual Impairment, Sending questionnaires to the county government of Nairobi seeking to understand why many laws on accessibility have not been implemented. Sending google forms to professionals to understand why the designs are not made accessible from the inception.

3.3 Location of the Study

This study was majorly located in Bomb Blast Memorial Park, located in Nairobi in Kenya. This is because the study focused on mostly the blind individuals that use the park. This area was favorable because this study endeavored to help the visually impaired individuals with special needs and also the whole community that will need to access services at the facility.

3.4 Target Population

Bomb Blast Memorial Park experiences people of more than to 500 per single day. The accessible population is 100 at the Bomb Blast Memorial Park. These were the people that were considered to walk into the park on a daily basis and was assumed that this number of people will be found there on the day of the research.

3.5 Sample

This is a group of people from the accessible population that the study will be generalized. Thesample will be of 100 people.

3.6 Sampling Procedure

The sampling technique is probability. And in this probability, the researcher will use a simple random sampling technique. This is because the research design is descriptive. Questionnaires, google forms, sample interviewquestion and observation will be used to collect data.

3.7 Pilot Test

Pilot test was done from the Uhuru Park where a sample of 50 people were identified and were randomly selected and volunteer selection of respondents were used.

This test helped to ensure that the study design was improved before the main research. This also helped to determine validity and reliability of instruments to be used. If maybe the questionnaire is wrongly designed, there may be room for improvement.

3.7.1 Validity

This is the extent to which the instrument accurately measures what it is intended to measure. The validity used is internal content validity to measure the content of the questionnaire, interview guide questions and observations.

3.7.2 Reliability

This deals with consistency of data collection method in relation to findings when replicated by others. Questionnaires, self-administered will be reliable because the data collected will be less biased, face to face interviews and observation captions from the ongoing construction at Uhuru Park.

3.8 Data Collection

The researcher sought permission from the Chairman of the Department of Arts and Design. The researcher also sought permission from the authorities in charge of the places where she visited for research. The researcher then explained the advantage of carrying out this study to the respondents before giving them the necessary instrument to answer the questions provided.

3.9 Data Collection Tools

Questionnaires were administered to the Nairobi County Government. Self-administered questionnaires which have both open ended close-ended questions this was to get clear details on the opinionof the respondents on the study. Interview guide questions were used to get information from the people with Visual Impairment. Google forms were sent to the professionals. At the Bomb Blast Memorial Park pictures were taken to identify if at all it is accessible to all groups of people especially the VI, observation was used at this site.

3.10 Data Analysis

(Calzon, 2022) defines data analysis as the process of collecting, modeling, and analyzing data to extract insights that support decision-making This was done after the questions were adequately answered. The data was cleaned and any contaminated data was gotten rid of. Descriptive analysis was used to analyze the data collected. The hypotheses were then analyzed also using inferential statistics.

CHAPTER FOUR

FINDINGS AND DISCUSSION

4.1 Introduction

This chapter describes the data collected, analyzed systematically and then discussed without bias thereby putting in clarity what the respondents feel about this research and also describing their own opinion on the subject of the study.

4.2 Section A; Background Information

4.2.1 Gender

Table 1: Gender

Gender	**Tally**	**Percentage**
Male	21	56
Female	16	44
Total	**37**	**100**

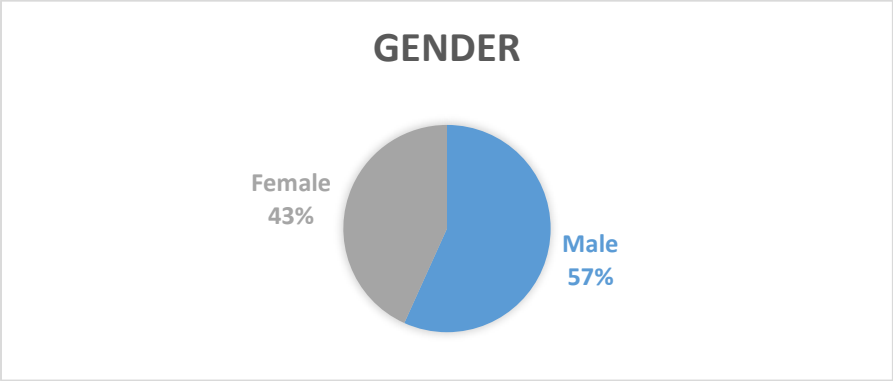

Figure 16: Gender of the respondents

(Source; Author, 2022)

The chart describes the gender of the respondents having gathered information from 43% of the population of the respondents were female and 57% of the population are female.

4.2.2 Age in Years

Table 2: Age in years

Age	Tally
12-20	0
21-35	26
36 and above	11

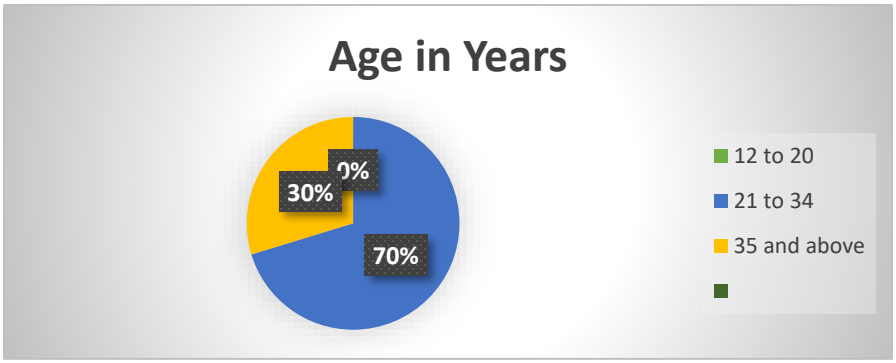

Figure 17: Age in years

(Source; Author, 2022)

The chart shows the age of the respondents, red showing the ages of 21 to 34 and green showing the respondents of ages 35 and above.

4.2.3 Level of Study

Table 3: Level of study

Not gone to college	4
Certificate	3
Diploma	10
Degree	16
Masters	2

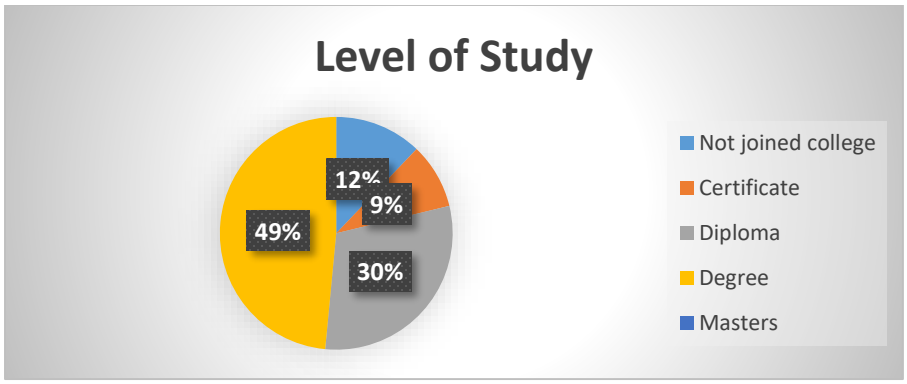

Figure 18: Level of study of the respondents

(Source; Author, 2022)

The respondents' level of education is as described in the chart. 12% have not joined college, 9% of the sample population did certificate, 30% of the population did diploma and 49% did degree and the remaining population did up to masters.

4.2.4 Braille knowledge

Table 4: Braille knowledge

Have	13
Process of learning	3
Do not have	3
Not answered	2

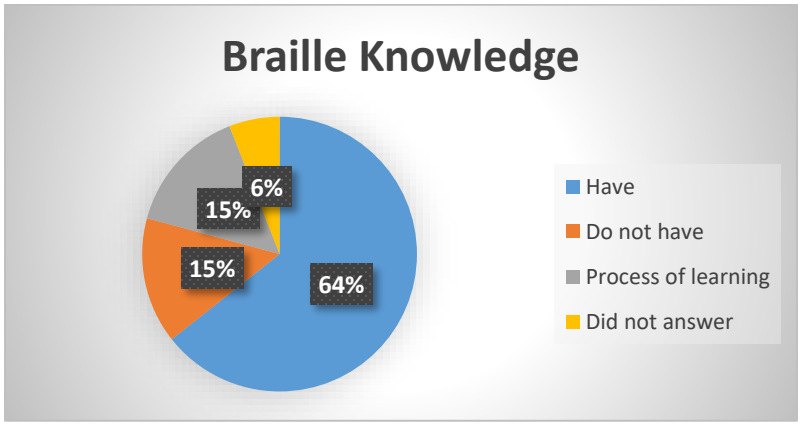

Figure 19: Shows the number of respondents from the with braille knowledge

Source; Author, 2022)

4.3 Section B

4.3.1 Condition of vision

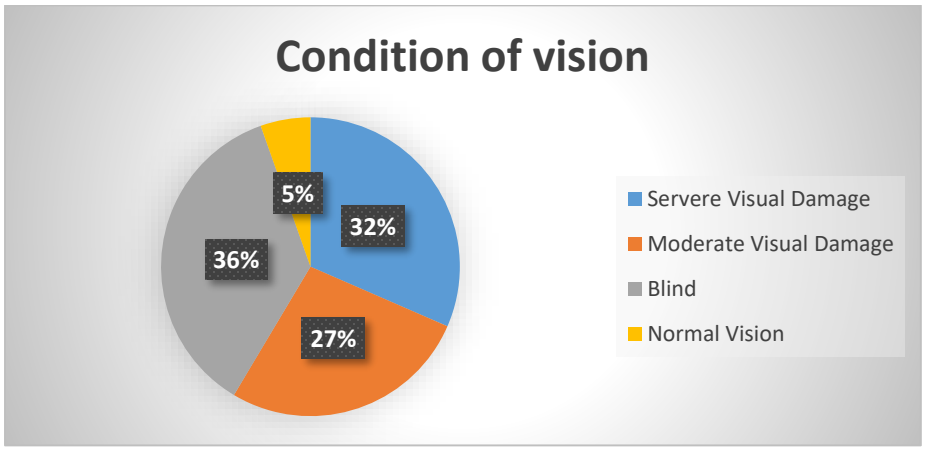

Figure 20: Shows the number of respondents and the condition of vision they have (Source; Author, 2022)

(NewYorkState, 2012) Magazines states that there are different conditions of vision including blurred vision, age related muscular degeneration, glaucoma, cataract, diabetic retinopathy, crossed eyes and lazy eyes also called amblyopia.

4.3.2 Causes of VI

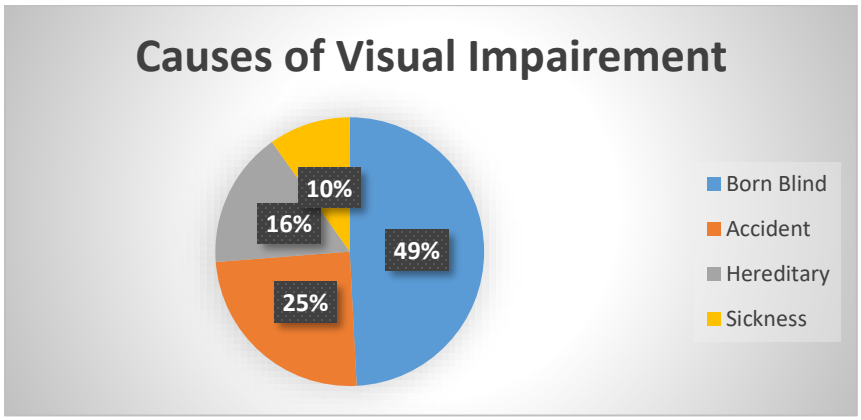

Figure 21: Shows different causes of VI

(Source; Author, 2022)

According to the findings of the World Health Organization –WHO, there are different causes of blindness or low vision which include trachoma, corneal opacity, diabetic

retinopathy, uncorrected refractive errors, and age-related muscular degradation, glaucoma, and cataracts (WHO, 2021). (Mandal, 2019), in her research found out that apart from the causes mentioned above, there are other causes of visual impairment including cancer of the AIDS-related visual impairment, inherited conditions of blindness and vision impairment, and a common cause of inherited blindness is the Retinitis Pigmentosa and eye infections are also causes of visual impairment.

4.4 Discussions

4.4.1 Experiences of the VI in the parks (paths)

Most of the respondents said they found it hard to navigate through the park due to various hurdles on their paths. These hurdles are not limited to lack of tactile surfaces hence they move around guessing where they are stepping. However, according to my observation of the Bomb Blast Memorial Park, there were tactile surfaces. This represents only one percent of the Kenyan parks that have tactile surfaces. Further in my observation the tactile surface was not repaired, this is hazardous to the VI individuals especially those that will choose to visit this park for the first time because they will be prone to tripping and falling. Most of the VIs while responding to the questions they said one of their greatest fears as they move to these open spaces is the fear of falling. Respondents said it is even saddening that the 'normal sighted' people usually watch and eagerly wait for them to fall so that they may get amused.

(Vogtle & Jenkins, 2015) in their article quoted Schkade & Schultz (1992) who stated that there is a need for a person to master their environment. They continue to say that inaccessibility of the VI is not necessarily due to physical inabilities or the physical form of space but by the information such as signages and spatial knowledge that is difficult to access due to low vision or lack of vision.

The respondents, quite a number of them said that most of the parks have no show lines. This therefore poses as a danger to them because many a times as they navigate the park they may loose direction and unless there is a person to help them reconnect their way then they will be totally lost in the park.

Figure 22: Path in Bomb Blast Memorial Park
(Source; Author, 2022)

4.4.2 Assistive Technologies

The researcher sought to know if different parks provide different assistive technology like the caregivers/guards to give direction, service animals like dogs, provide canes, fragrance, braille signage and audio systems for direction. The right to access information is provided for in the 2010 Kenyan constitution Article 35. However, the VI cannot access information in the parks simply because the design of most of the parks has not incorporated persons with vision impairment. The respondents stated that the above mentioned are not provided for in the parks.

Service animals do not have an association or regulatory body in Kenya. These animals are unavailable in the country. Moreso, these animals even when they will be introduced to the country they can only be afforded by the high-class individuals. Respondents said that these animals are trained, they need to be vaccinated and well-fed and so if then the VI choose to buy them for their good. Then a large number of these individuals will be 'BBI' Blind

and Broke Individuals. This is because of the demand these animals pose in terms of being taken care of.

Canes, are not provided at the parks. These individuals are however allowed to use their canes in the parks. This has helped them in navigating through the park.

Figure 23: A person with VI using white cane
(Source; Author, 2022)

Guards /caregivers, the guards are the first people that the VI encounter as they go into the park. The respondents, in my engaging them, said that these guards are ignorant. This is because whenever they give direction to the VI they do so as though giving direction to a normal, sighted person. “Go past that green building then take the small path at the corner and you will be there”, said one respondent. The fact that they are not able to see means that they will definitely get lost because they can’t identify the green building or which is the larger path differentiated from the smaller path. Caregivers, most of them are untrained. They may be willing but they may not necessarily know how to handle the VI. One respondent said that for him he has to train his caregiver. Then the question is why has the government not introduced such courses to our colleges on how to take care of the people with disability? Most people who have VI are mishandled by untrained willing volunteers who want to take care of them. The few who may have the know-how may also be unwilling and rough as they handle these people.

Audio systems are not at all incorporated in any park in accordance with the respondents. The only place where the audio systems for directions are installed is in the elevators. Further than the elevator, there are no other places. It is clear that the VI use any other of their senses except sight. The audio systems will activate their hearing senses and hence minimize their getting lost within the park. It is possible to install these devices because a park in South Africa has already come up with audio systems that are hired at the entrance and the VI can move around independently. The Bomb Blast park, however, has their information in the video that has audio so the VI can know the history of the Park incase they have gone there to learn about its history. The respondents said that most of the parks that they have visited do not have such

Braille signage are seldom found in these parks. The researcher observed the Bomb Blast Memorial park and on asking the parking attendant inside the museum who said that there is no information in braille.

Figure 24: Information at the entrance of the museum not translated to braille (source; Author, 2022)

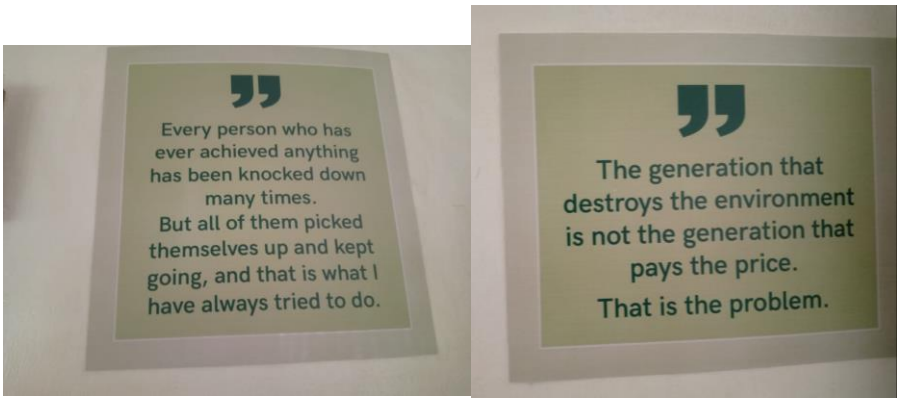

Figure 25; Information on the walls in the Museum inside Bomb Blast park (Source; Author, 2022)

Figure 26: Information outside that describes a short history of the park (Source; Author, 2022)

According to the observation the researcher made, all the information was written in word, and none of them was translated to braille. This thereby denies most of the VI visitors a lot of information.

4.4.3 Design

The researcher also sought information from the professionals and was able to record their views on the design of these parks. The designers are of the strong opinion that if you have to achieve UD then the most important thing is to incorporate the VI from the inception of the design through the construction to finalization of the design/construction. This is

because the VI are like any other person in the society and they have to be included. Studies have shown that when humans connect with nature, their mental and physical health improves greatly. The designs in the parks include well laid cabros/clean paths, upstands, rails, and ramps in place of steps.

Ramps (Merriam-Webster, n.d), is a sloping way or a plane.

Figure 27: Ramp in the Bomb Blast Park leading into the museum (source; Author, 2022)

Ramps are an alternative to staircases. The VI respondents stated that they feared using steps because some do not have consistent treads and risers. Studies show that they should be 150 to 200mm done consistently. The VI choose to use ramps as an alternative because they are never sure of the number of steps the size of the steps and the steepness of the steps of the staircase available unless they are moving around with a caregiver/ guide.
Upstand as shown in the image recedes as one goes towards the entrance. Most of the parks according to the respondents do not have upstands on the staircases. This also poses as a great danger to the VI as they use these upstands as show lines and a slight miss means they will fall and injure themselves.

Figure 28: Steps in the Bomb Blast Park heading towards the museum
(Source; Author, 2022)

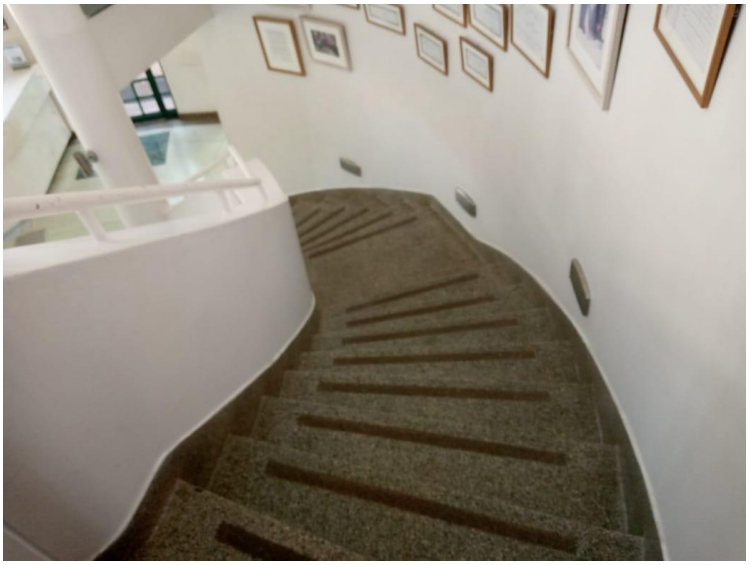

Figure 29: Staircase leading to the conference room
(Source; Author, 2022)

There is no alternative for Ramps going up to the conference rooms. The staircase is also not continuous because there is a landing in the middle of the way.

The upstand in this particular case does not cover all the steps. Railings are support structures on either ramps, stairs, corridors etc where an individual support themselves as they move using their hands. The staircase and ramp as shown in the photos above do not have guard rails.

4.4.4 Challenges to UD in parks

There are many challenges that hinder UD in parks. Most of them can be looked into and solved in short term whilst others can be looked into in the long term. These challenges include policymakers, partly ignorance of designers, funds, and materials.

Policymakers make laws on inclusivity and accessibility to all. They make very good laws but implementation becomes a problem and this makes part of the society suffer, be segregated, and be looked down upon for what is not their mistake but that of the policymakers. Respondents stated that out of 47 counties in the country 17 do not have representation for the disabled and Nairobi is one of the counties that do not have a representative. This has made the VI voices not to be heard and no one cares about voicing their concerns to the concerned. They complained about one among many instances for example of how they are defrauded by the powerful in the nation, like when the new currency was going to be launched they were lied to that it would be VI friendly only to be launched on a non-working day and they found out that they had been lied to. This shows that a greater majority, VI, of the people in the society are neglected by their own state/nation. The policy makers do not invite the VI to a table where important decisions about their life too are made and in this case the designing of the parks. Rwandese have even benefitted from the great brains of the nation. One respondent reported that the Rwandan people come and look at the Kenyan constitution and what is available in terms of accessibility and they go and implement it in their nation yet in the nation where the brain has been used to make laws there is still a struggle in the implementation of these laws which is quite amusing.

Ignorance of the designers could also be part of the challenges that most parks have not met the UD. Respondents quite a number of them have pointed out the negligence of the designers in designing these parks which cannot accommodate everybody in the society.

Funds are another challenge that affects the UD. The government mostly depends on the donor fund for the 'big projects'. Respondents from the county government of Nairobi noted that there is no donor fund to come up with UD parks and thereby posing a great challenge to making these parks accessible.

Materials were also stated by many as a challenge to achieving UD in the parks. Most parks have marram surfaces that have an uneven ground which has a greater risk of the VI individuals falling and getting injured. The VI respondents told the researcher that they visited the Karura forest recently and that, the terrain was very unwelcoming to them especially when they do not have guides.

4.5 Summary

In summary, chapter four sought to get the responses of the involved in this research. Even with the many challenges experienced in the field like not achieving the number of respondents as written in the proposal, limited time for the research, limited resources for the research, uncooperative respondents, and lack of know-how on handling the VI.

Apart from the challenges, there were many things that the researcher achieved like getting the required information for the research and understanding how the VI navigate through parks that are not UD, getting the stakeholders to also answer and put forth their opinion about the research.

There were in total 39 respondents. 9 professionals, 4 from the county government of Nairobi, 1 from the Bomb Blast Memorial park and the rest from the Kenya Society of the Blind. The researcher targeted 50 unfortunately most of the respondents were not cooperative.

Many were the responses of the respondents from barriers they face due to inclusive design that has been compromised. The challenges they experience in the parks during their visit. Their opinion on what they would like to be done in the parks so they feel included and even have the urge to visit these parks for recreation like anybody else.

There are different challenges that the nation faces in coming up with UD. These challenges include unavailability of materials, unavailability of funds, lack of implementation of laws on accessibility and partly ignorance of designers among other challenges.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.1 Summary

In summary, the study took place at the Bomb Blast Memorial Park. The study's aim was to understand if the Memorial Parks in Kenya are accessible to the VI individuals. It is concluded that most of the parks in Nairobi are not VI friendly and this has kept most of the VI individuals from visiting such recreational facilities. In as much as UD had been suggested for a long time now, Kenya has shown little to no effort in developing spaces and structures that are UD. This according to the research conducted may be partly due to lack of funds, materials, ignorance of the designers, not involving the VI in the planning process from the conceptualization to the inception/initialization of the construction to the finalization among many other challenges.

5.2 Recommendation

The researcher recommends that any Park that will be built henceforth should be VI friendly. This means when the contract comes up the VI will be part of the stakeholders in the designing of the parks. The current parks should be made VI-friendly through retrofitting. The public should be made aware of the different classes of VI and even taught how to handle them, guards in the parks should be trained on how to direct the VI individuals. The universities should in cooperate with short courses on how to handle the VI and the courses certified. Funds should be allocated for the retrofitting of new parks construction that are VI friendly from the national treasury or the County government treasury. The guides that walk with the VI should also be accorded free entry into the parks, they should be counted as one with the VI. Availability of braille signage, ramps, upstands, guardrails, show lines, audio track systems will greatly help the VI to interact with the parks.

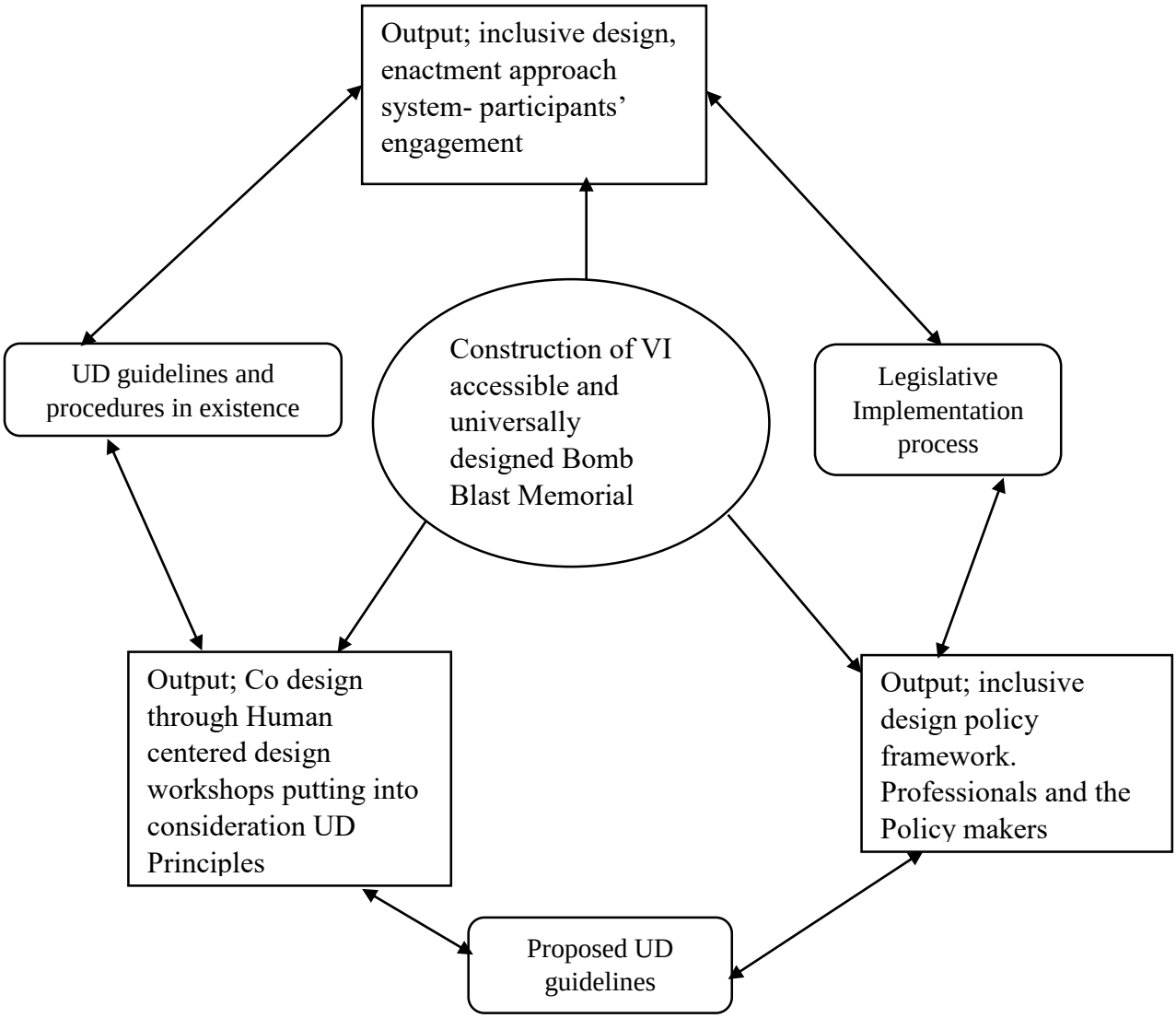

Figure 30; UD conceptual framework

(Author, 2022)

5.3 Conclusion

To conclude, the VI like any other person will move around independently in the Parks if the barriers and inhibitors are gotten rid of. There is a design saying that, "form follows function" and therefore the designers should use this when designing spaces. Most of the VI had an outcry of being out and connecting with nature like any other individual. It is up to the County Government of Nairobi to ensure that they bring in the individuals to be participants of any upcoming park designs or renovations. Designers should also fight for

the participation of the VI whenever they are contracted to make Park designs. This will ensure that the needs of these individuals are catered for and they also have the opportunity to move out and connect with the natural environment.

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APPENDICES

APPENDIX I: INTERVIEW GUIDE FOR VISUALLY IMPAIRED

DATE……...

SERIAL NO…….

INTERVIEW GUIDE

TICK IN THE BOX PROVIDED WHERE APPROPRIATE AND WHERE THERE IS BLANK SPACE GIVE YOUR OPINION.

SECTION A

BACKGROUND INFORMATION

1. Gender

   Female [ ]

   Male [ ]

2. Age in years

   12-20 [ ]

   21 -35 [ ]

   35 and above [ ]

3. Level of study

   Diploma [ ]

   Degree [ ]

   Masters [ ]

   PhD [ ]

   Others

(specify)……

SECTION B

1. What is the condition of your vision (mark where appropriate)?

   Severe visual damage [ ]

   Moderate visual damage [ ]

   Blind [ ]

2. What caused your impairment?

……

3. What has been your experience with new open spaces?

……

4. Have you ever been to any open space (recreational)? Yes [ ] No [ ]

b. What has you experience been with regard to;

(i) Barriers

……

(ii) Challenges

……

(iii) Experiences

……

5. Does Bomb Blast Memorial Park support visually impaired individuals?

Yes [ ]

No [ ]

6. How?

a. Provides guides [ ]

Does not provide guides [ ]

b. Accepts access of service animals [ ]

Does not Accepts access of serviceanimals [ ]

c. Provides assistive devices eg cane [ ]

Does not Provides assistive deviceseg cane [ ]

d. Provides audio systems for direction [ ]

does not Provides audio systemsfor direction [ ]

e. Provides braille signage [ ]

Does not Provides braille signage [ ]

f. Has tactile surface [ ]

does not Has tactile surface [ ]

7. According to the answer you have given to the above questions how has it affected your mobility?

……

N/B The researcher will question further the respondent depending on theanswers they give to get more clarification

APPENDIX II: INTERVIEW GUIDE TO THE COUNTY GOVERNMENT OF NAIROBI

1. Is there a possibility of developing Bomb Blast to be accessible for all?

   Yes [ ]

   No [ ]

2. Have you considered adding features that will help the visually impaired access thepark?

   Yes [ ]

   No [ ]

   Depending on your answer, give a reason

   ……

3. What are some of the barriers that may affect the visually impaired depending on yourdrawn plan?

   ……

b. Can the barriers be reconsidered to make the park more accessible?

   Yes [ ]

   No [ ]

c. If (NO) what's the reason for your answer?

   ……

4. What are the challenges that you experience in creating accessible open spaces?

a. Funds [ ]

b. Fear of having to cater to different groups of disabled [ ]

c. Ignorance of the designers/ spatial planners/ contactors etc. [ ]

d. Ignorance of the county governments [ ]

e. Other reasons……

5. Have you considered setting up accessible open spaces around the city?

   Yes [ ]

   No [ ]

b. is there a way designers can help in building accessible open spaces?

APPENDIX III: BUDGET

Table 1; this table describes the budget that will be used during the research period.

Sponsored by; Researcher

Item	**Quantity**	**Cost (Kshs)**
Printing	1copy(4pgs)	20
Photocopying	800 copies	16000
Stationery	10	200
Research Meals	12wks*7days	200 per day
File	5	300
Airtime and Data	-	2000
Total		**35320**

APPENDIX IV: TIME PLAN

Table 1; Explains the activities that will take place throughout the research period

Activity	Duration in Weeks 2022									
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Making questionnaires										
Seeking permission to administer Questionnaires										
Pilot test										
Checking and rectifying faults										
Administering questionnaires to the accessible population										
Doing follow ups										
Collecting Questionnaires										
Analyzing data										
Interpreting data										
Presenting final report										
Activity	Duration in Weeks 2022									
	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10
Making questionnaires										
Seeking permission to administer Questionnaires										
Pilot test										
Checking and rectifying faults										
Administering questionnaires to the accessible population										
Doing follow ups										
Collecting Questionnaires										
Analyzing data										
Interpreting data										
Presenting final report										