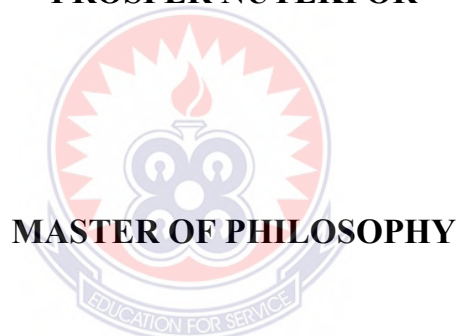


UNIVERSITY OF EDUCATION, WINNEBA

**ADULTS WITH MOBILITY IMPAIRMENTS ACCESS TO MOBILITY
ASSISTIVE TECHNOLOGY IN EFFUTU MUNICIPALITY**

PROSPER NUTEKPOR



MASTER OF PHILOSOPHY

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UNIVERSITY OF EDUCATION, WINNEBA

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ASSISTIVE TECHNOLOGY IN EFFUTU MUNICIPALITY**



**A thesis in the Department of Special Education,
Faculty of Educational Studies, submitted to the School
of Graduate Studies, in partial fulfilment**

**of the requirements for award of degree.
Master of Philosophy
(Special Education)
in the University of Education, Winneba**

JUNE, 2022

DECLARATION

Student's Declaration

I, Prosper Nutekpor, declare that this thesis with the exception of quotations and references contained in published works, which have all been identified and duly acknowledged, is wholly my own original work and it has not been submitted, either in part or whole for another degree in this University or elsewhere.

Signature:

Date:



Supervisor's Declaration

I hereby declare that the preparation and presentation of this thesis was supervised in accordance with guidelines and supervision of the thesis laid down by the University of Education, Winneba.

Name of Supervisor: Dr. Adam Awini

Signature:

Date:

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DEDICATION

I wholeheartedly dedicate this work to the memory of my father, Charles Kofi Nutekpor. He should have been alive to share the joy with me.



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ABSTRACT

This study examined how adults with mobility impairments access mobility assistive technologies in Effutu Municipality, Winneba in the Central Region of Ghana. The study was underpinned by Penchansky' Theory of Access. The research design used was a case study. The target population for the study was twelve (12) participants consisting of seven (7) males and five (5) females. Census sampling technique was used to select the sample size. Face-to-face interviews were conducted with the use of semi-structured interview guide. A thematic approach was applied in analyzing the data. The findings from the study revealed that participants relied on donor support, family members and other charitable organizations as sources to access mobility services. Participants also confirmed that there were several benefits of accessing mobility assistive technologies including independent ambulation and performing daily living activities. Some of the barriers to accessing mobility services were financial constraints and lack of awareness about funding mobility assistive technologies. The study recommends that the government and other stakeholders in collaboration with department of social welfare and other donor agencies should always assist in providing access to mobility assistive technologies to adults with mobility impairments.



CHAPTER ONE

INTRODUCTION

1.0 Background to the study

The term ‘mobility assistive technology’, also known as mobility aids or mobility devices, is described as technologies designed to assist individuals with mobility impairments move around or to do things that they were doing before the impairment (Okoli, 2013). There are many types of mobility assistive technologies that are available to support individuals with mobility impairments to allow them move around without help from others. Some of the most common mobility assistive technology include manual and electric wheelchairs mobility scooters, elbow crutches, on foot frames, walkers and on foot sticks, tricycles, and canes (Alam, 2015). Mobility assistive technology help persons with disabilities to achieve personal mobility and access to these technologies is a start line for realizing equal opportunities, enjoying human right and residing in dignity (United Nation, 1993) The United Nation Convention on Right of Persons with Disabilities (UNCRPD) outlines the duties of countries to take effective measures to ensure that they provide their citizens with personal mobility for their needed independence with effort to promote and ensure mobility assistive technology availability and access (United Nation, 2006). The United Nation Standard Rules on the Equalization of Opportunities for People with Disabilities (United Nation, 1993) as well as World Health Assembly Resolution noted that “Disabilities, in addition to prevention, management and rehabilitation” (WHO, 2011.p.5) mandated countries to promote access to appropriate mobility assistive technology that facilitate their improvement along with different regions that inspire their inclusion of these with disabilities in society.

The Community-Based Rehabilitation Guidelines which includes the CBR guidelines (WHO, 2010); Guidelines on the provision of manual wheelchairs in less-Resourced settings (WHO, 2008), Prosthetics and Orthotics Projects and Program Guide and the Guidelines for Training Personnel Development in Prostheses and Orthotics Services (WHO, 2015) all provided practical recommendations and support for countries in the area of assistive technology. When adults with mobility impairment is given the possibilities to flourish as another grownup, they have the ability to steer pleasing lives and to make contribution to their social, cultural and financial validity in their communities. However, surviving and thriving may be especially tough for grownup with mobility impairment without access to any of those assistive technologies.

Mobility impairment may be defined as an impairment to mobility that restricts the ability of the individuals to move about in the natural environment in order to carry out activities essential to daily life (Rosenberg, et. al., 2011). Mobility includes troubles on foot, stair hiking posture, balance, manipulation, switch and different locomotion responsibilities and its miles therefore, critical to exceptional of lifestyles (Fregly, et. al., 2012). All too frequently, adult with mobility impairments is isolated and excluded from health, and social services, and might have restricted possibilities and may have limited opportunity to participate in family and community life. This often has impacted on their future employment possibilities and participating in civic life. One of the maximum crucial necessities for adults with mobility impairment to flourish is their access to mobility assistive technologies (WHO, 2015). The WHO further reported that, for many adults with mobility impairments, mobility assistive technology represents the difference between enjoying their human right and being deprived of them. However, in lots of low-resourced international locations, handiest

5 to 15 percent of folks that require mobility assistive technologies have access to them.

Recognizing the relevance of access to mobility assistive technology, the Convention on the Right of People with Disabilities, has of their several articles mandated countries to take excellent measures to make mobility assistive technologies and different associated offerings extra inexpensive to their residents, (WHO, 2015). Very frequently, mobility assistive technologies were lacking hyperlink withinside the chain of conditions that allow adults with mobility impairment to stay the sort of stay in which they could revel in and exercising their rights. Whiles national government have number one duties to make certain that humans with disabilities can access mobility assistive technologies, the WHO found that global cooperation withinside the place of provision of mobility assistive technology also can be visible critical.

To increase access to mobility assistive technologies, all associated stakeholders want to preserve an excessive degree of dedication to knowing the mandate of the Convention at the Right of Person with Disabilities – to expand country wide plans, politics and packages for provision of mobility assistive technologies. Access to suitable mobility assistive technology may be an effective device to growth the independences of adult with mobility impairment to independence in their development in participation or social lifestyles. It can assist adult with mobility impairment to turn out to be mobile (WHO, 2015). Matching the maximum suitable mobility assistive technology to the desires of adu It with mobility impairments, is crucial for his or her daily mobility services. Mobility impairments often limiting participation in work, family, social, vocational, and leisure activities (Stonger, 2009). Furthermore, adults with mobility impairment often experience difficulties and

barriers in adapting to the changing and progressive nature of mobility loss, frequently remarked by exacerbation and remission (Hosian, et. al., 2002).

Living with mobility impairment is challenging, many studies have shown that quality of life of people with mobility impairment is lower than quality of life of people without the disabilities (Edwards, et. al., 2003). Also, mobility impairment challenges the affected person in diverse ways as a result of problem in mobility and stature. Fortunately, mobility assistive technologies help to overcome many challenges faced by people with mobility impairment (Bryen & DiCasimirro, 1997). People with mobility impairments, have the right to choose whatever mobility assistive technology that best suit their needs. For example, someone may prefer to use a manual wheelchair rather than the power wheelchair because it enables the individual to maintain his or her upper body strength (Americans with Disabilities Act, 2014). Global data on the need for rehabilitation services, including mobility assistive technologies and estimates of unmet needs, a very limited (WHO, 2011). Studies done by World Health Organization (2005), have released that people requiring for example, orthotics or prosthesis and other related services are made up of 0.5% of the population in developing countries like Ghana, was the number of people with disabilities in developing countries who needed a wheelchair for example is approximately 1% of the population (ISPO, USAID & WHO, 2006). The improvement of life by mobility assistive technology in Ghana are alignment with global goal of mobility assistive technologies; the utilization of mobility assistive technology permits individuals to move freely and participate in meaningful occupation and social activities, and most mobility assistive technologies used in Ghana are provided by religious groups or non-governmental organizations (Shadel, 2014).

Studies carried out in countries like Malawi, Namibia, Zambia, Zimbabwe on the conditions of people with disabilities, showed a huge gap in the provision of assistive technologies (Eide & Kamereri, 2009). Furthermore, these studies revealed that only 17 to 37% of the people who needed assistive technology had access to them. Access to mobility assistive technology is a key factor that helps to improve on quality for people with disabilities (WHO, 2016). The use of these technologies gives opportunity to people with disabilities to take part in activities of their choice in the community in which they live. Independent mobility is regarded as a human right and signatory countries to the Convention on the Rights of Persons with Disabilities have been mandated to make conscious effort to ensure their citizens have equitable access to affordable mobility assistive products, to promote mobility and independence (Stogner, 2008).

As of now, absent or inadequate access to mobility assistive technologies have led to many people with disabilities being forced into a cycle of poverty and deprivation, thus minimizing their access to work and social facilities (Borg et al., 2009; WHO, 2008). This incidents of lack of access to mobility assistive technologies is in part due to unavailable collaborations among diverse stakeholders who require to work together to design, manufacture and deliver mobility technologies (Kamaraj, et. al., 2017).

A study by Shadel (2014), revealed that in Ghana which is a developing nation in the sub-Saharan Africa with a population of 25 million people, common diagnoses resulting in longer term disability including motor vehicle injuries, spinal cord injuries, cerebral palsy, polio, amputation, and unknown injuries potentially resulting from farming occupation. Shadel found that environmental factors that militate

against the use of wheeled mobility in Ghana include not only barriers in the rural lifestyle and terrain, but also the accessibility and safety of urban areas. Furthermore, when an individual suffers from mobility impairments, quality of life is affected in relation to the severity of impairment. For instance, mild knee osteoarthritis can limit participation in preferred recreational or athletic activities without significantly impacting normal daily activities and productivity. In contrast, a major stroke can make it nearly impossible to walk or manipulate objects which significantly reduces an individual's ability to self-sufficient and equally function in society (Fregly et al., 2012).

Many individuals with mobility impairments in Ghana appear to face challenges in accessing comfortable mobility assistive technologies to assist them take full opportunities of their human rights, and to improve their inability to engage in the social life of their communities. The available modernized mobility assistive technologies are costly with most people with mobility impairments unable to afford them Shadel (2014). The above observation is in line with the World Health Organization (2010) findings that many low-income and middle-income countries such as Ghana, only 5 to 15% of the people who require assistive technologies and technologies have access to them. Access to mobility assistive technology can be an important resource for adults, but timely provision can mean the difference between maintaining and losing one's functional independence (Pressler & Ferraro, 2010).

1.1 Statement of the Problem

Mobility assistive technologies may also have an impact on the prevention of falls, injuries and further impairments. Investment in provision of mobility assistive technology can reduce health-care costs and economic vulnerability and increase

productivity and quality of life (Shore, 2012). Mobility assistive technology enable persons with disabilities to achieve personal mobility, and access to these technologies is a precondition for achieving equal opportunities, enjoying human rights and living in dignity (United Nations, 1993). However, if these mobility assistive technologies are not there for these individuals it worsens their situations, not only the ability to move about freely but also, they may not be able to participate in activities they once enjoyed, engage socially or retain independence. In addition, prolonged immobility is associated with increased fatigue, low self-esteem and loss of confidence. This can increase the risk of falls and the development of pressure ulcers. Mobility assistive technology is important because it helps to maintain health and the body's ability to heal and repair. The provision of mobility assistive technology services remains challenging, especially in low resource settings like Effutu Municipal. Interacting barriers in availability of mobility assistive technology services and healthcare access can negatively affect households of individuals with mobility impairments in productivity and obtaining income. The availability of mobility assistive technology services can potentially lessen the related economic burden. However, to date there is limited evidence concerning the economic gain of mobility assistive technology users in Ghana, especially adults with mobility impairments in Effutu Municipal. A study conducted by Bhakti (2019), found out mobility assistive technology have an economic implication and due to that, has increase the income of households with mobility impairment conditions.

United Nations Convention on the Rights of Persons with Disabilities (CRPD) highlights the responsibility of the states to take effective measures to ensure personal mobility with the greatest possible independence for persons with disabilities, and a corresponding responsibility to promote and ensure and availability and access to

mobility aids, technologies and assistive technology to improve the life adults with mobility impairment (United Nations, 2006). But all these responsibilities of the State government to provide for mobility assistive technologies has failed to reach a standard (Saurman, 2010).

From the researchers' own observations in Winneba for about two years, the researcher met individuals with mobility impairments in several occasions like when they are trying to move around to buy their foodstuffs, they have to be supported by individuals or a family member as they move; when trying to access medical care, going to marketplaces they had to be supported by individuals before getting to their needs. All these observations prompted the researcher to go into this area to conduct research on access to mobility assistive technologies that can support these individuals with mobility impairments to live independently. According to Stogner, (2009) individuals with mobility impairments are always supported in their daily routine which happen to be a burden on the caretakers, family members and others. Also, the researcher made a follow up to inquire some information from Department of Social Welfare in Effutu Municipality, Winneba to see if the problem really exists, of which they complained bitterly that most of these individuals are always dependent on family members. They even went to say sometimes too when some of them are coming to their office too, is the family members that support them mostly. So, these individuals with mobility impairments find it difficult in accessing healthcare, perform daily activities on their own without support and sometimes too to move about attending to their needs.

Despite these efforts of stakeholders at the international, national, regional and local levels, access to mobility assistive technologies for people with disabilities are not being met (WHO, 2011). Records at the Winneba Government Hospital (2018) indicates that about 70% demand for mobility assistive technologies have not been met (Information Department, Winneba Government Hospital, 2018). That is why this study hope to find out access to mobility assistive technology by adults with mobility impairment in Winneba Municipality.

1.2 Purpose of the study

The purpose of the study was to examine how adults with mobility impairments access mobility assistive technology in Effutu Municipality, Winneba in the Central Region of Ghana.

1.3 Objectives of the study

The objectives of the study were to:

1. Examine how adults with mobility impairments acquire mobility assistive technology in Effutu Municipality.
2. Ascertain how access to mobility assistive technologies improves the life of adults with mobility impairments in the Effutu Municipality.
3. Identify what barriers affect access to mobility assistive technologies for adult with mobility impairments
4. Establish what measures should be taken to improve on access to mobility technologies for adults with mobility impairments in Effutu Municipality.

1.4 Research questions

The following research questions were raised to guide the study;

1. How do adults with mobility impairments acquire mobility assistive technologies in Effutu Municipality?
2. How do access to mobility assistive technologies improves the life of adults with mobility impairments?
3. What barriers do adult with mobility impairments face in accessing mobility assistive technologies?
4. What measures should be taken to improve on access to mobility assistive technologies for adults with mobility impairments in the Effutu Municipality?

1.5 Significance of the study

The results of the study would help in revealing how adults with mobility impairments acquire mobility assistive technologies in Effutu Municipality. This would enable other adults with mobility impairments to have information about where and how to access mobility assistive technologies.

The results of the study would also bring to light how access to mobility assistive technology promote the life of adults with mobility impairment. This would also enable stakeholders and other opinion leaders to provide more mobility assistive technologies for individuals with mobility impairment as they live independently without any assistance or support.

The results of the study would again cover the barriers adults with mobility impairments face in having access to mobility assistive technology. This would enable the policy makers and other key leaders to speak out on these barriers so that they can be removed or addressed. Finally, the results of the study would add up to the existing

knowledge in order to offer suggestions on the measures that should be taken to improve access to mobility assistive technologies in Winneba Municipality. This would also help both participants of the study and the researcher who is a trained person in the field to take up the problem for redress.

1.6 Delimitation of the study

The scope of the study covered only the Effutu Municipality in the Central Region of Ghana with the focus on access to mobility assistive technology by adults with mobility impairments aged between 45 to 65 years where the problem under study has been identified. This is because it is the adults with mobility impairment who often use mobility assistive technology. Again, these are individual adults who are currently using the mobility assistive technologies and also have knowledge on the use of these technologies.

1.7 Limitations of the Study

The scope and the sample size of the study significantly posed a limitation to the study, this was because the findings of the study could not be generalized to adults with mobility impairments in other Municipalities across the Country.

1.8 Organization of the study

The study was organized into five chapters. Chapter one covered the introduction, background to the study, statement of the problem, objectives, research questions, significance of the study, delimitations, limitation, organization of the study and operational definition of terms. Chapter two dealt with literature review, chapter three focused on the research design, population, sample size, and sampling techniques, instrumentation, procedures for data collection as well as trustworthiness, credibility, dependability, confirmability, transferability, ethical considerations and data analysis

are included in this chapter. In chapter four, data presentation, analysis and discussion of findings have been provided. Finally, chapter five covered the summary of the research findings, conclusion and recommendations.

1.9 Operational Definition of Terms

Mobility assistive technologies: mobility assistive technology in this study refers to aids that enable adult with mobility impairments to walk and move around freely and be independent.

Assistive technology: Assistive technology in this study also refers to any tool or product system, modified to increase, maintain, or improve the functional capabilities of adults with mobility impairments.

Mobility impairment: this includes physical body limitations that may necessitate the use of mobility assistive technologies.

Adults: this refers to individuals aged 45-65 who use mobility assistive technologies.

Access: this refers to resources of getting mobility assistive technologies by adults with mobility impairments.

Barriers: factors that make access to mobility assistive technologies for adults inaccessible.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents the literature reviewed for the study. The review first covered the theoretical framework and review on the various sub-headings derived from the variables raised as the main themes in the research questions such as the following:

Theoretical framework, adults with mobility impairments access to mobility assistive technology, benefits of mobility assistive technology to adults with mobility impairments, barriers to access mobility assistive technology, measures to improve access to mobility assistive technology and summary of literature review

2.1 Theoretical framework

In the study, theoretical framework was necessary as a basis for the discussion on access to mobility technologies by adult with mobility impairments. The study is guided by two theoretical frameworks namely; the Dimensions of Access Theory by Penchansky and Thomas.

2.1.1 Penchansky and Thomas's Dimensions of Access Theory

This study adopted the Penchansky and Thomas's theory of Access as its theoretical framework. Penchansky and Thomas's theory of access is the theory which underscores that access influence consumers and system in three ways: use of services, consumer satisfaction and system practice (Penchansky & Thomas, 1981). One importance of observation about this theory and the relevance it brings to the present study is that it provides a useful explanation that incorporates dimensions of access. The theory views access as the degree of fit between the consumer and the

service: noting that the better the fit, the better the access, the theory of access as propounded by Penchansky and Thomas is optimized by accounting for each of the following dimensions: accessibility; availability; acceptability; affordability; the adequacy or accommodation. Furthermore, the dimensions of access are independent but are not interconnected and each is important to assess the outcome of access. Although, this theory is much more used in relation to access to healthcare however, it's relevant to this study is equally important in the sense that it highlights the core principles of accessing assistive technology services for persons with mobility impairments.

Figure 1 shows the Penchanskys' dimension of theory



(Penchansky & Thomas, 1981) Dimensions of Access Theory

Fig 1 shows the various influences with the Penchansky and Thomas's dimensions of access theory which are critical to the success of mobility technologies by adults with mobility impairments in the Winneba Municipality.

As conceived by Penchansky and Thomas, reflect the fit between characteristics and expectations of the providers of services and the clients. They group these characteristics into five "As" of access are: affordability, availability, accessibility, accommodation and acceptability. They indicate that affordability is determined by how the provider's charges relate to the client's ability to and the willingness to pay for services. Availability measures the extent to which the provider has the requisite resources, such as personnel and technology to meet the needs of the client. Accessibility was the opinions of Penchansky and Thomas refers to geographic accessibility which is determined by how easily the clients can physically reach the provided location. In explaining accommodation, they note that accommodation reflects the extent to which the providers operation is organized in ways that meet the constraint and preferences of the client. Of greatest concern about accommodation according to Penchansky and Thomas, are period of operation and the client's ability to receive service without prior appointment. And finally, acceptability captures the extent to which the client is comfortable with the more immutable characteristics of the provider and the vice versa. These characteristics as they note include the age, sex, social class, and ethnicity of the provider (and of the client), as well as the diagnoses of the types of coverage of client.

2.2 Adults with mobility impairment access to mobility assistive technology

Access to mobility assistive technology may be sourced from combination of government, non-government, consisting of faith-based organizations, non-public zone and disabled human's organizations (Borg, et. al., 2015). An international survey through the United Nations International Children's Emergency Fund (n.d) additionally observed that governments, non-governmental organizations, Disable People's Organizations and families are major sources of providers of assistive

technologies for people with disabilities. Studies in South Africa, Namibia, Malawi, and Sudan found that the most common areas of access to assistive technology were government health services (37.8%), “Other” global humanitarian aid, development, charity and religious organizations (29.8%), and private health services (22.9%) (Visagie, et. al., 2016). The studies similarly discovered private services were more common as a source of assistive technology in urban areas and among females (p. 5). Another study in Bangladesh found that government facilities provided about one percent of the assistive technologies needed in that country (Borg & Ostergren, 2015).

The authors (Visagie, et. al., 2016) in addition observed that, approximately one in five of the organizations (NGOs) in Bangladesh became lots better in a preceding observe in four African countries, in which 2.3 to 9.3 percentage of the mobility assistive technology were respondents who used wheelchairs had obtained them from different sources. Additionally, Borg and Ostergren referred to that provision with the aid of using non-governmental included community members, clubs and volunteer organizations (p. 303), reportedly provided by NGOs.

Furthermore, where government resources and capacity are limited, other stakeholders, including international organizations, such as the International Committee of the Red Cross (ICRC), may play a greater role in provision of mobility assistive technologies. Again, people with disabilities may also access mobility assistive technologies through a number of different facilities, including hospitals, rehabilitation facilities, mobile/outreach facilities and community-based programmes, and also from private retailers and special education agencies. A variety of health personnel, especially rehabilitation personnel, are also involved in the provision of mobility assistive technologies, including therapists (e.g., occupational therapists and

physiotherapists), medical staff (e.g., doctors and nurses), orthotists and prosthetists, and community workers (e.g., community-based rehabilitation workers and community health workers) (WHO, 2011). In the Republic of Ghana, for example, most mobility assistive technologies are provided by religious groups or nongovernmental organizations (Strauss & Corbin, 2015). Countries that were party to the Convention on the Rights of Persons with Disabilities (CRPD) are legally bound to fulfill the obligations outlined below regarding personal mobility and the provision of mobility assistive technologies. Even if a country has not signed the CRPD, it is helpful for the interpretation of other human rights conventions to which that country is a party. As well as action from participating nations, global cooperation is also required in support of national efforts to realize these:

2.2.1 General obligations

The 2011 World Report on disability notes the following obligations:

- a. "To adopt or promote research and development of, and to promote the availability and use of new technologies, including information and communication technologies, mobility aids, device and assistive technologies, appropriate for individuals with disability giving precedence to technology at a low-priced cost;
- b. To offer reachable data or accessible information to individuals with disability about mobility aids, gadgets and assistive technologies, such as new technologies, as well different sorts of assistance support technologies, guide offerings and facilities;

2.2.2 Personal mobility

States parties shall take effective measures to ensure personal mobility with the greatest possible independence for person with mobility impairments or disabilities including by:

1. Facilitating the personal mobility of persons with disability in the manner and at the time of their choice, and at affordable cost.
2. Facilitating access by person with disabilities to equality mobility aids, technologies, assistive technologies and forms of live assistance and intermediaries, including by making them available at affordable cost;
3. Providing training in mobility skills to person with disabilities and to specialist staff working with person with disabilities (WHO, 2015).

Encouraging entities that produce mobility aids, device and assistive technologies to take into account all aspects of mobility for persons with disability (United Nations 2006), as cited in (WHO, 2011, p. 10). Even though access to mobility assistive technology can be accessed through different sources it is relevant that those technological technologies meet the client's needs, for instance, the technologies accessed must be acceptable, adaptable and of quality to the user (Penchansky stability by increasing the base of support, assist to provide tactile information about the ground to improve balance (Kaye, et. al., 2000). Again, are helpful for person who also need to use their arms for weight balance and propulsion and not just for balance (Kaye et al., 2010). Crutches are again used to aid with ambulation by helping with balance, widening the base support, and decreasing weight bearing on as single lower limb (Souza et al., 2010). Crutches provide more balance for users than with canes doing walking and are good for people who need bilateral support and showcase good

upper- limb control (Stuliff, 2008). It is estimated that one crutch can offer 80% weight bearing support.

2.3 Benefits of mobility assistive technology to adults with mobility impairments

Mobility assistive technology provide some of advantages to individuals who make use of them. Mobility assistive technology have the potential to save money and improve the quality of life of many elderly people with mobility impairments (Elliot, 1992). The United States Workplace of Technology Assessment (1985) stated that for some individuals, and assistive technology can delay or prevent institutionalization, ensuring in enormous personal and financial savings. According to Elliot, the variety of mobility assistive technology available today can permit aged individuals with mobility impairments to maintain functionally independent in their communities with fewer in-home services or domestic services. Elliott in addition stated that the usage of assistive technologies can enable a number of individuals with impairments to bath independently and additionally ought to allow people to dress themselves and thereby assuaging the need for some help from others. Mobility assistive technology consist of any technologies used to hold or improve mobility (Assum, 1997; Blake & Bodine, 2002). Mobility assistive technology is likewise designed to improve functioning, allow a success dwelling at home and in the community, and enhance independence (Scherer, 1996). Studies discovered that mobility assistive technologies had been earmarked as a powerful treatment for compensating weakness, restoring energy, and supporting to control unstable knee and ankle musculature (Souza, et. al., 2010). Mobility device is likewise beneficial for foot drop, a circumstance wherein someone cannot clean his or her toes in swing- through phase of mobility, might also additionally probably have an effect on everyday gait (Sutliff, 2008). They also provide ambulation through providing even distribution of weight at the hips that can

be traits of an everyday gait (Souza et al., 2010). These technologies are once more beneficial whilst working appear to be or mildly risky, thereby lowering working effort and the associated dangers of failing whilst in comparison with ankle- foot orthoses and hip flexion assistive orthoses (Stuliff, 2008). Several sorts of canes available, such single- legged cane and quad cane that have a ball huge base of aid and may keep upright freedom so that they do now no longer turn out to be tripling danger (Souza et al., 2010).

The wheelchair has turn out to be one of the maximum vital and broadly used assistive technologies that assist in rehabilitation of persons who experience mobility impairments (Best, 2014). Best (2014) once cited that "simply obtaining a wheelchair can facilitate social participation benefits for older adults" (p.3). Providing appropriate wheelchair not only enhances mobility but begins the process of opening up a world of education, work and social life for people with mobility impairments and can again benefits their physical health and quality of the user by helping in reducing common problems such as pressure sores, progression of deformities and improve respiration and digestion (WHO, 2010, P.1).

According to Sarantakos (2012), provision of mobility assistive technology for individuals with mobility impairments has the capacity to remedy activity limitations and participation restrictions, can save you or limit fatigue by energy conservation and additionally enhance quality of life. Access to and uses of mobility assistive technology also create opportunities for education and work, and once more make a contribution significantly towards improve health and quality of life of people with mobility impairments (Eide & Oderud, 2009; Shore, 2012). Mobility assistive technologies may also help in preventing falls, injuries and probably from causing

further impairment and an early death among the users (WHO, 2011). It is acknowledged that use of mobility assistive technologies promotes functional independence, as they permit adults to remain active when facing impairments in everyday activities (Agree & Freedman, 2003; Cornman, Freeman & Agree, 2005).

Mobility assistive technology has progressed over the past two decades with the current estimates available indicates that closely one-third of all adults aged about 65 years or older make use of at least one device (Freeman, et. al., 2006; Scheoni, et. al., (2008); Spillman, 2005). A study in America also discovered that African adults 65 years and over used mobility assistive technologies such as canes, walkers more than ever and increasingly using more than one device, depending on the setting (American Physical Therapy Association (APTA), 2015). In addition, the researchers equated the feasible rise in the use of technologies to be a greater disability rate, increase longevity, wider acceptance or correction of unmet desires in preceding decades. Access to mobility assistive technology again can become an important resource for adults with mobility impairments, however, only family adoption can mean the difference between maintaining and losing one's functional independence (Pressler, et al., 2010). Impairments and mobility however increase with age and mobility assistive technologies such as canes, crutches and walkers can be used to increase the individuals base of support, enhance balance, and increased activity and freedom (Bradley & Hernandez, 2011).

Furthermore, a person becoming disabled does not mean that the life of the individual will become stuck. There are many special forms of mobility assistive technologies that are available on the market to assist individuals with disability in need. The use of mobility assistive technology in diverse ways appears to provide a great promise to

potentially improved mobility, functionality, including social interaction and also performance of daily activities for the elderly (Weerasignhe, et. al., 2015). Moreover, mobility assistive technologies are seen as having preventive capability due to the fact they may limit more Independence of the people with disabilities on family members, thereby maintaining sense of themselves as full adult persons (Long, 2012). Borg, Lindstrom and Larsson (2009) also stated that because free mobility is a human right, signatory countries to the Convention on the Rights of Persons with Disabilities are mandated to ensure their citizens have equal access to low-cost mobility assistive technologies to promote free mobility.

The result of unavailability of mobility assistive technology provision has revealed may force many people with disabilities into the cycle of poverty and deprivation, curtailing their access to education, work and social facilities (Borg et al., 2009; World Health Organization, 2008). People with disabilities who cannot walk or move around can be provided with mobility technologies such as wheelchairs, crutches, canes, scooters and rollators so as to facilitate and that enable active participation (Lofqvist, et. al., 2015; Sorensen, et. al., 2003). Access to mobility technologies is generally being seen as very important, and the United Nations (UN) as well as World Health Organization has recommended them as essential tool in creating equal opportunities for people with disabilities (Salminen, et. al., 2009). The benefits of mobility technology in Ghana in alignment with global of goal mobility technologies; the utilization of mobility technologies permits individuals to move freely and participate in a meaningful occupation and social activities (Shadel, 2014). Dessureault, et. al., (2009) stated that people with mobility impairments with access to mobility technologies have the better opportunity to engage in social activities. This is because being actively involved in social role brings about personal identity, self-

esteem, and help in elimination and segregation (WHO, 2010). Mobility assistive technology are used by people with impairments, that is those having difficulty in walking, or who may be unable to walk, can be provided with wheelchair or other mobility technologies such as canes, collators, and scooters so as to help promote and facilitate activities and participation (Braut, 2010; Lofqvist et al., 2003). The WHO also pointed out that when people with disabilities are given opportunity, they can take up different social roles. These different roles may include those related to “relationships (husband, wife, sister, brother, friend), work (teacher, community worker, farmer), daily routine (cleaner, cook), recreation and sports (football player, card player) and community (volunteer, community leader)” (WHO, 2011 p.3)

Okoli (2013) however, suggested that there must be a maximum benefit from the use of mobility technologies and that the technologies must be suitable and used appropriately. Okoli further suggested that professionals who prescribe mobility technologies need to be knowledgeable about disability mobility assistive technology and should skilled in their use and applications. According to Okoli, mobility assistive technologies must meet the following requirements: they must be appropriate to meet the individual's needs and their ability to ensure environmental conditions, be able to provide proper fit and postural support base on biomechanical principles, be safe and durable, be available and accessible and be maintained and sustained to meet the economic conditions.

Saurman (2010) observed that mobility device fit and use can vary depending on the need of a population and the define norms within that specific country. But, Bolding, et. al., (2013) pointed out that the universal principles are still the same and that mobility assistive technologies are advanced technology and cautioned that specialist

such as the rehabilitation personnel need to acquire some level of clinical training and theoretical knowledge before assessing and fitting individuals. In the effort to promote access to personal mobility for people with disabilities to, the United Nations on its mandates outlined the following as a guide for signatory countries, including by:

"Making sure that personal mobility for persons with disabilities is facilitated in the manner and time of their choice, including at low cost;

Ensuring that people with disabilities get access to quality mobility aids, technologies, assistive technologies and other forms of live assistance and intermediaries, including by putting in place measures to make them accessible for affordable cost;

Offering training in mobility skills to persons with disabilities and to specialized person working people with disability; and

Encouraging entities that are producing mobility aids technologies and assistive technologies to take into account all aspects of mobility for persons with disability" (UN, 2006) cited in WHO, 2011, p.11)

Another disability status report in the United States in 2012 revealed that 37.6% million persons in USA have some level of disability with the above 20 million persons representing with ambulatory disability (Erickson, et. al., 2012). With the statistics given above, it is estimated that about 3.6 million wheelchair users and 11.6 million persons requiring the use of canes, crutches, walker for mobility help in the USA (Brault, 2010). For these reasons, it was suggested that the number of persons with mobility-related impairment that may require the use of assistive technology would substantially grow (Carver, et. al., 2015). While it is strongly believed that the benefits of using mobility assistive technologies are well realized among caregivers

and consumers, health professionals and policy makers, there is however, limited research evidence to justify the benefits and power of mobility technology provision (Finlayson & Hammuel, 2003; Mills, Holm & Schmeler, 2007). Functional mobility, according to Carver et al., (2015), is a necessity for participating in activities of daily living, leisure pursuits and community participation moreover it can also be seen as a key component of freedom for those with disabilities.

Although people are familiar with the larger mobility and visible mobility assistive technology such as wheelchairs, walkers, and canes, many individuals with mobility impairments remain unaware of the potential benefits of using different types of assistive technology in the life in order to control the situation. Assistive technology has remarkable potential to improve the life of individuals with mobility impairments and disabilities. When assistive technology technologies and services provide access to the mobility assistive technology in general, this engagement in turn provides more opportunities for social inclusion and enhancement to individuals self-esteem or self-management abilities. By using mobility assistive technology, individuals with mobility impairments and disabilities can be integrated in activities that might not otherwise be available or accessible to them. One of the greatest benefits or improvement of mobility assistive technology may be its capacity to enable adults with mobility impairments and disabilities to access a task that could not have been done before, or reach a specific ambition that otherwise would not have been possible (Cobbold, 2008). Mobility assistive technology has the power to allow adults with mobility impairments and disabilities to actively engage in social activities with their peers.

2.4 Barriers to Access Mobility Assistive Technology

There are several mobility assistive technologies available for people with mobility impairments, but several obstacles hinder the adoption of these technologies. These hindrances include consumer-related issues, such as the challenge of affording mobility assistive technologies, lack of awareness about how mobility assistive technology can improve functioning and quality of life; and reluctance of used mobility assistive technology because of the stigma that comes from their use (Centre for Technology and Aging, 2010). There is variation in mobility assistive technology used in terms of socio-cultural factors including socio-economic status, age, gender, ethno-cultural status, housing and geographical location (deKlerk, et. al., 1997; Kaye, Yeager & Reed, 2008). For example, the capacity to buy a mobility assistive technology is an important precondition of using one (Skinner and Weisner, 2007). Kaye et al. reported that Montes and Halteman (2008) also found out that there is often a great burden on families to purchase mobility assistive technology directly from their pockets, with those without health insurance even face the greater. Another study confirmed that those without an insurance coverage will be more likely than those with insurance coverage to report and meet needs for mobility assistive technologies (Dusting, et. al., 2004). Similarity, people from minority groups and low-income backgrounds are also more likely to miss out on quality mobility assistive technology (Hunt, et. al., 2004). Been for mobility assistive technology is one of the major barriers to accessing mobility assistive technologies for many people with mobility impairments as many of them are economically insecure (Johnson & Wilson, 2010). Harvey also argued that it is important to examine the socio-economic factors because families of people with disabilities are believed to be disproportionately

financially constrained by poverty (Harvey, 2001), while the use of mobility assistive technology can also be impeded by the location of the users lives.

Education is found to be linked with social economic status and, therefore people who are better educated and more likely to know about technologies that are available and can feel confident about using them, particularly those that come with sophisticated technologies (Kaye et al., 2008). Education also plays a major role to income in determining mobility assistive technology usage. Kaye et al. concluded that disparities may be attributable to differences in awareness in relation to mobility assistive technology and their perceived benefits of using them as may be opposed to economic factors. Indeed, there is the need for individuals to have the appropriate level of health literacy and social capital added in order to access the use of mobility assistive technology (Ali, et. al., 2001). Evidence from the rehabilitation literature shows that users living in remote areas can encounter challenges in accessing mobility technologies (Giltlow & Sanford, 2003). Giltlow and Sanford further observed that most allied health professional find it very difficult to travel to places outside their jurisdiction for assistive technology education, thereby compromising the accessibility of technologies (Savage, et. al., 2009). However, little is known about how geographical location impact and let's need for mobility assistive technology for adults with mobility impairments. Another factor that can influence the use of mobility assistive technology could be gender (Bierman, et. al., 2004; Kaye et al., 2008; Statistics Canada, 2008).

Some studies have also indicated that there is no difference in the use of mobility technology gender (Hung, et. al., 2007), but others found that that there exists a gender determinant to whether a mobility assistive technology is used or abandoned

(Beck, et. al., 2010). There are other views which points to the fact that men have lower level of mobility assistive technology usage, particularly for low-tech technologies (Kaye et al., 2008).

Agenda consideration in assessing and using mobility assistive technology is vital because it's may influence beliefs about health and lifestyle which are linked with disability management (Payne, 2006). This may happen as gender may influence the way in which symptoms are perceived, health seeking behavior, access to health services, adherence to treatment and long-term social and health consequences (WHO, 2008). Perceived benefits of using them as may be opposed to economic factors. Indeed, there is the need for individuals to have the appropriate level of health literacy and social capital added in order to assess the use of mobility assistive technology (Ali, et. al., 2001). Evidence from the rehabilitation literature shows that users living in remote areas can encounter challenges in accessing mobility assistive technology (Giltlow & Sanford, 2003). Giltlow and Sanford further observed that most allied health professional find it very difficult to travel to places outside their jurisdiction for assistive technology education, thereby compromising the accessibility to technologies (Savage, et. al., 2009). However, little is known about how geographical location impacts and net sleeves for mobility assistive technology for adults with impairments. Access to mobility assistive technologies can also be obstructed due to generally low area of priority from national governments, and as a consequence, it is not reflected in national legislation, policies and strategies (WHO, 2011). Furthermore, lack of financial capacity to tackle provision of mobility assistive technology in some countries has impacted greatly on production of mobility assistive technology and related services. Another research carried out again reported that most of the countries that took part in the survey rely on out-of-pocket transaction as a way

of financing mobility assistive technology which has accounted for most persons with disabilities and families to purchasing even more than half of all assistive technology directly (Albrecht, et. al., 2003).

Provision of mobility assistive technologies has been attacked for many governments especially those in low-income countries because these technologies have been in short supply and when they do exist, they are located far away from where people with disabilities live (WHO, 2011). It is estimated that 53% of countries have not taken the initiative of programs relating to the provision of assistive technology (South north center for Kaye et al. (2008) found that another determinant of assessing the using mobility assistive technology may include the cultural factor and that cultural may present a disparity in accessing the using mobility assistive technology because ethno-cultural believes and probably the norms shape lifestyle behavior and how disabilities are perceived (Ali et al., 2001). This may be due to some believe that disability in evil and a curse, sigma or a possible retribution from God, which can lead to people with disability reluctant or hidden away (Meekosha, 2004; Shultz & Sankaram, 2006). In some cultures, as stated by Gannoti, et. al., (2001), people with disabilities can be overprotected to the extent that it can influence family expectations for the capabilities of those with impairments.

Access to mobility assistive technology can also be obstructed due to generally low area of priority from national governments, and as a consequence, it is often not reflected in national legislation, policies or strategies, (WHO. 2011). Furthermore, lack of financial capacity to tackle provision of mobility assistive technology in some countries has impacted greatly on production of mobility technologies and related services. Another research carried out again reported that most of the countries that

took part in the survey rely on out-of-pocket transaction is as a way of financing mobility assistive technology, which has accounted for most persons with disabilities and families to purchasing even more than half of all assistive technologies directly (Albrecht, et. al., 2003). Provision of mobility assistive technologies has been a task for many governmental especially those in low-income countries because these technologies has been in short supply and when they do exist, they are located far away from where people with disabilities live (WHO, 2011). It is estimated that 53% of countries have not been taken the initiative of programs relating to the provision of assistive technology (South-North Center for Dialogue in Development, 2006) in some cases WHO found that, where non-governmental organizations engage in service delivery, they do not have enough financial capacity to continue to develop, perhaps a sustainable service delivery system to cover entire country and moreover too, their services turn to concentrate on a particular service delivery system and also most of their services are sometimes geared towards specific impairments, age group and or geographical area.

Furthermore, where it happens that provision of mobility assistive technology exist, there are more often centralized in major urban areas such as rehabilitation centers. Therefore, it becomes very difficult for people with disabilities and family members to afford the cost of traveling to center where mobility assistive technologies are available, in addition to the fact that public transport to these areas people with disabilities and family live is far and often not accessible (Dejong, et. al., 2002; Penny, et. al., 2007).

It is documented that in almost all countries, services relating to the provision of mobility assistive technologies are inadequate and of low quality and this can put

people with disabilities at risk of secondary conditions, for instance if a particular device like prosthesis are not fitted well can lead to device abandonment, or wheelchair are provided without cushion, pressure sores can develop (WHO, 2011). Inadequate or a lack of water in personal accounts for a major setback to the provision of appropriate mobility technologies services in many countries (Jensen, et. al., 2004; Pearlman, et. al., 2008). Several countries have announced insufficient, unstable or unavailable supplies of rehabilitation professionals (WHO, 2016), and most developing countries have also been cited for not having enough educational programs for rehabilitation professionals (WHO. 2011). The organization further revealed that many countries lack the production capacity with mobility device being produced on a small scale or in some cases not available at all. The WHO further observed trend to be a result of lack of limited access to the materials and the possible equipment needed to produce mobility assistive technology. In addition, these factors are speculated by WHO could also be as a result of market related factors which have the potential of limiting production, for example "there may be a limited demand for mobility assistive technology because people with disabilities in developing countries are often unaware of the existence of benefits of these technologies and may have limited purchasing capacity" (p. 17).

Several physical environmental barriers also exist that pose dangers to accessing of mobility assistive technology. As indicated by Wearmouth and Willandt (2009), there are a number of challenges within a person's physical environment that can create barriers to limit individual access to mobility and use of mobility technologies; an individual will not be able to use a device such as wheelchair of good quality in an accessible house, or workplace Shadel (2004) also found that the environmental barriers to mobility accessibility are not limited to uneven terrain on unpaved road but

also include a lack of universal design concepts in regards to the layout of public and private buildings. A study on the living conditions of people with disabilities in Lesotho, for example showed that there was a wide gap of 25.4% between the expressed needs for mobility device services and awareness of these services (Kamareri & Eide, 2011). Social and cultural barriers may also pose enormous restrictions on the use of mobility assistive technology. For instance, arthouses for lower-limb weakness often come ready fitted with a shore, which indicates they cannot be used in places of worship and homes in many parts of the world (Mulholland et al., cited in WHO, 2011). Mobility technologies however, are not without disadvantages, as some of them have been associated with falls and even injury (Batemi & Maki, 2005; Faruqui & Jaebon, (2010). A study by the American physical Therapy Association, found that mobility device use did not appear to lower the incidence of falling, because mobility technology has been significantly associated with many risk factors for falls (American Physical Therapy Association, 2015). This, the Association laments has serious implications for practitioners, especially for those who prescribe and train adults in the use of mobility technologies.

Literature again has shown that inappropriate mobility assistive technology for instance, may culminate to pressure ulcer, falls, accidents and device abandonment or underutilization (Greer, et. al., 2012). In order for people with mobility impairments to benefit from the mobility technologies provided, a comprehensive assessment is required to ensure that they meet the needs of the individuals within their homes, work and community environment (WHO. 2011)

Barriers to improving access to assistive technologies in low-and middle-income countries stem like Ghana from low production and limited quality; financial barriers; and lack of government funding; provisions and human resources. There is a scarcity of personnel trained to provide these technologies, especially at provincial and district levels. In many settings where access might be possible, the costs are prohibitive. Even in high-income settings, such as the USA, access to these technologies and qualified providers is frequently limited and varies considerably across states and districts as well as urban and rural areas. Factors such as culture and language, expectations, legal constraints, stereotyping, autonomy and dignity also hamper access to assistive technologies for persons with mobility impairment. A systematic review of barriers to adoption of assistive technologies by older people found that privacy was the top concern, followed by worries about trust, functionality and added value. Other key barriers were cost and affordability; ease of use and suitability for daily use; perception of “no need”; stigma; fear of dependence and lack of training.

The 2011 world report on disability notes that these accessibility challenges or barriers also apply in low-and middle-income countries and are reinforced by inadequate policies and standards; negative societal attitudes towards people with disabilities or mobility impairments; lack of provision of medical rehabilitation, vocational training and welfare services. In nationally representative surveys of the living conditions of adults with mobility impairments in Namibia, Malawi and Zambia, shortcomings were found in mobility assistive technology services, in addition to lack of vocational training, welfare services and counselling. The unmet need was high; only 17%, 18%, and 26% of adults with mobility impairments or disabilities who were surveyed had access to mobility assistive technologies in Namibia, Malawi and Zimbabwe respectively. As discussed earlier, demand-side

barriers contribute significantly to the gaps in access to and use of these technologies. At all levels policy-makers, care providers and potential beneficiaries – there is a lack of understanding about the benefits of mobility assistive technologies and a lack of information about what assistive technologies are available. It is critically important to understand and address the mismatches between high need and low demand, to devise policies to improve access to mobility assistive technologies.

Gaps in the evidence, there is a significant lack of data overall on the size of unmet need in this area. For example, accessibility in individual countries can be difficult to estimate, since the CRPD States Parties' reports provide only the number of people with disabilities who have access to these assistive technologies but not the total number of people disabilities who need them, so the proportions whose needs are being met and unmet are unknown. Furthermore, although it is acknowledged that there is a large and growing need for mobility assistive technologies from low-and middle-income countries, there is a lack of research in these settings, which hinders the development of evidence-informed policy and practice. A scoping review of research on mobility assistive technologies from low- and middle-income countries and other research limited settings from 2000 to 2016 aimed to characterize the evidence available. The review found that, of the 252 studies included, over 80% focused on types of assistive technologies to address hearing and communication needs, (45.2%) on vision, (35.5%) needs with spectacles and prosthetics accounting for over 50% of all publications. The review found that evidence was most lacking on mobility assistive technologies to address access to mobility impairments issues.

Unsurprisingly, most research assessing the effectiveness of various types of assistive technologies is from high-income settings. Several reviews summarizing findings to date have highlighted the lack of high-quality, well-designed research in this area. For example, while much has been published on the potential role of electronic assistive technology for memory support to people with dementia, assessments of effectiveness have been low quality. Likewise, although mobility assistive technology is one of the most frequent interventions used by adults with mobility impairment, a systematic review found only one small randomized trial of low quality assessing a device that is not commonly used. The absence of reliable information on access is a gap that urgently needs to be addressed. This is critical not only for informing more rational use of resources in high-income settings where such technologies are available, but also to allow evidence-informed decisions in low-income settings like Ghana. In access to mobility assistive technologies, the outcome measurement should be relevant not only to the target populations, but also, importantly, to institutions, organizations, families and caregivers. In addition, there are limited numbers of rigorous cost analyses of mobility assistive technologies for people with mobility impairments and their caregivers.

2.5 Measures to Improve on Access to Mobility Assistive Technology

Removing barriers to mobility assistive technology and related services should take into consideration the principle of accessibility, acceptability, affordability, availability, adaptability and equality (WHO, 2010). Furthermore, national data on needs for mobility assistive technology both met and unmet are paramount for policies and programmers, for example, those needs that are met and unmet can be accessed through data on prevalence of disability, disability research and population and administrative data. Another strategy that can be useful for increasing access to

mobility assistive technology is that questions on the related and unmet needs for mobility device services can be included as a sub-set of national studies or representative surveys, like the one that was done on the living condition among people with activity limitation and six southern African countries (Eide & Oderud, 2009; Kamaleri & Eide, 2011). The WHO also suggested that the supply of mobility assistive technology can be estimated from administrative data that involve mobility technology provision. Again, measures such waiting time can be done through proxy for the extent to which the demand for mobility assistive technology is being met (WHO, 2011). Estimating adults with mobility impairments needs for mobility assistive technologies and mapping available resources are a prerequisite for planning equitable services (WHO, 2015). Furthermore, in the absence of unavailable data, a percentage for example 3-5% of adults with mobility impairments in many populations can be used as a baseline to determine the number of those who require mobility assistive technology. It is also essential that the needs of adults with all type of mobility impairments are taken into consideration.

Provision of mobility assistive technologies needs to be included into existing or new legislation, strategies and policies and the documents backing the provision of mobility assistive technology need to address the issue of physical and cognitive accessibility to mobility technologies and services, and also to public in-and outdoor environments and facilities (WHO, 2015). Lack of awareness of the services or the negative attitudes about disability that influence the person or the family seeking technologies needs to be tackled (WHO, 2011). In addition, indicators relating to number of people demanding mobility assistive technology services and unable to receiving them or those that are receiving inadequate or inappropriate technologies can provide useful information for planning. It may be unrealistic for people with

disabilities living in rural areas to travel to specialized centers to have their technologies repaired and this may lead to an abandonment when they experience difficulties using them (WHO, 2011) and also local artisans as noted by the Organization can be trained to make small repairs to assistive technology such as orthoses, prostheses and wheelchairs, example repair orthoses by replacing straps, screws or reverts. The WHO (2015) also pointed out that decision-makers at all the levels require the right training to effectively develop and implement all aspects of a system for the provision of mobility assistive technology for adult with mobility impairments. The forming of partnerships among various stakeholders can play a role to support national efforts, coordination and collaboration and helps prevent duplication (WHO, 2011). Aside forming partnership at the national level, collaboration can also take place at the international level or other entities that may have committed to the convention on the Rights of Persons with Disabilities and Article 32 on international corporation (Borg, Larsson & Ostergren, 2011; Borg, Lindstrom & Larsson, 2011). It is important for platforms for information sharing, including research and good practices may be established (WHO, 2011). Ensuring effective implementation of policies relating to the provision of mobility assistive technologies require budgeting and allocation of necessary funding; where the needs for access to mobility technologies for adults with mobility impairments needs to be identified and made available at an affordable price (WHO, 2015). In addition, the development of importance mobility assistive technology may be facilitated through many funding mechanisms including government funding, donor funding, national or private insurance schemes, public or private assistive technology funds, existing systems and infrastructure; for instance, healthcare, education, and community-based rehabilitation.

In order for the signatory countries to achieve the standard set for the provision of assistive technology (mobility technologies) as stated in the Convention on the Rights of Persons with Disabilities, the following principles need to be considered:

1. "People with disabilities need to be actively involved in all stages of mobility assistive technology provision, having choice and control over the decision that affects them and factors such as sufficiency, reliability, simplicity, safety and aesthetics should be taken into account to ensure technologies and related services are acceptable to users;
2. Mobility assistive technology and related services are accessible to everyone with an identified need. Accessibility encompasses non-discrimination, physical accessibility and information accessibility. Provision of mobility assistive technology should be equitable to avoid discrepancies between genders, age groups, impairment groups, socioeconomic groups and geographical regions;
3. Mobility assistive technology and related services are adapted and modified to ensure they are appropriate to the requirements of the individual's disability, that is impairments, activity limitation restriction, related health condition, environmental factors; (example physical and social environment) and personal factors (example gender, age, race, physical fitness, lifestyle and habits) (WHO, 2001);
4. Mobility assistive technology and related services must be affordable for people with disabilities and their families, particularly in the low-resourced settings.

Affordability refers to the extent to which people can pay for the device and /or services associated with it;

5. All relevant resources (health-care facilities, programs and services, human resources, materials and products) required for the provision of mobility assistive technologies are available in sufficient quantity for the needs of the population and are provided as close as possible to people's community; and
6. All relevant (health-care facilities, programs and services, human resources, and material and products) are of an appropriate quality. Product quality and can be measured through local, national and international technical standards or guidelines in terms of strength, durability performance, safe and comfort" (WHO, 2011, p. 19).

Mobility technology for people with mobility impairments can be provided by a broad range of stakeholders including the government, international agencies, non-governmental organizations, or (charitable and faith-based organizations), and the private sector (WHO, 2011). In countries such as "Coata Rica, Cuba, Guyana, Indonesia, Mozambique, the Philippines and South Africa, provision of mobility technologies is an important part of health care and they are provided by the ministry of health through the national health care system" (p. 9). The WHO (2008) mentioned that countries such as Pakistan, the Syrian Arab Republic and Sri Lanka provide mobility technologies primary through their Ministry of Defense for army personnel and in some cases, they extend such provision to civilian. The WHO further noted that when resources and capacity are limited, other stakeholders, including international organizations, for example the International Committee of Red Cross (ICRC), may be involved to play a greater role in the provision of mobility assistive technology. Health personnel, more importantly rehabilitation personnel, are mostly involved in the provision of mobility assistive technologies, including therapist, such as occupational therapist and physiotherapists, medical staff such as doctors and nurses,

orthotists and prosthetists, community workers (example, community-based rehabilitation workers and community health workers) (World Health organization 2011).

Based on the GATE workplan, there are four overarching, interlinked measures for countries to improve access to mobility assistive technologies. First, a national policy framework for mobility assistive technology is needed, with adequate funding support and a focal unit to promote intersectoral actions. Second, product development by research and development partners should be encouraged through incentive schemes that support and promote affordable assistive products. Third, capacity-building of personnel is needed, through undergraduate and in-service training, as well as training of formal and informal caregivers. Fourth, provision needs to be enhanced, especially through integration of services with the health system. Several key focus areas are described next.

2.5.1 Increasing awareness and demand

In the World Health Assembly Resolution, Member States are urged to develop a national list of priority mobility assistive products that are affordable, cost effective and meet quality and safety standards, based on the priority mobility assistive products list. It is anticipated that national lists will trigger awareness among health-care providers, especially if governments also commit to allocating adequate funding to improve delivery systems and training of health workforces. In turn, health awareness among professionals, and improve availability of these priority mobility assistive technologies, should gradually increase public awareness and demand.

2.5.2 Product development and adoption

WHO initiated GATE as a platform for international collaboration across governments, United Nations agencies and civil society groups, to incentivize the development of products that are affordable for adoption in developing countries? The priority mobility assistive products list should stimulate interest in improved product designs that take into account user-defined needs to facilitate wider adoption and use. Promoting low-cost locally produced items, raising awareness and fostering targeted research will improve access. Six criteria for assessment of the merits of mobility assistive technologies are described below.

1. **Availability:** mobility assistive technologies are available in sufficient quantity for those in need and are provided close to their communities.
2. **Accessibility:** those who need mobility assistive technology services know about them and are able to get them.
3. **Acceptability:** the mobility assistive technology and related services are appropriate, useful and helpful in the lives of those who need them.
4. **Adaptability:** mobility assistive technologies are adaptable and sufficient adjustable to meet each individual's needs.
5. **Affordability:** mobility assistive technologies are available at a cost the user and their family can afford.
6. **Quality:** mobility assistive technology and services are of sufficient quality for their intended purposes. (Source: modified from the 2010, WHO Health Component).

2.5.3 Financing and delivery

In the context of the SDGs and universal health coverage and the adoption of World Health Assembly Resolution, governments need to embed mobility assistive technologies and associated services in health and community services, and subsidize the provision of mobility assistive technologies and services such that they are free of charge. Government subsidies for mobility assistive technologies are required, as household out-of-pocket payment for these services can be a major barrier to access. In-service training of existing cadres of health personnel can be rapidly scaled up to support the initiation or strengthening of service provision. This should run in parallel with a long-term plan for undergraduate curriculum development and training. Focus should be on improving the economies of scale in manufacturing and assembling products locally, and reducing or exempting import duties, especially where importing countries do not have local production capacities. Appropriate products should be made available and properly prescribed and fitted; users should receive proper training with appropriate follow-up; and societal and environmental barriers should be removed

2.5.4 Multisectoral action

Effective multisectoral collaborations contribute to a holistic approach to fostering functional capability and autonomy among all potential beneficiaries of mobility assistive technologies. This requires a whole-of-government approach. Universal designs for mobility assistive technologies, buildings, transport, and information and communication technologies require multisectoral actions across government and business sectors. Multisectoral involvement, especially of governments, manufacturers, users and consumers, can be embedded in the national mobility assistive technology policy framework. For example, in a project in Thailand,

architects and engineers supported design and housing modifications to enable independent living by people with mobility impairments and disabilities, with community involvement and funding support from local government. Government agencies, industries and research groups demonstrated successful innovation in mobility assistive technology through coordinated knowledge transfer, partnerships and focused funding that support training, local research and development, and manufacture of high-quality measures, with involvement and active participation by people with mobility impairments and disabilities. Effective governance of multisectoral action requires leadership capacity across sectors and levels of government and cultivation of champions in different sectors who can agree on common objectives.

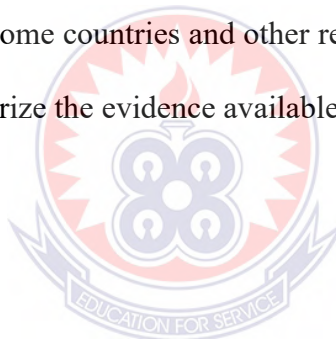
2.6 Summary of Literature Review

The literature covered various important factors that account for access to mobility assistive technology. The literature reviewed showed that governments, non-governmental organizations, religious groups, families of people with mobility impairments, are the major sources of access to mobility assistive technology for people with mobility impairments. The literature again revealed that many benefits are derived from access to mobility assistive technology, for example activities of daily living and social participation in activities.

Literature also, showed that many barriers account for access to mobility assistive technology, this includes affordability, unavailability of mobility technologies and the stigma that comes with the use of mobility technologies. It also revealed measures to improve on access to mobility assistive technology for people with mobility impairments, for instance, having data that covers both met and unmet needs,

appropriate funding and awareness creation about the benefits of people with mobility impairments can be derive from mobility technologies use, as well as creating the enabling environment for the mobility assistive technology to be accessible.

Finally, the literature showed that there was not enough research carried out on access to mobility assistive technology within the Ghanaian context as a consequence, literature drawn upon was mainly from foreign countries. Furthermore, although it is acknowledged that there is a large and growing need for mobility assistive technologies within low-and middle-income countries like Ghana, there is lack of research in these settings, which hinders the development of evidence-informed policy and practice. A scoping review of research on mobility assistive technologies from low- and middle-income countries and other research-limited settings from 2000 to 2016 aimed to characterize the evidence available. (CRPD, 2018).



CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the methodology for the study. The areas covered include: research approach, research design, study population, the sample size, sampling techniques, instrumentation and procedure for data collection and analysis.

3.1 Research Approach

The research approach that was adopted for this study was qualitative approach. Strauss and Corbin, (2015) stated that qualitative research is used to provide in-depth understanding of research issues that embrace the perspectives of the study population and the context in which they live and to explore understanding of complex issues, explaining peoples' beliefs and behaviors. Qualitative research takes into consideration the holistic description of whatever is being observed, rather than comparing the effects of a particular treatment as quantitative research does. Qualitative research also seeks insight into issues rather than statistical analysis. Qualitative research approach studies phenomena in its natural settings. The researcher deemed qualitative method useful in that it helped to conduct an in-depth exploration of the issue being investigated. Qualitative approach allowed the researcher to get into participants' personal world and gain deeper and clear understanding of their experiences and feelings. The nature of the study and the kind of data obtained demanded this approach; for example, personal interview and observation.

3.2 Research design

The research design adopted for the study was a case study design. Creswell (2007) defines case study design as an empirical inquiry that investigates a contemporary phenomenon within its real-life context; when the boundaries between phenomenon and context are not clearly evident and in which multiple sources of evidence are used. Case study research is also good in facilitating understanding of a complex issue or object and can extend experience or add strength to what is already known through previous research. A case study emphasizes detailed contextual analysis of a limited number of events or conditions and their relationships. A case study method was adopted for this study because the phenomenon under investigation is a real life contemporary developmental issue which needs an in-depth investigation. The researcher also sought to present a detailed description on factors hindering access to mobility technologies in order to develop a deeper understanding of the phenomenon and recommend vital measures to minimize it.

3.3 Population

The study was conducted in the Effutu Municipality, Winneba in the Central Region of Ghana. Twelve adults (7 males and 5 females) between the ages of 45 and 65 years old who were adults with mobility impairments, which formed the target population for the study.

3.4 Sample size

The sample size of the study was made up all the 12 adults with mobility impairments aged between 45 and 65 years old, who utilized mobility assistive technology. These included 7 males and 5 females. The reason for selecting all the 12 participants was that all these 12 participants falls under the inclusion criteria set by the researcher, so

the researcher include all the 12 participants in order to solicit information from them, since they have been using mobility assistive technology which make them more experienced and also have knowledge on the mobility assistive technologies. Patton (2015) argued that the quality of the sample affects the quality of the research generalizations. Patton, however, further concluded that obtaining an unbiased and information rich sample is the main criterion when evaluating the adequacy and quality of a sample.

3.5 Sampling Technique

The census technique was used to select the sample size of 12 for the study. However, in census, the researcher includes all individuals in the population who have equal probability and chance of being selected as a member of the sample (Strauss and Corbin, 2015). With census sampling, all the members or elements of the population or target population were selected for the study. The census technique was used because the researcher wanted responses from different heterogeneous grouping. The term is applied to those situations where the researcher selects or samples all the members of the population and used them for the study. This technique is usually used depending on the availability of all units who are supposed to participate in the study. According Creswell (2012) census technique is an attempt to gather data about every member by virtue of its accessibility. In census technique, the researcher would readily select all individual members of the population who are willing to participate in the study in order to avoid the hassle of going around to look for people to participate in the study. Census technique was used to select all the 12 adults with mobility impairments who were mobility assistive technology users in the Effutu Municipality.

3.6 Instrumentation

This study adopted interview guide for its data collection. Interview as a method of data collection allowed an open-ended exploration of the topic in the research as well as stimulates responses that will be understood in the unique words of the respondents (Gall, Borg & Gall, 2013). Semi-structured interview was used in order to obtain a more comprehensive understanding of the perceptions and attitude of the participants as far as mobility assistive technology is concerned. The items on the interview guide were predetermined, however, they were modified based upon the interviewee's responses. The interview guide consists of about 5 to 10 structured items which was segmented into five sections namely; section A, B, C, D and E. The Section A was made up of seven (7) structured items that collected sociodemographic data of the respondents, Section B, contained three to five structured items on access to mobility assistive technology; Section C, also contained three to five structured items on benefits of mobility assistive technology to adults with mobility impairments; Section D dealt with barriers to accessing mobility assistive technology and Section E, was on the measures to improve access to mobility assistive technology.

3.7 Procedure for Data Collection

An introductory letter from the Department of Special Education, Winneba was sent to all participants for permission to carry out the research. The day, time and the meeting place for conducting the interviews were communicated appropriately to the participants.

The interview was conducted within three weeks in January from 7th to 28th 2022. An audio-tape recorder was used to record the interviews in order to maintain the accuracy of the data. The audio recording provides a complete verbal record, it can be

studied much more thoroughly, and it speed up the interview process. The time frame for the interview was approximately 20min to 30min for every participant. The data collection period depends largely on the availability and time schedules of the participants. In the first week at the interviewee's homes, the researcher realized there was some uneasiness among the interviewees about my presence in their homes. The researcher assured the participants of their security, the researcher after each recording of the interview further played back the audio tape recording to the participants and also, notes were taken from the interviews whenever necessary and were read back to the participants after the interviews were completed. this was vital in order not to compromise the method of ethical issues involved as an interviewer (Robson, 2002).

3.8 Trustworthiness of the Instrument

Trustworthiness criteria is often used to establish the quality of qualitative studies. Johnson and Christensen (2012) suggested four constructs which can act as guides in aiding the determination of trustworthiness in research undertaken as: a) credibility b) dependability c) confirmability d) transferability.

3.8.1 Credibility

Credibility refers to the extent to which research findings are believable and appropriate as well. In order for my research findings or results to be credible, I engaged the study participants for long in the course of conducting the interview, investing sufficient time to become familiar with the setting and context, to test for misinformation, to build trust in the data collected. Also, member checking was done, after the transcription, I returned the data to the participants to check for accuracy and

resonance with their experiences in order to establish the trust of the research study's findings.

3.8.2 Dependability

Dependability refers to the consistency and reliability of the research findings and the degree to which research procedures are documented, allowing someone outside the research to follow, audit and critique the research process (Sandelowski, 1986). I selected a case study design which allowed the participants to come out with their lived experiences on the research phenomenon (participant experiences). I used literature-based interview questions which aligned with the research questions to collect the data from participants. The interview items were presented in a forum which enabled the researcher to reshape all the questions before administering them. Dependability also includes the aspect of consistency and the flow of procedures, results and their interpretations (Lincoln & Guba, 1985).

To increase dependability, I trained four research assistants (RA) for two months to assist in the interviews and also assist in transcribing the audio of the interview into words. Lincoln and Guba (1985) opined that the process of allowing for external audits is aimed at fostering the dependability of the data presented during the research process. In the present study, to foster dependability I allowed the two RAs to evaluate the accuracy of the transcriptions and to evaluate whether or not the findings, interpretations and conclusions were supported by the data.

To ensure that the data were dependable, the analysis of interviews were analysed with the help of two RAs who supported the researcher to analysed the data. In the course of the analysis, the two RAs and the researcher agreed on the interpretation of what the participants said. I and the two RAs used one week to review participants'

interviews to foster dependability. Lincoln and Guba (1985) suggested that dependability can be established through the establishment of appropriate enquiry decisions, review of interviewer bias to resist early closure, the establishment of categorical schemes and exploration of all areas, resistance to practical pressures and findings of both positive and negative data triangulation.

3.8.3 Confirmability

Confirmability is the degree of neutrality in the research study's findings, this means that the findings are based on participants' responses and not any potential bias. To avoid bias in the data, I made sure I did not involve my feelings to the data as a researcher. Conducting qualitative research in an area with which the researcher is familiar raises several issues of confirmability (Creswell, 2017). To foster confirmability and to gain the trust of the participants and their willingness to support my role as the researcher, I identified my role before and during the data collection process and explained the purpose of the study to participants.

3.8.4 Transferability

Transferability refers to the degree to which the results of qualitative research can be generalized or transferred to other contexts or settings. I gave a detailed description of all participants and an in-depth explanation of the inclusion and exclusion criteria for selecting participants, a description which included their age, academic qualification, their gender, and their employment status. Transferability concerns the aspect of applicability (Lincoln & Guba, 1985). Lincoln and Guba (1985) further explained the provision of a thick description of the participants and the research process, by so doing I provide a vivid description of participants in Effutu Municipal to enable the

readers to assess whether the findings are transferable to their setting; this is the so-called transferability judgement.

3.9 Data Analysis

All data collected through the interview schedules were analysed qualitatively. Thematic analysis approach was used for the analysis. Creswell (2013) explains that this analytical strategy requires the researcher to organize or prepare the data, immerse himself in and transcribe the data, generate themes, and describe them. With this strategy the researcher organized the data across all the interviewees and their responses so as to identify consistencies and differences. By organizing the data, the researcher logged according to dates, pseudonym, time, when and with whom they were gathered while considering confidentiality issues as this strategy could easily reveal identities of the participants without proper precaution. After organizing the data, the researcher transcribed the recorded interviews. According to Creswell (2012), transcription is the process of converting audio tape recordings or field notes into text data. Here, the researcher listened to each tape repeatedly to familiarize himself with the conversations and carefully wrote them down in the words of the participants. The researcher carefully read through the data repeatedly so as to help reduce the voluminous data for analysis and clarity. In attributing quotations or pseudonym of the interviewees, the participants were given the pseudonym, P1 – P12 (where P stands for Participant). Qualitative data were analyzed in themes. In analyzing the interview data, the raw data was transcribed into word, cleaned and the responses from the participants identified with pseudonym codes. This enabled the researchers to easily associate specific responses to the appropriate interviewee. Again, data collected from the interviews were transcribed by two different persons, separately and independently of one another. The transcription was done by playing

back the recorded version of the responses with references from the jotted points. The different transcriptions were compared to come out with more accurate response that reflected the participant's views. The transcribed data was read back to the participants make further corrections, if any. Data were categorized in relation to the research questions raised and analyzed descriptively using thematic content analysis approach. Inferences from literature and other relevant studies was drawn to support the findings. The verbatim expressions of some participants were indicated at some instances. As the study is about adults with mobility impairments' access to mobility assistive technology in Effutu Municipality, the researcher summarized and described data from the participants and came out with a conclusion and some recommendations.

3.10 Ethical Considerations

This current study was subjected to certain ethical issues. As it was stated earlier, all participants reported their verbal consent regarding their participation in the research (McMillan and Schumacher, 2010). At the same time, selected participants were asked to feel free to withdraw from the research if they felt uncomfortable. The aim of asking sampled participants to feel free to withdraw was to reassure participants that their inclusion in the research was voluntary and also to protect their rights. Participants were encouraged to participate voluntarily, and participants were informed that they could withdraw from the study at any time, if they wish to do so. The researcher promised the anonymity of the research participants by ensuring that the names and addresses of the participants were not indicated in the study. These were replaced with codes. They were ensured that recorded information, instrument for the data collection, and dissemination of research finding did not contain the names of the research participants.

The research information gathered from the participants were not passed on to the department. All audio-recorded information was protectively stored in a personal recorder and later transferred to a personal password-protected laptop. The researcher transcribed all the interviews and for each participant, created a file which was identified using assigned pseudonym.



CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the results, interpretations and discussions of the findings that emerged from the data obtained. The demographic characteristics of participants were first presented and followed by analysis of the various research questions. The demographic characteristics of the participants were analyzed using frequencies and percentages presented in tabular form. Again, data obtained from the participants with respect to research questions 1, 2, 3 and 4 were analyzed using thematic approach.

4.1 Demographic Characteristics of Participants

The demographic characteristics of participants are considered under this section. These comprise of age, gender, marital status, academic status, employment status, type of mobility assistive technology used and the cause of mobility impairment of the participants. These demographic characteristics of participants were determined using the items found on section A on the interview guide.

Variable	Number of Participants	Percentage (%)
Age	Participants	
45 – 49	3	25
50 – 59	5	41.7
60 – 65	4	33.3
Total	12	100
Gender		
Males	7	58.3
Females	5	41.7
Total	12	100
Marital status		
Single	2	16.7
Married	3	25.0
Divorced	4	33.3
Separated	2	16.7
Widowed	1	8.3
Total	12	100
Academic status		
Primary education	2	16.7
Junior High education	3	25.0
Senior High education	4	33.3
University education	3	25.0
Total	12	100
Employment status		
Self-employed	4	33.3
Public Servant	2	16.7
Unemployed	6	50.0
Total	12	100
Employment status		
Self-employed	4	33.3
Public Servant	2	16.7
Unemployed	6	50.0
Total	12	100
Cause of mobility impairment		
Motor accident	5	41.6
Occupational accident	2	16.7
Congenital disability	2	16.7
Diabetes Mellitus	3	25.0
Others	0	00.0
Total	12	100

Source: Field Survey, 2022

The Table shows the ages of participants for the study. From the table 3(25%) were between the ages of 45 to 49years, 5(41.7%) were between the ages of 50 to 59years while 4(33.3%) were within the ages of 60 to 65years. The analysis of the age range of the participants suggests that 9(75%) of the study participants were between the ages of 50 - 65years. This conforms with the assertion that prevalence of mobility impairment is said to be highest among the adult population, with the possible risk of limited walking capacity increasing with advancing age (Sorensen, et al., 2003; Dahlin-Ivanoff & Sonn, 2005; De Cream, et al., 2006).

The result in Table revealed that 7 (58.3%) of the participants in the study were males while 5 (41.7%) were females. As shown in Table, 2(16.7%) were single, 3(25%) were married while 4 participants representing 33.3% reported being divorced. Again, 2(16.7%) participants were separated while a participant (8.3%) was widowed.

Again, Table presents academic qualification of the participants used in this study. From the analysis, it could be observed that 2(16.7%) participants had primary education, 3(25%) had Junior High education and tertiary education respectively while 4(33.3%) had Senior High education. The academic qualifications of some of the participants are very commendable. This supports the assertion that mobility impairment or disability does not mean intellectual disability. People living with mobility impaired can also attain higher education and academic statuses in the society.

Furthermore, the Table indicates the employment status of participants, from the table, 4(33.3%) participants were self-employed; 2(16.7%) were public servants while majority of the participants 6(50%) were unemployed. The analysis confirmed

the general perception held by the larger society on discrimination against persons with disability on the job market, Assum (1997).

The Table illustrates the type of mobility assistive technology used among the participants. 5(41.7%) participants use wheelchairs, 3(25%) use elbow crutches and tricycle respectively while 1(8.3%) participant uses walkers/walking frame. None of the participants use cane/walking stick, scooters, orthoses or prostheses or other mobility assistive technology. The data clearly showed that majority of the study participants were wheelchair users. This finding supports Best (2014) who found that wheelchair has become one of the most important and widely used mobility assistive technology that helps in rehabilitation of persons who experience mobility impairments.

Table represents the causes of the mobility impairments among the participants. Out of the total participants used for the study, 5(41.6%) had their mobility impairments through motor accidents, 2(16.7%) by congenital disability and occupational accidents respectively while 3(25%) participants had it through diabetes mellitus. None of them suffered mobility impairments through other means. This data suggest that majority of the participants had their mobility impairments through motor accidents. This finding is not different from that of Assum (1997) and Street et al., (1999) who found that motor accident injuries are leading causes of mobility impairments in developed and developing countries.

4.2 Discussion of Research Questions.

Data was obtained on four research questions and analyzed using thematic approach.

Research Question 1: How do adults with mobility impairments acquire mobility assistive technology in Effutu Municipality?

Research question 1 sought to find out how adults with mobility impairments acquire mobility assistive technology in the Effutu Municipality. Items 1 and 2 on the interview guide for participants were used to solicit responses for this research question. Two broad themes with their respective sub-themes were deduced from the responses collected. The first broad theme was participant's access to assistive technologies used with sub-themes such as Non-governmental Organizations (NGOs), family support, friends support and church support. The second broad theme deduced was assistive device used and participant expectations, with sub-themes such as acceptability, adaptability and quality.

Theme 1: Sources of mobility devices

The first theme deduced from the responses which seek to address research question 1 was on how the participants used for the study got access to their respective assistive technologies. Analysis of the data collected indicate that all the study participants got access to their respective assistive technologies or technology through either Non-governmental Organizations (NGOs), Family support, Friends support and/or Church support. For instance, when the participants were asked how they got access to the assistive device they are using, one of them stated:

"My device was given to me by some white people who visited me sometimes ago and is the device I have been using since then but at first I didn't like the device, as time goes on I begin to like it." (P2).

Another participant remarked:

"My church donated to me this wheelchair when I asked for help from them because there was no government sector to access the device, I actually prefer the electronic one to the manual but this is what was given to me." (P5).

Some other responses obtained from the participants were:

"My brother-in-law brought my device for me" (Verbatim expression by a participant).

"The wheelchair was given to me by my cousin" (P6).

"Well, when I found myself in this situation, I was financially handicap, so I fall on my friends to support me with something, that is what I used to buy my device I am using now even though is not what I want" (P11).

From the responses analyzed with respect to research question 1, it was revealed that all the 12 participants got their mobility technologies or technologies through Non-governmental Organization support, church support, family support and/or friends' support. More so, most of the participants interview showed their frustrations because they had to wait for a very long time before receiving their mobility technologies. Furthermore, most of the participants indicates that they got their technologies from churches they attended; while some receive theirs from family members, friends and non-governmental organizations. In addition, the comments also revealed that the participants were able to have access to technologies because they were informed by colleagues who had knowledge about places where mobility technologies were being sold or distributed. Even though, other ministries in some countries take responsibility for the provision of mobility technologies through the Ministry of Social Welfare in Eritrea, Ethiopia, India and Vietnam, for their citizens, however, the responses revealed that the trends are not the same here in the Winneba Municipality.

The findings of the study also confirmed a study done by Shadle (2014), which found out that most mobility technologies utilized in Ghana are provided by missionaries or non-governmental organizations. The phenomenon whereby provision of mobility technologies is solely being undertaken by missionaries or other non-governmental organizations as this study revealed is at variance to Article 20 of the Conventions on

the Rights of Persons with Disabilities, which stated that States Parties shall take effective measures to ensure personal mobility with the greatest possible independence for persons with disability.

The participants were also interviewed on whether the mobility assistive technologies or technologies accessed met their expectations in relation to; acceptability, adaptability and quality. Responses collected from all the 12 participants who shared their views suggest that the device are of quality, they were able to easily adjust to the device and also acknowledged that the device minimize their struggle. Some of the responses given by the participants when asked whether the technologies meet their expectation include but not limited to the following:

"First, I was not sure the device would meet my desire but when it was given to me, I like it because it was good and felt comfortable in it" (P3).

"My device is of quality and I am ok using it. I was measured before it was provided. It can be adjusted up and down depending on their heights I want it". (P12).

"Even though my mobility technology or device is not brand-new yet it is good and strong I have been using it for almost three years now without changing my boat on it". (P1).

"I am able to move myself around with the help of my crutches without having to rely on any daughter again to help me move." (P3).

As stated earlier, the interviews were to find out from the participants whether the mobility technologies or technologies they accessed and were using met their expectations. One of the participants narrated that she was not at first, too sure if the device provided could meet her desire. She however realizes that the device was good for her comfort. Other participants also revealed that their mobility technologies were of quality. The participants again mentioned that he was measured before the device was provided for him. Also, other participants noted that even though her device was

not brand-new before it was provided, notwithstanding the device was good and strong. The participant went further that the device had been used for almost three years now without her changing even a bolt on it. The findings are consistent with Penchansky and Thomas's concept of access (1981) which indicates a service when accessed must be seen to offer adaptability acceptability and quality. The dimensions of access were at play as adults with mobility impairments had access to mobility technologies or technologies which enable their usage of the technologies.

Again, another participant who was a woman and uses a wheelchair due to occupational accidents expressed her profound gratitude for having a mobility device.

She commented this way:

"The mobility device has brought some relieve for me because I am able to ride myself from my room to outside and around the environment without depending on anyone for help" (P9).

Summary of findings on research question 1

The findings indicate that adults with mobility impairments sourced their mobility technologies from NGOs, church, friends and through family supports. It was also found that the mobility technologies accessed met the expectations of the beneficiaries with some of the participants indicating that they were comfortable using their mobility assistive technologies or technologies. Some also believed that their mobility technologies were of quality and good for them to use.

Research Question 2: How do access to mobility assistive technology improve the life of adults with mobility impairments?

Research question 2 sought to find out how access to mobility assistive technology has improved the life of adults with mobility impairments. Item number 3 on the interview guide for participants were used to gather responses for this research

question. Seven themes emerged from the responses gathered. These themes include independent mobility, balance in posture, physical activity, performing daily activities, job, recreation, and family involvement/participation.

Theme 1: Independent Mobility

Data gathered from the participants indicate evidence of participants' ability to move around in their environments with their mobility assistive technologies or technologies without having to be assisted by family members. It was gathered from the interview that until the participant's access to their technologies, they were mostly dependent on family members for movement. Some of the significant responses from the participants which indicates their independent mobility were:

"I am able to move myself around with the help of my crutches without having to rely on my families again for help to move me." (P4).

"Formally, when the issue happened I was ignored by friends and family members, one faithful morning that some people came from the University of Education, Winneba was educating the community about how to treat people with disability and from there my family developed little love and help me to acquired my mobility assistive device I am using now, now I can move around without depending on anybody". (P1).

Again, another participant who was a woman and uses a wheelchair due to occupational accidents expressed her profound gratitude for having a mobility assistive technology or device.

She commented:

"Hmmm.....the device has brought some relieve for me because I am able to ride myself from my room to outside and around the environment without depending on anyone for help" (P5).

Another, participants who also used crutches confirmed that his device provide him with stability and balance to enable him walk and moved swiftly without falling down.

He commented:

“My device provides balance for me because I can stand on it for support when having a conversation with someone. It supports me for say 20 minutes or more if I want to stand”. (P10).

The responses from the participant with respect to balance and movement as stated in the comments by the participants were in line and linked with the individual's base improved balance discourse on mobility impairments. From the results there were references to independent mobility as one of the most important benefits participants were able to attend because of access to mobility assistive technology or technologies. The ability to move around without being impeded through any means was viewed by the participants as the major starting point of their lives towards realizing their potential. There were occasions where participants had to crawl on the floor and to be carried to be able to enjoy certain rights. However, access to mobility assistive technology or technologies was the necessary platform for the participants to be included in the society. Mobility assistive technology or technologies have been reported to reduce the need for formal support services, as well as reduce the time and the physical burden on care givers (Allen, et al., 2006).

On the issue of achieving balance in movement, one of the participants who use crutches commented:

"First, when I did not have the mobility device, I always feel in my legs some level of imbalance pain which made standing up and to sit down more difficult but using the crutches has brought down that imbalance as I can now feel a bit more balance compared to what I used to experience" (P11).

Another participant who also use crutches stated that his mobility device provides him with stability and balance to enable him work and move swiftly without falling down.

He stated:

"My mobility device provides balance for me because I can stand on it for support when having a conversation with someone or friends. It supports me for say 10 to 15 minutes or more if I want to stand" (P3).

The responses from the participant with respect to balance as stated by the participants were in line with the individual's base improved balance discourse on mobility impairments. These comments from the participants are of great importance to them as they reflect the daily difficulties they had to overcome in mobility. This goes to confirm studies by Kaye et al (2009), Faruqui & Jaebon (2010) and Lui (2009) which found that mobility technologies improve stability in people with lower extremity weakness or poor balance and they facilitate improved mobility by increasing the user's base of support and supporting the user's weight.

Theme 2: Activities of daily living

Another area the participants talk about was their ability to engage in physical activities using their mobility assistive technology. They view exercising as a good activity to help strengthen their bodies. These comments were shared:

"I used my mobility assistive device to go around in the morning and evening for exercise because I want to keep myself fit. (P8).

"Aside the other things that my mobility assistive device helps me to do, it also gives me the opportunity to exercise my body because my doctor even advises me to do it" (P7).

"Exercise is good for my body because it can help me prevent fatness in me" (P6).

From the data presented with respect to physical activity, the ability of the participants to engage in physical activity were also seen as one of the benefits of using the mobility assistive technology for the participants. The participants noted that

exercising their bodies were of great importance to them because it helps minimize obesity in them. A study carried out by (Eide & Oderud, 2009). show that individual with mobility impairments who have access to mobility assistive technologies or technologies and use them are likely to benefit from improved health and quality of life.

On daily living activities, participants' answers were examined from four different perspectives: this includes washing clothes, cooking and washing plates, bathing and dressing up. The following were the comments from the various participants on what they are able to do as far as the daily living skills were concerned through the use of their assistive technologies:

"Sometimes I have to wash my clothes sitting on my mobility assistive device because not all the time that somebody can help me wash my clothes. (P8).

"Washing was something I enjoy doing even before I became disabled, so it was very difficult at first but for now I can do all for myself without any assistance because I leant on my device thinking I should stop just because I am in a wheelchair" (P4).

"Some participants said at first family members to help them do most their daily living activities like bathing, dressing up, even sending them to private but now with the help of mobility assistive technologies, they can do all by themselves". (P5)

Other participants also commented:

"Cooking has been my hobby even before I had my accident some years back, so, for cooking I love it and not even my conditions can take away cooking from me. She burst into laughter after her comments and said even nobody can take it from me". (P9).

From these data as obtained from the participants, it could be argued that there were no apparent hindrances to carrying out daily living activities on the parts of the participants with the help of their mobility assistive technologies. Engaging in daily living activities were critical in facilitating successful living at home for the

participants, all of which are important in independent living. Adults with mobility impairments irrespective of their conditions and with the appropriate provision of mobility assistive technologies need to be able to avail themselves in addressing issues that pertain to their self-care aside their assistance from their families and they must be concerned about their own well-beings. In support of this view, Long, (2012) stated that mobility assistive technologies must be seen as having preventive potential because they might minimize greater dependency of the people with disabilities on family members, thereby maintaining sense of themselves as full adult persons. Also, there were indications that participants were willing to fully engage in daily living activities. This was because they wanted to be self-reliance rather than always waiting on other people to accomplish these activities for them. Also, this may be an effective way of encouraging people with disabilities that self-dependence brings dignity and self-esteem.

Theme 3: Participants' field of work

Ability to work was one of the benefits participants in the study also mentioned. According to the participants, their access to mobility assistive technologies has contributed greatly to their ability to take up social roles. The following comments were shared:

“I open a new cement depot some year ago, I just started some twenty (20) bags, where I work, my mobility device assists me to go to the shop” (P2).

“Because I work, I am able to take care of my family and my children in school and if not for my mobility device it would have been very difficult to go to work. I also attend family gatherings to contribute dues anytime there is a funeral or any important occasion in the family”. (P12).

“I am a teacher, so when unforeseen happened, because of the discriminations I stop the teaching and started my private Institution

that is where I work now with the help of my mobility assistive device”
(P10)

From the responses with regards to job performance, the participants noted with joy that they were able to work because they have access to mobility assistive technologies. Also, some participant revealed that they were able to take up family responsibilities such as taking care of their own children because they have access to mobility assistive technologies which support them to attend to their work. Again, some participants revealed that they contribute financially during important occasions in the family. The World Health Organization (2010) observed that been actively involved in social roles may bring about personal identity and self-esteem for the people involved. It further noted that taking up social roles such as work, are importance as they give identity and meaning to life. Again, individual's social status can be linked by the various social role they can play with in their community. For example, being a wage earner may be highly applauded, valued and will have a positive impact on social status on the individual involved, whereas been unemployed may be less valued and it can lead to negative impact on social status.

Theme 4: Recreation, leisure and sports

On the aspects of recreation, leisure and sports, these comments were made by the participants:

“I sometimes join the town guys to play draft and cards especially during the Aboakyir festival” (P8).

“Sometimes I goes to Winneba beach to just relax myself by the help of my mobility assistive device”. (P11).

Another participant also stated:

“I remember that during the New Year, I joined my fun club to the beach for fun and it was great” (P3).

Although, recreation, leisure and sport activities are one of the few opportunities people with disabilities have to take part in community life beyond their own immediate families, adults with mobility impairments participating in recreation, leisure and sports may help reduce loneliness therefore can help prolong their lives. Engaging in activities such as sports and other leisure activities may also bring about health benefits. Recreation, leisure and sports may help adults with mobility impairments to refresh their body and mind and make their leisure time more interesting and enjoyable. This can also enable them to rest relax and enjoy life to the maximum. Thompson (2012) also underscored that access to mobility assistive device allow participation in fulfillment of social desires and enablement of independence because in the case of adults, their desire to be relieved of exercise, stress and loneliness of coping with life encourage them to see participation in recreation, leisure and sports as the best solution to their conditions.

Theme 5: Family participation or Involvement

On the issue of family participation or involvement, the participants noted that access to their mobility assistive technologies have enabled them to engage in family responsibilities. These were some significant comments made:

“I have a wife and four children as I am talking to you right now, two of my children are in school; one is in the University of Cape Coast and the other in the senior high School” (P1).

“Even though, my first husband left me after the disability, another man expressed interest in me which I accepted so we are living together as husband and wife” (P6).

“I take part in most of our family meetings with the assistance of my mobility assistive device because I can move on my own” (P4).

“I am also involved in the decision-making in my family whenever the need arises irrespective of my condition, I am not isolated, I thank God for such a wonderful family I have” (P9).

From the information gathered, most of the participants were married and living together. They also admitted that their families involved them in decision-making process whenever the need arises. It was also evident from the comments by participants that their zeal and willingness to take part in family responsibilities and social roles were to counter the assertion from the society, in relation to the notion that people with disabilities are object of isolation and charity. As noted by World Health Organization (2010), when people with disabilities are presented with the opportunity, they can take up social role. They further observed that some of these roles could include those related to relationships such as husband, wife, sister, brother or friend. Indeed relationships, marriage and family are very important value of every society.

Moreover, belonging to a family can provide support and security. Furthermore, it is important that society also recognize that people with disabilities have the right to establish or belong to a family. The findings of this research question raised is consistent with Vroom's Expectancy Theory (1964) which indicates that an individual's choice concerning an activity is influenced by an anticipated outcome which is effect is driven by motivation and the unique individual needs of that person. With growing recognition that every person with disability is an individual with specific needs, getting access to mobility assistive technologies are tailored to benefit them.

Summary of the findings on research question 2

The findings under research question two showed a greater level of benefits in relation to access to mobility assistive technologies for the participants sampled for the study. There were number of benefits mentioned including independent mobility,

balance, physical activities, work, recreation, leisure and sports and family participation.

Research Question 3: What barriers do adults with mobility impairments face in accessing mobility assistive technology?

The third research question sought to find the barriers adults with mobility impairments face in accessing mobility assistive technology. Item number 4 on the interview guide for participants was used to solicit responses for this research question. Nine themes emerged from the responses gathered. They include financial constraints, lack of donors, attitudes of donors, device unavailability, replacement problem, repair and maintenance, awareness, physical environment and stigmatization.

Theme 1: Financial constraints

Financial difficulty was a major challenge to the access of mobility technologies by the participants. All the participants interviewed had to receive their mobility assistive technologies from NGOs, friends and families because they could not afford their own mobility technologies directly from their pocket.

Some of the participants interviewed had these to shared:

“My left leg cannot function. I had struggle before getting this device from some donors, but now it is old and I need a new one. However, I don't have money to replace it with a new one” (P2).

“Is because of financial problem that I could not purchase my mobility assistive device myself, now is old to get a new is a problem” (P3).

“Money is really a problem for me. I wish I could buy a new wheelchair” (P10).

From the data above, there was a financial problem that served as challenge for the participants in accessing mobility assistive technologies. It was discovered that, the participants included in this current study had to solely rely on donor organizations or charity organizations, family members, friends and churches for their mobility assistive technologies. In some instance, as indicated by some of the participants, buying mobility assistive device directly from the pocket was a huge problem because there was no money. Also, most of the participants had to wait for a long time before having access to their mobility assistive technology or technologies due to financial difficulty. Again, the participants complained that the technologies were costly that, they could not afford it. Indeed, there may be several mobility assistive technologies available for people with mobility impairments but several barriers hinder the adoption of these technologies such as the challenge of affording the device (Center for Technology and Ageing, 2010). Moreover, the trend seems to be more severe for especially users who live in developing countries where the economy is poor.

It is again evidence that those people with mobility impairments who come from the poor background are likely to find it very difficult owing a mobility assistive device since there is often a great burden on family to purchase mobility assistive device directly from their pockets (Montes & Halteman, 2008).

These results confirm research done by Johnson and Wilson (2010) which revealed that people with mobility impairments paying for mobility assistive technologies is one of the major barriers in accessing mobility assistive technologies. Interestingly, the findings from this research in relation to the costly nature of the mobility assistive technologies as expressed by some of the participants "I do not have the money that a wheelchair cost", is at variance with one of the dimensions of the Penchansky and

Thomas theory of access. In their theory of access, Penchansky and Thomas underscored that access to the service must be seen to be affordable so that users can have easy access to their services (Saurman, 2010). However, in this study, most participants complained of not having access to mobility assistive technologies on time because they could not afford it, and when available are most often too costly.

Theme 2: Lack of Donors

Lack of donors also emerged as a problem. It was found out that only on rare occasions did donors come around to support in providing mobility assistive technologies for people who need them. Again, locating donors was not easy. Some of the participants had this to say:

"I wanted a new wheelchair because I could not walk to distance place using my leg. I was sure that having one was going to help me engage in daily routines. However, it took time because I could not find a donor" (P7).

"It is very difficult to always find those who come from charity or non-governmental organizations to provide mobility assistive technologies that we may need. Those that are there are likely located in the cities thereby making unlikely for those of us here in Winneba to go after them (P2).

From the narrative accounts as presented, it was on rare occasions that donors are found to assist users with mobility assistive technologies. More so, donor organizations or charity organizations available are said to be mostly found in the cities and therefore people with the need of the mobility assistive technologies find it extremely difficult to travel to these cities to search for them because of financial constraints and the transportation challenges that people with mobility impairments face. A report by the World Health Organization (2011), stated that the provision of mobility assistive technologies seems to become a daunting task for many governments especially those in low-income countries because these technologies

have been in short supply. The organization further revealed that these situations is most often forced non-governmental organizations to engage in service delivery and note again that these non-governmental organizations also in some cases do not have enough financial capacity to continue to develop, perhaps a suitable service delivery system to cover entire the country. The resultant effect is therefore that people with the need for mobility assistive technologies who live in the remote parts of the country like Winneba and far away from the likely available non-governmental donors of mobility assistive technologies would miss out.

Theme 3: Attitudes of Donors

It was also discovered that even if donors for example non-governmental organizations and charity organizations are located, they tend to assist only small number of persons. These were some comments from the participants:

“I was directed to a place where mobility technologies were distributed without money. It was a charity organization but they told me their focus was individual with more severe impairments that they assist with technologies and I came back home without a device” (P3).

Another also said:

“There was a day I had information that some white people were giving out wheelchairs for free. But to my surprise, I was told the wheelchair was meant for older adults and that they were now going to start planning towards younger adults” (P5).

From the analysis of the data, if donors such as non-governmental organizations, charity organizations and other bodies are found, they seem to have varying attitudes and can assist only few numbers of individuals. It was also the case that some of the organizations may not have enough resources or the budget funding for all the category of people with disabilities and therefore could decide to focus on a single category of disabilities to the neglect of other disabilities. As noted by World Health Organization (2011) most non-governmental organizations as a result of lack of

financial capacity may resolve to channel their services to concentrate on a particular service delivery system and also most of their services may sometimes be geared towards specific impairments, age group and/ or geographical area.

Theme 4: Unavailability of Technologies

The study also highlighted difficulties in relation to unavailability of mobility assistive technologies as a challenge in accessing mobility assistive technologies for adults with mobility impairments in the Effutu Municipality, Winneba. Some comments from the participants were:

“If I had a mobility device on time my condition would have improved better than it is today. But due to lack of available technologies in the area I had to wait for it from far away”. (P9).

“When I was first advised by the doctor to go for a mobility assistive device, it was not easy finding the device because some are not being produce here in this area. It was later that someone directed me to a place for one”. (P7).

From the data there were complaints about mobility assistive technologies not being available to access. Because of this, most participants could not have access to mobility assistive technologies on time. Even when it was evident that access to the device could have improved the participant’s situation, they had to wait for a long time before owing one. The comments from the participants were also in conflict with one of the core principles (Accessibility) of Penchansky and Thomas theory of access (1981). They noted that access to services must be accessible to those who may require their use. Some of the participants place the lack of available technologies on the doorstep of non-production of mobility assistive technologies in the area. Furthermore, when it happens that provision of mobility assistive technologies exist, they are often more centralized in major urban centers, where travelling to these places become more impossible for people with disabilities (mobility impairment) and

family members because of costs and in addition to the fact that public transport to these areas is far away from where people with disabilities and families live (Dejong et al., 2002; Penny et al., 2007).

Theme 5: Replacement and Maintenance of Technologies

It also came up that, participants were finding it very difficult trying to replace their old technologies with newer ones because most of the old technologies has gone through many repairs already. One of the participants lamented:

“As a woman, I need to see to it that my children are taken care of before they go to school and because my device is old, I am unable to reply on it for most of these daily routine works. It is very difficult finding a new mobility assistive device to replace the old one” (P10).

Similar comment was also expressed by another participants who uses a tricycle:

“I have been using this assistive device for many years but now it has become very old with some of the parts are falling off. The problem as at now is that I am unable to find a newer one for easy ambulation”. (P6).

It could be suggested that there were issues that bothered on the device replacements. What this meant is that participants could not readily replace their old technologies even though the ones they have been using are old and they would have preferred newer technologies. Greater number of the participants interviewed confirmed that they have been using their present mobility assistive technologies for a very long time and could not rely on the same device for their daily routines. Some even went further to mention that part of their technologies is falling off but the problem was how to find new technologies. One of the participants, a woman was not happy about the situation because her mobility assistive device was old and finding it extremely difficult to get a new one. She also narrated that due to the old nature of her device it becomes very difficult for her to take care of her younger children before they go to school.

There was again an issue about repair and maintenance services problems for those that wants their technologies repaired and maintained. This problem was expressed by some participants:

“I got my wheelchair from one of the donor organizations but it's becoming weaker each day. There is no place around this area, I mean, Winneba where I can go and repair assistive device”. (P10).

“Maintaining my mobility assistive device is very difficult. I have to travel to Accra to do it”. (P 3).

“I don't remember the last time I repair my wheelchair” (P1).

From the data, it was revealed that even if repair and maintenance services is existed, they turn out to be costly. Thus, for these current participants, lack of effective repair and maintenance services coupled with the high cost of repair maintenance was a challenge in using mobility assistive technologies. A work done by World Health Organization (2010) cautioned that it's made by a realistic for people with disabilities living in rural areas to travel to specialized centers to have their technologies repair and this would lead to the effect of device abandonments when they experienced difficulties using them. To help solve this problem, the organization further suggested that local artisans can be trained to make small repair to mobility assistive technologies by replacing straps, screws and reverts.

Theme 6: Lack of Awareness

Awareness about where mobility assistive technology or technologies are provided, new device and the benefits derived from using the technologies was mentioned as a challenge to accessing mobility assistive technology or technologies. Several of the participants interviewed said that they had no information where mobility assistive technologies were currently available or about the modern mobility assistive technologies that they are eager to use. For instance, a participant said:

“A friend who is not disabled informed about where to get a mobility device that can help me in my situation. But I personally did not have any information about mobility assistive technologies”. (P12).

It was clear that information about current mobility assistive technology or technologies is rarely disseminated. This is due to the fact that people with information about modern mobility assistive technologies think those who need such technologies may not be interested or that even if they are informed may not be capable to afford them. This was a comment a participant gave:

“The doctor who prescribe the device for me did not give me enough information about the merits and demerits of the device and where to access the device. Also, I did not myself border to find out more information about it”. (P11).

From the interviews, it was gathered that participants did not have enough information on where to get mobility assistive device. It was also revealed that even information on the benefits of the use of mobility assistive technologies was not adequately disseminated and again, most participants were not so much informed about the modern mobility assistive technologies since that they are so much desire to use. However only small number of participants stated that they have some level of knowledge about the mobility assistive technologies, where to get access to them, their benefits and the modern mobility technologies that have been introduced.

Furthermore, those who admitted they had information stated that information came from colleagues who are not mobility impaired. Kaye, et. al., (2008) opined that education is linked with socio-economic status and therefore people who are better educated may likely know about mobility assistive technology or technologies that are available and can feel confident about using them, particularly those that come with sophisticated technologies. The authors further noted that disparities may therefore be attributable to differences and awareness in relation to mobility assistive technology

or technologies and the perceived benefits of using them as may be opposed to economic factors.

Theme 7: Movement of Participants

Even with the mobility assistive technology technologies people with disabilities still face problems relating to the accessing public and private places. In this study, several of the participants complained about the difficulties they face in trying to access public and private places:

“It is always very difficult for me reaching public places with my wheelchair because there are no access ways available. The situation almost discouraged me from accessing one” (P3).

Interestingly, most participants included in the current study were eager to get things accomplished on their own using their mobility technologies and other one said:

“Even with this wheelchair, I am unable to get to public and private places as there are no access to pathways. Everywhere they are steps except few places that you can find ramps. So, what is the use of having the device if you cannot use it to achieve at the purpose you need for”. (P11).

From this study, there were issues raised about access to public and private places even when participants had access to mobility assistive technologies such as wheelchairs, tricycle and crutches. In the comments expressed by the participants it was stated that the participants did not want to have access to their technologies because they felt the environment was not going to allow them use it. They noted also that if the benefits of going to afford a device cannot be realize, then it was better not to own it. These frustrations were highlighted because most often, people with disabilities especially those who use mobility assistive technology or technologies such as wheelchairs always seem to encounter barriers in the physical environment as they are mostly no pathway (ramps) for them to ride there technologies on in order to access places they may wish to have access to. More so, the issues about inaccessible

places for those with mobility technologies cannot be overlooked because a number of these physical environmental barriers also exist that pose dangers to accessing the mobility technologies. In confirming these physical barriers Wearmouth & Willandt (2009) noted that, these numerous physical challenges in the environment can create barriers to limit personal access to mobility assistive technologies and use of mobility assistive technologies. The authors also stated that an individual would not be able to use a device such as wheelchair of good quality in an inaccessible house or workplace.

Theme 8: Fear of Stigmatization

The analysis of the data revealed that most of the participants contemplated not using mobility assistive technologies because they fear they might look different from other people. Some even assume that they would evoke negative comments from the public, should they use mobility assistive technology or technologies. It was evidence that most of these challenges were rooted in the participant's inner feelings. These were some of the comments shared:

“I first and foremost using a mobility assistive technology or device was not in my thinking. I did not want people to talk about me or see me differently when using the device” (P5).

“I did not like to go out for any social gatherings or even visit my friends at first because I was afraid people may gossip behind my back when they noticed me using a mobility assistive device” (P7).

“As for me, in my area the way people look at me when I am even walking before this incident happened to me, I don't want to go outside for people to even see me in these condition”. (P9).

The fear of facing stigmatization from the public were revealed by the participants as one of the challenges they face when they consider accessing mobility assistive technology or technologies.

According to them, they did not want people to talk about them when using their mobility assistive technologies in the public. This assertions by the participants confirmed what the Centre of Technology and Aging (2010) also found out when it noticed that many people with disabilities either refuse or are reluctance to use mobility assistive technology or technologies because of the stigma that comes with their use. This finding is consistent with the social model of disability which argues that it is the barriers that people make people disabled and not the disability. It further indicates that barriers such as inaccessible mobility assistive technology or technologies can incapacitate people with disabilities further by rendering them unable to perform a task. In this study, it was found that although adults had access to mobility assistive technology or technologies, they were still numerous barriers to accessing the technologies. For instance, some of the participants who needed to replace their old mobility assistive technologies with newer ones are unable to do so because newer technologies are unavailable for easy access.

Summary of findings on research question 3

Based on the analysis of data on research question 3, it emerged that financial constrain, donor scarcity, donor approach and unavailability of technologies, problems with device maintenance, lack of repair and maintenance of technologies, lack of awareness, difficulty in getting access to public places and fear of stigmatization where the barriers to accessing mobility assistive technology or technologies.

Research Question 4: What measures should be taken to improve on access to mobility assistive technology for adults with mobility impairments in the Effutu Municipality?

The fourth research question sought to find out measures taken to improve on access to mobility assistive technology for adults with mobility assistive technology. Item number 5 on the interview guide for participants were used to answer this research question. Eight themes emerged from the responses gathered. These include needs of users, living condition, collaboration, funding support, training of personnel, awareness about technologies, public education and policy and legislation. Here, the participants interviewed were asked to suggest measures that can be put in place to help increase access to mobility assistive technology for adults with mobility impairments in the Effutu Municipality.

Theme 1: User Needs

User needs was one of the themes deduced from the responses gathered. According to the participants, having a detailed national data through the social welfare departments in the various districts will help identify the mobility assistive technology needs of the beneficiaries. Some of the views expressed were:

“To me, it will be good if the social welfare department can take it upon themselves if, only they would be interested, to find out the number of people with or without mobility assistive technologies in order to provide some assistance”. (P4).

“We require national research into how many people with mobility impairments who lack access to mobility assistive technologies. It would be the only way to solve the problem related to access to mobility assistive technologies” (P7).

From the participant’s comments, it could be suggested that national data on the users met and unmet needs that will help alleviate the challenges they go through when accessing mobility assistive technology is important. In one of the participant’s

opinions, he suggested that the Social Welfare Department can take issues after finding out the number of people with disabilities who have or do not have mobility assistive technology or technologies in order to offer some assistance when the need arises. Another also offer a suggestion that it will require national research into how many people with mobility impairments without access to mobility assistive technologies and according to these participants that will be the only way for the problem to be solved. Collaborating the suggestions by the participants, the World Health Organization (2010) also stated in their paper that national data on needs for mobility assistive technologies - both met and unmet are of great importance for policies and program. For example, those needs that are met and unmet can be assessed through data on prevalence and disability, disability research and population and administrative data. Furthermore, it is noted that the supply of mobility assistive technologies can be estimated from administrative data that may involve mobility assistive technologies provision.

Theme 2: Living condition

The participants also commented on the need for the government to have data on the living conditions of people with mobility impairments. One of the participants commented:

“I suggest that when our situations are taking notes of, it would help to quicken the effort for the provision of technologies.” (P12).

Other participants also said:

“It appears that the conditions of the people with mobility impairments are not well known. This is making it very impossible for successive governments to pay much attention to our needs especially in the areas of access to mobility assistive technologies” (P1).

Another also had this to say:

“Our conditions are not that good even though some efforts have been made to tackle our plight. There is the need for further research on the present predicament of the people with disabilities in general to help strengthen desire for improving access to mobility assistive technology” (P9).

From these comments, it could be inferred that the participants believe that in order for measures to be put in place to increase access to mobility assistive technologies; there is the need for governments to have data that reveal the living conditions in which people with mobility impairments live. They further revealed that some of them, their living conditions are not that good even though some efforts are made to find solution to their plight. The comments by the participants were in line with the Kamaleri and Eide, (2011) who in their earlier studies noted, when they posited that knowing the actual living condition among people with activity limitations would necessitate efforts toward improving access to mobility assistive technologies. (Kamaleri & Eide, 2011). Most often, knowing the actual living condition of people with disabilities could be difficult. This is because most families who have people with the impairments may be unwilling to disclose such individuals publicly with the fear that it might lead to public resentment, and sometimes for the protection of the family's image.

Theme 3: Collaboration on the part of donors

Partnership between stakeholders towards the provision of measures to increase access to mobility assistive technologies also came up during the interview of the participants. The participants suggested that there should be a partnership between stakeholders as the strategy to help increase access to mobility assistive technology or technologies. According to the participants, partnership between stakeholders in the field of provision of mobility assistive technology or technologies would help

strengthen the finding support base for increasing mobility assistive technologies provision. Below were the some of the suggestions from the participants interviewed:

“What I can suggest is that all the various donors should form a partnership to make it easier to achieve the increase in access to mobility assistive technologies. When they do this, it will make finding also very easy” (P6).

“As it is now, there are many people who are trying to help us with mobility assistive technologies but if all these people can form an alliance, I think it will help a lot. For example, local donors can work with other donors from outside. This would help bring down the burden of the individuals’ donor” (P8).

“To me, I think department of social welfare can also have a direct link with the government in providing assistance to adults with mobility impairment”. (P2).

It was obvious from the participant’s suggestion that there may be little or no partnership between donor and sponsors who provide assistance in relation to mobility assistive technologies for people with mobility impairments. The concerns raised will be as a result of lack of consistency of donors and stakeholders towards accelerating access to mobility assistive technology. The forming of partnership among various stakeholders can play a role to support national efforts, coordinating and collaboration, and helps prevent duplication (WHO, 2010). Moreover, in the participant’s suggestions, partnerships can be formed as both the national and international level in the form of coordination and collaboration, which can help minimize the over burden that a few mobility assistive device providers go through in their bid to satisfy their mobility assistive technologies needs among clients. For instance, one of the participants added:

“Sometimes, when you are assured of the mobility assistive device, it delays before it comes. Sometimes too those who promise us also complain of lack of funds and unavailability of device in the system”. (P10).

It was evident from the responses that not all the time those donors are able to fulfil their promises in relation to the provision of mobility assistive technologies on time. Also, as one of the participants noted donors sometimes lack the necessary financial capacity to redeem their pledges of support. It is no doubt that, mobility assistive technologies for people with mobility impairments are most often provided by a broad range of stakeholders including the government, international agencies and non-governmental organizations, (or charitable and faith-based organizations) and the private sector (Shadel, 2014). When resources and capacity are limited, partnership can be formed to bring about good service delivery.

Theme 4: Funding Support

Another issue that came up during the interviews was the suggestion that mobility assistive technology or technologies should be made affordable for people who may require their use. The participants complained about the high cost of mobility assistive technology or technologies and the lack of funds to purchase them. They also suggested that there was the need for adequate budgetary allocations and funding for mobility assistive device provision to help cater for the needs of the users. Some of the suggestions shared by the participants include:

“Government needs to invest money in the production of mobility assistive technologies locally. When this is done, more technologies can be produced to feed the population”. (P11).

“I know of some organizations producing mobility assistive technologies in the country. These organizations can be assisted by governments through budget allocation so that the cost of the mobility assistive technology or technologies produced can be reduced for those who require their users to buy”. (P4).

To me, I think government sectors can even produce these mobility assistive technologies or technologies and subsidize it for lay people like me to purchase”. (11).

The issues bordering on high cost of mobility assistive technology or technologies has been one of the foremost challenges that confront people with mobility impairments. Even when mobility assistive technologies are available the cost of paying for such technologies become a burden on family members:

“There is a need for much attention to be focused on funding for mobility assistive technology or device production locally. If nothing at all, a small amount of funding from government to help private individuals engaging in mobility assistive technology or device production would be beneficial. This may help reduce the high cost of selling the device after production” (P3).

Achieving affordable implementation relating to provision of access to mobility assistive technology or technologies requires budgeting and allocation of necessary funding; where the needs for adults with mobility impairments need to be identified and made available at an affordable price (WHO, 2015). Because, the development of importance mobility assistive technology or technologies could be facilitated through many funding mechanisms including government funding, donor funding, national or private insurance schemes, public or private assistive technology funds, existing systems and infrastructure; for instance, healthcare, education and community-based rehabilitation.

Theme 5: Training of personnel

Training of local artisans in the production of mobility assistive technology, in maintenance services were major suggestions by the participants. Participants mentioned that training experts locally to manufacture mobility assistive technology could help increase production. The participants were also of the opinion that locally trained artisans can be equipped with the necessary skills in maintenance of the mobility assistive technology or technologies. The following were participants views:

“We need in the country locally trained people who can manufacture mobility assistive technologies for example, artificial legs, crutches, wheelchairs and others” (P12).

“To me, I think we depend too much on external help in everything we need in this country. How can't our governments prioritize training of indigenous people to produce some of these technologies with the assistance of funding? I know people have talents to do it”. (P3).

The opinions from the participants were of the indication that there is a huge gap when it comes to training of local experts who are specialized in producing of mobility assistive technology or technologies. The suggestions as raised by the participants again seemed to illustrate to the very large extent the low interest of government investing into the production of mobility assistive technology or technologies locally. The participants suggested that local artisan can be trained to make small repairs to mobility assistive technologies as orthoses, prostheses and wheelchair, example repair orthoses by replacing straps, screws and rivets (WHO, 2010). Most often, people who use mobility assistive technology or technologies have to abandon the use of these technologies not because they do not want to use them again but because most of them cannot readily access repair and maintenance service for their device when they breakdown. In similar vein, another participant also noted:

“I don't understand why I have to still wait for the donor to come and carry my wheelchair for repairs when its breakdown. Why can't we have people in the community well trained to solve little problems such as this”. (P2).

Lack of well-trained personnel could account for a major setback of the provision of appropriate mobility assistive technology or technologies services. It was reported that several countries had announced insufficient, unstable or unavailable supplies of rehabilitation professional (Sarantakos, 2012). The case of insufficient or lack of trained local personnel in the industry of mobility assistive technology or technologies as a result has showed above can work against the efforts of achieving access to

mobility assistive technologies for those who require their use. It is equally important to have well trained personnel who are knowledgeable in repairing broken down technologies. It is also important to add that personnel trained should have the needed resources and tools to enable them function properly.

Theme 6: Awareness about mobility assistive technology

On awareness as one of the measures, these comments were made:

"To me, I think some kind of awareness should be created on various platforms for more people have knowledge about the mobility assistive technology". (P3)

"If they want me to use something, I do not have enough knowledge about can bring about fear because I may not even know how it functions. So, for me, education is much needed" (P1).

"There should be some level of information about the mobility assistive technologies before they are provided for use because now, there are many modern ones that the user requires more education to be able to adjust to their use" (P5).

Lack of proper awareness about mobility assistive technologies was one of the concerns the participants also suggested must be tackled as far as access to mobility assistive technologies is concerned. Clearly, education can play a major role in determining mobility assistive technology or device usage because people who are better educated to know about technologies that are available and can feel confidence about using them particularly those that come with so with sophisticated technologies (Kaye et al., 2008). However, the participants interviewed raised concerns about lack of conscious efforts on the part of successive governments", donor and those who prescribe mobility assistive technologies to make available the necessary information about the advantages and disadvantages of mobility assistive technology or technologies and about their used to them. Majority of the participants complained that they did not have enough education or awareness concerning the use of mobility

assistive technologies, as well as the locations of these mobility assistive technologies can be found. Also, lack of awareness of services relating to mobility assistive technologies can influence the person or the family seeking technologies. Assuming there are technologies available but no information is provided about them, the resultant effect maybe that individuals or family members seeking such services may not have access to them.

Theme 7: Public education

Another measure the participants mentioned was that there must be public education for people to have knowledge about mobility assistive technologies, their benefits for people with disabilities, in order to minimize the negative attitudes, they face when they come in contact with people.

Some of the comments shared were:

“The wheelchair is my mode of working so people should be educated to understand that using a wheelchair does not mean I am not a woman being” (P8).

“I have decided not to pay attention to what people say about me and my device. People need to be informed about disability and the important of use of mobility assistive technologies and other assistive” (P11).

“As for me, I think public education is very importance for people to know that individuals with disabilities are also valuable in the society”. (P3).

There were again issues about public negative attitudes towards some of the participants because they used mobility assistive technologies. Most of the participants said that they face negative attitudes when they are using their technologies. Most of them explained that the reactions from people when they meet evoke sentiments that make them uncomfortable. Even though, negative sentiments cannot be totally overcome, however, some level of public education can help

minimize their impact. The comments expressed above confirm a study done by the Centre of Technology and Ageing (2010) which revealed that people with disabilities may be reluctant in using mobility assistive technologies because of the stigma that comes with their use.

Theme 8: Policy and legislation

Participants also recommended policies and legislations as strategies to increase access to mobility assistive technologies. According to the participants, ensuring effective implementation of policies and legislations relating to the provision of mobility assistive technologies would bridge the wide gap that exists currently. These were some of the comments shared by participants:

“It is high time good policies are made towards increasing access to mobility assistive technologies, policies to address the issues relating to lack of funding” (P1).

“Currently, it is clear that our governments' over the years have not put in place good policies and legislations to address to every problem we face when it comes to mobility assistive technology or technologies. So, policies are very well needed”. (P4).

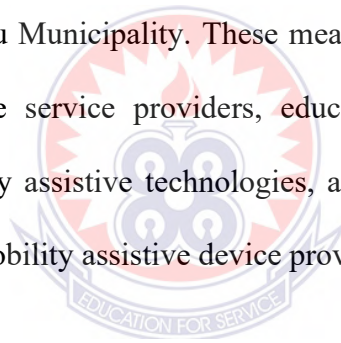
“The current Disability Act should be passed into law. If it is done, it will pave the way for other policies. We need policies on mobility assistive technology or device provision because it our means of basic transportation” (P9).

Provision and access to mobility assistive technology or technologies needs to be included into existing or new legislation, strategies and policies and the documents backing the provision of mobility assistive technologies, in order to address the issue of physical and cognitive accessibility to mobility assistive technologies and services, and also to public in-and outdoor environments and facilities (WHO, 2015). Because, having a policy that backs access mobility assistive technologies will help bring down the perpetual frustrations people with mobility impairments would have to go through in the event of accessing mobility assistive technology or technologies in the future.

The desire for improving on access to mobility assistive technology or technologies on the part of adults with mobility impairments conforms to Vroom's (1964) Expectancy Theory which suggests that expectancy is about mental processes regarding choice or choosing. He explains that expectancy is the belief that increased effort will lead to increased performance, instrumentality he says is the belief when an activity is performed well, a desired outcome will be achieved and valence is the importance one place on the desired outcome of the said activity.

Summary of the findings on research question 4

Analysis of the data revealed ideas and measures participants suggested can be put in place to improve access to mobility assistive technologies for adults with mobility impairments in the Effutu Municipality. These measures include partnerships among mobility assistive device service providers, education about availability and the benefits of using mobility assistive technologies, addressing the issue about lack of policy and funding for mobility assistive device provision to address the challenges.



CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATION

5.0 Introduction

This study focused on access to mobility assistive technology by adults with mobility impairments in Effutu Municipality, Winneba in the Central Region of Ghana. The study employed a narrative case study design, with semi-structured interview guide for data collection. Twelve (12) participants with the aged ranging from 45 to 65 years took part in the study. This chapter therefore, presents the summary of major findings, conclusions and recommendations of the study.

5.1 Summary of Major Findings

Key findings of the study are presented as follows;

1. It was revealed with respect to research question 1 that adults with mobility impairments acquired their mobility technologies from NGOs, church, friends and through family supports. It was also found that the mobility technologies acquired met the expectations of the beneficiaries with some of the participants indicating that they were comfortable using their mobility assistive technologies or technologies.
2. Regarding research question two, it was revealed that mobility assistive technologies improved the life of adults with mobility impairments by helping to enhance independent mobility, balance in posture, physical activities, job, recreation, leisure and sports and family participation among users.
3. The findings under research question 3 revealed that financial constrain, donors' scarcity, attitude of donors and unavailability of technologies, problems with device maintenance, lack of repair and maintenance of

technologies, lack of awareness, difficulty in getting access to public places and fear of stigmatization were the barriers to accessing mobility assistive technologies or technologies.

4. Finally, findings under research question 4 revealed some measures participants suggested should be put in place to improve access to mobility assistive technologies for adults with mobility impairments in the Effutu Municipality. Some of these measures mentioned include, partnerships among stakeholders in the provision of mobility assistive technologies, adequate budgetary allocation or funding of mobility assistive technology provision, training of local artisans in manufacturing, repair and maintenance of mobility assistive technologies. Other suggested measures include information and education on mobility assistive technologies, and promulgation of policies and legislations to address the provision of mobility assistive technology challenges in the municipality.

5.2 Conclusion

Based on the findings, it was concluded among other things that:

Adults with mobility impairments in the Effutu Municipality, Winneba depend mainly on donor supports and Stakeholders for the acquisition of mobility assistive technologies due to poverty. Mobility assistive technologies are quite expensive and cannot be afforded by adults with mobility impairments. Similarly, in fulfilments of their corporate responsibilities, donors give out mobility assistive technologies to vulnerable groups such as adults with mobility impairment.

Secondly, it is concluded that the use of mobility assistive technologies has influenced the perception of users that disability is not inability. There is greater participation of adults with mobility impairments in social and economic activities in the Effutu Municipality Winneba.

From the findings to research question three, it is concluded that though adults with mobility impairments have access to mobility assistive technologies, but do so under enormous challenges. Adults with mobility impairments appear inadequate with respect of number of donors and donors' capacity to supply them with mobility assistive technologies. Maintenance culture of adults with mobility impairments is very appalling. Perhaps, if assistive technologies were bought by the users themselves (thus adults with mobility impairment), maintaining them would have been a priority for them.

Finally, policies and legislations, state funding of disability issues, and awareness about mobility assistive technologies were some of the measures suggested by adults with mobility impairments to enhance their accessibility of mobility assistive technologies. It appears the Government of Ghana is relenting on disability issues hence their limited involvement in the acquisition and accessibility of mobility assistive technologies for adults with mobility impairments.

5.3 Recommendations

In line with the conclusions, the following are recommended;

1. Adults with mobility impairments should find other innovative ways such as appealing to Assembly Members, Members of Parliament in order to get more benevolent organizations and individuals involve in funding of the mobility

assistive technologies. This will help boost access to mobility assistive technologies for many adults with mobility impairments.

2. Adults with mobility impairments should be motivated and encouraged by Educators, Policy Makers, Department of Social Welfare and Medical Experts to access mobility assistive technologies as the study revealed that, the use of these technologies has helped improve the life of adults with mobility impairments.
3. Adults with mobility impairments should channel the barriers they face in getting access to mobility assistive technology to the Department of Social Welfare, so that the barriers can be addressed. They can also use their local association as a medium to advocate on their behalf, if they may not be able to do so by themselves.
4. Adults with mobility impairments should develop a strong relationship between them and their service providers, by putting across the measures such as educating the general public, creating awareness about mobility assistive technology that can improve access to mobility assistive technology in Effutu Municipality, Winneba.

5.4 Suggestions for Further Research

The sample size used for this study was small, so it would be difficult to state that the findings are the true reflection of what pertains to other populations. As a result of this, further research will be needed to explore access to mobility assistive technology for adults with mobility impairments in Ghana as a whole. Furthermore, it will also be appropriate if future research will be tailored to other aspects of disability. Again, further research could be undertaken to explore the hindrances that come with using mobility assistive technologies for adults with mobility impairments.

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APPENDICES

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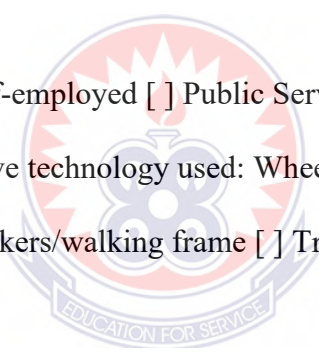
SCHOOL OF GRADUATE STUDIES

DEPARTMENT OF SPECIAL EDUCATION

INTERVIEW GUIDE FOR ADULTS WITH MOBILITY IMPAIRMENTS

Part one: Demographic Characteristics of Respondents

1. Age:
2. Gender: Male Female
3. Marital status: Single Married Divorced Separated Widowed
4. Academic status: Primary Junior High School Senior High School
University
5. Employment status: Self-employed Public Servant Unemployed
6. Type of mobility assistive technology used: Wheelchair Crutches
Cane/walking stick Walkers/walking frame Tricycle Scooters
Orthoses/prostheses
7. Cause of mobility impairment: Motor accident Occupational accident
Congenital disability Diabetes Mellitus other



**INTERVIEW GUIDE FOR ADULTS WITH MOBILITY IMPAIRMENTS IN
THE EFFUTU MUNICIPALITY, WINNEBA IN THE CENTRAL REGION OF
GHANA**

(FACE-TO-FACE INTERVIEW)

1. Research question 1: How do adults with mobility impairments access mobility assistive technology in Effutu Municipality?

Please what mobility device do you use or prefer?

Please can you describe how you got access to your mobility assistive technology?

Probes:

- a) Acquired by yourself?
- b) government support?
- c) non-governmental support?
- d) church support?
- f) family support?
- g) Disabled People Organization's support?
- h) friends' support?



How does the assistive technology meet your expectation?

- a) Acceptability?
- b) Adaptability?
- c) Quality?

Research question 2: How do access to mobility assistive technologies improve the life of adults with mobility impairments?

Please how does your mobility assistive technology improve your life or your daily activities?

Probes:

- a) independent mobility?
- b) achieving balance?
- c) physical activity?
- d) performing daily activities?
- e) Job?
- f) recreation?
- g) family involvement/participation? political office?

Research question 3: What barriers do adults with mobility impairments face in accessing mobility assistive technology?

Please can you describe what barriers you face in getting access to mobility assistive technologies?

Probes:

- a) finance?
- b) lack of donors?
- c) attitudes of donors?
- d) device unavailability?
- e) replacement problem?
- f) repair and maintenance?
- g) awareness?
- h) physical environment?
- i) stigmatization?
- j) fear of injury?



Research question 4: What measures should be taken to improve on access to mobility assistive technology for adults with mobility impairments in the Effutu Municipality?

Please what do you think should be done to improve access to mobility assistive technologies?

Probes:

- a) needs of users?
- b) living condition?
- c) collaboration?
- d) funding support?
- e) training of personnel?
- f) awareness about technologies?
- g) public education?
- h) policy and legislation?



APPENDIX A

LETTER OF INTRODUCTORY



UNIVERSITY OF EDUCATION, WINNEBA
FACULTY OF EDUCATIONAL STUDIES
DEPARTMENT OF SPECIAL EDUCATION

P.O. Box 25, Winneba, Ghana
+233 (020) 204 1009

spe@uew.edu.gh

20th April, 2022

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

LETTER OF INTRODUCTION: MR. PROSPER NUTEKOR

I write to introduce to you, **Mr. Prosper Nutekor** an M.Phil. Student of the Department of Special Education with index number 202142775.

He is currently working on his thesis on the topic: **"Access to Mobility Assistive Technology by Adults with Mobility Impairments in Effutu Municipality in the Central Region of Ghana"**. He needs to conduct interviews in your school.

I should be grateful if you could give him the needed assistance to enable him collect the data.

Thank you for the consideration and assistance.

Yours faithfully,

A handwritten signature in black ink, appearing to read 'Yaw Nyadu Offei'.

DR. YAW NYADU OFFEI
(Ag. Head of Department)

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