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PERSONS WITH DISABILITIES SUPPORT SERVICES NEEDS AND UTILIZATION IN KENYA: A STUDY IN PREPARATION OF A DISABILITY POLICY BRIEF

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ABSTRACT

Background: The interaction between impairment and environmental factors impose a certain degree of incapacity on individuals, often undermining their freedom to function. Despite the fact that this disablement may require support services to forestall loss of function, little research has been conducted in Africa and the Sub-Saharan region, more specifically in Kenya, to explore persons with disabilities support services needs and utilization. There is also a paucity of information on predictors of PWDs' use of existing support services. In addition, Kenya lacks a disability policy.

Purpose: The aim of the research was to determine the persons with disabilities support services needs and utilization in Kenya, to support the development of a disability policy.

Methods: Overall, the research project used a sequential, mixed methods, multiphase design, with an exploratory strategy. In the overall design, a quantitative data collection and analysis preceded qualitative data collection and analysis, which, in turn, preceded another quantitative data collection and analysis. This was considered the most appropriate design for this study, as the primary focus was to explore a phenomenon that had not been adequately researched previously.

In 2015, the first phase, a cross-sectional quantitative household survey conducted in three counties in Kenya. Multi-stage sampling was used. The counties were selected, using a simple random sampling method, from three clusters of counties, stratified as urban, semi-urban and rural. A representative sample of 1,230 people with/without disabilities from the three selected counties were identified. Pre-piloted interviewer-administered, structured survey tools that included a (1) short household questionnaire, (2) the Washington Group six questions for screening adults and (3) two short UNICEF/Washington Group on disability statistics (WG) child modules (for those age 5-17 and for 2-4 years). The long Washington Group questionnaires and UNICEF/ WG child modules were completed for consenting individuals with a disability/ies. The Statistical Package for Social Sciences instrument, version 21.0 was used during data analysis. Descriptive statistics were calculated, including the prevalence of disability, as a percentage of the persons with disabilities, out of the 1,230 respondents, who were involved.

In the second phase - part one, an exploratory study was conducted in 2015. It consisted of focus group discussions with 52, purposively selected individuals with disabilities, and interviews with 6 key-informants. The 52 individuals formed 6 focus groups of between 8 to 10 individuals. Pre-piloted focus group and individual interview guides, including a short questionnaire designed to collect demographic data only, were applied. ATLAS.ti version 6.0 software was used to analyse the data into themes and sub-themes, consisting of factors affecting the utilization of support services and needed services, help needed and whether the services were utilized, or not.

In this phase two - part two, a cross-sectional study utilizing a quantitative method was conducted in 2015. The research team revisited households where the PWDs lived (n= 133). A random sample of 20 students and teachers with disabilities from a local secondary school were included. A validated, reliable interviewer-administered structured questionnaire was used to collect data. Guardians voluntarily provided written consents for underage, or illiterate, persons to participate. However, children under 5 years were excluded to avoid proxy-response bias. Firstly, multiple linear regression statistical tests were performed using demographic variables (age, gender, income, level of education and type of disability) as independent variables and each outcome variable representing the utilization of a service, as the dependent variable. The same procedure was used for all services, using the Statistical Package for Social Sciences version 21.0. Secondly, multiple linear regression tests were performed using factors, extracted during factor analysis, as independent variables, and each outcome variable as the dependent variable. All factors items were entered hierarchically (backward method). The Kenyatta National Hospital-University of Nairobi and the University of the Western Cape Ethical Review Committees approved this study.

Results: Of the 1,230 subjects, 155 (12.6%) had disabilities, of which 87 (56.1%) were women and 68 (43.9%) were men. Among those with disabilities, 62 (40%) were aged 60 years and older, while, 48 (31%) were adults aged between 18-59 years and 45 (29%) were children and adolescents aged between 2-17 years. Mobility (61.3%), visual (43.9%) and cognition (43.2%) were the most prevalent disabilities. Common disabilities in children (2-17 years) included intellectual (30.3%) and learning (28.9%), and difficulty playing with peers. Slightly over 1-in-3 persons with disabilities lacked formal education; 86.5% lived in families with low income, while 60% lived in male-headed households.

Findings of the qualitative study revealed that PWDs' support services needs were largely unmet. A few used assistive devices and/or received assistance from family, friends and peers. The study also revealed a gap in access to healthcare, rehabilitation, education and special education, vocational training, employment, information and transport services. The findings suggested the presence of systemic negative attitudes, discrimination and isolation, abuse, denial, cost, lack of qualified resource persons, lack of facilities, long distance and height of delivery (childbirth) couches, which made services somewhat inaccessible.

In the quantitative study, a total of 153 persons with disabilities participated. Gender significantly predicted the utilization of education services. Age, accessibility and receiving information significantly predicted the utilization of vocational training services (F (3,147) = 57.584, $p< .001$, with an adjusted R^2 of .531). The level of education significantly predicted the utilization of health services (p=.041). Beliefs were significant predictors of the utilization of counselling services (p=.001). Only accessibility and attitude of service provider predicted the utilization of Faith healer services (p< .001). Annual family income (p<.035), being a government employee, affordability and service provider skills predicted the utilization of sign language interpreter services (F (3,148) = 74,154 $p< .001$, with an adjusted R^2 of .592.). Gender also significantly predicted the utilization of personal assistance services. Education level (p= .026) and autonomy (p< .001) significantly predicted independent living. Education level (p<.015) also significantly predicted the utilization of transport services.

Conclusion: An estimated 12.6% of Kenyans, majority of whom are at retirement age, have a disability. Mobility, visual and cognitive disabilities are the most prevalent in all age groups. Despite many of the PWDs' needs for support services being unmet, a few reported using assistive devices and/or assistance from family, friends and peers. However, several factors interact to predict the utilization of the support services. Considering the implications of unmet needs for support, which include lack of choices, illiteracy and unemployment, the findings have implications for a policy framework that focuses on developing the potential of PWDs, based on a supports model, for the provision of appropriate support services.

KEY WORDS

Predictors,

Support services,

Persons with disability,

Assistive devices,

Distribution of disability,

Washington group questions,

Capability Approach

ABBREVIATIONS AND ACRONYMS

ADL - Activities of daily living

CA - Capability Approach

CDC - Centers for Disease Control

CLT - Central Limit Theorem

CRPD - Convention on the Rights of persons with disabiliti

ECDE - Early Childhood Development Education

FGDs - Focus group discussions

HPI - Human Poverty Index

IADL - Instrumental Activities of daily living

ICF - International Classification of functioning, Disability and Health

K - Key informant

KNHCR - Kenya National Commission on Human Rights

NCPWD - National Council for persons with disabilities

NDS - National Disability Survey

NFSS - Nairobi Family Support Services

P - Participant

PWDs - Persons with disabilities

UN - United Nations

UNDP - United Nations Development Programme

UNICEF - United Nations International Children Education Fund

WG - Washington group

WHA - World Health Assembly

DEFINITIONS OF TERMS USED IN THE STUDY

1. **Rural**: “This is a large and isolated area of open country (in reference to open fields), often with low population density” (Republic of Kenya, 2010).
2. **Urban**: This is “an area with an increased density of human-created structures in comparison to the areas surrounding it and has a population of 2,000 and above. In this definition, urban areas include the following: Cities, Municipalities, Town Councils and Urban councils” (Republic of Kenya, 2010).
3. **Literacy**: Is “defined as the ability to read and write at least a sentence with a given language (UNDP Kenya, 2010).

DECLARATION

I declare that *“Persons with Disabilities Support Services Needs and Utilization in Kenya: A study in preparation of a Disability Policy Brief”* is my own work, that it has not been submitted for any other degree, or examination, at any other university, and that complete referencing have been made and acknowledged for all sources used and/or quoted.

Signed……………………………………………

This day ……14th ..of July 2018

DEDICATION

This work would not have been completed without the love of my wife, who had to stay awake through the nights, as I wrote this work. Our two daughters, Esther Njeri and Mercy Mwihaki and son, Daniel Matheri, encouraged me to hang on the thread to the finish. They conducted themselves well, and kept our dignity. To Esther Njeri Matheri, my late mother, who cared, educated, cultured and whispered wise words, which kept my spirit alive, as well as to my sisters and brothers. To the reverend, Pastor Kamau Gicigi, Mr Kimani Matheri, Dr Waihenya, Uncle John Kariuki and wife, Nyambura of Kakamega, Niece Wangeci Thairu, Dr Waturu –Chair Elders Welfare group, Maina Karuma, Dr George Karanja Kimiri, Dr Samuel Ngugi, Mr Mureithi Kinyungu and their families, students and many friends, who encouraged and supported my studying.

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CHAPTER ONE

INTRODUCTION TO THE STUDY

1.1. Background

The unavailability of disability support services has emerged as a major policy issue, globally (Donnelly *et al.*, 2007; Madden, Glozier, Mpofu & Llewellyn, 2011; World Health Organisation [WHO], 2011). Support services refer to are all services required by people with disabilities (PWDs), to decrease the impact of their incapacity to function, or to facilitate free engagement with the environment. These services include a personal assistant; personal advocate/ombudsperson or caregiver; sign language interpreter; cash transfer; social and emotional support, including supported decision-making; PWDs support in education and in the workplace (WHO, 2011). Because of the mismatch between the capability of the individual with an impairment, and his/her environmental demands, the individual becomes disabled, raising the need for appropriate supports to be used (by the individual) to undo the incapacitation. The lack of appropriate support services exposes PWDs to suffer participation restriction, social exclusion and isolation (Erickson & Lee, 2008; Mont, 2007). In addition, it makes them vulnerable to low education, lower average incomes and higher poverty rates, as well as low self-esteem (Mont, 2007; Batavia & Beaulaurier, 2001). The lack of appropriate support services also exposes PWDs to victimization through neglect, abuse and violence, even in their own families (Deepak, Kumar, Ramasamy & Griffo, 2014).

Research has revealed that persons with disabilities often receive fewer services than they need from service providers, to overcome their incapacitation (WHO, 2011; National Council on Disability, 2009; Donnelly *et al*., 2007). In addition, the National Disability Survey (NDS) results revealed that 50% of PWDs had unmet needs for specific assistive devices (Kostanjsek *et al.*, 2013). The lack of appropriate support services hinders PWDs from participating in activities of daily living, such as to earn an income or socially interact, resultantly; they are forced to over-rely on their family members and caregivers. For example, inaccessible public places, due to the lack of appropriate support for the PWD, constrains practical opportunities to build relationships for work performance or classroom attendance, and, therefore, the chance of converting physical capital into social capital; and to some extent, economic capital is lost (Loja, Costa, Hughes & Menezes, 2013). However, access and utilization of appropriate support services has been observed to improve PWDs' participation in social and community activities, as well as the likelihood of them accumulating social and economic capital. According to Nisbet, Hagner, Antal, Fox and LaPointe (2006), social and economic capital accumulates through social networking in public spaces, building trust and participating in community activities. Nisbet et al. (2006) argue that only when PWDs venture into social places, with or without assistance, they meet other people and create social connections that could have potential for cumulative opportunities, building trust, meaningful relationships and economic activities. Therefore, the need exists to identify the barriers to accessing appropriate disability support services.

1.2. Barriers to accessing support services and other essential services

Researchers have revealed that barriers to accessing appropriate support and essential services needed by PWDs are social, structural or psychological (Roberts & Babinard, 2004; Venter *et al.*, 2004). Using the International Classification of functioning, disability and health [ICF] (WHO, 2011), these barriers to accessing disability support services may be summarized into two major classifications, namely, personal and environmental barriers. Personal barriers include lack of awareness of services, disempowerment, attitude and lack of resources. Environmental barriers include social, physical and attitudinal barriers, with the social barriers being, among others, the inaccessibility of knowledgeable personnel, the healthcare delivery models and the unaccommodating transport systems; the physical barriers being in the built environment (public buildings and offices) and equipment; and finally, the attitudinal barriers being negative societal attitudes (Kostanjsek *et al.*, 2013; WHO, 2011; Finlayson *et al.*, 2010; Mont, 2007).

Researchers have identified inadequate health worker skills, as well as the lack of experienced and knowledgeable specialists in primary care settings, as barriers to PWDs accessing primary healthcare (Bernabe-Ortiz *et al.*, 2016; Iezzoni, Frakt & Pizer, 2011; Drainoni *et al.*, 2006; Iezzoni, Killeen & O'Day, 2006; O'Day, Palsbo, Dhont & Scheer, 2002). Additionally, the United Nations [UN] Economic and Social Council (2008) noted that healthcare personnel in many parts of the world had inadequate knowledge and skills to provide reproductive services to women with disabilities. In most low and middle-income countries, one barrier to accessing healthcare has been the shift from an institution-based healthcare model, to community-based health services, which has been slow and disproportionate

(WHO, 2011). Other barriers are insensitive taxation regimes, the lack of non-contributory health insurance schemes, and the lack of social security (Krahn & Drum, 2007; Donnelly *et al*., 2007; Simpson, de Boer-Ott & Smith-Myles, 2003). In addition, researchers have revealed that suitable transport for PWDs is often limited, unaffordable, or inaccessible (WHO, 2011, Drainoni *et al.*, 2006; Park *et al.*, 2009). According to Eide and Loeb (2006), PWDs cite transport as a barrier to accessing healthcare, particularly where health facilities are located far from where they live.

Concerning physical barriers, researchers have consistently revealed that PWDs are often unable to obtain comprehensive medical check-ups, such as breast and cervical cancer screening because examination tables and mammography equipment (Krahn, Walker & Correa-De-Araujo, 2015; WHO, 2011; Nosek & Simmons, 2007), as well as weight scales are inaccessible (Mudrick, Breslin, Liang & Yee, 2012). Additional barriers in the built environment, such as uneven access to buildings, narrow doorways, corridors and washroom doorways are also often reported (Krahn *et al.*, 2015; Mudrick *et al.*, 2012; Nosek & Simmons, 2007).

Research has revealed that multiple environmental and personal factors, including the disability itself, interact to diminish accessibility of support services (Bottari, Lamothe, Gosselin, Gélinas & Ptito, 2012; WHO, 2011; Havercamp, Scandlin & Roth, 2004; Hardy & Gill, 2004). These factors synergistically interact to diminish the opportunities for PWDs to accumulate social and economic capital, thereby highlighting the need for appropriate support services. The supports provided become appropriate, if, when utilized, they improve the capability of the disabled person, to a new level of capability that overcomes the disabling environmental barriers, thereby reducing activity limitation and participation restriction (Nussbaum, 2007).

More recently, researchers have shown some existence of discriminatory socioeconomic mechanisms in society that favour men with disabilities, to the detriment of women with disabilities (Boman, Kjellberg, Danermar & Boman, 2013). To some extent, this implies that culture propagates gender inequality in social and economic contexts. Kiani (2008) concurs that women with disabilities experienced both attitudinal and physical barriers.

The perceived barriers to disability support services are not limited to low and medium income countries only, but have also been found in high economic countries. For instance, in Australia, Uo, Garrett and Hillman (2011) observed that the barriers to healthcare access, as perceived by the parents of children with disabilities, included the cost, transport problems, childcare problems, service availability and family reasons. The Ireland National Disability Survey (NDS) results revealed that transportation was a major barrier (boarding and alighting from public transport) to social participation, affecting 16% of PWDs, aged 5 years and over, as was the built environment (Kostanjsek *et al.*, 2013). As mentioned earlier, the UN Economic and Social Council observed that reproductive health facilities lacked knowledgeable personnel with skills to provide reproductive services to women with disabilities (UN, 2008). In a UK survey on PWDs' access to employment, involving 500 companies with 20 employees, Robinson (1999) observed that the barriers to employment were, the managers' lack of understanding about the capabilities of PWDs; the lack of awareness concerning the financial, technical assistance, accessibility, and accommodations the PWDs required. These factors collectively reduced the employment opportunities of PWDs.

The PWDs' current circumstances indicate the effects of barriers to participation on them; for example, the Central Statistics Office Report of 2006 indicated that close to a half of the PWDs living in community settings, had difficulty going shopping, or socializing in public places, with women being affected more (57%) than men (43%) (Central Statistics Office, 2006). Using the WHO's participation scale to assess the inclusion of PWDs in community development, Biggeri *et al.* (2014) observed that PWDs believed that they had fewer opportunities than their peers without disabilities did. According to Biggeri *et al.* (2014), the barriers to the inclusion of the PWDs emanated from impairments and social constraints. This begs the question, "What is the impact of barriers to support services on PWDs?"

1.3. Impact of barriers to support services on persons with disabilities

The impact that barriers inflict on the overall well-being of individual PWDs (after excluding them from participating in essential services and making social contacts) is disastrous in the long-term. Persons with disabilities are more likely to be illiterate, or have a low level of education, be unemployed, have a low income and lower occupational mobility, be poor and isolated (Wehbi & El-Lahib, 2007), as well as have low accomplishment and a poor quality of life (Ballet, Koffi & Pelenc, 2013). However, it is clear that all forms of barriers create social and economic disadvantages against PWDs, especially women. For instance, most women with disabilities live in poverty, due to their low prospects for education and finding employment, or getting married (Kiani, 2008). Mehrotra (2004) noted that the Indian society marry off women with disabilities to poor disabled men, or underprivileged men, who have no means of income. According to Mehrotra (2004), women with disabilities in India are more likely to live in poverty and isolation, because they are perceived as poor homemakers and incapable of working for a living, or taking care of a family. In addition, researchers have shown that PWDs, in general, live in isolation and marginalization arising from low levels of education, unemployment and low incomes (Wehbi & El-Lahib, 2007). Mizunoya and Mitra (2012) observed that PWDs had a lower employment rate than people without disabilities in 9 of the 15 countries they surveyed. Regrettably, these socioeconomic impacts can only be ameliorated through consistent application of effective and appropriate support services throughout the course of life.

Because of these society-based socioeconomic disadvantages, households with PWDs lose the input from unemployed PWDs, with attendant impacts on their households and communities, namely, poverty and marginalization (World Bank, 2007). For instance, in India close to 45% of households with a PWD have an adult missing work because of caregiving (World Bank, 2007).

The perceived barriers often experienced by PWDs may vary from country to country. Researchers have noted that cumulative social and economic disadvantages, such as non-school attendance, unemployment and work constraint, paid caregiver, lost income and increased expenditure, as well as the inequitable distribution of resources inside house-holds, lead to poverty and lower standards of living (Mitra & Sambamoorthi, 2014). These circumstances are even worse among those families, who are unable to compensate for lost income (Mitra, Posarac & Vick, 2011). Subsequently, researchers have revealed that disability portends multidimensional poverty. Using World Health Survey [WHS] data, Mitra, Posarac & Vick (2013) revealed that disability in 15 developing countries, was significantly associated with higher, multi-dimensional poverty, or economic deprivations; for example, non-employment and low educational attainment. The UN estimates that 20% of those living on under a dollar a day are PWDs, in countries with fewer resources; the majority lack education, employment, access to clean water and sanitary facilities (UN, Economic and

Social Council, 2008). These countries, with fewer resources, are also home to over 80% of the estimated one billion PWDs in the World (UN, Economic and Social Council, 2008). In these countries, droughts, tribal conflicts, low GDP per capita, poor infrastructure, and competing health issues, such as malaria, diarrhea, microbial infections, tuberculosis, HIV-AIDS and disability compete for scarce resources.

In their 23 November 2007 discussion note, the UN Economic and Social Council stated that the high rates of illiteracy, unemployment and lower occupational mobility were major causes of poverty among the PWDs in developing countries (UN, Economic and Social Council, 2008). The meeting highlighted the critical role that the provision of appropriate supports and accommodations performs in the promotion of PWDs' social and economic participation. However, the lack of appropriate supports and accommodations leads to isolation from both social and economic activities and, therefore, to poverty (UN, Economic and Social Council, 2008).

In a cross-sectional, household survey with 333 PWDs in Sao Paulo, Brazil, to determine the accessibility problems to health services, Castro, Cieza and Cesar (2010) observed that 15.9% had difficulty accessing health services. Inaccessibility to health services affected those with mobility disability more than those with hearing problems. In addition, Wehbi and El-Lahib (2007) observed that the few PWDs in employment, lacked access to social benefits and health insurance. Benedict *et al.* (2005) noted that disparities in the access to support services among PWDs do exist, even in the most progressive democracies. These disparities are characterized by variable experiences of contextual barriers that affect the individual's capabilities resulting in reduced accomplishments and well-being (Ballet *et al.*, 2013).

1.4. The need to provide access to support services

The need to provide access to support services, healthcare, re-habilitation or vocational rehabilitation, which enables PWDs to exercise their human rights effectively, is unequivocal (Officer & Groce, 2009). According to Saunders (2006), the impact of poverty on disability, and the risk of poverty and actual hardships, is reason enough for action through support services, to safeguard PWDs from abject poverty and its attendant consequences. To safeguard PWDs from the vagaries of poverty, over one hundred and fifty countries have ratified the new UNCRPD (UN, 2006). The UNCRPD, ratification by 152 countries, also demonstrates a transnational agreement on its application, to remove barriers that hinder PWDs from participating and maintaining their well-being (Mittler, 2015). However, the tendency in less resourced countries to level-out opportunities in their contexts is inclined towards providing support services and assistive aids to those with mobility disability. This inclination unconsciously marginalizes PWDs with sensory difficulties (MacLachlan & Swartz, 2009: p. 151). The disinclination to provide equipment and technology that compensates for sensory impairments, in favour of mobility aids, is evident across low economic countries, such as Cambodia (Vanleit, 2008).

This practice undermines the spirit of article 3 (b) of the UN CRPD on non-discrimination (UN, 2006). This notwithstanding, the new CRPD underpins the overarching need for states to provide support services to PWDs by removing prejudices as barriers to inclusion and to ensure their right to live free from poverty (Lang, Kett, Groce & Trani, 2011). Researchers posit that elimination of perceived barriers has the potential to promote PWDs participation in activities that they have value for, in their community settings and/or individual development (Nussbaum, 2007; Mitra, 2006; Robeyns, 2005). For example, access to health care and health settings, use of assistive aids and technology, rehabilitation services and non-discrimination, play a significant role in meeting the needs of PWDs (Clancy & Andresen, 2002). Therefore, the lack of access to supportive services has far-reaching implications that require policy makers and stakeholders attention (Officer & Groce, 2009).

1.5. Disability policy

A strong perception is emerging in the current discourse among disability researchers that the time has come to move the disability rights debate from policy to implementation (Groce, Lang & Trani, 2011). The basis for this growing perception is the shortcomings of earlier models that made the PWD a victim of nature and human-made systems (Palmer & Harley, 2011; Amundson, 2000). For instance, Groce and Bakshi (2009) observed that despite the movement towards inclusive education, some adolescents and adults with disabilities age-out of the educational system, before it becomes accessible, or available to them. In a systematic review of literature concerning transition for young people with intellectual disability, Foley, Dyke, Girdler, Bourke and Leonard (2012) detected that environmental factors, including family, post-school services and access to transport had an impact on transitional outcomes, implying a lack of planned youth preparation in transition skills, such as, independent living, vocational or work skills. This lack of planned youth preparation in transition skills is an indicator to the dominance of the medical model that viewed disability as an attribute of the individual with a medical condition, or an impairment that required a medical solution (Groce *et al.*, 2011). The impact that the medical approach brought to bear on service outcomes across the age-groups of PWDs, triggered the evolution of a social model of disability (Amundson, 2000). The Social model of disability views disability not as an attribute of the individual; instead, it is created by the social environment and requires social change; therefore, the new discourse on social justice (Mitra, 2006). This metamorphosed view of disability has implications for the national disability policy to embrace the social justice paradigm - the rights of inclusion.

The works of Nussbaum (2007), Mitra (2006), Sen (2005) and Robeyns (2005) gives impetus to the current discourse on social justice (rights to social inclusion). These researchers have provided insights into the interactions between persons with disabilities and their environments, and the dynamic processes and opportunities therein (Nussbaum, 2007; Mitra, 2006). Their dichotomy of the many factors and circumstances surrounding individuals living with disability has brought forth new understandings about disparities that exist in the accessibility and utilization of support services among PWDs with similar or different impairments. This is despite the implementation of the disability mainstreaming policies.

Therefore, earlier efforts to mainstream disability did not translate to automatic inclusion of many persons with disabilities, partly due to disparity, inaccessibility and unavailability of support services in less resourced countries, including Kenya (World Health Organization [WHO]-United Nations Children’s Education Fund [UNICEF], 2015; Vanleit, 2008). This failure of inclusion was chiefly precipitated by the lack of implementation policies integrating needed support services. Article 32(d) of the CRPD calls on the state parties’ international cooperation and its promotion in support of national efforts to improve access to assistive technology (WHO-UNICEF, 2015; UN, 2006). This is more the reason why the UN continues to provide leadership and innovation to tackle a seemingly evasive phenomenon (disability mainstreaming).

United Nations entities’ efforts in pushing for mainstreaming disability in the development agenda, towards 2015 and beyond, is documented in the Secretary General’s Report to the council dated 28 November 2012 [from the Commission for Social Development, 51 session contributions] (United Nations Economic and Social Council, 2012). In the report, the Secretary General highlighted the African Decade of PWDs (2010-2019), adopted at the third session of the African Conference of Ministers of Social Development, which was convened in Addis Ababa, on 26-30 November, 2012. Notably, during the “meeting and in consultation and cooperation with” disability stakeholders and PWDs themselves, the revised continental plan was drafted. The continental ministerial conference marshalled renewed commitment, among the stakeholders to design measures to strengthen institutions for the implementation, and monitoring of the continental Plan of Action (UN, Economic and Social Council, 2012). Throughout the last decade, many African countries shifted to mainstreaming disability issues.

However, the achievements made, remain sketchy. Despite disability mainstreaming being incubated by the WHO as a pre-requisite strategy for the inclusion of PWDs in society and social development (Hartley & Okune, 2008), little or no effort has been made to assess the level of PWDs’ inclusion in mainstream services. These include services, such as social, health, education, work and employment (Prodinger, Weise, Shaw & Stamm, 2010). There is also a paucity of literature on nationwide surveys, regarding the appropriateness of the support services provided, their accessibility, utilization and factors influencing utilization of existing support services, in many countries on the African continent, and the Sub-Saharan region, except for small cross-sectional studies on small samples.

A cross-sectional study, conducted in Barkowino sub-location, in the former Nyanza province, Kenya, to explore attitudes towards persons with physical disabilities and the utilization of available services, revealed that 36% were unaware, and only 2 out of 5 respondents had gained access to the support services offered to people with physical disabilities (Monk & Wee, 2008). Regardless of these findings, support services are not part of the core objectives of disability policies in many countries, including Kenya (WHO, 2011). To date, Kenya’s disability policy is in draft form. However, the Kenya Disability Act (Republic of Kenya, Act No. 14 of 2003), as well as the Chapter 4, Bill of Rights, in the recently promulgated new Constitution (Republic of Kenya, Review Act No. 9 of 2008), recognises the rights of PWDs.

Therefore, issues affecting PWDs largely depend on political goodwill, which implies that factors influencing PWDs participation in daily life activities remain largely unaddressed as they are unknown to policy makers (Groce *et al*., 2011; Robson, 2005). There is also paucity of empirical data on the magnitude of the need for support services by PWDs, as well as the factors that influence the utilization of disability-related support services, in Kenya. This research aims to reduce this void, firstly, by determining the need for, and utilization of, disability support services, as well as the predictors of utilization of the various support services. Secondly, it aims to reduce the void by preparing a policy brief on disability support services in the Kenyan context. The adoption of the suggestions in the policy brief could go a long way in aiding the development of a national disability policy. The eventual implementation of this disability policy could guarantee the provision of appropriate support services and increase the social inclusion of the Kenyan PWDs in society activities.

1.6. Justification for the study

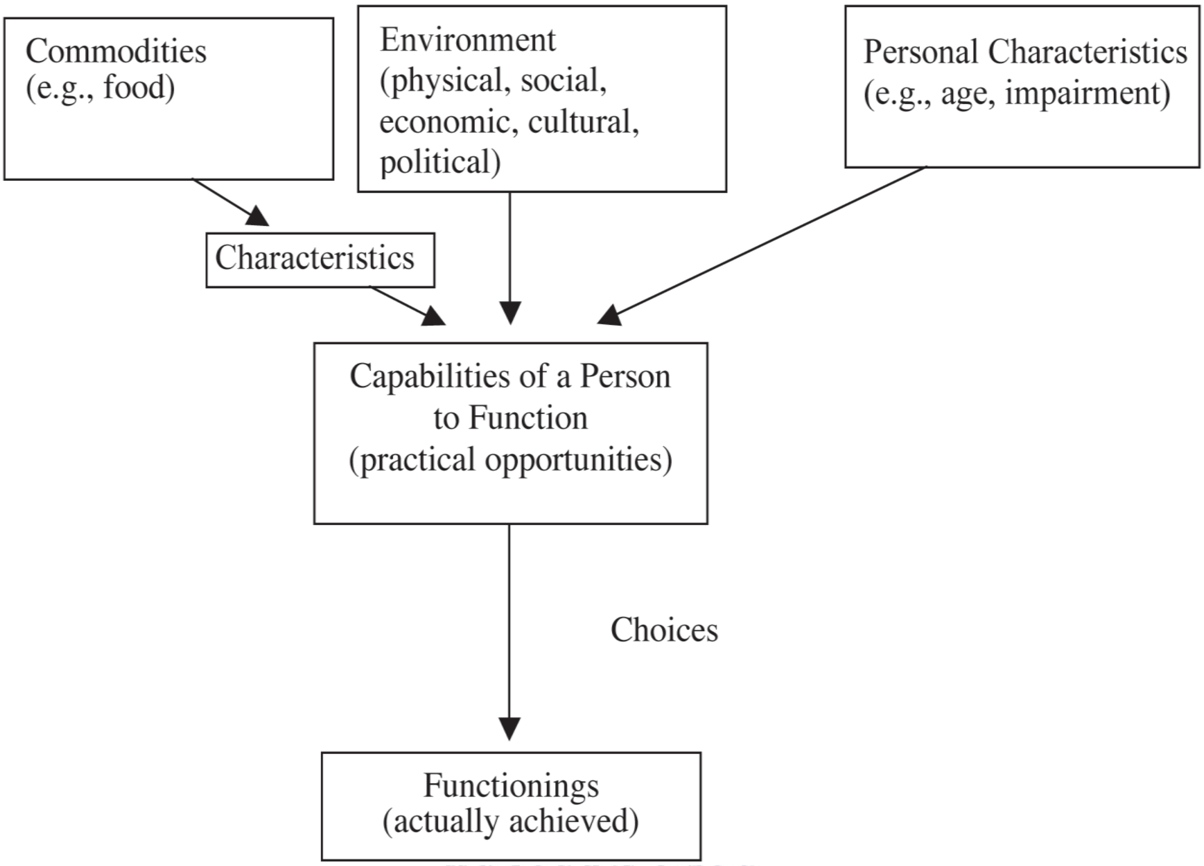
Although Kenya had the Disability Act passed in 2003 (Republic of Kenya, Act No. 14 of 2003), and the Chapter 4 (Bill of Rights) in the new constitution (Republic of Kenya, Review Act No. 9 of 2008; Guernsey, Nicoli & Ninio, 2007), it lacks an official policy on disability. The two documents do not mention support services among their core objectives. The implication of the lack of an official policy is the lack of political commitment to the needs of PWDs (WHO, 2011; Robson, 2005). This omission of a documented policy to guide public administration, as well as the management of a marginalized section of the population, has huge and almost catastrophic implications, as planning and provision of services is policy, data and resource dependent.

The population has also increased faster than the development in the economy, social infrastructure, social services and disability-related services (Republic of Kenya, 2010). This has huge policy implications, specifically in planning and provision of services. Additionally, an environment of higher demands competing for fewer resources, promotes trade-offs [sacrifices] (Collins, 2005). These trade-offs may have serious implications for those with disabilities, the majority of whom, are living in the margins of society (WHO, 2011). There is also very little that is documented on the availability, needs for and utilization of persons-with-disabilities-specific support services in sub-Saharan Africa, more specifically in Kenya. Therefore, the significant amount of needs for PWDs-specific support services continue to be unmet in many contexts, as they are unknown to policy makers. Therefore, this study aims to reduce this void by preparing a disability policy brief to enhance the advocacy of the disability support services. It also aims to investigate the need for, as well as the determinants of the utilization of persons-with-disabilities-specific support services in Kenya.

Ultimately, the study provides empirical data needed for the advocacy of support services that prevent the loss of PWDs capabilities and well-being (WHA, 2005). Support services that prevent the loss of PWDs' capabilities and well-being are in line with the United Nations CRPD articles 1 and 9. These articles emphasize the need to promote full enjoyment of all human rights and basic freedoms among PWDs, by increasing their access to all support services, such as education and health, work/employment and transportation among others (United Nations General Assembly, 2006). One school of thought that has emerged holds the view that an individual's capability and resources, combined with the availability (provision) of crucial supports, increase the potential for the individuals with disability to access and utilize mainstream services. Nussbaum (2007) argues that individual capabilities and resources are dispositions of the individual with disability, who has the potential that enables him/her to achieve desired functioning, when environmental factors are favourable (supportive). The capability enhancing interventions that provide support and increase access to resources for vulnerable populations have a high chance of success and replication across countries. Therefore, the conceptual framework for this study includes the capability approach.

1.7. Conceptual Framework: The capability approach

Figure 1.1 Conceptual framework



(Reproduced from Mitra, S. The Capability Approach and Disability, 2006**)**

The capability approach (CA) provides the conceptual framework through which the access and use of disability support services is determined. The framework focuses on how well people are able to function with the commodities/services at their disposal. It also focuses on the quality of life and the removal of barriers in their lives, for them to gain sufficient freedom to live the life they desire (Robeyns, 2005; Clark, 2005; Nussbaum, 2007). In this framework, having practical opportunity, or capability (that is access to support services, finances or food), is valuable only to the extent that it makes people function (do or participate) in their contexts (Mitra, 2006; Nussbaum, 2007). For example, two PWDs may be out of school and achieve the same functioning (lack education), but they have different sets of capabilities. One has decided to stay away from school, while the other is out of school, due to the lack of school fees. Clark (2005) demonstrates how the framework distinguishes between support services/commodities, human functioning/capability and utility as follows:

Services/Commodity→	Capability →	function(ing) → Utility
(means)	(freedom to function)	(achieved functioning)

The Capability Approach illustrates how the individual's personal characteristics (such as age, race, gender and impairment), the individual's commodities (goods or resources), and the individual's environment [physical, social, economic, political] interactions contribute to the capability of a person to function [disability or non-disability status] (Mitra, 2006). In this current study, the CA informs the assessment of the individuals' deprivation of capabilities, which in turn creates support needs and utilization of support services. Support needs include, but are not limited to, the need for personal assistance, assistive devices/ technologies/equipment for mobility, self-care and/or sensory functions, sign language interpretation, information technology devices and means of transportation, among others. As a conceptual framework, the CA approach is used in this study to identify the predictors of specific support services, and to develop a disability policy brief. The illustrations of the results of each study, based on the CA approach, precede their discussion.

1.8. Measuring Disability

Significant disparities exist between the old and new paradigms of disability perspectives, mostly in the manner that disability is defined, conceptualized and measured (Pledger, 2003). The old paradigm viewed disability as a direct outcome of pathology and emphasized the specific disability characteristics and impairments (Mont, 2007). The new paradigm, the social model, sees disability as an outcome of the dynamic interaction of individual characteristics and environmental factors (Mont, 2007; Pledger, 2003). This new thinking informs the International Classification of Functioning, Disability and Health (ICF) framework, as a basis for measuring functional capacities and disability (Mont, 2007). However, apart from the ICF, other frameworks for measuring disability do not distinguish between two levels of disability. The ICF comprises a capacity qualifier to assess capabilities, and a performance qualifier to assess functioning. This is similar to the Capability Approach that allows disability assessment at two levels, which is, at the capability level [as potential disability] and at the functioning level [actual disability] (Mitra, 2006). The scope of the ICF in measuring deprivation of capability and functioning in an individual with impairment is, however, restricted to health-related issues (that is, activity limitation and participation restriction). In comparison, the scope of the CA in measuring deprivation of capability and functioning encompasses personal characteristics, an individual's resources, and the environment factors (Mitra, 2006; Robeyns, 2005). These are significant reasons why the researcher of this current study selected the CA as the most suitable framework to determine the prevalence of disability. In addition, it was the most suitable to determine the needs for, and utilization of, support services, as well as the predictors of utilization of support services to inform the development of a disability policy.

1.9. Statement of the Problem

Although Kenya recognizes the rights of PWDs, in the Disability Act (14 of 2003), as well as in Chapter 4 (Bill of Rights) of the new constitution (Republic of Kenya, Review Act No. 9 of 2008), it lacks an official policy on support services for PWDs. The Kenya Disability Act (14 of 2003) and Chapter 4 (Bill of Rights) of the new constitution of Kenya (Republic of Kenya, Review Act No. 9 of 2008) also do not mention support services among their core objectives (Korpinen, 2009; Guernsey, Nicoli & Ninio, 2007). Therefore, both documents are less aligned with the UN CRPD (UN, 2006), which Kenya ratified on 19th May, 2008 (minus its implementation protocol). The lack of an official disability policy, coupled with the high population growth, slow economic growth and development of social infrastructure and social services, has huge policy implications, specifically in the planning, funding and provision of support services that meet the needs of PWDs in the country. The national scenario may even be worse, given the paucity of information concerning the prevalence of disability, as well as the needs for, and utilization of, persons-with-disabilities-specific support services in Kenya. The predictors of the utilization of disability support services are also unknown. The World Report on Disability (WHO, 2011) highlighted that there is a general scarcity of internationally comparable data on the prevalence of the population with disabilities as well as the demand for, and supply of, disabilities-specific support services and assistance in low income countries (WHO, 2011). Consistent with this view, the 2009 Kenya Population and Housing Census conceded that it was difficult to describe disability in children, as well as in persons with cognitive and psychological impairments during census, though it estimated that 4% of Kenyans have disabilities (Republic of Kenya, 2010).

The lack of a disability policy and internationally comparable data on the burden of disability in Kenya implies that a significant amount of needs for support services among PWDs are being unmet in many contexts, as they are unknown to policy makers. It also implies that on-going PWDs programmes largely depend on political goodwill, and to some extent, charity. This trade-off may seriously affect those with disabilities, the majority of whom live on the margins of society. Because of unmet needs, PWDs continue to experience reduced functional capacity, illiteracy, inequality, poverty, poor quality of life and high morbidity rates. Therefore, determining the burden of disability, and exploring the persons-with-disabilities specific support services needs and utilization, as well as determining factors influencing the utilization of disability support services, while preparing a disability policy brief on support services (for Kenya), to inform future development of an empirically grounded model for the advocacy of support services for PWDs, is worthwhile. Research has revealed that the availability and accessibility of support services positively impact on PWDs' capabilities, performance, participation and other peoples' attitude (Simpson *et al.*, 2003). Additionally, disability alleviation models and strategies founded on capability theory (Mitra, 2006; Nussbaum, 2007) and research evidence have a greater chance of success (Madden *et al.*, 2011; Mitra, 2006).

1.10. Research questions

1. What is the prevalence of persons with disabilities among communities living in Nairobi, Muranga and Machakos Counties in Kenya?
2. What are the needs and the utilization of disability support services among PWDs living in Nairobi, Muranga and Machakos Counties in Kenya?
3. What are the predictors of the utilization of support services by PWDs living in Nairobi, Muranga and Machakos Counties in Kenya?

1.11. Aim of the research

The aim of the research was to determine the needs for, and utilization of, support services for persons with disabilities in Kenya; a study in preparation of a disability policy brief.

1.12. Specific objectives

1. To determine the prevalence of persons with disabilities among communities living in Nairobi, Muranga and Machakos Counties in Kenya.
2. To explore the needs for, and the utilization of disability support services among PWDs living in Nairobi, Muranga and Machakos Counties in Kenya.

3. To determine the predictors of utilization of support services by PWDs living in Nairobi, Muranga and Machakos Counties in Kenya.
4. To prepare a disability policy brief on support services in the Kenyan context.

1.13. Outline of the Chapters

Chapter 1 comprises the background of the study, justification for the study, problem statement, aim and objectives of the study. In addition, the conceptual framework of the study is described.

Chapter 2 contains the overall methodology for the mixed methods research. The procedure for each of the three studies conducted is described. Sample determination and recruitment of participants, inclusion and exclusion criteria, the instruments used and validation process, as well as the ethical considerations are described. Chapters 3, 4 and 5 are the sequential studies.

Chapter 3 consists of a quantitative study addressing objective one of the study, which investigates the prevalence of disability in Kenya. The background of the study, the methodology and the findings are described, as well as a discussion of the findings. A summary of the chapter is also provided.

Chapter 4 comprises an exploratory qualitative study, which addresses objective two of the study and sought to determine persons with disability support services needs and utilization in selected counties Kenya. The background of the study, the methodology, including sampling procedure, the findings are described, as well as a discussion of the findings. It concludes with a summary of the chapter.

Chapter 5 comprises a quantitative study, which addresses objective three of the study and sought to determine the predictors of utilization of disability support services in Kenya. The background of the study, the methodology, including sampling, questionnaire construction, piloting, reliability and validity tests and recruitment of study participants are described. In addition, the study findings, discussion and summary of the chapter, are provided.

Chapter 6 contains the disability policy brief in detail, as well as a summary of the chapter.

Chapter 7 comprises a summary of the study, the conclusion of the thesis and appropriate recommendations.

CHAPTER TWO

METHODOLOGY

2.1. Introduction

In this chapter, the researcher describes the overall research design and research methodology including population, sampling, data collection and data analyses. The overall research methodology was conceptualized in three phases. The first two phases describe the different research designs adopted for this current study, sequentially. Phase 1 describes a cross-sectional quantitative disability prevalence survey. Phase 2 comprises two studies, study 2A and 2B. Study 2A describes a qualitative study that explored the needs and utilization of support services by persons with disabilities that emerged during the survey of phase 1. Study 2B describes a cross-sectional quantitative survey to determine predictors of utilization of support services. The variables were factors identified during the qualitative data analysis of study 2A, as facilitating, or hindering, access to, as well as utilization of, the services that PWDs perceived as supportive. Finally, Phase 3 describes the methodological approach adopted to develop the disability policy brief.

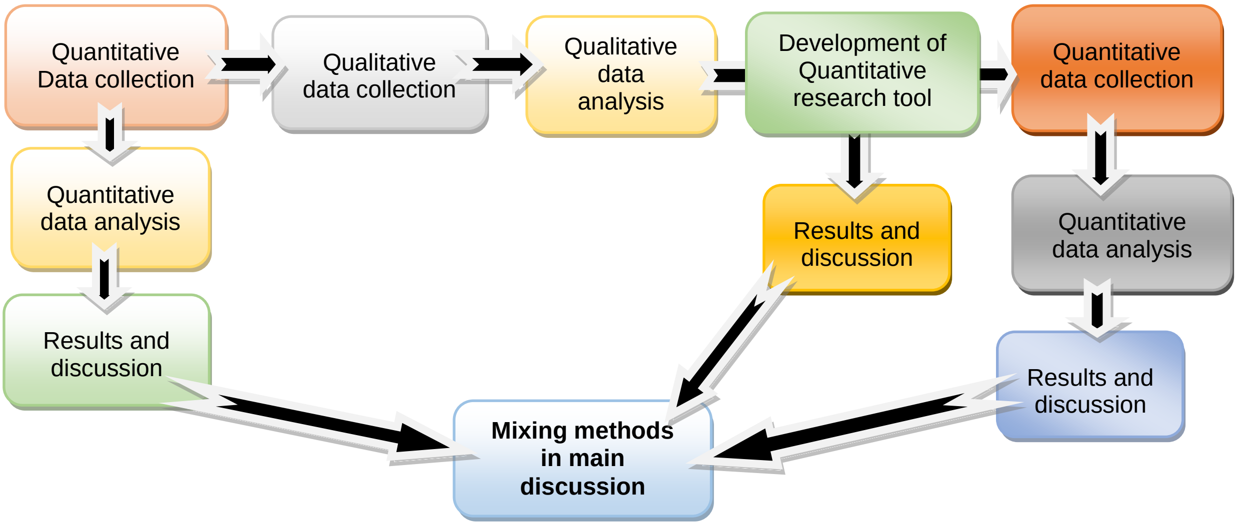
2.2. Overall Research Design

Overall, the research project used a sequential mixed methods multiphase design (Creswell & Clark, 2011: p. 185). In a sequential mixed methods multiphase design, one type of data provides a basis for the collection of another data type, with each new approach building on the findings of the previous data, to address a central research aim (Creswell & Clark, 2011: p. 100). As indicated by Onwuegbuzie and Collins (2007), as well as Cresswell, Fetters and Ivankova (2004), mixed methods research design goes beyond gathering quantitative and qualitative data. It provides for integration of data, relating or mixing data at some point in the research process to produce a more comprehensive analysis. In this design, the two methods are meant to develop each other.

Creswell (2009) describes three general strategies used in mixed methods research and continues to reveal the variations within them. The three strategies are the sequential, concurrent and transformative mixed methods strategies. In this current study, the sequential mixed methods, multi-phase design, with an exploratory strategy, was used. In the overall design, a quantitative data collection and analysis phase precedes a qualitative data collection and analysis phase, which, in turn, precedes a second quantitative data collection and analysis process. The second phase (qualitative) builds on the results of the first phase. The results of the first part of the second phase help to develop the third data collection and analysis process, which is quantitative and the second part of phase two. Therefore, the first part of the second phase is given more weight, generally, than the second and last part (Creswell, 2013: p. 211).This was considered as the most appropriate design for this study, because the primary focus of sequential mixed methods, multiphase design, with an exploratory strategy, is to explore a phenomenon that has not been researched before. It uses quantitative data to identify subjects for qualitative research and, subsequently, qualitative findings, to develop a measure for quantitative research.

The phenomenon in this current study refers to the prevalence of persons with disabilities, their needs for, and utilization of, disability-specific support services, as well as the predictors of the utilization of these support services, which are not well understood, and a paucity of literature exists, regarding the subject, in the selected counties, and Kenya at large. The design is useful for developing new psychological/assessment instruments (Hanson, Creswell, Clark, Petska & Creswell, 2005). In addition, Hanson *et al.* (2005) argue that the sequential explanatory and sequential transformative designs are valuable in explaining relationships and/or study findings; thereby helping researchers to understand a phenomenon that could be changing, while the sequential exploratory is useful for refining and testing emerging theory. Figure 2.1 illustrates the sequence followed in this study.

Fig. 2.1: Sequence followed in this mixed methods research design



The first phase used a quantitative method and the second phase used a qualitative method to collect data. The results of the second phase qualitative study were used to develop a quantitative data collection instrument, to be used to collect data in the final phase. In this current study, quantitative, qualitative, and quantitative data collected in phases one (see chapter 3), two (see chapter 4) and three (see chapter 5), sequentially [QUAN-QUAL-quan sequence], were used as the basis for developing the disability policy brief. The rationale for “mixing” is that neither quantitative, nor qualitative data are sufficient in isolation, to capture the trends and details of such a complex problem as PWD needs, motivations and utilization of support services (Hanson *et al.*, 2005).

The use of mixed methods in social science research, including physiotherapy, rehabilitation, health care and disability has increased over the last ten years (Hanson *et al.*, 2005; Morgan, 1998). Researchers of the mixed-methods research philosophy argue that the combination of both quantitative and qualitative methods in research could assist in answering complex problems, to gain a deeper understanding of the determinants of an outcome under examination (DeCuir-Gunby, 2008; Hanson *et al.*, 2005; Morgan, 1998), as well as corroborate findings. Social science researchers’ advocacy for mixed-methods is based on a view that combining the two approaches maximizes the strengths of both methods, leading to enhanced comprehension of the research problems, or phenomenon under examination (Creswell, 2013; Klassen, Creswell, Plano-Clark, Smith & Meissner, 2012; Cresswell & Garrett, 2008). This was the researcher’s motivation for adopting a sequential exploratory mixed-methods research approach in the overall research project.

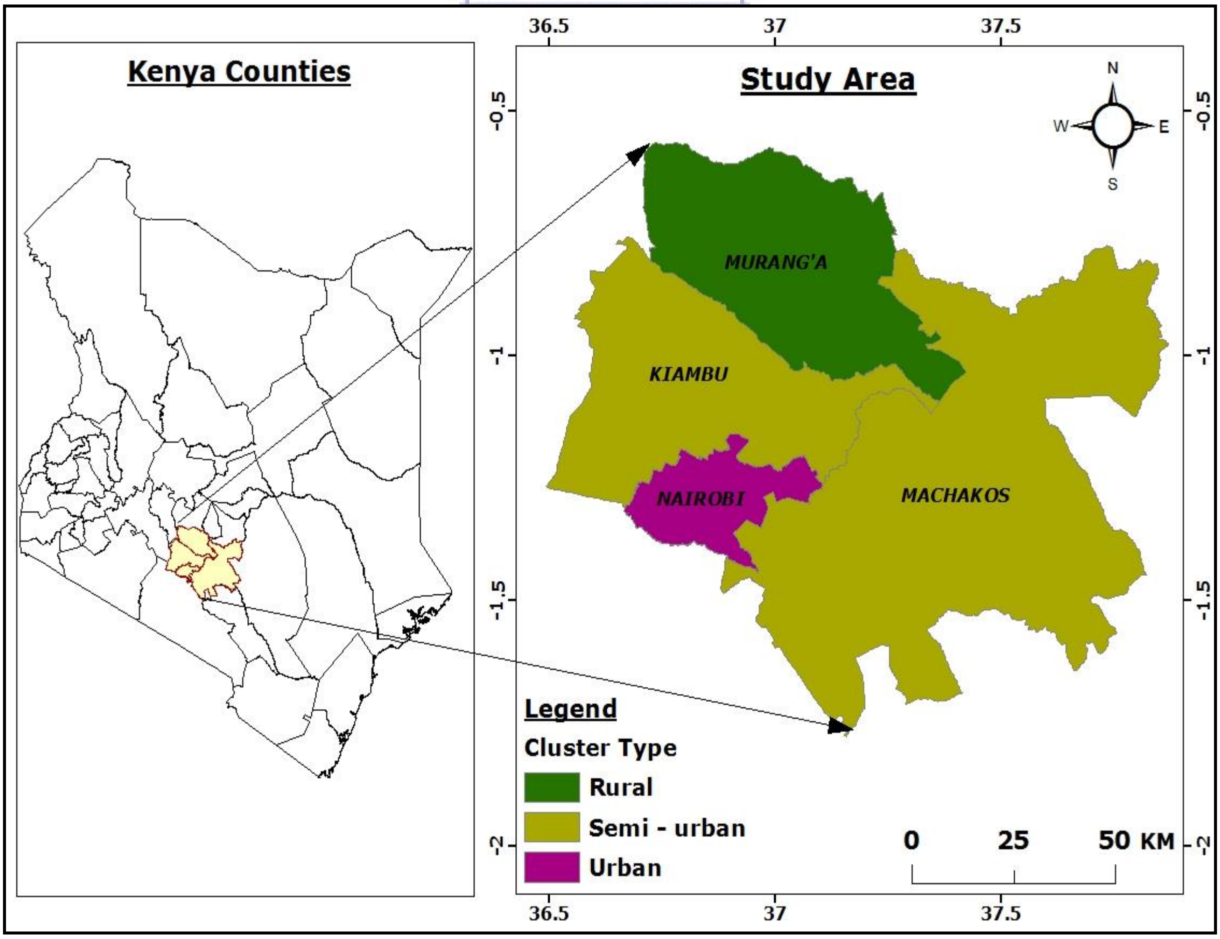
2.3. Research Settings

The study participants were drawn from rural and urban households in three of Kenya’s 47 counties, namely, Nairobi, Murang’a and Machakos Counties. The three counties were selected, using the simple random sampling method from three clusters of counties, stratified as urban, semi-urban and rural. The researcher wanted to establish whether there was a difference between the prevalence of disabilities in urban and rural settings (Peen, Schoevers, Beekman & Dekker, 2010). In the urban cluster, >50% of the population live in towns. In the semi-urban cluster, >25% but <50% of the population live in towns, while in the rural cluster <25% of people live in towns. A town is an area with many buildings (shops, places of work and places of entertainment, among others) where people live and work, has a name, defined boundaries and a local government, that is larger than a village, and, generally, smaller than a city (Hornby & Wehmeier, 1995). Table 2.1 summarizes the distribution of counties into urban, semi-urban and rural clusters. Figure 2.2 illustrates the map of Kenya and the boundaries of the 47 counties.

Table 2.1: Distribution of the counties into clusters

Type of cluster	Counties
Urban	Nairobi, Mombasa and Kisumu.
Semi-urban	Garissa, Isiolo, Machakos, Kiambu, Nakuru, Kajiado, Bungoma, Kisii, Kericho and Lamu.
Rural	Narok, Bomet, Uasin Gishu, Kwale, Nyeri, Nyamira, Kilifi, Tana River, Taita Taveta, Wajir, Mandera, Marsabit, Meru, Tharaka, Embu, Kitui, Murang'a, Makueni, Nyandarua, Kirinyaga, Turkana, West Pokot, Samburu, Trans Nzoia, Elgeyo Marakwet, Nandi, Baringo, Laikipia, Kakamega,Vihiga, Busia, Siaya, Homabay and Migori.

Figure 2.2: Map of Study Area



Nairobi County is urban with modern housing and informal settlements, while Murang'a and Machakos have urban-rural settings. Nairobi has a population of 3,138,369 people, covers an area of 695 square kilometres and has four districts (now sub-counties). It borders Machakos, Kiambu and Kajiado Counties and is linked to other parts of Kenya by major tarmac roads, a railway line and two airports, one of which is an international airport. Its economy is mainly industry-based (manufacturing, tourism, hotels, transport, education and international trade), and markets that sell farm produce. Nairobi has upmarket, middle class housing and designated informal settlements. The Kenya National Human Development Report of 2009 (UNDP Kenya, 2010) indicated that Nairobi has a lower Human Poverty Index [HPI] (17.6%) than Murang'a, with an estimated HPI of 24.2%. Murang'a County comprises 3 districts, with a population of 942,581 people, the majority (83.7%) of whom live in rural settings. It has middle class housing located in towns, where <16.3% of its population lives. Its economy is supported mainly by agriculture, namely, Coffee, tea and subsistence farming. The county occupies approximately 2,559 square kilometres. Machakos County comprises 4 districts, occupying 6,208 square kilometres of semi-arid and unproductive land, and is home to 1,098,584 people, some (48%) of whom live in rural settings. Its estimated HPI is 33.6% (UNDP Kenya, 2010). The county borders Nairobi, Murang'a and four other counties. Its economy is mainly agricultural, namely, Coffee farming, bee keeping, dairy and subsistence farming. Population densities for Nairobi, Murang'a and Machakos are 4515; 368; and 177 people per square kilometre, respectively.

The Human Poverty Index is used as a human development indicator (HDI) that includes poverty dimensions, such as capabilities of schooling, access to health care and clean water, and nutrition of under-5-year-olds, among other things (Sumner, 2007; Ranis, Stewart & Samman, 2006). In this current research project, poverty dimensions, such as, the lack of education and inaccessibility to health care, among other supportive services, were points of research interest.

2.4. Phases of the study

Each section describes the study design and method, study sample and sampling method used, as well as the inclusion and exclusion criteria. Data collection instruments, procedure, methods, management and analysis are also presented. The research setting (see section 2.3) and ethical considerations (see section 2.5) are the same for all three population-based phases and, therefore, are described for the overall research project.

2.4.1. Phase one

This section presents the methodology used to determine the proportion of PWDs in the selected counties, which reflects the prevalence of disability in Kenya. As reported in the literature, the prevalence of disability in Kenya varies across studies. Some estimate that 4% (Republic of Kenya, 2010), 10.3% (Mitra & Sambamoorthi, 2014) and 15.2% (WHO, 2011) of the Kenyan population live with disability. Therefore, conducting a cross-sectional survey was appropriate for this current research project.

2.4.1.1. Study Design

A cross-sectional survey, utilizing quantitative methods, was conducted in phase one. A cross-sectional study is a survey used to determine the prevalence of an outcome of interest, at a point in time, in a given population, where the participants included, are selected from a sampling frame (Levin, 2006; Mann, 2003). Prevalence estimates provide a measure of societal disability burden by indicating how many people in a population have disabilities within a defined period (Steiner *et al.*, 2003). According to Levin (2006), the prevalence of an occurrence in a given population, the result of which is counts (numbers), can best be approached via a cross-sectional study. One major advantage of cross-sectional studies is that they are conducted at one time, or over a period (Mann, 2003). Simkiss, Blackburn, Mukoro, Read and Spencer (2011), as well as Mann (2003) posit that cross-sectional surveys are relatively cheap to organize and are valuable in establishing the prevalence of a characteristic in a target sample population. In addition, Mann (2003) notes that cross-sectional studies consume less time, compared to both cohort and case controlled studies, which take longer to complete. Therefore, a cross-sectional quantitative study approach was selected, as it was the most appropriate research method to establish the prevalence of disability in the populations of the selected counties. Additionally, this current study is population-based, and can be best approached via a cross-sectional study, whose findings could be generalized to the target population.

2.4.1.2. Study population

The study population approached to determine the prevalence of disability are all the people living in Nairobi, Murang'a and Machakos Counties of Kenya. The inhabitants are from a cross-section of cultural backgrounds. The majority of the population speak Kiswahili and various local languages, while some also speak English.

2.4.1.3. Sampling method

A multi-stage sampling method was used in the first phase of this study. Multi-stage sampling includes stages of cluster random sampling, followed by simple random sampling at village level (Onwuegbuzie & Leech, 2007). It involves the repetition of two basic steps, which is listing and sampling. In each stage, the cluster gets smaller in size, and finally, subject sampling is applied (Acharya, Prakash, Saxena & Nigam, 2013). For example, during a national survey, a random number of sub-counties are selected from all counties in the country, followed by a random number of districts, locations, sub-locations and villages. Each stage is preceded by obtaining a list of names for the areas, writing the names on small pieces of paper that are folded, mixed and random sampling is performed. In the third and final stage, houses are selected. All the houses, which are the final units of sampling, are surveyed (Acharya, Prakash, Saxena & Nigam, 2013; Onwuegbuzie & Collins, 2007).

Multi-stage sampling is preferred for use, when a complete database of members of a target population, is lacking, or is inaccurate (Acharya *et al.*, 2013). The method was appropriate for use in this current study because the objective was to generalize the findings to the entire Kenyan population (Onwuegbuzie & Leech, 2007).

2.4.1.4. Sample Size Determination

In determining the sample size, a researcher not only is concerned with the purpose of the study and the population size, but also the method to determine the sample size (Barlett, Kotrlik & Higgins, 2001). Al-Subaihi (2003) summarizes methods used to determine the sample sizes in surveys as including, census for small populations, sample sizes from similar studies, published tables, and formulas. Despite cost considerations making this difficult, a census of the entire population is the most common approach used in small populations (Al-Subaihi, 2003; Israel, 1992). A second approach is the use of the same sample size, as in similar studies to the one being planned (Al-Subaihi, 2003; Israel, 1992). This is not without the risk of repeating errors made in determining sample sizes of the reference studies (Al-Subaihi, 2003; Israel, 1992). A third approach is to use published tables, that provide the sample size for a given set criteria (Israel, 1992; Al-Subaihi, 2003). These criteria combine the level of precision (the allowable sampling error), confidence level, and degree of variability in the attributes being measured (Filmus, 2010; Israel, 1992). The level of confidence, or risk level, is based on notions embraced in the Central Limit Theorem (CLT). The main idea in the CLT is that the average value of an attribute obtained by repeated sampling of a population is equal to the true population value (Filmus, 2010; Israel, 1992). A fourth approach to determine sample sizes is the application of one of several formulas, as appropriate (Israel, 1992). These formulas encompass most of the probability sampling designs and are applied to either assess the population prevalence or the mean (Al-Subaihi, 2003).

For this current study, the Cochran 1963 Equation was used to calculate the sample sizes (Israel, 1992) in three large populations (over 10,000 people), each with unique characteristics. Section 3.7.4 summarizes the approach followed to determine the sample size in this current study.

2.4.1.5. Inclusion and Exclusion criteria

To be ethically defensible the characteristics of the participants have to be relevant to the objective of the study. According to Robinson (2014), the suitability of the participants must be supported by the rationale for inclusion that rests on reasons that could be universally agreed upon by research experts. Therefore, any researcher, or team of researchers, must clearly describe the inclusion criteria and exclusion criteria, in detail sufficient to delineate the study population (Luborsky & Rubinstein, 1995).

As this was a household survey, all persons living in selected households were recruited to participate voluntarily in the study. Both males and females were represented. Since literacy among adults in Kenya is above average [60%] (UNDP Kenya, 2010), and the setting was in households, the principal researcher anticipated that many of the participants could read, write and speak fluent Kiswahili and English. The guardians of the participants aged less than 18 years, as well as of those, who could not communicate fluently, due to health, cognition and related problems, were to act as proxies. All persons unwilling to participate, were absent from their houses during the study period, and those aged less than 18 years, who declined to assent, and whose guardians failed to consent to their participation, were excluded from the study.

2.4.1.6. Instrumentation

Primarily, the desire to use a standardized instrument and method to collect accurate and consistent data, which describes the prevalence of disability that is comparable internationally, informed the choice of the instruments to use. Based on the objective of this current study to determine the prevalence of disability, the Washington Group and UNICEF/WG questionnaires (specific to each age category) were more appropriate (Madans, Loeb & Altman, 2011). The Washington Group and UNICEF/WG questionnaires, structured within the ICF framework, have proven to produce internationally comparable data (Miller, Mont, Maitland, Altman & Madans, 2011). The WG questions assess whether PWDs participate, to the same extent as persons without disabilities, in education, employment and family life (UN, Economic and Social Council, 2008). A brief motivation for the choices of the instruments and their properties follows hereafter.

2.4.1.6.1. Household Questionnaire

This interviewer administered questionnaire (Appendix 3) measured the household characteristics. The following variables were assessed: house hold size, ages of members of the household and their marital status, type of housing, residence, water and source, volume of water, sanitation and number of toilets.

2.4.1.6.2. The WG and UNICEF/WG survey questionnaires

Prevalence rates from across the world have been criticized for their large variation, for instance from 4% in Kenyans (Republic of Kenya, 2010) and 5% in South Africa (Statistics South Africa, 2001), to 24% in New Zealand (Statistics New Zealand, 2014) and 22.2% in the USA (Courtney-Long *et al.,* 2015). This variability emanates from several factors, such as, differing definitions of disability between countries, different methods of data collection, and a variation in the quality of the study design (Mont, 2007), including the criteria used in each country to select participants for the its survey (Sabariego *et al.,* 2015). Palmer and Harley (2011) assert that low and medium income countries applied an impairment measure, while high-income countries applied a functioning measure. These factors have an important impact on reported disability prevalence and the comparability of this prevalence cross-nationally (Sabariego *et al.,* 2015; Mont, 2007). As Kenya is part of the global community of nations, there was need to determine disability prevalence data that is understandable and comparable to those of other countries, using a standardized measure. In addition, it was important that the standardized measure is able to detect prevalence by thresholds, representing those with mild, moderate and severe disabilities. Therefore, the Washington Group (WG) and the UNICEF/WG child modules were the most appropriate measures for this current study.

The Washington Group (WG) on statistics was founded in June 2000 to design a set of census questions to ensure that census disability data became internationally comparable (Miller *et al.,* 2011). This followed several international meetings of the WG members, and its outcome was the WG six questions. The questions were designed to identify most of the persons in the population at greater risk of disability (participation restriction) from those at no risk. The questions cover six domains of functioning: seeing, hearing, walking, cognition, self-care and communication (Madans, Loeb & Altman, 2011) [Appendix 1A]. Each question scale has four response categories: (1), No, no difficulty, (2) Yes, some difficulty, (3) Yes, a lot of difficulty, and (4) cannot do it at all (Madans *et al.,* 2011). This scale is designed to detect the severity of disability, using the response categories, in order to provide the full spectrum of functioning from mild to severe. The application of the WG questions in disability prevalence studies has revealed that it is able to capture several possible disability prevalence estimates, ranging from mild to severe disability prevalence (Madans *et al.*, 2011).

The WG six questions have been adopted by the Washington Group and incorporated in the principles and recommendations for population censuses by the United Nations (Madans *et al.*, 2011). The WG six questions were adapted and operationalized in a 2006 Zambian survey (Loeb, Eide & Mont, 2008). They have also been applied in a population survey across four countries, namely, Sudan, Namibia, Malawi and South Africa, to determine the prevalence of specific barriers, and the effect of disability on barriers for accessing health care (Eide *et al.*, 2015). However, the WG questionnaires, including the extended sets, have not yet been validated, but have been undergoing cognitive and field testing, in multiple languages and locations (Madans *et al.*, 2011).

2.4.1.6.3. The Washington Group (WG) Questionnaire

The Washington Group’s [WG] six questions are used for screening all adults, with a long set for people identified with functional restrictions. The instrument consists of two sections, section A has demographic items (age, gender, education level, marital status, employment status and annual income), and section B comprised the Washington group (WG) questionnaire for adults – a short version for screening, and a long version for those with disabilities (Appendices 1A,B,C & 2A,B,C).

2.4.1.6.4. UNICEF/WG child modules (5-17 year-old)

The UNICEF/WG children module for 5-17-year-old children consists of two sections. Section A: comprised demographic items (age, gender, education level of guardian, marital status of guardian, employment status of guardian and annual family income), and section B comprised UNICEF/WG children module for children aged 5-17 years, short version, as well as the long version (Loeb, *et al.*, 2017), which was used on individuals, identified with disability(ies),, after informed consent to participate in the study was obtained from the guardian.

The UNICEF/WG survey questions enquire about child functioning and disability, referring to difficulties the child experiences with certain activities, such as seeing, hearing, walking, self-care, communication, being understood, learning, remembering, anxiety and depression, behaviour control, attention, rationality, as well as making friends.

The UNICEF/WG children questionnaires, including the extended sets, have not yet been validated, but have been undergoing cognitive and field testing in multiple languages and locations (Madans *et al.*, 2011). For this current study, a trained multilingual translator translated the questionnaire and consent forms from English into the main language of the selected communities (Kiswahili) and back.

2.4.1.6.5. UNICEF/ WG children module (2-4 years-old)

This instrument consisted of two sections. Section A: comprised the demographic items (age, gender, education level of guardian, marital status of guardian, employment status of guardian and annual family income), and section B comprised the UNICEF/ WG child modules for children aged 2-4-years, short version, as well as the long version, which was used on individuals, identified with a disabilities, after informed consent to participate in the study was obtained from the guardian. The UNICEF/WG survey questions enquire about child functioning and disability, referring to difficulties the child has in certain activities, such as seeing, hearing, walking, being understood, learning and playing.

2.4.1.6.6. Translation

Prior to the commencement of the data collection, the adopted study questionnaires needed to be translated. The translation and adaptation of the self-administered questionnaires in a country, other than the original source, is conducted to achieve equivalence between the original source and target country version of the questionnaire (Weeks, Swerissen & Belfrage, 2007; Beaton, Bombardier, Guillemin & Ferraz, 2000; Johnson, 1998; Brislin, 1986). According to Beaton *et al.* (2000), the questionnaire items should not only be translated into the target language, but also adapted culturally, to preserve the content validity of the instrument, at a conceptual level between the different cultures. In addition, as a measure to insure the achievement of equivalence of the translated questionnaires, back translation is usually performed. Back translation is used in survey research to compare/contrast the back translated version, with the text version from the source (Harkness & Schoua-Glusberg, 1998). Back translation is regarded as a source of information on the quality of the translation (Harkness & Schoua-Glusberg, 1998). One major advantage of back translation is that a good back translator will resolve problems, which are actually present (Harkness & Schoua-Glusberg, 1998; Brislin, 1986). Additionally, tests to evaluate the psychometric properties of the adapted questionnaire are recommended after the translation is completed (Beaton *et al.*, 2000).

In this current survey, the households' questionnaire, constructed by the principal researcher, and the WG/UNICEF questionnaires adopted in the study, were translated by two multi-lingual translators, from English into the main language (Kiswahili) of the selected communities (and back), which assured content validity of the translations and enhanced the comfort of the participants.

2.4.1.7. Validity and reliability of WG and WG/UNICEF Questionnaire

The WG questions' field testing and use in more than 50 countries, on all continents, has confirmed that they produce internationally comparable data (Madans, Loeb & Altman, 2010; Madans, Loeb and Altman, 2011). Currently, the WG questions are undergoing cognitive and field testing, in multiple languages, in several European countries, including France, Italy, Portugal, Spain, Germany and Switzerland (Madans *et al.*, 2010; Madans, et al., 2011). Canada, South Africa and the USA have already completed cognitive surveys of the long set WG questions (Madans *et al.*, 2011).

To ensure that the *WG* and *WG/UNICEF Questionnaire* were suitable for use in this current study, they were subjected to construct and content validity assessments. *Construct validity* is the degree to which a questionnaire, or survey tool, measures the target construct (Haynes, Richard & Kubany, 1995). The term "construct" denotes the concept, or theorized attribute, that is the focus of the measurement. *Content validity* is the degree to which components of a questionnaire, or survey tool (items, response format and instructions), represent the construct in focus, which is intended for a specific assessment purpose (Cook & Beckman 2006; Haynes, Richard & Kubany, 1995). Therefore, the principal researcher consulted expert reviewers in the field of this current study, throughout the adaptation process (DeCuir-Gunby, 2008: p. 132).

Cronbach and Meehl (1955) assert that experts in a field of the study are required, when the questionnaire, or survey tool, is to be interpreted as a measure of some attribute not operationally defined. According to Cronbach and Meehl (1955), as well as Haynes *et al*. (1995), content validation is achieved through expert acceptance that the universe of content, defining the variable being measured, is adequate (Cronbach & Meehl, 1955). Experts in a field of study provide scientific support and advice on the research questionnaire, or survey tool, content specificity. In this current study, expert reviewers in the field of the study (disability) provided feedback concerning the content validity of the questionnaires. The rationale for their combined expertise comprised, but was not limited to, research, publications and teaching, as well as international consultancy and contribution in disability policy issues. The expert reviewers concurred that the questionnaires appeared to be valid, in terms of their content, and only suggested some minor changes, which were made.

A second aspect in research questionnaire preparation is its reliability. Reliability summarizes a questionnaire's consistency (Andresen, 2000). According to Cook and Beckman (2006), as well as Andresen (2000), the reliability of a research questionnaire is confirmed by the reproducibility of the scores, from one administration to another, when no real change has occurred; one example being the test-retest and inter-rater reliability. As a degree of agreement, the intraclass correlation (ICC) is routinely used to test reliability (McDowell, 2006: p. 41; Andresen, 2000). In the absence of evidence of a research questionnaire's repeatability, reliability tests of the statistical internal consistency of its scales (e.g. alpha coefficient, Cronbach Alpha) augment its reliability. In this study, the principal researcher conducted a pilot study to assess the reliability of the questionnaires.

2.4.1.8. Pilot study

A pilot study of the translated instruments (for quantitative and qualitative surveys) was conducted with 39 eligible volunteers, with/without disabilities in Kiambu County, between November 2014 and December 2014, to ensure valid and reliable results were obtained, and errors of translation corrected, before the tools were used in the main study (See results in 3.3.5.2 of Chapter 3). A pilot study is the most common technique used to polish research instruments, such as questionnaires and interview schedules (Sampson, 2004), as well as to identify potential problems that are likely to be encountered during data collection (Van Teijlingen, Rennie, Hundley & Graham, 2001).

Piloting also helps to uncover logistical problems that could affect the survey process, such as the perceptions of local language interpreters and research guides, including poor recording and response rates (Van Teijlingen *et al.*, 2001). Therefore, the data gathered by the principal researcher and research assistants, in each setting, was compared, to ensure inter-rater reliability.

After the pilot study, the principal researcher held a one hour meeting with the research assistants to reflect on the challenges that had been encountered. The alterations made to the questionnaires were also communicated to the research assistants.

2.4.1.9. Research assistants

The recruited research assistants received 5 days training on the role of a research assistant, ethics and code of conduct, consent seeking, study instruments and the logistics of data collection, mock FGD and Key Informant interviews, role-play exercises and data capturing. Hobson, Jones and Deane (2005) posit that a research assistant's role is important to research efforts, given that academics, as scientists, are time-poor, while research is a time intensive enterprise. Therefore, scientists usually require extra hands to assist with the administration of the survey instruments. In this current study, local language interpreters, who were fluent in English and Kiswahili, as well as a sign language interpreter, were recruited and trained, in advance, on the purpose of the study and the aim of the interviews. In addition, they were instructed to preserve confidentiality.

2.4.1.10. Data collection procedure

The principal researcher and the research assistants, accompanied by village elders (acting as guides) and a local language interpreter, carried out fieldwork for this study in Kibra, Mathioya and Ndithini divisions in Nairobi, Murang'a and Yatta sub-Counties in Kenya. (See 3.7.6 for the procedure of the data collection).

2.4.1.11. Data analysis

The data were captured on a spread sheet, using the Microsoft Excel programme, in preparation for the analysis. A variable on disability status was created during the data entry to differentiate between those, who had disability, and those without disability. Data values were entered as 1= Yes (as having disability), 2= No (without disability). The data were recorded from question responses into meaningful prevalence variables. Thereafter, it was imported into the Statistical Package for Social Sciences (SPSS) version 21.0, which was used for the analysis of the quantitative data. Descriptive statistics were calculated to determine the frequency of disability status, as well as frequencies of the different demographic variables. Descriptive statistics entails measures of distribution of a population with a characteristic of interest to the research (Bickel & Lehmann, 2012). These measures include measures of location, such as the mean and median, as well as measures of scale, such as standard deviation and interquartile range (Bickel & Lehmann, 2012). After the descriptive statistics were analysed, the frequency of disability status and demographic variables were presented, using summary tables and expressed in percentages and means. The prevalence of disability was determined as a percentage of all the participants in the study. A Chi-square test was used to establish whether there was any association between "having a disability" and selected demographic characteristics. According to researchers, the Chi-square test is a suitable method for establishing association between variables, using frequency data (Pretorius, 1995).

2.4.2. Phase two

This section and the one that follows used a mixed method exploratory sequential design. The design was chosen because it explores the problem and seeks to generalize the results (Creswell & Clark, 2011: p. 71). Phase two comprises two parts, namely, 2A, an exploratory qualitative study that explores the needs of persons with disabilities, and the utilization of specific support services, as well as the development of a quantitative research tool, for use in part 2B, which is a quantitative study, to determine the factors that predicted the utilization of support services among the PWDs in the selected counties.

2.4.2.1. Phase two: Part 2A

Pope and Mays (1995) describe qualitative research as the development of concepts, which help the researcher to recognize social phenomena in usual, rather than experimental settings, by emphasizing the meanings, experiences and opinions of the participants. In this current study, the understanding of the phenomena (participants experiences and key informants' views on the needs of PWDs for support services, as well as factors that influence their utilization) was enhanced by the use of quotes, describing needs, experiences, and factors that influence actual utilization, followed by the quantitative results (determinants of the utilization of support services) presented in chapter 5.

This current study aims to explore the needs of PWDs for what they viewed as support services, as well as the factors they felt influenced the actual utilization of those support services in the selected counties in Kenya. As mentioned in the background, the environment in which PWDs and those without disabilities live influences the accessibility and utilization of basic services, as well as equality among people (Bottari, Lamothe, Gosselin, Gélinas & Ptito, 2012; WHO, 2011; Nisbet *et al.*, 2006, Havercamp *et al*, 2004). The paucity of information on the needs of PWDs, which they view as support services, informed the selection of a qualitative study approach for this part of the overall research project.

2.4.2.1.1. Study Design

The study adopted an exploratory qualitative approach, integrating data from focus groups discussions (FGDs) among the PWDs, as well as key informants (KIs), which included a Physiotherapist, leaders of organizations for PWDs, special education teachers and a social worker. The integration of data from the FGDs and the KI interviews in qualitative surveys, helps to improve data, reduces risk of bias, and allows a better assessment of the phenomenon (DeCuir-Gunby, 2008; Onwuegbuzie & Leech, 2007). It also helps to compare the consistency of the responses from the FGD and KI interview data (DeCuir-Gunby, 2008: p. 132). In addition, focus group discussion (FGD) and key informant interview research techniques (that use open-ended questions) are frequently used to collect qualitative information concerning a phenomenon under exploration (Creswell & Garrett, 2008; DeCuir-Gunby, 2008: p. 129). This design was chosen because of the need to explore a deeper and broader range of the views, as well as perceptions of PWDs and stakeholders, concerning the need, access, and utilization of disability support services.

2.4.2.1.2. Sampling Method

In this study, purposive sampling was used to recruit 52 PWDs from among those identified during the prevalence survey. Purposive sampling is a non-probability sampling technique for selecting information-rich subjects, when the goal (of the study) is to gain insight into a phenomenon. The method permits the researcher to carefully select, a sample that is representative of the larger study population’s characteristics (Teddlie & Yu, 2007). Researchers find that the technique helps to maximize the understanding of underlying phenomena (Onwuegbuzie & Collins, 2007). Onwuegbuzie and Collins (2007: pp. 285-6) observed that many mixed methods researches utilize some form of purposeful sampling and provides 19 purposive sampling schemes. These include, maximum variation, homogenous, critical case, theory-based, confirming/disconfirming, snowball/chain, extreme case, typical case, intensity, politically important case, random purposeful, stratified purposeful, criterion, opportunistic, mixed purposeful, convenience, quota, multi-stage purposeful random and multi-stage purposeful. The description of each scheme is beyond the scope of this chapter. DeCuir-Gunby (2008: p. 129), as well as Onwuegbuzie and Collins (2007) posit that the purposive sampling technique is commonly used to recruit information-rich subjects for FGDs and as key informants. In this study, homogeneity and critical cases (subjects whose insight into the phenomenon are compelling to the researcher) were important purposive sampling characteristics for recruiting participants into this current study (Onwuegbuzie & Leech, 2007; Halcomb *et al.*, 2007; Onwuegbuzie & Collins, 2007). Therefore, the researcher recruited homogenous groups of participants for focus group discussions (FGDs) from the participants (persons) with disabilities (PWDs), identified in the initial survey, and persons, with at least five years' of working experience with or for PWDs, as key informants (as critical cases).

2.4.2.1.3. Study Participants

A targeted, purposive sample of participants, comprising 52 persons with disabilities, was organized into six focus groups, each with 8-10 PWDs of both sexes. According to Onwuegbuzie and Leech (2007); Powell and Single (1996), as well as Morgan (1996), ideal focus group sizes should comprise 6-10 homogeneous strangers as participants. However, other researchers argue that 4-12 participants are acceptable (Halcomb, Gholizadeh, DiGiacomo, Phillips & Davidson, 2007). Additionally, researchers recommend that in exploratory studies, fifty participants, overall, would provide broader deviations and sufficient variations, regarding an outcome of interest in the research (Malterud, Siersma & Guassora, 2015). Therefore, the essence of recruiting >50 participants in the study was to attain a minimum recommended sample, and to collect data for the whole spectrum of the outcomes and factors being explored.

More often the focus group discussion is paired with the in-depth or individual interview, because the latter has more depth and breadth coverage than the former (Onwuegbuzie & Leech, 2007; DiCicco-Bloom & Crabtree, 2006; Morgan, 1996). Therefore, in qualitative research, data is collected from diverse aspects to create a deeper and broader understanding of a phenomenon under exploration (Onwuegbuzie & Leech, 2007). For this reason, six key informants with/without disabilities participated in this exploratory study for their insight of the phenomena under research.

2.4.2.1.4. Data Collection Instruments

Two instrument guides, based on the Capability Approach Framework were constructed and utilized. The Capability Approach was developed in welfare economics, to analyse issues related to standard of living and well-being, by Amartya Sen (Mitra, 2006). As a framework, the Capability Approach helps to explain how disability may result from a combination of the individual's characteristics, resources in his/her control (commodities), and the individuals' environment (Mitra, 2006). One of the guides was used to steer the focus group discussions (Appendices 4A[i] & 4a[ii] and another, the key informants' interviews (Appendix 4B). A short questionnaire, designed to collect only demographic data, was distributed to every FGD participant and key informant. The two guides helped to gather information about the needs for, access to, barriers to, and utilization of disability support services, technical aids and personal assistant/caregiver services. The principal researcher consulted expert reviewers in the field, throughout the construction of these guides.

2.4.2.1.5. Trustworthiness of collected data

Trustworthiness is described by Schwandt, Lincoln and Guba (2007); as well as Golafshani (2003), as establishing the "truth value" of the study, which are its credibility, confirmability, consistency and transferability. To ensure trustworthiness, the principal researcher and research assistants verified the accuracy of the data recorded, during and after the data collection process. The principal researcher and research assistants read the handwritten data to the focus group members, to confirm that they accurately described what the participants had said. The study clearly described the context of the fieldwork sites; type of participants, methods used to collect data, and demonstrated that the findings emerged from the data, and not the researcher's biases.

Following the recommendations of Schwandt, Lincoln and Guba (2007), to ensure trustworthiness of the qualitative data (its credibility, dependability, transferability and confirmability), the principal researcher retained an audit of the process trail and ensured that the presentation was a true picture of the problem studied. To ensure the trustworthiness of the qualitative data, the criteria of credibility, dependability, transferability and confirmability were observed as follows:

- **Credibility:** This is comparable to internal validity and proves that the enquiry was directed in a way, which ensured that the subject of inquiry was truthfully identified and described (Schwandt, Lincoln & Guba, 2007). In this current study, the FGDs' guide and Key informants' interview guide were developed after the researcher conducted a thorough literature search to detect what most PWDs have described as needs, and viewed as important support services. Face-to-face debriefing sessions were conducted with colleagues in physiotherapy, disability, public health and community development teaching, at a local university, for their opinions on the kinds of questions that would be appropriate for FGDs and in-depth-interviews, relative to the study objective. The principal supervisor, two disability expert reviewers and the local co-supervisor were consulted on the construction of the guides. The project supervisor and co-supervisor also reviewed the transcripts and the researcher's interpretations.

  The FGDs and key informant interviews were conducted in languages that the participants were fluent in, audio-recoded and transcribed verbatim. According to Tong, Sainsbury and Craig (2007), audio-recording allows a much fuller record of the interviews, than merely taking notes; and it permits the researcher to focus in the interview. The FGDs and interviews were conducted in quiet rooms that were conductive to the context, non-threatening to participants, and offered adequate privacy, as well as comfort. The researcher ensured there were no interruptions. Prior to the interviews, all cell phones were powered-off, or put in silent mode.

The use of triangulation is not possible in sequential studies, in which the goal is development (Onwuegbuzie & Collins, 2007). However, it is considered as one way to enhance validity and reliability in qualitative researches. In this current study, the integration of information from both FGDs and Key informants, made the data more informative.

- **Dependability:** This is comparable to reliability, which is the evidence that, if the enquiry was repeated with similar participants, in the same context, its findings would be similar (Schwandt, Lincoln & Guba, 2007). Since there can be no validity without reliability, a demonstration of credibility is sufficient to establish the existence of dependability (Schwandt, Lincoln & Guba 2007; Rolfe, 2006).
- **Transferability:** This is similar to external validity and reveals the extent to which the results can be applied in other settings, or with other subjects (Rolfe, 2006). In this current study, the participants were recruited purposively, to ensure that their characteristics represented those of the larger population. To ensure sufficient detail and accuracy, an abundant account of the results was provided, using verbatim quotes to preserve the meaning of the participants' responses.
- **Confirmability:** This is analogous with objectivity in the study, or the degree to which the results are in line with the focus of the enquiry and not the researcher's biases (Schwandt, Lincoln & Guba 2007; Rolfe, 2006). In this current study, despite the researcher's past experience, having worked with PWDs, neutrality was maintained, first by including a physiotherapist, as a key informant. Secondly, the researcher consulted widely, during the construction

of the FGD and key informant interview guides, which assisted the researcher to remain, focused on the subject of inquiry.

2.4.2.1.6. Procedure

As mentioned previously, the research assistants were trained on how to become involved (their roles) in conducting the focus group discussions and the interviews of the key informants, including transcribing and confirming data with the participants. Key informants, defined as expert sources of information, are chosen for in-depth (in-person) interviews (DiCicco-Bloom & Crabtree, 2006; Marshall, 1996; Morgan, 1996). Interviews are face-to-face, in-depth interrogations to explore the experiences of the participants, regarding the needs for, and utilization of what PWDs consider support services to be. In-depth interviews are purposive discussions, in which participants are permitted to spontaneously express themselves on what they thought regarding needs for and utilization of what PWDs consider support services to be (DiCicco-Bloom & Crabtree, 2006). Social scientists believe in-depth interviewing is a deeper and broader way of identifying intricate experiences, beliefs and factors that influence peoples' behaviours, in relation to major life areas and socio-economic activities (DiCicco-Bloom & Crabtree, 2006). The principal researcher identified potential participants for the focus group discussions, during the household survey. These included both males and females. The principal researcher telephoned potential participants, and all agreed on a date, time and venue for the focus group discussions in each selected county. A week prior to the date for FGDs and interviews, reminders were sent out, and again two days prior to the date of meeting.

Before the commencement of the focus group discussions, or key informant interviews, the participants were provided with information, verbally and in a written format, concerning the purpose of the focus group discussion, or the key informant interviews, as well as the duration of each, respectively (Appendices 19A[i] & 19B[i]). During that briefing, each potential participant was informed that audio-recording and written notes would be used to collect data. The importance of keeping the deliberations confidential was also explained to the participants. Thereafter, the participants of the focus groups each signed a Focus Group confidentiality binding form (Appendices 19C &19D); however, the key informants only signed consent forms (Appendices 19A[i], 19A[ii], 19B[i] & 19B[ii]).

The research assistants audio-taped the discussions, and recorded pertinent information in their note books, of each focus group discussion and interview with the key informants, while the principal researcher conducted the FGDs or interviews. In this current study, the key informants were recruited from Ministry of Sports, Arts and Culture, Education, the National Council for Persons with Disabilities (NCPWD), and a physiotherapist. The principal researcher maintained a diary of appointments for interviews arranged between the research team and the participants, including dates, times and appropriate venues.

2.4.2.1.7. Data Analysis

The data were transcribed in a Microsoft Word document, cross-checked and verified, using handwritten texts and audio-recordings. After completing the transcriptions and translations, the researcher cautiously read all the transcripts, numerous times, to get a broad sense of the information, and to reflect on the general meaning of the participants' words (Braun & Clarke, 2006). Thereafter, the ATLAS.ti version 6.0 software was used to develop a code scheme, prior to the actual data analysis. The ATLAS.ti is a computer software programme used in social sciences to assist researchers with qualitative data analysis (Hwang, 2008). Leech and Onwuegbuzie (2011), note that ATLAS/ti software programmes, such as NVivo, only assist researchers with data analysis, while the thinking (to code and to retrieve data, or to provide code names), is the role of the researcher. According to Konopásek (2007) and La Pelle (2004), ATLAS.ti, used well, provides advantages, as it acts as a relational database, stores text, codes, memos and the information about the links between codes.

The process of preparing the code scheme involved forming a team, comprising the researcher and a social scientist, familiar with the ATLAS.ti software. Each coded a part of the data separately. Thereafter, a meeting was convened to discuss the code schemes generated by each member of the team. After two meetings, consensus was reached on a final coding scheme. The team strategy offered an advantage, as it brought an extra set of eyes to the study, while the researcher benefited from instant feedback, during the meetings. The steps followed in the analysis process included: creating codes, using an open coding software option; using the code manager to merge the codes (the code manager option helps to view the frequency of code while coding); and viewing the coding scheme graph in network view (Leech & Onwuegbuzie, 2011; Konopásek, 2007).

The ATLAS.ti version 6.0 software was used to access the Microsoft Word data files systematically. Using the code scheme, data coding and classification was performed, relative to the research objective. During analysis, the process involved constant comparisons, to detect divergent views from the participants, on any single issue. The integration of the data from the focus group discussions, with that of the key informants was undertaken with the same analytical rigor.

A thematic analysis approach was used, since it was considered the most appropriate for the current study. The approach seeks interpretations, and provides systematic elements to data analysis. It involves examining the qualitative data and analysing the frequency of a common theme, within one data set, as well as the whole data content (Coffey & Atkinson, 1996, cited by DeCuir-Gunby, 2008: p. 131). This process of coding, identifying, organizing and inter-relating codes into code families (themes), confers accuracy, clarifies intricacy and enhances the validity of the research findings (Powell & Single, 1996; Morgan, 1996).

Thematic Analysis offers the opportunity to understand the potential of the issue more widely (Yardley & Marks, 2004; Pope, Ziebland & Mays, 2000). Therefore, cross-thematic analysis was performed to gain an insight into the needs for, and the utilization of what PWDs perceived as disability support services in the selected counties. The findings of this exploratory study were used to develop a questionnaire, to assess the determinants of the utilization of support services in the selected counties, using quantitative methods.

2.4.2.2. Phase two: Part 2B

This particular section presents a quantitative study conducted after the exploratory qualitative study, as an attempt to determine the predictors of the utilization of support services by PWDs in the selected counties in Kenya. As mentioned in the background, there is paucity of information on whether or not PWDs need, or utilize what they considered support services and factors that influence their behaviour (WHO, 2011). This was the basis of preceding with a qualitative survey. A summary of the analysed qualitative survey data revealed that PWDs faced immense challenges, while searching for what they considered support services to be, including; a personal assistant, a sign language interpreter, education, healthcare, rehabilitation, assistive devices, social security (cash transfer), and employment. It also revealed that other challenges were prevalent, such as bad attitudes, inaccessibility, discrimination, incapacity, lack of assistive devices and affordability, unemployment, stigma, unfairness (inequity) and poverty to name but a few, and influenced the utilization of support services.

From the literature, Foley *et al.* (2012) observed that environmental factors, such as family factors, post-school services and inaccessible transport had an impact on the transition to adult roles. An implication for this current study was to assess whether the environmental and personal factors, identified in the qualitative part of phase 2, predicted the utilization of support services by PWDs. WHO-UNICEF (2015), Vanleit (2008) and Nussbaum (2007) noted that environmental factors facilitate, or hinder, functioning and well-being. Therefore, a quantitative study was appropriate in this part of the research project.

2.4.2.2.1. Study Design

A cross-sectional survey utilizing a quantitative design was conducted to determine the predictors of the utilization of support services. Data collected in cross-sectional studies have been used (in multiple regression analysis) to examine the predictor factors on various outcomes, for example, parenting stress (Åsberg, Vogel & Bowers, 2008). Other studies that had employed retrospective cohort design, for instance, Chen, Sung & Pi (2015), used it to examine factors associated with a live setting of traumatic brain injury patients, at discharge from inpatient rehabilitation (using logistic regression analysis). Hrastinski and Wilbur (2016) employed a retrospective study design to evaluate academic achievement of deaf and hard-to-hearing students, in an ASL/English bilingual programme, using a school database. In addition, Jang, Yun-Tung, Lin & Shih (2013) extracted data from the National Vocational Rehabilitation Services Documentary System, which contained demographic records, services records and employment outcomes on all clients receiving disability employment services (DES). Most other studies on predictors of outcomes have relied on secondary data, or extracted data, from archival databases, such as the United States Department of Education, Rehabilitation Services Administration (RSA form 911) case service report data for 2004 (Catalano, Pereira, Wu, Ho & Chan, 2006; Da Silva Cardoso *et al.*, 2007), and the RSA-911 data of 2005 (Dutta, Gervey, Chan, Chou & Ditchman, 2008). The RSA-911 data contains personal history, types of services, and employment outcome information on all clients receiving state vocational rehabilitation services in the USA.

The definition for a cross-sectional survey is stated in 2.4.1.1. In addition to this rationale, a cross-sectional quantitative study approach was selected, as it was the most appropriate research approach to determine the predictors of the utilization of disability support services, by the PWDs in this current sample. Many studies recommend parametric regression models as appropriate to evaluate outcome predictors (Wang & Lin, 2013; Sandberg, Kristensson, Midlöv, Fagerström & Jakobsson, 2012; Grill, Joisten, Swoboda & Stucki, 2007).

2.4.2.2.2. Population and Sampling method

The principal researcher used the database of the 155 persons found with disabilities in the first survey on the prevalence of disabilities, to purposively recruit respondents for the current survey. The database contained telephone contact numbers of household heads, county of residence and physical address (village and household) of the PWDs. The households were revisited; the purpose of the study was described to the PWDs, who were, again, requested to participate. After the PWDs consented, the principal researcher and research assistants completed the interviewer-administered questionnaire with them.

2.4.2.2.3. Data Collection Instrument

Based on the findings of the qualitative part of this phase, an interviewer-administered structured survey instrument was developed by the researcher. According to Creswell and Clark (2011), as well as Onwuegbuzie and Collins (2007), in sequential designs, the findings of an initial qualitative study, inform the development of an instrument for the quantitative study. The instrument developed from the preceding qualitative study, comprised two sections: section A contained demographic items (such as age, gender, marital and employment status), and section B contained 15 essential support services (referred to, elsewhere in the thesis, as outcomes). A list of possible factors influencing the particular outcome was compiled under each outcome (Appendices 5A & 5B). These were derived from the themes, and sub-themes that emerged from the participants (FGDs and key informant interviews) in the exploratory study (Phase 2, part 2A), as well as existing literature. Overall, 15 sub-scales were constructed. The instrument was piloted before being used to collect the quantitative data in this cross-sectional survey.

2.4.2.2.3.1. Pilot study

The draft predictors of the utilization of support services instrument was piloted with 9 eligible volunteers with disabilities, in Kiambu County, related to the time it took to complete, whether the respondents understood it, to ensure valid and reliable results were obtained, and errors in translation, which had to be corrected before the tool was used in the main study (See the results of the pilot study in section 3.7.5.2 of Chapter 3, and the rationale for pilot studies in section 2.4.1.8).

2.4.2.2.3.2. Validity and Reliability of the Scale

Cronbach’s Alpha and Intraclass correlation coefficients (ICC) were used to examine reliability of the scale. Cronbach’s Alpha is a popular psychometric measure for assessing the internal consistency of scales with numerous items (McGraw & Wong, 1996). A Cronbach’s Alpha score of >0.70 is deemed acceptable, and is good at >0.80 in social sciences (Gliem & Gliem, 2003). The intraclass correlation coefficient (ICC) is defined as a statistical measure of the prevalence of a variance that is attributable to the objects being measured (McGraw & Wong, 1996). To ensure that the questionnaire included good content, construct and face validity, relative to the research objective, the principal researcher regularly emailed and received feedback from expert reviewers in the field of study, throughout the drafting process. The validity of a research questionnaire is related to with whether it actually measures, what it was designed to measure (Onwuegbuzie & Johnson, 2006). Construct validity was also evaluated using the Exploratory Factor Analysis (see section 2.4.2.2.3.3) on subscale items (Williams, Brown & Onsman, 2010).

The reliability test, conducted to assess the correlations between survey items, revealed that they had high reliability (intraclass correlation coefficient [ICC] >.80), and the internal consistency was Cronbach α >.80 in 12 subscales, except in educational, social security and health information, in which the Cronbach’s Alpha coefficients were >.75. Cronbach’s Alpha coefficient of >.7 is regarded as indicative of acceptable internal consistency for the items in the scale (Gliem & Gliem, 2003). [See Table 2.2 below].

Table 2.2: Reliability of the determinants of the Utilization of Support Services Subscales

Title of Subscale	frequency (n)	intraclass correlation coefficient [ICC]	Cronbach α	p-value
Rehabilitation	12	.856	.856	.000
Assistive devices	12	.826	.826	.000
Educational services	9	.797	.797	. 000
Vocational Training	13	.935	.935	.025
Counselling for PWDs	13	.843	.843	. 000
Counselling for Parents/ Guardians	13	.807	.807	.000
Social security	10	.779	.779	.000
Health services	14	.875	.875	.000
Health information	9	.772	.772	.000
Faith Healer Services	11	.917	.917	.006
Legal advice / Justice	11	.871	.871	.000
Sign language Interpreter	8	.940	.940	.001
Personal assistant	10	.836	.836	.000
Independent living	9	.907	.907	.000
Transportation	8	.817	.817	.002

2.4.2.2.3.3. Exploratory Factor Analysis (EFA)

Exploratory factor analysis was performed to reduce the variables into key factors (groups of variables), which accounted for a substantial share of variation in the dataset. The result revealed the key factors influencing each of the 15 support services. Only the key factors that had three variables each, with loadings of .70, were retained for the multiple linear regression analysis.

- **Quality control**

  To determine the suitability of the data for factor analysis, prior to the extraction of the factors, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy, as well as the Bartlett's test of Sphericity were conducted (Williams *et al.*, 2010). The KMO was computed as follows:

$$\text{KMO} = \frac{\sum_S r_{ij}^2}{\sum_S (a_{ij}^2 + r_{ij}^2)}$$

Where $S = (i, j; i \neq j)$;

r_{ij} = is the correlation of variables i and j;

a_{ij} = the anti-image correlation.

The KMO findings were interpreted as characterized by the Kaiser, Meyer and Olkin measure of sampling adequacy (Dziuban & Shirkey, 1974), as follows:

Table 2.3: Interpretation of KMO values

KMO value	Degree of common variance
0.90 to 1.00	Marvelous
0.80 to 0.89	Meritorious
0.70 to 0.79	Middling
0.60 to 0.69	Mediocre
0.50 to 0.59	Miserable
0.00 to 0.49	Don't Factor

2.4.2.2.3.4. Bartlett's Test of Sphericity

The Bartlett’s Test of Sphericity examines the redundancy between the variables that can be summarized with a small number of factors (Yong & Pearce, 2013; Williams *et al.*, 2010). The test should be significant (p<.05), for factor analysis to be considered suitable (Williams *et al.*, 2010). The following is the Bartlett’s Test of Sphericity formula:

$$\chi^2 = -\left(n - 1 - \frac{2p+5}{6}\right) \times \ln|R|$$

- **Factor Extraction**

The aim of factor extraction is to reduce a large number of items into factors. The Principal Components Analysis method was used for factor extraction (Vyas & Kumaranayake, 2006; Williams *et al.*, 2010). Factor extraction is determined by three criteria, namely, the Eigenvalue >1 Rule; the Cumulative Percentage of Variance; and the Scree Plot Plot (Williams *et al.*, 2010; Costello & Osborne, 2005). Yong and Pearce (2013), as well as Williams *et al.* (2010) argue that multiple criteria are important in determining factor extraction. The criteria used in this current study are described as follows:

- ***Eigenvalue > 1 Rule*****:** All factors with an Eigen value above one were retained (Kaiser, 1960).
- ***Cumulative Percentage of Variance*****:** In this current study, cumulative percentage of variance is explained. No fixed threshold exists for this method, although certain percentages have been suggested for different fields (Williams *et al.*, 2010). According to Hair *et al.* (1995, cited by Williams *et al.*, 2010), in the fields of humanities and psychology, the explained variance is usually as low as 50%-60%.
- ***Scree Plot:*** The number of factors retained was the data points above the “break”. To determine the “break”, two lines were drawn, one horizontal and one vertical, starting from each end of the curve (Yong & Pearce, 2013).

- **Rotation**

The rotation method that was used in this current study is the Oblique (Oblimin) rotation method, with Kaiser Normalization. Factors were rotated for better interpretation (Costello & Osborne, 2005), as un-rotated factors are vague (Yong & Pearce, 2013). The aim of rotation is to achieve an ideal modest structure, with variable loading on as few factors as possible, but which maximizes the number of high loadings on each variable (Yong & Pearce, 2013).

2.4.2.2.3.5. Application of Exploratory Factor Analysis (EFA)

Exploratory Factor Analysis was used to identify a small number of latent dimensions (factors), which could explain the interrelatedness in the data given by the variables, in each of the 15 subscales (rehabilitation, assistive devices, educational, vocational training, counselling PWDs, counselling parents/family, social security, health, health information, faith healer, legal advice, sign language, personal assistant, independent living, and transportation) (Yong & Pearce, 2013). The fifteen (N=15) sets of variables were examined by subjecting them to the Principal Axis Factor (PAF) analyses, and the Oblique (direct oblimin) rotation method, with Kaiser Normalization; one group at a time (Williams *et al.*, 2010; Fabrigar, Wegener, MacCallum & Strahan, 1999). The Principal Axis Factor extraction method is recommended for extracting factors, whereas the Principal Component Analysis (PCA) is used to extract components (Yong & Pearce, 2013; Vyas & Kumaranayake, 2006). The PCA has been observed to over-inflate item loadings, compared to factor analysis, which threatens the generalizability of the results (Costello & Osborne, 2005). Costello and Osborne (2005) recommend the use of Principal Axis Factoring, with Oblique (direct oblimin) rotation, instead of orthogonal rotations, as it will reproduce an orthogonal solution and not vice versa. In addition, Yong and Pearce (2013) recommend the use of PAF, with oblique (direct oblimin) rotation, because it simplifies data.

The factor solutions were extracted, using the Eigenvalues greater-than-one (>1) criteria (Kaiser, 1960). The Scree plot was examined to ensure that the number of factors extracted, corresponded to the number of dots above point plot line sharply breaks (Williams *et al.*, 2010). The classification of the variables to specific factors was based on the largest correlation (factor loading) between a variable and the specific factor (Yong & Pearce, 2013, see Appendix 21). According to Fabrigar, Wegener, MacCallum & Strahan (1999), precise estimates of the population factors can only be achieved, with no less than 3 or 4 variables representing a common factor, and if the communalities are high (.70 or higher). Therefore, only factors with three or more variables (n ≥3), and loadings ≥ .70 fitted the classification, as summarized in Table 6.1. These were the factors used later in multiple linear regression analysis, against the outcome variables (specific disability support services).

The Exploratory Factor Analysis of the 11 variables, constituting the rehabilitation sub-scale, resulted in two factors (n=2) that accounted for 50.794% of the total variance in the data (Appendix 21). However, both factors had less than three items, with loadings ≥ .70, and were dropped. The Exploratory Factor Analysis of the 11 variables, constituting the assistive devices sub-scale, resulted in two factors (n=2) that accounted for 49.954% of the total variance in the data (Appendix 21). However, both factors had less than three items, with loadings ≥ .70, and were dropped. The Exploratory Factor Analysis of the 8 variables, constituting the educational sub-scale, resulted in two factors (n=2) that accounted for 57.553% of the total variance in the data (Appendix 21). Both factors had less than three items each, with loadings ≥ .70; therefore, they were dropped. The Exploratory Factor Analysis of the 12 variables, constituting the vocational training sub-scale, resulted in two factors (n=2) that accounted for 66.823% of the total variance in the data (Appendix 21). Factor-1 had three (n=3) items that fitted the classification criteria, with loadings ≥ .70. However, Factor-2 had less than three items, with loadings ≥ .70, and was dropped.

The Exploratory Factor Analysis of the 12 variables, constituting the counselling PWDs sub-scale, resulted in two factors (n=2) that accounted for 51.137% of the total variance in the data (Appendix 21). Factor-1 had less than three items, with loadings ≥ .70 and was dropped, while factor-2 that had three items, with loadings ≥ .70, and fitted the classification criteria. The Exploratory Factor Analysis of the 12 variables, constituting the counselling parents/family sub-scale, resulted in two factors (n=2) that accounted for 48.947% of the total variance in the data (Appendix 21). However, the factors had less than three items, with loadings ≥ .70, and were subsequently dropped altogether. The Exploratory Factor Analysis of the 9 variables, constituting the social security sub-scale, resulted in two factors (n=2) that accounted for 52.121% of the total variance in the data (Appendix 21). However, none of the factors fitted the classification criteria (three or more items, with loadings ≥ .70); therefore, they dropped. The Exploratory Factor Analysis of the 13 variables, constituting the health services sub-scale, resulted in two factors (n=2) that accounted for 50.462% of the total variance in the data (Appendix 21). However, none of the two factors fitted the classification criteria (three or more items, with loadings ≥ .70), and were dropped altogether.

The Exploratory Factor Analysis of the 8 variables, constituting the health information sub-scale, resulted in two factors (n=2) that accounted for 54.491% of the total variance in the data (Appendix 21). However, both factors had less than three items, with loadings ≥ .70 and were dropped. The Exploratory Factor Analysis of the 10 variables, constituting the faith healer sub-scale, resulted in two factors (n=2) that accounted for 67.004% of the total variance in the data (Appendix 21). Factor-1 had four (n=4) items, with loadings ≥ .70 and fitted the classification criteria. However, factor-2 had less than three items, with loadings ≥ .70 and was dropped. The Exploratory Factor Analysis of the 10 variables, constituting the legal advice/justice sub-scale, resulted in two factors (n=2) that accounted for 58.013% of the total variance in the data (Appendix 21). Both factors had less than three items, with loadings ≥ .70, and were dropped. The Exploratory Factor Analysis of the 8 variables, constituting the sign language interpreter sub-scale, resulted in two factors (n=2) that accounted for 77.326% of the total variance in the data (Appendix 21). Only factor-1, which had three items, with loadings ≥ .70, fitted the classification criteria. The other factor had less than three items, with loadings ≥ .70, and was dropped.

The Exploratory Factor Analysis of the 9 variables, constituting the personal assistant sub-scale, resulted in two factors (n=2) that accounted for 55.169 % of the total variance in the data (Appendix 21). However, both factors had less than three items, with loadings ≥ .70; therefore, they were dropped. The Exploratory Factor Analysis of the 8 variables, constituting the independent living sub-scale, resulted in two factors (n=2) that accounted for 68.828% of the total variance in the data (Appendix 21). Only factor-1, which had three items, with loadings ≥ .70, fitted the classification criteria. Factor-2 had less than three items, with loadings ≥ .70 and was dropped. Lastly, the Exploratory Factor Analysis of the 7 variables, constituting the transportation services sub-scale, resulted in two factors (n=2) that accounted for 62.047% of the total variance in the data (Appendix 21). Both factors had less than three items, with loadings ≥ .70; therefore, they were dropped.

Exploratory Factor Analysis is a multivariate statistical procedure routinely used across several social science fields, to provide a parsimonious picture of the associations among measured variables (Williams *et al.*, 2010; Hayton, Allen & Scarpello, 2004). Exploratory Factor Analysis is commonly used by social scientists, to help them make decisions on the number of factors to retain (Williams *et al.*, 2010; Henson & Roberts, 2006). However, these authors caution against over-relying on the Eigenvalue >1 rule. Instead, social scientists should adopt the use of multiple rules, such as parallel analysis (PA), and the Scree test, to guide their decisions on the number of factors to retain (Williams *et al.*, 2010). Exploratory Factor Analysis was used to reduce the number of variables that could explain the outcomes in this current study (Williams *et al.*, 2010).

The degree the common variance was marvellous for communication (sign language interpreter [Kaiser, Meyer and Olkin [KMO] = .901]), meritorious for vocational, faith healer and independent living (KMO ranged from .887 to .894), and middling for counselling for PWDs, (KMO ranged from .781). In all these cases, Bartlett's tests of sphericity were significant (*p*< .001).

Table 2.4: Determinants of the Utilization of Disability Support Services

Type of Disability Support Service	Determinant Factors		KMO/ Bartlett's Test
	Factor 1	Factor 2	
Rehabilitation	-	-	-
Assistive aids	-	-	-
Educational	-	-	-
Vocational	• accessibility • availability • information	-	KMO= .894 Bartlett's Test X^2 = 1217.797; df= 66. *p < .001*
Counselling PWDs	-	• beliefs • attitude • myths	KMO= .781 Bartlett's Test X^2 = 610.557; df= 66. *p < .001*
Counselling parents	-	-	-
Social security	-	-	-
Health	-	-	-
Health information	-	-	-
Faith healer	• affordability • incapacity • accessibility • attitude of service provider	-	KMO= **.887** Bartlett's Test X^2 = 887.359; df= 45. *p < .001*
Legal /justice	-	-	-
Communication (sign language interpreter)	• Employee of government • Affordability • Service provider skills	-	KMO= **.901** Bartlett's Test X^2 = 759.527; df=21. *p < .001*
Personal assistant	-	-	-
Independent living	• need for Autonomy • privacy • accessibility of physical environment	-	KMO= **.890** Bartlett's Test X^2 = 594.862; df= 28. *p < .001*
Transportation	-	-	-

Note: KMO value .90-1.0 = *marvellous*; .80-.89= *meritorious*; .70-.79=*middling*

2.4.2.2.4. Procedure

The principal researcher and the research assistants, accompanied by village elders (acting as guides), a local language interpreter, as well as a sign-language interpreter, conducted the fieldwork for this current study in Kibra, Mathioya and Ndithini divisions in Nairobi, Murang'a and Yatta sub-counties in Kenya, from 19 -30 January, 2016. Prior to the conducting of this study, the scale was piloted with 9 respondents with disabilities. (See section 2.4.1.9 for recruitment and training of research assistants, as well as local language interpreters. Also see section 2.4.1.3 for the overall sampling procedure).

The principal researcher and research assistants revisited households (identified during the survey of phase one), where individuals with disabilities resided. After receiving their consent, the principal researcher and research assistants administered the questionnaire. As stated in section 2.4.1.3 (overall sampling procedure), the guardians of household members with disabilities, who were under 18 years of age, were requested to provide written consent for them to participate in the survey. However, any child identified with a disability in the first survey, who had not reached the age of 5 years at the time of data collection, was excluded from the study to minimize proxy-response bias. Although previous studies have not produced conclusive evidence, some studies have underlined the risk of a “proxy-effect” for data collected in surveys (Beadle-Brown *et al.,* 2012; Shields, 2000), especially health-related ones (Shields & Shooshtari, 2001). An interpreter of the local dialect and a sign-language interpreter accompanied the research team to assist in data collection. Additionally, the study instrument was translated into the main language (Kiswahili) of the selected communities and back.

2.4.2.2.5. Data Analysis

The data were captured into MS Excel and analysed using the Statistical Package for Social Sciences (SPSS) version 21.0. Descriptive statistics were presented in percentages, summary tables and charts. Multiple linear regression statistical tests on factors (extracted earlier using EFA) were undertaken to determine the level of interaction between predictor (independent) and outcome (dependent) variables.

Field (2009: p. 223) posits that, there has to be 10-15 respondents’ data for each predictor variable in the multiple linear regression model for analysis.

Simply put, with 5 predictors, about 50 or 75 respondents' data would be required. However, the rule of thumb is, the larger the sample size the better (Field, 2009: p. 212; DeCuir-Gunby, 2008). Therefore, given that none of the factors extracted during the EFA had more than five predictors, the sample size of 155 PWDs in this current study was sufficient. The "goodness of fit" was examined for each multiple linear regression model. In this current study, multiple linear regression was conducted hierarchically, where predictors, were entered into the model, beginning with one that had the highest loading and ending with one that had lowest loading [backward method] (Field, 2009: p. 212). The results are described in the chapter 5 of the thesis.

2.4.4. Phase three

The section presents the methodology used to attempt the preparation of the disability policy brief for Kenya. As mentioned in the background chapter, the Kenya Disability Act (Republic of Kenya, Act 14 of 2003) and Chapter 4 on the Bill of rights in the new Constitution of Kenya, recognize disability issues (Republic of Kenya, The Constitution, Review Act No. 9 of 2008; Korpinen, 2009; Guernsey, Nicoli & Ninio, 2007). However, despite these two developments, the act omits support services among its core objectives. The researcher also observed that no "official disability policy" existed. Remarkably, 13 years after the Disability Act was introduced, the disability policy is still in draft form. Kenya ratified the UN CRPD on 19th May, 2008. However, efforts to domesticate international treaties, such as UN CRPD, are somewhat slow.

There is also a paucity of information about the extent of need for PWD-specific support services. It is plausible, that many of the PWDs' needs are unmet in many settings, as they remain unknown to policy makers. It is important also to note that the prevalence of disability in Kenya, varies across studies, some estimate 4% (Republic of Kenya, 2010), 10.3% (Mitra & Sambamoorthi, 2014) and 15.2% of the Kenyan population live with disability (WHO, 2011). This study will integrate, and critically review the findings from these three substantive studies, as well as their implications in the context of the Capability framework. Using a critical review, the principal researcher will prepare a disability policy brief. Therefore, the aim is to prepare a disability policy brief to inform the development of a disability policy.

2.4.4.1. Study Design

A cause and consequence approach to policy analysis was adopted in this study. This type of qualitative approach focuses on "intended and un-intended impacts of Government decisions or non-decisions" (Collins, 2005: p. 193). The approach helps to position a problem of public importance into context, and evaluates its outcomes, or consequences, with and without policy interventions.

2.4.4.2. Checklist

A checklist containing themes derived from qualitative and quantitative survey results, the Nussbaum list of 10 (ten) human capabilities (Nussbaum, 2007), and the UN Convention on the rights of PWDs (UN, 2006) were used to analyse the policy.

2.4.4.3. Procedure

As part of analysis of the disability policy, the findings from phases one and two of this current study, and the policy document itself was used. The policy document was obtained from the Kenyan government. An analysis of the policy content was performed, following Collins' (2005) eight steps, relative to this current study's conceptual framework, the capability approach.

These Steps included:

(1) definition of the problem relative to Kenya's inherent contextual factors promoting the policy problem;

(2) assembly of the evidence focused on support services, assistive aids, devices and assistive technologies;

(3) construction of policy options and strategies of intervention;

(4) selection of a criteria – themes for analysis;

(5) projection of possible outcomes;

(6) confronting the trade-offs;

(7) making weighted decision on policy alternative to write on; and

(8) writing and finally disseminating the policy brief.

Before using the checklist the principal researcher consulted expert reviewers in disability and policy issues, to ensure face and content validity. The principal researcher acquired Kenya’s disability policy draft.

2.4.5. Ethical considerations

The principal researcher obtained approval and ethical clearance from the University of the Western Cape, South Africa and the Kenyatta National Hospital/University of Nairobi Ethics and Research Committees (ERCs), sequentially, to conduct the study. Permission was also obtained from the National Commission for Science, Technology and Innovation (NACOSTI) and the County Commissioners of the three selected counties, as well as local administrators in Kenya.

The research assistants were trained and committed to preserve confidentiality. The principal researcher and the research assistants provided information concerning the purpose of the research to every household. They were informed that there was no apparent risk to their participating and that they reserved the right to withdraw from the study at any time, without loss or prejudice. It was explained to them that their participation was entirely voluntary. Written consent was sought from the heads of the households, as well as potential respondents, before administering the questionnaires. Guardians of household members, aged below 18 years, provided written consents for under-aged respondents, before they were allowed to participate in the survey.

CHAPTER THREE

PREVALENCE OF DISABILITY IN SELECTED COUNTIES OF KENYA

3.1. Introduction

This chapter is phase one of the research process, as indicated in Chapter 2. In this chapter, the researcher describes a cross-sectional quantitative survey, the objective of which was to establish the prevalence of disability in selected counties of Kenya. The Chapter comprises a review of studies on the prevalence of disability, as a background, the methodology and the results. The application of the conceptual framework to the context of this study is also illustrated. Ultimately, the discussion and summary of the chapter are presented.

3.2. Prevalence of Disability

The rising prevalence of disability, framed by current definitions, is a major concern to both low and high-income countries, in equal measure, because of the increased need for both human and financial resources (WHO, 2011). However, varying prevalence rates of disability are reported in many countries' national disability prevalence studies, raising public health policy concerns (WHO, 2011). Fujiura (2014), Krahn, Walker and Correa-De-Araujo (2015) and WHO (2011) observe that the differences in reported disability prevalence rates, in many countries, are attributable to the variations in the definitions, as well as the methods used to measure disability in those countries.

According to Krahn *et al.* (2015), Molden and Tøssebro (2012) and WHO (2011), a definition of disability affects the type and severity of impairment that qualifies people as having disability. For example, low disability prevalence rates emerge (<5% of the population), when an impairment definition is used, whereas higher disability prevalence rates, ranging from 12% and 30%, are observed, when the definition and method used to collect disability data, is based on activity limitation and participation restriction, in addition to impairments (Krahn *et al.*, 2015; Fujiura, 2014; WHO, 2011). One specific example is the ICF, which defines disability as an umbrella term for impairments, activity limitations and participation restrictions (World Health Organization [WHO], 2001). In two surveys conducted in Northern Ireland, one defined disability as (activity) limiting long-term illness (LLTI) and another used the Disability Discrimination Act's (DDA) definition for labour-related surveys (Sweeney & Furphy, 2008). The Disability Discrimination Act defines an individual with a disability, as one with either a physical or a mental impairment, which has substantial and long-term adverse effects on his/her ability to undertake daily activities normally (Bell & Heitmueller, 2009). The limiting long-term illness (LLTI) survey provided disability prevalence rates of between 20% and 27%, while the DDA definition for a labour-related survey, reported prevalence rates of 18-20% (Sweeney & Furphy, 2008).

However, such varied disability data are somewhat limited to countries such as the UK, while in others, such as USA and Australia, the reports are more consistent. This is probably because in the latter countries, there is an attempt to use ICF aligned definitions and methods to measure disability that recognize activity limitations and participation restrictions caused by impairments. For example, the Surveys of Disability, Ageing and Carers (SDAC) of 2009 and 2012 defined "disability as any limitation, restriction or impairment which restricts everyday activities, which has lasted or is likely to last at least six months" (Australian Bureau of Statistics, 2009: p. 3). The SDAC observed a disability prevalence rate of 18.5% in both surveys (Australian Bureau of Statistics, 2009; 2012).

During a 2011/2012 survey, the UK employed the Equality Act 2010 definition, which states that, "a person has a disability if: he/she has a physical or mental impairment, the impairment has substantial and long term adverse effect on their ability to perform normal day to day activities" (Xu, 2013). The UK analysis of disability data 2011/2012 estimated that 11.6 million people (18.4%) had disabilities. These early attempts resulted in data that were only relevant in those countries' public health and planning (for disability support services), which was not comparable to those of other countries, which made little attempt, and defined disability as an impairment. An examples of this is the analysis of data from the US Department of Health and Human Services, released in 2011 (that considered only serious limitation), and reported only 16% of adults had some disability (Centers for Disease Control and Prevention [CDC], 2013). Another example is a study conducted by Steinmetz (2006), who observed a disability prevalence rate of 18.1% (for disability lasting any length of time) and 11.5% as having severe disability. The findings of three USA disability surveys, namely the BRFSS of 2013 (Courtney-Long *et al.*, 2015), the USA Department of Health and Human Services report of 2011 (CDC, 2013), and the report by Steinmetz (2006), demonstrate notable differences. These differences could be explained, partly by the various motivations, scope and definitions employed in each survey.

3.3. Prevalence of disability in high- and low-medium-income countries

Despite the differences in results, the figures remain relatively higher than the highest prevalence of disability reported in low- and medium-income countries (Loeb & Eide, 2004; Mont, 2007; Eide & Loeb, 2006; Eide & Mmatli, 2016); United Nations, Department of Economic and Social Affairs, Population Division, 2015). In particular, in 2013, 24% (1.1 million people) of New Zealanders had some disability (Statistics New Zealand, 2014). While, in 2011, the UK reported that 11.6 million people had disabilities (population of 63.2 million people), comprising 1 in 20 children, 1 in 5 working-age adults, and 50% of all pensioners (United Kingdom [UK], 2014). The analysis of a Survey of Income and Program Participation (SIPP) by the CDC and the USA Census Bureau indicated that, in 2005, the prevalence of disability in the USA was 21.8% (CDC, 2009). The 2010 USA census results and the 2013 Behavioral Risk Factor Surveillance System (BRFSS) report revealed the prevalence of disability ranging from 18.7% to 22.2% in the USA (Courtney-Long *et al.*, 2015; Brault, 2012). In Australia, the SDAC of 2009 and 2012 reported a disability prevalence of 18.5% (Australian Bureau of Statistics, 2009; 2012). High-income countries have older populations, compared to those in low- and medium-income countries (Centers for Disease Control and Prevention [CDC], 2003; Anderson & Hussey, 2000). The World population ageing 2013 report reveals that the prevalence of disability in a population, aged 65 years or older, ranged from 19%, 19.5%, and 26.9% in New Zealand, USA and Italy respectively, compared to 4.2% and 8.4% in Kenya and sub-Saharan Africa respectively in 2013 (United Nations [UN], Department of Economic and Social Affairs [DESA], Population Division, 2013). This partly explains the existing differences in reported disability prevalence rates between high-income and the low-medium-income countries.

Although sub-Saharan African countries fall under the low-income bracket and the highest disease burden, their national population Census results, demographic and Health surveys, as well as disability surveys, report low disability prevalence rates (WHO, 2011). This is partly because some agencies in these countries, conveniently define disability to limit the scope of their surveys (WHO, 2011; Mbogoni, 2003; Eide & Loeb, 2006; Central Bureau of Statistics [CBS], Kenya, Ministry of Health, and ORC Macro, 2004). In addition, there is the under-reporting of disability status, that is influenced by the social stigma associated with "being labelled as disabled", as well as the cultural believes in some communities, such as the Kalenjin in Kenya, who view disability as a curse (Mbogoni, 2003). Available data consistently show high prevalence rates of disability in countries that utilize the ICF definition and framework to measure disability, but lower rates in countries that do not. Examples of countries with higher prevalence rates include Canada 31% and Australia 20% (Madden *et al.*, 2011), Zambia 13.1% (Mont, 2007; Eide & Loeb, 2006), and USA 16-22.2% (Courtney-Long *et al.*, 2015; CDC, 2013; Steinmetz, 2006). In contrast, countries that have not applied the ICF definition and method to measure disability, and that report low disability rates include Kenya and South Africa, with estimated prevalence rates of 4% and 5%, respectively (Republic of Kenya, 2010; Statistics South Africa, 2001). However, the ICF definition is limited to an individual's body (biological, physiological aspects), his/her activity limitations and participation. It does not recognize societal factors, with which individuals with disabilities interact. Therefore, it does not provide the broader perspective for describing disability, as the capability approach does (Bakhshi & Trani, 2006). The capability approach perspective permits the identification of factors that influence the capability of the person to function, including his/her impairment, resources and the environment (Bakhshi & Trani, 2006). A more important aspect of disability prevalence studies is the identification of the disparity in age segments, as well as sexes in their reports. Therefore, a need exists for a review of disability prevalence in age-segments and between sexes.

3.4. Age-and-gender-related Prevalence and distribution of disability

According to Mathers (2008), 5% of children aged 0-14 years, 15% of persons aged 15 to 59 years and 46% of persons aged 60 years and older, have moderate to severe disabilities, globally. Globally, of all the individuals aged 60 years and older, 10.2% experience severe difficulties in their daily lives (WHO, 2011; Mathers, 2008). Internationally, there is no analogous data on the prevalence and distribution of disability (WHO, 2011). However, this pattern of increased disability prevalence among the older segment of the population, has been reported in several high economic countries, but less in low-medium economic countries, with young populations; for example, in the 2011 UK disability estimate, only 9% of the 11.6 million adults with disabilities (PWDs) were under 35 years of age (Xu, 2013).

Similarly, in New Zealand, 59% of adults, older than 65 years of age, were living with disabilities, compared to only 21% of adults below 65 years of age (Statistics New Zealand, 2014). In the USA, Courtney-Long *et al.* (2015) and the CDC (2013) reported that older age-groups (65 years and older) and the age group of 45-64 years, respectively, have higher disabilities of any type, compared to younger age-groups. Other countries reporting a similar trend include Australia (Australian Bureau of Statistics, 2009) and Canada (Casey, 2015). Low-medium economic countries exhibit lower rates, for example, 10.6% in Malawi (Loeb & Eide, 2004), 13.1% in Zambia (Mont, 2007; Eide & Loeb, 2006), and 3% in Botswana (Eide & Mmatli, 2016). The low rates of disability in low-medium economic countries are attributable to their youthful populations (United Nations, Department of Economic and Social Affairs, Population Division, 2015). According to McPherson (1990, cited by Murray & Syed, 2005), the United Nations classifies a population as "youthful", if between 4% and 6% are over 60-65 years of age.

Most of these countries' reports on prevalence and distribution of disability, highlight some gender disparity, as well. For example, the USA 2013 morbidity and mortality weekly report (MMWR) household survey revealed that women had a higher prevalence of any disability [24.4%], than men did [19.8%] (Courtney-Long *et al.*, 2015). This is consistent with the Survey of Income and Program Participation (SIPP) by the CDC and the USA Census Bureau, which observed that men had lesser (19.1%) disability prevalence rates, as compared with women (24.4%), at all ages (CDC, 2009). Consistent with these USA survey results, the UK 2011/2012 prevalence of disability survey estimate revealed that disability among women was higher [6.3 million people], compared to men [5.4 million people] (Xu, 2013). This is partly attributable to chronic medical conditions, such as arthritis (accompanied by functional limitation) that are less prevalent in younger than the older cohorts, the majority of whom are women (Cornwall & Davey, 2004). Researchers have consistently reported a higher risk of disability, depression, dementia, as well as self-reported poor health and function, among women, compared to men (Aboderin, 2010). According to Cornwall and Davey (2004), it is also partly due to women enjoying a higher life expectancy than men do, and they are more likely to spend an increased number of their later years in poor health and disability (Kelly, Baker & Gupta, 2000). Higher life expectancy for females, compared to males, is almost universal. Research has revealed that women live five to seven (5-7) years longer than men do in developed countries, the notable ones being Europe and North America, but less in developing countries (Mathers *et al.*, 2001). For example, life expectancy, at birth, was 74.3

years for males and 79.6 years for females in New Zealand, while in Australia, it was 75 years at birth for males and 79.7 years for women in 1997 (Cornwall & Davey, 2004). An important disparate, gender-related trend is in the prevalence of developmental disability and its distribution between adults and children (Boyle, *et al.*, 2011; Maulik, Mascarenhas, Mathers, Dua & Saxena, 2011).

In a review of published literature on the prevalence of intellectual disability, Maulik *et al.* (2011) observed that the male-to-female ratio was 0.7 to 0.9 for intellectual disability in adults, and 0.4 to 1.0 for children and adolescents. In contrast to the adults with disabilities trend, a USA study on the prevalence of developmental disabilities [1997-2008], conducted by Boyle *et al.* (2011) observed that the trend among boys was higher than among girls. These researchers attribute the higher prevalence of developmental disabilities among boys (compared to girls) to genetic disorders (that result in intellectual disabilities and functional limitations) and culture, including a behaviour sub-type (autism) that favours identification of boys over girls.

Disparity in disability prevalence between genders, notwithstanding, researchers have revealed that high-income countries report relatively higher disability rates, than do low- and medium-income countries (WHO, 2011). This is particularly important in the context of the rising Global Burden of Disease (GBD), some of which result in disability (Vos *et al.*, 2015; Mathers, 2008). Therefore, a review of the GBD needs to be conducted to highlight the contributions of different diseases and risk factors to the overall burden.

3.5. Global burden of disease and disability prevalence rates

The Global Burden of Disease (GBD) integrates a wide array of information on the causes of death, disease, injury incidence and prevalence, years-lived-with-disability (YLDs) and risk factors (Newton *et al.*, 2015). High-income countries account for 11.6% of the global burden of disease and disability (Murray & Lopez, 1997). Globally, the prevalence of disability emanates from diverse causes, including health conditions and disease incidences and their distributions (Vos *et al.*, 2015; Sousa *et al.*, 2009; Mathers, 2008). The three most common causes of disability reported in USA surveys include, arthritis, spinal problems, heart disease (CDC, 2009; Brault, 2012), most of them lifestyle diseases that develop over time. Of the 11.6 million persons with disability in the UK, 17% suffered from congenital impairments

(Xu, 2013). There are differences on the most common causes of disability across countries; first because of differences in the prevalence of older people, compared to other age-groups, and second because of differences in life expectancies in various countries. The higher the life expectancy, the older the age group that reports higher prevalence of disabilities of any type, such as blindness or partial blindness, and advanced dementia in any society (Australian Bureau of Statistics, 2009).

Studies in Eastern Europe and Central Asian countries report neuropsychiatric conditions, such as dementia, injuries from falls and accidents, as well as musculoskeletal diseases, as the most common causes of disability (Mete, 2008). Additionally, diseases and illnesses among adults in New Zealand (Statistics New Zealand, 2014), as well as cardiovascular diseases, diabetes, cancers, and chronic respiratory diseases among the elderly, also cause increasing disability prevalence rates (Bauer, Elsaesser, Scherer, Sax & Arthanat 2014). Brault (2012) and the CDC (2009) reported that heart disease, emotional problems, hearing problems, limb problems and stroke were also major causes of increased disability prevalence rates. Research has revealed that, hereditary conditions, ageing, poverty, hypertension, tobacco smoking and substance abuse, alcohol ingestion, physical inactivity and the HIV pandemic, significantly affect health and wellness (Rosenberg, Bombardier, Hoffman & Belza, 2011; Zullino, Waber & Khazaal, 2008). These conditions have been associated with increased disability incidences, prevalence, morbidity and mortality, as well as adverse socio-economic consequences (Bradshaw *et al.*, 2003; Murray & Lopez, 1997).

Other studies have revealed mental disorders as major risks for disability. In a survey of neuropsychiatric disorders (mood, anxiety and alcohol disorders), using a representative random sample of community-living persons, conducted in six European countries, Alonso *et al.* (2004) observed that 14% had mood disorder, and 13.6% had anxiety disorder. Females were doubly more likely to suffer mood and anxiety disorders compared to males (Alonso *et al.*, 2004), which are specific causes of increased disability prevalence. According to Comas-Herrera, Wittenberg, Pickard and Knapp (2007), cognitive impairment (difficulty remembering and concentrating) is projected to rise over the next 30 years, if no effective remedy to slow down dementia is made available. So will be the disability prevalence. Sousa *et al.* (2009) noted that dementia, followed by vision problems, are the largest causes of disabilities among the elderly in low- and middle-income countries, which highlights the need to review disability prevalence in core activity domains.

3.6. Disability prevalence in core activity domains

Surveys in selected countries have reported disability prevalence in core areas of human functioning (activity domains), such as walking/mobility, or seeing disabilities. For example, in the USA, in 2013, 13% mobility, 10.6% cognition, 6.5% independent living, 4.6% seeing and 3.6% self-care disabilities were reported (Courtney-Long *et al.*, 2015). The Australian household surveys of 2009 and 2012 reported that 18.5% of the population had a limitation either in communication, mobility, seeing, or self-care, as well as a restriction in attending school, or going to work (Australian Bureau of Statistics, 2009; 2012). The UK government estimate of 2011/2012 revealed that 56% of people with disabilities, had mobility disability, followed by lifting or carrying disabilities (Xu, 2011). In another UK survey of PWDs, Xu (2013) reported that 24% of the people with disabilities suffered upper limb disability and 24%, physical incoordination. In contrast, Statistics New Zealand (2014) revealed a disability prevalence of 18% due to physical impairments in the population (those aged 15 or over), and 6% prevalence for learning disability among all children under 15 years of age. A secondary analysis of the UK Family Resource Survey data (2004/5) of children with disabilities, aged 0-18 years, based on the Disability Discrimination Act definition, found that 1.5% of them had mobility, 2.2% memory-concentration and learning and 2.0% communication disabilities (Blackburn, Spencer & Read, 2010). These prevalence rates are a function of activity limitations and participation restrictions that result from the interaction of the individual with a condition/disease and his/her environment (physical, social or structural) with the resources at his/her disposal (Nussbaum, 2007; Mitra, 2006).

However, adult impairments are acquired over a lifetime, in addition to any pre-natal and antenatal conditions; therefore, the likelihood is greater that the disability prevalence rates among adults and older adults would be higher, than among children. The risk factors for disability in children are also diverse, but are fewer compared to those of adults (Emerson, Madden, Robertson, Graham, Hatton & Llewellyn, 2009; Emerson, Madden, Graham, Llewellyn, Hatton & Robertson, 2011; Murray & Lopez, 1997). Research has revealed that some people may attribute their disability to antenatal (Down’s syndrome), perinatal (birth injury, asphyxia), and/or postnatal causes, such as infections and developmental disorders (Maulik *et al.*, 2011), or congenital (Statistics New Zealand, 2014); therefore, the lower figures of disability prevalence among children. For instance, using data from 1997-2008 National Health Interview Surveys, Boyle *et al.* (2011) observed that, in 2006-2008, 1 in 6 children in the USA suffered from some developmental disability, including autism; attention deficit hyperactivity disorder; intellectual disability; cerebral palsy; seizures; stuttering; moderate to profound hearing loss; blindness; learning disorders; and/or other developmental delays. In a Zambia survey, Eide and Loeb (2006) observed that the common causes of disability include physical illnesses, congenital/from birth and accidents, as well as, to a lesser extent, alleged witchcraft. Most studies have been conducted outside the African setting, more specifically the Sub-Saharan region. In addition, very few studies are published on disability, save for a systematic review of literature on Africa, focused on disability and HIV/AIDS, which, subsequently, revealed a lack of prevalence studies on disability, and only a few on HIV/AIDS, with one outside Sub-Saharan Africa (Hanass-Hancock, 2009).

Consequently, there is lack of data on the prevalence of disability in Kenya. The state of persons-with-disabilities in the sub-Saharan region, more specifically in Kenya, is unknown. This study was conducted to reduce the gap, by determining the disability prevalence rate of the Kenyan population. Precise estimates of prevalence of disability reporting in developing countries is an important population outcome for services planning (Eide & Loeb, 2005). Therefore, this study adopted the capability approach perspective, to measure the prevalence of disability in selected counties in Kenya, which included measuring the prevalence of disability by the degrees activity limitations and participation restrictions in core activities. The researcher is of the opinion that unknown activity limitations and participation restrictions among a significant segment of a population, strongly undermines a country's health and well-being of its citizens, as well as national security.

3.7. Methodology

3.7.1. Study Design

A cross-sectional survey, utilizing a quantitative design, was conducted between December 2014 and March 2015 (See section 2.4.1.1.)

3.7.2. Target population

The target population included all persons with/without disabilities, living in the Nairobi (representing the urban population), Murang'a (representing rural/urban population) and Machakos (representing rural population) counties of Kenya. The inhabitants comprise a cross-section of cultural backgrounds, the majority of whom speak Kiswahili, as well as various local languages, with some also fluent in English.

3.7.3. Sampling method

In this study, the multi-stage sampling method was used (See section 2.4.1.3.). Nairobi West, Murang'a North and Yatta districts were selected randomly, by lottery method, as clusters from Nairobi, Murang'a and Machakos counties, respectively. The names of all the districts in each county were written on small pieces of paper, which were then carefully folded to hide the details. Thereafter, the folded papers were placed in a hat, thoroughly shaken up, before the pieces of paper were singularly and randomly drawn from the hat, one at a time. The selected paper was unfolded and the name unveiled was identified as the setting for the study. Nairobi West District comprises Kibra and Dagoretti divisions. Murang'a North comprises Kiharu, Kahuro, Kangema and Mathioya divisions; while Yatta District comprises Masinga, Ndithini, Yatta, Ikombe and Katangi Divisions. For the first part of the second phase, Kibra, Mathioya and Ndithini Divisions in Nairobi West, Murang'a North and Yatta sub-counties (formally referred to as districts) were selected, by lottery method, for this study. For the second part of the second phase, randomly selected locations in each selected divisions was again selected, by lottery method. In the third phase, simple random selection of sub-locations was conducted. The same procedure was followed up to the last stage (village level), where individual households were sampled, systematically, using lottery method.

The following example illustrates how household selection was conducted. If a selected village had 1 155 households, the centre of the village was identified by the village elder, who guided the research team. A four-sided dice, labelled, East-West-North and South was tossed, and the label side that ended facing up, became the direction to the house-holds, which the researchers would follow to begin their selection. Every third household was selected for the study, until the last one in each direction. In each household, all the occupants were purposefully recruited into the study. The researchers ensured that participation was voluntary. In the 2009 Kenya Population and Housing Census (Republic of Kenya, 2010), Nairobi, Murang'a and Machakos counties had an estimated 985 016, 268 304 and 213 678 households, respectively.

3.7.4. Sample Size Determination

Since this was a cross-sectional study, with population sizes exceeding 10,000 people from each County, whose prevalence of disability was unknown, a 50% disability prevalence rate was assumed, to calculate the sample size (Al-Subaihi, 2003). In addition, because the intention of the current study was to get a representative sample for the prevalence of disability in a large population, the Cochran 1963 Equation was used to calculate the sample sizes (Israel, 1992).

Cochran 1963 Equation:

$$n_o = \frac{Z^2pq}{e^2}$$

Sample size calculation:

$$n_o = \frac{(1.96)^2(.5)(.5)}{(.05)^2} = 385 \text{ people}$$

Key:

n_o= Sample size
Z= 1.96 standard deviation corresponding to 95% Confidence Interval
P= 0.5 prevalence rate
Q= 1-P individuals not experiencing disability

Overall, 1155 people were envisioned to participate in this quantitative survey. The average household sizes in Nairobi, Murang’a and Machakos were 4, 4 and 6 persons per household, respectively (Republic of Kenya, 2005). Therefore, the principal researcher and the assistants planned to collect data from 97, 97 and 65 households in Nairobi, Murang’a and Machakos Counties, respectively.

3.7.5. Data Collection Instrument

Pre-piloted, interviewer-administered, structured survey tools were used to collect data in this phase of this current study (See section 2.4.1.6 for a detailed description of the survey instruments. The tools included (1) a household questionnaire [Appendix 3], (2) the WG six questions (all adults) for screening all adults [Appendix 1A], and (3) two short UNICEF/WG child modules (one for children aged 5-17 and another children aged 2-17 years) [Appendices 1B & 1C]. Eventually, the long WG individual questionnaires and UNICEF/WG child modules were administered to the individuals with disability, who provided informed consent (WHO, 2011) [Appendices 2A, 2B & 2C].

3.7.5.1. Validity and reliability of the data instruments

The instruments' face, content and construct validity was ensured by the principal researcher, who consulted experts in the area of the study, throughout the adaptation of the instruments. To establish the reliability of the instruments, the principal researcher conducted a pilot study (See 2.4.1.8).

3.7.5.2. Pilot study

A pilot study was conducted with 39 eligible volunteers, who suffered disabilities in Kiambu County, Juja division, Kiaora Sub-location, Gachororo Village on 27 and 29 November 2014. In the household questionnaire, serial number 3, "Highest level of formal education of household member", an item on "adult education" was suggested during the pilot study; therefore an item "Adult class = 25" was added in the 3rd column of the final questionnaire. In column 4 of serial number 3, a "Left School" response emerged repeatedly, during the pilot study and was added as an item in the final questionnaire. Subsequently, "Don't know = 9" was corrected to "Don't know = 10". This omission was corrected in every other questionnaire. In serial number 4, "Reason for (household member 1, 2, 3, 4, 5…) not attending school/College or University", the part "/College or University", was viewed as unimportant by the respondents, and was deleted in the final household questionnaire, as well as all other questionnaires. Serial number 5 had five options during the pilot study: namely 1 = failing/underachiever; 2 = Pregnancy; 3 = Physical illness; and 4 = Mental; 5 = Other (specify), as well as 9 = Don't know. However, options 3 and 4 were merged as one item 3 = illness, as most respondents were becoming confused with the former two items.

During pilot study, it was observed that a number of the respondents relied on motorbikes and bicycles for transportation, which had not been provided for in the adults' individual questionnaire, serial number 9, "Mode of Transportation" options ("Public = 1", "Personal Car = 2" and "Other [specify]…= 3"); therefore, an option of "motorbike = 3" was added. Additionally, in the adults' questionnaire, page 1, serial number 10, “What is your main source of income?” the options were “Employment/business/disability grant/retirement benefits”. During the pilot study, it was observed that some elderly respondents’ income was “support from children or family members”; therefore, an option item, “support from children/family”, was added in the final questionnaire. A repeat pilot study was conducted one 4 and 5 December 2014 with 24 eligible volunteers, who suffered disabilities, at which time; consensus was reached on the clarity of questionnaires.

3.7.6. Procedure

The principal researcher and the research assistants, accompanied by village elders (acting as guides), a sign language interpreter and a local language interpreter, conducted the fieldwork for this current survey in the Kibra, Mathioya and Ndithini divisions of Nairobi, Murang’a and Yatta sub-Counties in Kenya, between December 2014 and March 2015 (See sections 2.4.1.3 and 3.7.3 above for the overall sampling method). From the point that was determined as the centre of the selected village by the research team, assisted by village elders, a starting direction to households was determined (starting with East followed by West, North and lastly South), every third household was selected for the study, until the last one in each direction. After the last household in a direction, the team returned to the centre of the selected village, from which point they had begun, in order to select households in the remaining directions.

In every household, once the occupants welcomed the researchers, the latter sought to establish who the owner of the household was; however, at times it was voluntarily offered as “I am the owner of this compound.” Consequently, where no information was offered, the team sought to identify the head of the household by posing a casual question, “Who is the owner of this home?” In each selected household, the researchers provided written information regarding purpose of the research, and requested consent for the household to participate. Once the head of the household accepted and provided consent for his/her household to participate in the study, the household questionnaire was administered to him/her. In each household, all the occupants were requested to participate, voluntarily. After receiving their assent and signed consents, screening questionnaires were administered to all the members present in the household at the time of the survey. The guardians of household members, who were aged younger than 18 years, were requested to give written consent, to allow them to participate in the survey.

Prior to the survey, ethical clearances and permission had been acquired from the University of the Western Cape (Appendix 6, project number 13/9/29) and the Kenyatta National Hospital/University of Nairobi Ethics and Research Committee [ERC] (Appendix 7, June 30, 2014) to conduct this current research. The principal researcher had also acquired authority and a permit to conduct the research from National Commission for Science Technology and Innovation [NACOSTI] in Kenya (Appendix 9, September 2014). The local language interpreters, who were fluent in English and Kiswahili, and a sign language interpreter were trained (in advance) on the purpose of the study, as well as the aim of the interviews, and committed to preserve confidentiality.

3.7.7. Data Analysis

The quantitative data were keyed into a computer MS Excel programme. A second entry of the data were made and comparisons taken. Subsequently, the data were imported into the Statistical Package for Social Sciences (SPSS) programme, version 21.0. Descriptive statistics were made on the two data entries and the differences of frequencies cross-checked. Where they appeared to vary, the questionnaires were referred to, to confirm the correct entry. Thereafter, the data were analysed. Descriptive statistics are presented in percentages, summary tables and charts for different domains and sub-domains. Chi-square tests association between “Level of education”, “Family income” and “Reasons for never attending school”, or “Leaving school”, by gender variable were performed. In addition, the variables of age, gender, family income, and level of education were cross-tabulated against disability status. Additionally, household disability status, source of water, volume of water consumed daily and sanitation were cross-tabulated by household size and Chi-square established.

3.8. Results

3.8.1. Characteristics of the households

Of the targeted 259 households, only 242 (93.4%) eligible households were visited in the three selected counties. The 242 households visited, included, 95 (39.3%) in Nairobi, 81 (33.5%) in Murang'a and 66 (27.3%) in Machakos County.

3.8.2. Socio-demographic characteristics of all the participants

Although the researcher's initial estimated target was to recruit 1,155 study respondents in the three counties, 1,230 persons voluntarily participated in the study. Of the 1230 respondents, 402 (32.7%), 403 (32.8%) and 425 (34.6%) of them were from Murang'a, Machakos and Nairobi, respectively. Table 3.1 summarizes the distribution of participants, according to age categories.

Table 3.1: Distribution of respondents by Age Categories

Age-range (Years)	Frequency (n)	Percentage %
2-4	74	6.0
5-17	432	35.1
18-32	321	26.1
33-45	186	15.1
46-59	98	8
60 +	119	9.7
	1230	100

The *mean* age of the respondents was 27.28 years, with an *SD* of 19.684 years, and a median of 22 years. The percentage of female respondents was 55.1%, and males, 44.9%. Of the 1,230 respondents, the majority 83.6% (n=1031) lived in families, whose income was less than 50 000 Kenya shillings (equivalent to < 490 US dollars) per annum. Among the respondents (n=1,230), 52.1% had Primary School education, 24.1% had secondary school education, and 10% had no formal education. Among the respondents, who never attended school (n=118), 50.8% lacked the funds, 11.9% reported that school was not accessible, while 10.2% quoted disability/ies as their reason/s for not attending school. In addition, among the respondents, who had left school (n= 60), 38.3% lacked the funds, 18.3% had early pregnancies, and 11.7% quoted failing/underachievement (Table 3.2). Among all the respondents (n=1,230), 63.9% were self-employed in small businesses/farming, 19% were in formal employment, 5.9% were housekeepers/house makers, and 5.4% were students. The highest number of the respondents (99.8%) used public transport means of conveyance, while the rest (0.2 %) used family cars, bicycles, motorbikes or "other" means of transport.

Table 3.2: Distribution of participants by selected demographic characteristics and gender

Characteristic	**Gender** (n=1,230)					
	Male		**Female**		**Total**	
	n	**%**	**n**	**%**	**n**	**%**
Level of Education						
No formal school	51	4.1	72	5.9	123	10
Less than primary	18	1.5	12	1.0	30	2.4
Primary	287	23.3	354	28.8	641	52.1
Secondary	137	11.1	159	12.9	296	24.1
College/University	38	3.1	52	4.2	90	7.3
Vocational Training	13	1.1	18	1.5	31	2.5
Special School	8	0.7	11	0.9	19	1.5
Sub-totals	552	44.9	678	55.1	1230	100
Family income (KES**)**						
<50,000	463	37.6	568	46.2	1031	83.8
>50,000 -100, 000	58	4.7	67	5.4	125	10.2
>100,001-200,000	27	2.2	34	2.8	61	5.0
300,000 or more	2	.2	4	.3	6	.5
Refused to say	2	.2	5	.4	7	.6
Sub-totals	552	44.9	678	55.1	1230	100
Work status *(self, parent or guardian)*						
Employed	120	9.8	114	9.3	234	**19**
Self-employed	350	28.5	436	35.4	786	**63.9**
Non-paid work	15	1.2	11	0.9	26	2.1
Student	30	2.4	36	2.9	66	**5.4**
Housekeeping	18	1.5	55	4.5	73	**5.9**
Retired	4	0.3	5	0.4	9	0.7

Unemployed -health reasons	12	1	12	1	24	2
Casual labour	3	0.2	8	0.7	11	0.9
Other	0	0.0	1	0.1	1	0.1
Sub-totals	552	44.9	678	55.1	1230	100
Reason for not attending school						
Not enough money	29	24.6	31	26.3	60	**50.8**
Illness	4	3.4	0	0.0	4	3.4
Lack of interest	2	1.7	3	2.5	5	4.2
Disability	4	3.4	8	6.8	12	**10.2**
School not accessible	3	2.5	11	9.3	14	**11.9**
Other	0	0.0	7	5.9	7	5.9
I don't know	8	6.8	8	6.8	16	13.6
Sub-totals	50	42.4	68	57.6	118	100
Reason for leaving school						
Failing/underachiever	5	8.3	2	3.3	7	**11.7**
Early pregnancy	0	0.0	11	18.3	11	**18.3**
Lack of interest	5	8.3	1	1.7	6	10
Illness	2	3.3	2	3.3	4	6.7
Not enough money	12	20	11	18.3	23	**38.3**
I don't know	4	6.7	3	5	7	11.7
Liberation war	2	3.3	0	0.0	2	3.3
Sub-totals	30	50	30	50	60	100

3.8.3. Prevalence of Disabilities (n=1,230)

Of the 1,230 respondents, 12.6% (155) had some form of disability, the highest prevalence was found among those aged 60 years and above (40% [n=62]). Among the 155 persons with disabilities, women had a higher prevalence of disability (56.1% [n=87]) than men (43.9% [n=68]). Among the 155 persons with disabilities, 86.5% (n=134) lived in families that earned less than 50,000 Kenya shillings annually. Overall, more than 1-in-3 people with disabilities had no formal education, and 2-in-5 had primary school education (See Table 3.3).

Table 3.3: Prevalence of disability by selected Socio-demographic characteristics (n=155)

Characteristic	**Frequency** (n =)	**Percentage** %
Age		
2-4	12	7.7
5-17	33	21.3
18-32	15	9.7
33-45	17	11
46-59	16	10.3
60 and above	62	**40**
Total	155	**100**
Gender		
Male	68	**43.9**
Female	87	**56.1**
Total	155	**100**
Family income (KES, 000s)		
< 50,000	134	**86.5**
50,000-100,000	11	7.1
100,001-200,000	7	4.5
300,001 or more	2	1.3
refused to say	1	0.6
Total	155	100
Level of education		
No Schooling	57	**36.8**
Primary	66	**42.6**
Secondary	12	7.7
College/University	7	4.5
Vocational Training	4	2.6
Special School	9	5.8
Total	155	100

3.8.3.1. Prevalence of disabilities by core activity domains (n=155)

Among those with disabilities (n=155), 61.3% had mobility disability, 43.9% had visual disability and 43.2% had cognition disabilities (see Table 3.4).

Table 3.4.: Prevalence of disabilities by core activity domains

Disability Domain (n=155)	with disability		without disability	
	n=	(%)	n=	(%)
Visual	68	**43.9**	87	56.1
Hearing	31	20	124	80
Mobility	95	**61.3**	60	38.7
Communication	22	14.2	133	85.8
Cognition	67	**43.2**	88	56.8
Self-care	36	23.2	119	76.8
Upper body	14	9	141	91

3.8.3.2. Prevalence of other disabilities among children

Among the children with disabilities aged 5-17 years (n=33), 51.5% had behaviour control disability, 45.5% had disability in accepting changes, 42.4% had disability of "being understood" inside, and a similar percentage outside their household, 42.4% had learning disability, and 39.4% had memory disability. Of the children with disabilities aged 2-4 years (n=12), 83.3% had learning names of objects disability, 75% had "being understood" disability and similar percentages had learning and playing disabilities (see Table 3.5).

Table 3.5: Prevalence of other disabilities among children

Type of Disability	with disability		With no disability	
	n=	(%)	n=	(%)
Children aged 5-17 years (n=33)				
Being understood inside household CFD 12 (5-17)	14	**42.4**	19	57.6
Being understood outside household CFD 13 (5-17)	14	**42.4**	19	57.6
Learning disability- CFD14 (5-17)	14	**42.4**	19	57.6
Memory [Remembering things] CFD15 (5-17)	13	**39.4**	20	**60.6**
Behaviour Control - CFD 18 (5-17)	17	51.5	16	48.5
Concentration - CFD 19 (5-17)	4	12.1	29	87.9
Accepting changes - CFD 20 (5-17)	15	45.5	18	54.5
Making friends - CFD 21 (5-17)	14	42.4	19	57.6
Children aged 2-4 years (n=12)				
Understanding someone CFD 11 (2-4)	8	66.7	4	33.3
Being understood by guardian - CFD 12 (2-4 years)	9	75	3	25
Learning disability-CFD13 (2-4)	9	75	3	25
Learning names of Objects CFD 14 (2-4)	10	83.3	2	16.7
Playing - CFD15 (2-4)	9	75	3	25

3.8.3.3. Prevalence of disability by domain and selected socio-demographic characteristics

Among the persons with some form of disability (n=155), women (34.2%) had a higher prevalence of mobility disability, compared to men (27.1%). Additionally, women (30.3%) had a higher prevalence of cognitive disability, compared to men (12.9%). Regarding upper body disability (difficulty raising a 2-litre bottle of water to eye level), more women (7.1%), than men (1.9%), suffered from this disability. Some of the respondents had more than one disability; therefore, n=100%.

Older persons, 60 years of age and older, had higher rates of disabilities in most activity domains, except in self-care (6.5%), where the 5-17 year old children had a higher prevalence (8.4%). Of the group of respondents with disabilities (n=155), 25.2% with visual disability, 32.9% with mobility disability and 25.8% with cognitive disability, were individuals aged 60 years and older. Regarding the prevalence of disability, based on families' income, the highest percentage (55.5%) represented individuals with mobility disability, followed by 38.7% with cognitive, and 38.1% with visual disability, most of whom (n=134) were residing in families with the lowest annual income (earned less than 50,000 Kenya shillings). The prevalence of disability (cognitive, mobility and visual disability) increased, with the decrease in the level of education, for example, from 1.3%, 1.9%, 1.9%, respectively, among those with university/college education, to 23.2 % (cognitive disability), 27.1% (mobility disability) and 21.9% (visual disability) among those with no formal education.

Respondents living in rural households had higher rates of visual disability (20.6%), compared to 13.5% in urban households. Respondents living in urban households had a higher prevalence of mobility disability (24.5%) compared to only 19.4% and 17.4%, in those who live in rural and urban/rural settings, respectively. Cognitive disability was more prevalent (19.4%) among respondents living in rural settings, compared only 12.3% in rural/urban settings.

Table 3.6: Prevalence of disability in core activity domains by selected socio-demographic characteristics

Characteristic	Seeing		Hearing		Mobility		Communication		Cognition		Self-care		Upper body	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Gender (n=155)														
Male	32	20.6	16	10.3	42	27.1	10	6.5	20	12.9	17	11	3	1.9
Female	36	23.2	15	9.7	53	**34.2**	12	7.7	47	**30.3**	19	12.3	11	**7.1**
Total	68	43.9	31	20	95	61.3	22	14.2	67	43.2	36	23.2	14	9
Age Group (n=155)														
2-4	3	1.9	1	0.6	11	7.1	0	0.0	0	0.0	0	0.0	0	0.0
5-17	12	7.7	8	5.5	11	7.1	0	0.0	0	0.0	13	8.4	0	0.0
18-32	2	1.3	3	1.9	1	0.6	6	3.9	8	5.2	4	2.6	2	1.3
33-45	4	2.6	2	1.3	10	6.5	4	2.6	10	6.5	6	3.9	1	0.6
46-59	8	5.2	3	1.9	11	7.1	2	1.3	9	5.8	3	1.9	1	0.6
≥60	39	**25.2**	14	9	51	**32.9**	10	6.5	40	**25.8**	10	**6.5**	10	**6.5**
Total	68	43.9	31	20	95	61.3	22	14.2	67	43.2	36	23.2	14	9
Family income (n=155)														
<50,000 KES	59	**38.1**	28	18.1	86	**55.5**	19	12.3	60	**38.7**	29	18.7	12	7.7
>50-100 KES	6	3.9	3	1.9	5	3.2	2	1.3	3	1.9	4	2.6	1	0.6
>100-200 KES	2	1.3	0	0.0	4	2.6	0	0.0	2	1.3	2	1.3	1	0.6
300 or > KES	1	1.5	0	0.0	0	0.0	0	0.0	1	0.6	0	0.0	0	0.0
refused to say	0	0.0	0	0.0	0	0.0	1	0.6	1	0.6	1	0.6	0	0.0
Total	68	43.9	31	20	95	61.3	22	14.2	67	43.2	36	23.2	14	9
Education level (n=155)														
No formal school	34	**21.9**	14	9	42	**27.1**	9	5.8	36	**23.2**	13	8.4	10	6.5
Primary	24	15.5	13	8.4	38	24.5	10	6.5	25	16.1	13	8.4	2	1.3
Secondary	5	3.2	3	1.9	7	4.5	0	0.0	1	0.6	2	1.3	1	0.6
College/University	3	1.9	0	0.0	3	1.9	1	0.6	2	1.3	2	1.3	0	0.0
Vocational Train	1	0.6	0	0.0	1	0.6	1	0.6	2	1.3	2	1.3	1	0.6
Special School	1	0.6	1	0.6	4	2.6	1	0.6	1	0.6	4	2.6	0	0.0
Total	68	43.9	31	20	95	61.3	22	14.2	67	43.2	36	23.2	14	9

Note: Family income in Kenya Shillings is in thousands (KES). One Kenyan Shilling was equivalent to 0.0102 US dollars

3.8.3.4. Prevalence of pain and fatigue episodes by age

Among the respondents with disabilities, aged 18 to 60 years and older (n=110), the majority (35.5%), who had pain on most days prior to the time of the study, were people aged 60 years and older. Similarly, the majority (31.8%), who experienced fatigue on most days prior the date of the study, were people aged 60 years and older. Some of the respondents had more than one disability.

Table 3.7: Distribution of prevalence of pain and fatigue episodes by age category

Enquiry	Frequency of episodes	18-32		33-45		46-59		60 & older	
		n	(%)	n	(%)	n	(%)	n	(%)
In the last 3 months, how often was pain felt.	Never	6	5.5	4	3.6	2	1.8	4	3.6
	Some days	8	7.3	10	9.1	6	5.5	19	17.3
	Most days	1	0.9	2	1.8	3	2.7	22	**20**
	Every day	0	0.0	1	0.9	5	4.5	17	**15.5**
	Total (n=110)	15	13.6	17	15.5	16	14.5	**62**	**56.4**
In last 3 months, how often was fatigue felt	Never	5	4.5	4	3.6	1	0.9	5	4.5
	Some days	9	8.2	9	8.2	7	6.4	22	20
	Most days	1	0.9	3	2.7	4	3.6	21	**19.1**
	Every day	0	0.0	1	0.9	4	3.6	14	**12.7**
	Total (n=110)	15	13.6	17	15.5	16	14.5	**62**	**56.4**

3.8.4. Degrees of disability

When the degree of disability, or degree of limitations and restrictions of capabilities to function, based on the capability conceptual framework, was scored, using the scale of moderate-severe (at least a lot of difficulty and higher), mobility (45%), followed by cognition (25.5%), seeing (12.9%) and self-care (12.4%) disabilities, in reducing order, were the most prevalent disabilities. However, the combined prevalence rate of sensory disabilities (seeing, hearing and communication) was 29.7%. Accordingly, when the degree of difficulty, "unable to do at all", was scored, mobility (10.7%) and self-care (10.3%) activity domains had the highest prevalence rates of severe disability (see Table 3.8). Some of the respondents had more than one impairment; therefore, n=100%.

Table 3.8: Prevalence of Disability by core activity domains

Core activity domain	**Degrees of disability (n=155)**					
	Mild-severe		*Moderate-Severe*		*Severe*	
	n	**%**	**n**	**%**	**n**	**%**
Seeing	68	**43.9**	20	**12.9**	1	0.6
Hearing	31	20	11	7.7	1	0.7
Mobility	95	**61.3**	67	**45**	16	**10.7**
Communication	22	14.2	10	9.1	1	0.6
Cognition	67	**43.2**	28	**25.5**	1	0.9
Self-care	36	23.2	18	**12.4**	15	**10.3**
Upper body	14	9	5	4.6	1	0.9

Scale: 1=*Mild- Severe* (At least some difficulty & higher) 2=M*oderate-Severe* (At least a lot of difficulty & higher) 3=*Severe* (Unable to do at all)

3.8.5. Utilization of Assorted assistive devices, personal assistance and medications

3.8.5.1. Utilization of Mobility aids and personal assistants

Among the respondents with disabilities (n=155), 25.2% (n=39) were using mobility equipment, or some person's assistance. Of those using mobility aids, or someone's assistance, (n=39), 79.5% were using walking canes, and 7.7% (n=3) were using crutches, while 5.1% (n=2) used some person's assistance for their mobility (see Table 3.9). Of the participants using mobility aids (n=39), 74.4% (n=29) and 12.8% (n=5) were persons aged 60 years and above and 46-59 years respectively. There was a statistically significant association between "using a mobility aid and gender (X^2= 4.432, df= 1, *P-Value* = .035).

Table 3.9: Distribution of PWDs using Mobility aid by Type of aid used (n=39)

Type of assistive aid used	**n**	**(%)**
Cane or walking stick	31	(79.5%)
Walking frame	2	(5.1%)
Crutches	3	(7.7%)
Wheelchair	1	(2.6%)
Someone's assistance	2	(5.1%)
Total	**39**	**(100%)**

3.8.5.2. Utilization of Assorted Assistive Devices, Sign Language Interpreter, Medications

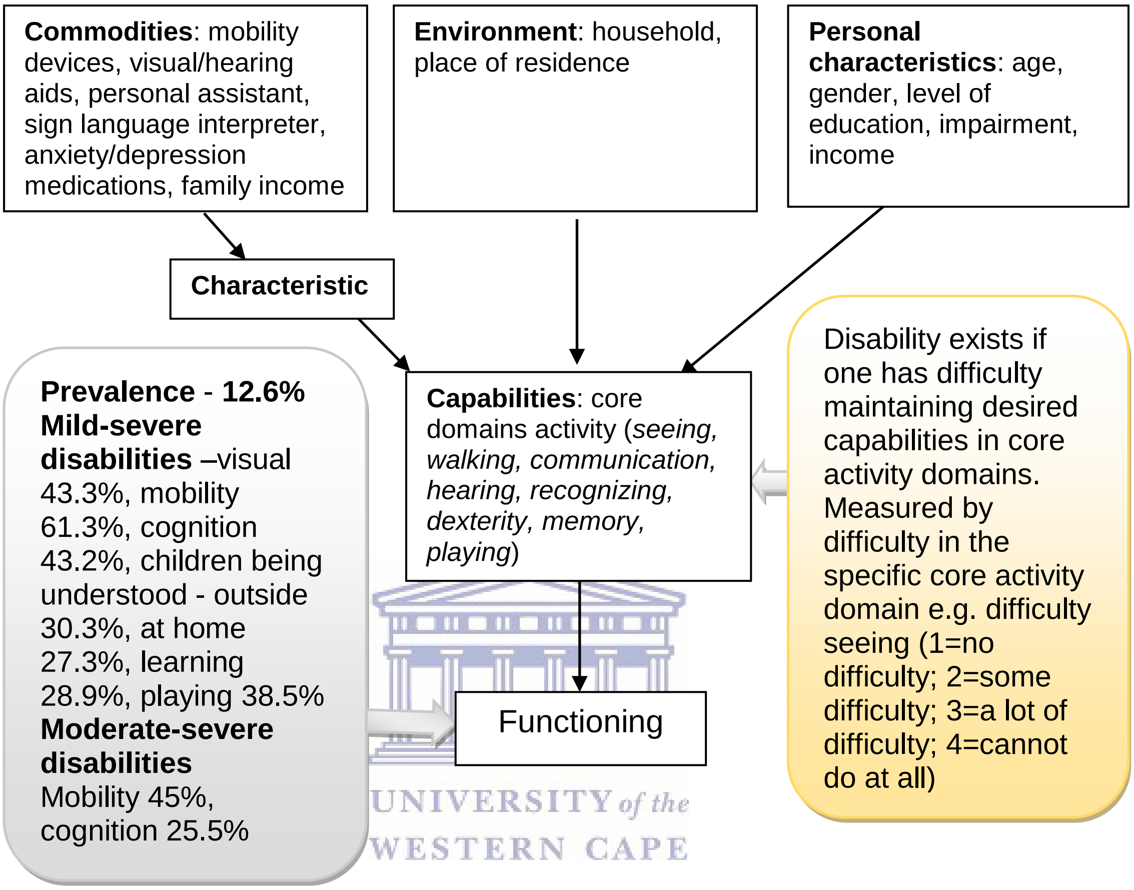
Of all participants with disabilities (n=155), 10.3% (n=16) were using visual aids. Slightly more males than females were using visual aids. Only 1.9% (n=3) of all participants used hearing aids, and all were males. There was a statistically significant association between “using a hearing aid and gender (X^2= 3.914, df= 1, *P-Value* = .048). Among the participants with disabilities, very few 2.8% (n=3), both males and females, used sign language to communicate. Additionally, 17.7% (n=18) both male and female were using anti-anxiety medications while 11.7% (n=12) both male and female were on anti-depressant medications.

Table 3.10: Distribution of PWDs utilizing assorted assistive devices, sign language interpreter and medications by gender

Gender					
Variable	**Use status**	**Male**	**Female**	**N**	**P-Value**
Visual aid	Yes	9 (5.8%)	7 (4.5%)	16	.292 X^2= 1.110, df=1
	No	59 (38.1%)	80 (51.6%)	139	
	Total	**68 (43.9%)**	**87 (56.1%)**	**155**	
Hearing aid	Yes	3 (1.9%)	0 (0.0%)	3	**.048** X^2= 3.914, df= 1
	No	65 (41.9%)	87 (56.1%)	152	
	Total	**68 (43.9%)**	**87 (56.1%)**	**155**	
Mobility aid	Yes	23 (15.5%)	16 (10.8%)	39	**.037** X^2= 4.365, df=1
	No	43 (29.1%)	66 (44.6%)	109	
	Total	**67 (44.6%)**	**82 (55.4%)**	**148**	
Sign language	Yes	1(0.9%)	2 (1.9%)	3	.796 X^2=.067, df =1
	No	42 (39.6%)	61 (57.5%)	103	
	Total	42 (40.6%)	63 (59.4%)	106	
Takes anxiety medications	Yes	7 (6.9%)	11 (10.8%)	18	.828 X^2=.047, df=1
	No	35 (34.3%)	49 (48%)	84	
	Total	42 (41.2%)	60 (58.8&)	102	
Takes depression medications	Yes	4 (3.9%)	8 (7.8%)	12	.577 X^2=.312, df=1
	No	38 (36.9%)	53 (51.5%)	91	
	Total	42 (40.8%)	61 (59.2%)	103	

3.8.6. Application of the capability approach conceptual framework in the context of the study

Figure 3.1 Analysis of Disability based on the capability approach: Conceptual framework



3.9. Discussion

3.9.1. Prevalence of disability

The prevalence of disability among communities in the selected Counties of Kenya (12.6%), which is lower than the WHO estimated 15.2% of the Kenyan population (WHO, 2011). The difference in the two prevalence rates is partly because the World Health Report asked about decrements in functioning in the past month (due to health conditions), thus including fairly acute health conditions (WHO, 2011: p.294). The World Health Survey data analysis was based on a contestable threshold for disability. In contrast, the present study only considered difficulties the individual has been experiencing in various activity domains. The prevalence of disability found in the present study, though comparable to Zambian figures (Mont, 2007; Eide & Loeb, 2006), is clearly lower than the 18.5% and 22.2%, obtained in Australia (Australian Bureau of

Statistics, 2009; 2012) and the USA (Courtney-Long *et al.*, 2015), respectively. Using the Washington Group - ICF derived questionnaires in two Zambian national disability surveys, Mont (2007), as well as Eide and Loeb (2006), reported disability prevalence rates of 13.1% and 13.3%, respectively. The low prevalence of disability found in this current study is attributable to Kenya's youthful population, compared to the older populations of Australia and New Zealand. A population is considered "youthful", if between 4% and 6% are aged 60 years and older, and "aged", if 10% or more are aged 60 years and older (Lutz, Sanderson & Scherbov, 2008). The 2009 Census indicated that only 5% of the Kenyan population were aged 60 years and older. In contrast, in 1998, the prevalence of Australian and USA populations aged 65 years and over, was 12.2% and 14.3%, respectively (Kinnear, 2001). The difference between the countries is the inevitable result of higher fertility in Kenya, compared to that of Australian and USA, which is low, coupled with low mortality rates in the latter two countries (Kinnear, 2001; Cornwall & Davey, 2004).

While few disability-related research studies have been conducted in Kenya, the Kenya National Bureau of Statistics (formally known as the Central Bureau of Statistics) has been collecting data in Censuses from 1948 (Odhiambo & Ndilinge, 2005). The most recent 2009 census (Republic of Kenya, 2010), reported 4% prevalence of disability in the population. Based on the available information, it is clear that the Kenya National Bureau of Statistics used the definition and methodologies that combine conditions with impairments, as disabilities, which omit the inclusion of PWDs with communication, upper body and learning disabilities, as well as pain (Kenya Population and Housing Census, 2010: p. 524). Firstly, the census used questions that enquired about the type of disability a person had, which could only capture limited disability data, compared to the WG/UNICEF questions used in this current study. The WG/UNICEF questions enquire about the level of difficulty in performing activities in each domain, such as seeing and hearing. Therefore, the data generated in this current study are unique, in the sense that it covered the breadth of disabilities, which previous surveys could not capture, such as cognition, self-care, pain and fatigue, as well as learning disabilities. The data already generated provided the opportunity to study the different disabilities and their impact on individual PWD's potential or well-being. It also provides a basis for future disability-related studies.

3.9.2. Prevalence of moderate-to-severe disability by Activity Domains

This current study revealed that mobility (45%), followed by remembering or concentrating (cognition, 25.5%), seeing (12.9%), self-care (12.4%) were prevalent disabilities. The rates are similar for mobility disability, but lower in remembering or concentrating and seeing disabilities, compared to those reported in Botswana (Eide & Mmatli, 2016). Regarding the living conditions for persons with activity limitations, in Botswana, Eide and Mmatli (2016) observed that 46.1% had mobility disability, 34.3% had self-care, 26.1% had difficulties in remembering or concentrating, while 18.2% had seeing and 11.2 % hearing problems. Although this current study's findings are low for hearing and seeing disabilities, the mobility disability rate is similar to the USA 2010-2011 National Health Interview Survey's reported prevalence (CDC, 2013). Using a definition of disability that included "impairment, activity limitations and restriction on social participation" the National Health Interview Survey, USA, 2010-2011 reported walking/climbing problems at 45%, problem solving 38%, dependence 34%, hearing 24% and seeing at 20% prevalence (CDC, 2013). This is unlike the study of Courtney-Long e*t al.* (2015), which reported lower prevalence rates of mobility (13%), cognition (10.6%), seeing (4.6%), and self-care (3.6%) disabilities among US citizens. Although not significant, the differences observed in the estimated prevalence of the CDC (2013) and this current Kenyan study, may only be explained by the differences in the age-clusters of the two samples, in which the USA one could have more older individuals (>60 years old). This implies that some variations in the distribution of disability prevalence exist between countries, and so should policies targeting PWDs.

Previous studies conducted in the region (Botswana, Zimbabwe, Zambia and Malawi) on the living conditions of people with activity limitations, presented prevalence of disability for "seeing, hearing and communication" as sensory impairments data (Eide & Loeb, 2005; 2006). Similarly, the Zimbabwe, Zambia and Malawi studies also presented intellectual disabilities, learning disorders and emotional disorders as merged data. Therefore, in the following sections, the prevalence of "seeing, hearing and communication" disabilities is presented under the "sensory disabilities" sub-heading.

3.9.3. Mobility Disability

As reported in previous studies, in this current study, mobility disability was the most prevalent activity limitation, which is a significant source of concern. This current study's estimated prevalence, is not only similar to a study conducted by Eide and Loeb (2003), which reported a 45% prevalence in the living conditions of persons with activity limitations in Zimbabwe, but also shows concurrence with those of previous studies in other countries. Zambia and Malawi national surveys on the living conditions of persons with activity limitations indicate that the prevalence of mobility disability was 42% and 43% respectively, and the highest compared to other activity domains-related disabilities (Eide & Loeb, 2005; 2006).

Although it was not within the scope of this current study, previous studies conducted in Kenya revealed that injuries sustained in road traffic accidents involving passengers, pedestrians, cyclists and motorcyclists (Bachani *et al.*, 2012; Odero, Khayesi & Heda, 2003; Ingstad & Grut, 2007; Odero, Garner & Zwi, 1997), including debilitating medical problems, are major causes of mobility disabilities (Mayou & Bryant, 2003). Mobility disability is also perceived to be a consequence of diabetic foot ulcers and deformities that are prevalent (Mugambi-Nturibi, Otieno, Kwasa, Oyoo & Acharya, 2009; Nyamu, Otieno, Amayo & McLigeyo, 2003). Persons reporting mobility disability often have limitations in other ADLs, IADLs, social integration, and financial independence. Consequently, a significant proportion of PWDs endure low education, unemployment, being poor (Emerson *et al.,* 2011), and more than likely receive cash transfer benefits (Soares, Ribas & Osório, 2010).

However, an important implication for individuals with mobility disability is the inability to access the physical environments. Because of the difficulties of getting around, the persons with mobility disability may have interrupted schooling, or no schooling at all. The person then loses opportunities to learn, receive vocational training, work or socialize (Nussbaum, 2003). This is supported by Emerson *et al.* (2011), who note that disabled children and adults have greater risk of exposure to living and working conditions, associated with poorer health outcomes, including low education, poorer housing, lower income and employment insecurity. Another implication for them is the inability to access the assistance or support that they need, from time to time, including assistive devices (mobility aids) and rehabilitation services, often due to the cost thereof. In addition to the cost of assistive devices, is the high cost of transport, which affects the mobility of such individuals, exacerbating their inability to secure and maintain employment and live independently (Jacobs & Price, 2006).

A history of mobility disability is strongly associated with physical inactivity and non-communicable diseases, which are disabling in their own right (Aboderin, 2010). It is anticipated that the data gathered in this current study, therefore, will provide a unique basis for future research, to assess the impact of mobility disability, and to establish the level of physical activity participation among PWDs with mobility disability. Ultimately, the established fact that mobility disability is the most prevalent of all types of disabilities raises concern for a disability policy in Kenya.

3.9.4. Cognition Disability

In this current study, cognition disability was the second most prevalent disability (25.5%). This is slightly lower than the 26.1% prevalence rate of cognition disability, reported in the Botswana living conditions for persons with activity limitations survey (Eide & Mmatli, 2016). However, the prevalence rate of cognition disability in Kenya is clearly higher than that reported (10.6%) in the USA (Courtney-Long *et al.*, 2015). Various studies conducted in the region, besides Botswana, namely, Zambia, (Eide & Loeb, 2006), Malawi (Loeb & Eide, 2004), and Zimbabwe (Eide & Loeb, 2005) did not report on cognition disability, but on the combined prevalence rates for intellectual disability, learning disorders and emotional disorders. However, a modicum of information is available on the burden of cognitive impairment and disability, as an outcome of the various injuries that afflict the population in the sub-region, more specifically, Kenya (Odero *et al.*, 2003). This is the status quo, despite the known risk factors for cognitive impairment, including longevity, neurological conditions, epilepsy, autism, Alzheimer's and Parkinson's diseases (Hoy, March, Woolf & Brooks, 2014), injuries and violence having been reported in Kenya (Ogechi & Ruto, 2002).

The lack of data on the prevalence of cognitive impairment has specific implications for the prevention of the development of difficulties in cognition, as well as the interventions to restore social functioning for individuals with cognitive disability. A major implication for individuals with cognitive impairment is the difficulty of accessing education, educational progression and the delay in developing adequate social capital. Another implication for individuals with cognitive impairments is the difficulty of managing their own affairs and social interactions, namely, the difficulty to make friends, to express their sexuality, to achieve family lives, to earn and manage income (Comas-Herrera *et al.*, 2007). Therefore, there is a need for the re-evaluation of cognitive disability, pre-empting strategies, as well as mental health policy changes.

3.9.5. Sensory Disabilities

This current study found a 29.7% combined prevalence rate of moderate-to-severe sensory disabilities (seeing, hearing and communication). This finding is lower than that of previous researches on the living conditions of PWDs conducted in the region, specifically, Zambia, Malawi and Zimbabwe, which reported 47% 42% and 32% prevalence of sensory disabilities respectively (Eide & Loeb, 2005; 2006; Eide *et al.*, 2003). The causes of this disability, reported in studies conducted in the region, include, illness, congenital or birth-related complications, perinatal conditions and accidental (Simkiss, Blackburn, Mukoro, Read & Spencer, 2011; Eide & Loeb, 2005; 2006). Although nearly a half of the Worlds' blindness is due to cataracts (Ingstad & Grut, 2007), Trachomatous inflammation that causes potentially blinding eyelid deformities and corneal scaring, is a major cause of blindness and visual loss in Kenya (Schwab *et al.*,1995). In Kenya, Simkiss *et al*. (2011) report the use of ototoxic drugs, besides genetic and cerebrovascular disease, to be a major risk factor for deafness and hearing impairment.

Sensory disabilities, like visual impairment, have implications for mobility, social interactions, work and schooling, especially reading texts. A key implication for children and adults with sight disability is the difficulty to access essential services, including ophthalmic (sight correction), re/habilitation, personal assistance and employment. Access to essential services may be influenced by several factors, including the individual's awareness concerning the services, attitude, availability, and cost of the service and of transportation and distance travelled (Peters *et al.*, 2008; Jacobs & Price, 2005).

The deaf or hard-at-hearing PWDs, including children, experience difficulty with language development and educational progression (Convertino *et al*., 2009; Marschark *et al.*, 2006). An implication for the deaf and hard-at-hearing population is the unavailability and inaccessibility of hearing aids, interventional medical care, lack sign language skills, unemployment and transport. Based on the prevalence, established by this current study, of 7.7%, which is slightly lower than the regional average (that range from 11.2% in Botswana to 15.7% in Malawi), it is plausible that the Kenyan health strategy against childhood diseases has had a positive impact. However, the present data provides a unique basis for future research, to establish the impact of sensory disabilities on PWDs and their families.

3.9.6. Self-care Disability

Self-care disability (12.4%) was the fourth most prevalent disability in this current study, which was much lower than the reported 34.3% prevalence in the living conditions of persons with activity limitations, conducted in Botswana (Eide & Mmatli, 2016). The current study's estimated prevalence of self-care disability is slightly higher than the WHO (2011) report, which revealed that at least 8.5% of PWDs experience moderate-to-severe limitations in self-care. Self-care disability is an outcome of the decline of physical functioning that could accelerate the development of other conditions leading to further disability (Fried *et al.,* 2004). In Kenya, as in other countries of the Sub-Saharan region, conditions such as stroke and rheumatoid arthritis (McGill, 1991), as well as burn-related deformities of the arms and legs, result in self-care disability (Ingstad & Grut, 2007). Ingstad and Grut (2007) observed that victims of burns often develop deformities of the arms and legs, in both sexes and across all age groups, which limit self-care abilities.

Self-care disability has diverse implications for individual PWDs. Firstly; they may need constant assistance with “self-care” (bathing, grooming and dressing, toileting and feeding), activities of daily living (getting in and out of bed) and instrumental activities of daily living (make the bed, buying grocery, preparing meals, house cleaning and gardening). Secondly; PWDs with self-care disability suffer social isolation, lack income or have other unmet needs, including, healthcare and rehabilitation, education, vocational training and employment due to the inaccessibility of services. A major implication for individuals with self-care disability is the unmet need for assistance and/or support. In addition, they are unable to manage their own finances, or engage in social interactions. Despite the lack of formal assistance or support to those with self-care disabilities, family members, friends and well-wishers provide the assistance, albeit inconsistently (Braithwaite & Eckstein, 2003).

3.9.7. Disability and gender

This current study’s finding that more women (56.3 %), compared to men (43.7 %), had disability, concurs with the findings of a study conducted by Xu (2013), who observed that disability among women was higher [6.3 million people] than among men [5.4 million people] in the 2011/2012 UK disability survey. The findings of this current study also compares favourably with those of the USA 2013 MMWR household survey report (Courtney-Long *et al.*, 2015), in which women had a higher prevalence of disability (24.4%), than men did (19.8%). The gender gradient revealed in this current study, is consistent with the findings of the Survey of Income and Program Participation (SIPP), conducted by the CDC and the USA Census Bureau, which indicated that men had lesser (19.1%) disability prevalence, compared to women (24.4%), at all ages (CDC, 2009).

On average, health-adjusted life expectancy at age 60 in high income countries, ranged from 19 years for females, to 10 years for males, while it remains low for both men and women in sub-Saharan Africa (Mathers *et al.*, 2004). The low levels of health-adjusted life expectancy in sub-Saharan Africa may be indicative of the increased impact of the HIV-AIDS pandemic, violence and tribal conflicts, in conjunction with traditional causes of premature mortality in the sub-region [malaria, tuberculosis, pneumonia and diarrheal diseases] (Lopez, Mathers, Ezzati, Jamison & Murray, 2006: p. 9). In Kenya, female health-adjusted life expectancy was less than one year higher than for males (Mathers *et al.*, 2004). The widening of the sex gap in Kenya could reflect the sharp increase in young people’s over-involvement in road accidents and violence. Therefore, a particular implication exists, for research on the determinants of the disability gradient, discriminating females. The implication (higher burden being in women, than in men with disabilities) is the isolation of women in daily life due to poor health and loss of social networks. According to Mathers *et al.* (2004), the longer life expectancy in high income countries is confounded by a higher prevalence of disabling conditions, such as dementia and musculoskeletal conditions.

3.9.8. Disability, ageing and pain

In this current study, 40% of those with some of form of disability were aged 60 years and older, compared to 31% of working age adults (18-59 years). These findings are slightly lower than those of the study conducted by Mont (2007), which was 46% for persons aged 60 years and older; however, at only 15% for those aged 15 to 59 years, this current study's finding is higher. In New Zealand, more adults older than 65 years of age (59%), were reportedly living with disabilities, compared to 21% of adults below 65 years of age (Statistics New Zealand, 2014). This implies that the ICF-based instruments, used in this current study, are able to detect persons with various activity limitations and participation restrictions, as opposed to measures previously used to measure disability in Kenya. The higher prevalence of disability found in this current study has implications for the availability, magnitude and quality of services required by PWDs.

In this study, 56.4% of PWDs, aged 60 years and older, experienced frequent pains and fatigue. These findings concur with the CDC (2013) report, which revealed that up to 33% of adults afflicted with arthritis, experience severe pain, with some having participation restrictions in valued social activities. In contrast with the findings of this current study, the findings of a study conducted by Cockburn, Cleaver and Benuh (2014), in the North West Region of Cameroon, revealed a low prevalence of pain (2.8%). Cockburn *et al.* (2014) estimated the prevalence of at least moderate-severe pain impairment on their subjects, using an ICF checklist, while this current study used the Washington group questionnaire, which seeks to establish how often pain was experienced (some days, most days or every day) over the past three months. A particular implication for this current study's finding is the inability of PWDs, aged 60 years and older, to access healthcare services, compared to their counterparts in high income countries (WHO, 2011).

In addition, this current study revealed a high prevalence of intellectual, learning and cognition disabilities among school going children (aged 5-17). These findings concur with those of a New Zealand survey report, which indicated that learning disability affected over half of all children with any disability (Statistics New Zealand, 2014). This current study's findings are also consistent with those of a study conducted by Xu

(2013), which indicated that children were more likely to have learning disability, cognition and communication disabilities, in the UK. Despite the present study's findings being consistent with studies conducted in other countries, there is an obligation to improve health outcomes for children aged 5-17. There is also an obligation for early childhood care, schooling, and vocational training, to ensure that they are able to acquire life skills for independent living in the future.

3.9.9. Socio-demographic factors

3.9.9.1. Personal characteristics

This current study revealed that, over four-in-five of the respondents' families (83.8%), had low incomes (less than 490 USA dollars a year [50,000 Kenya Shillings]), with half of the families minding PWDs. The findings of this current study are similar to those of Krahn, Walker & Correa-De-Araujo (2015), which indicated that a higher prevalence of PWDs' households (34%), had the lowest income (less than 15,000 USA dollars per annum) compared to those of persons without disabilities (15%). In their study, Krahn *et al.* (2015) compared the differences in incomes between persons with disabilities, and those without. They observed that people with disabilities were more than likely to earn less income, than those without disabilities. In this current study, 63.9% of the PWDs survived on self-employment (small-scale businesses and subsistence farming). Urban-residing PWDs (17.4%) were less likely to engage in self-employment activities, than those residing in rural (27.1%), and urban/rural (25.2%) areas. This study finding is comparable to that of a study conducted by Pagán (2009), which indicated that PWDs were more likely to be in self-employment, than the able-bodied people. Pagán (2009) compared self-employment between PWDs and the able-bodied individuals, as well as gender, using data from the European Community Household Panel for the period 1995-2001 in 13 European countries (Denmark, The Netherlands, Belgium, France, Ireland, Italy, Greece, Spain, Portugal, Austria, Finland, Germany and the UK). The overarching implication is the inability of PWDs to procure and retain employment, therefore, to overcome this drawback, some PWDs resort to self-employment in small-scale businesses.

This current study observed that working status was significantly associated with place of residence. Previous studies have not explored the influence that places of residence have on working status. However, what matters most is the inability of persons with disabilities to execute ADLs due to their impairment, irrespective of the level of education. Each of these personal characteristics, place the individual at a socio-economic disadvantage. This current study also observed that 60% of PWDs lived in male-headed households. This finding is similar to that of the Kenya Integrated Household Budget Survey [KIHBS], 2005/06 (Republic of Kenya, 2005), which found that 60.2% of Kenyan households are male headed. An important implication, observed from this current study, is the socio-economic disadvantage among male PWDs, who head households. Research has revealed that male-PWD-headed-households are generally poor (Hoogeveen, 2005).

Further, the findings of this current study indicated that nearly 2 in 5 PWDs had no formal education. This finding is slightly higher than the 1 in 4 PWDs in Zambia and Mozambique, compared to only 1 in 10 people without disabilities (Eide & Kamaleri, 2009; Eide & Loeb, 2006). Although the prevalence is low in the UK, Xu's (2011) finding that 15% of persons with disabilities had no formal education (compared to only 7% of people without disabilities) reflects the same disadvantage observed in this current study. This implies that PWDs in Kenya, as in other countries in the region, encounter more barriers to accessing education than in the UK. On the flipside, access to education appears to favour men with disabilities in Kenya; for instance, this current study revealed that females were more likely to drop from school, compared to males. The findings of this current study are consistent with those Eide and Loeb (2006), which indicated that fewer women with disabilities attended school in Zambia. Generally, the low educational attainment among PWDs has implications for their employability and inequity of incomes (Eide & Kamaleri, 2009; Elwan, 1999). The implications on employability and unequal incomes point to a socio-economic gap that may exist between PWDs and persons without disabilities (Eide & Kamaleri, 2009; Pagán, 2009).

These gaps may exist, despite Kenya's long history of attempts to increase access to education, including special education, and to provide equal opportunities to

PWDs. Kenya has had a series of committees and commissions since 1964. These committees and commissions include: the Ngala Mwendwa, 1964 Committee on Care and Rehabilitation of Disabled; the Gachathi, 1976 National Education Commission on Education objectives and Policies; the Presidential Working Committee on Education and Training for the next decade and beyond, as well as the Kamunge Report 1988 (Republic of Kenya, Ministry of Education, 2009). Additionally, Kenya has had the Commission of Enquiry into Education Systems, the Koech Report, 1999, and the Kochung, 2003 Task Force on Special Needs Education (Republic of Kenya, Ministry of Education, 2009). The Kenyan Government, through funding from DANIDA, also initiated 17 educational assessment and resource centres (EARCs) on 1st September, 1984, growing to 200 centres by 1991. The strategy was to ensure early identification, assessment, intervention, and referral of children and young people with special needs and disabilities, to appropriate education or training programmes (Bii & Taylor, 2013); a role that is now part of the Kenyan Education Act (Republic of Kenya, 2003). In addition, despite these strides in improving access to education for PWDs, this current study reveals that over 3 in 4 PWDs (79.4%) had completed primary level of education and below. This is consistent with the proportions of PWDs, who had completed primary level of education or less, in Zambia (80%) and Malawi (85.2%). This implies that, regardless of the government’s efforts, educational attainment among PWDs remains low.

This current study reveals that 1 in 5 PWDs were on medications for anxiety. This finding is similar to that of a study conducted by Van der Linden *et al.* (2007), which revealed a 20% prevalence rate for anxiety. One important implication is the inability to cope with stress (emotional and psychological problems) in their daily lives. The inability to cope with stress has indirect implications for an individual’s overall health and social functioning. This implies that PWDs with anxiety problems may need emotional and psychological support. In addition, PWDs, like their peers without disability, need mental health and counselling services to alleviate suffering and improve their well-being.

3.9.10. Assistive Devices, Assistive aids and Supports

This current study found that 1 in 4 PWDs (25.2%) were using assistive devices, or personal assistance for mobility. The majority (3 in 4) used walking canes and were aged 60 years and older. This current study's findings are slightly higher than those of a study conducted by Eide and Kamaleri (2009), which indicated that 1 in 5 PWDs in Mozambique was using an assistive device, either for mobility (wheelchairs, crutches and canes), information (hearing aids, eyeglasses) or assistive technology. In contrast to this current study's findings, Eide and Loeb (2006) observed that only 13% of the PWDs in Zambia were using assistive devices for mobility. The difference between the current study findings and those of Eide and Loeb (2006) could be attributed to the difference in the methodology.

In addition, the current study also found that some PWDs had acquired assistive devices, such as eyeglasses, hearing aids and mobility aids that had not corrected their disability status. Consistent with the findings of this current study, Statistics New Zealand (2014) reported that 11% of all PWDs in New Zealand had functional limitations, such as hearing and seeing, that assistive devices failed to correct. A second implication is for uncorrected activity limitations on the adult PWDs is a progressive slide into poverty and marginalization, due to incapacity. Ultimately, an important implication of uncorrected activity limitations on the individual PWDs is the inability to access mainstream services, including transport, medical care, education, vocational training and social services.

3.10. Conclusion

This current study reveals a prevalence of disabilities that is not only higher than those reported in previous national surveys, but also one that is comparable to those reported in studies conducted in the region. It has produced a unique data set that outlines prevalence rates across activity domains by levels of severity. Additionally, the study has clearly revealed disability prevalence rates across age groups and between sexes, which are similar to those reported in other studies. Virtually no other information of this kind has been generated in, or for, Kenya. As in other published studies, a key finding in this current study is that persons with disabilities, as well as their households, are worse off on important human development indicators; for example, there has been significantly low educational attainment among those with disabilities, compared to those without disabilities.

The data presented in this current study offers new insights into the various types of disabilities, as well as levels of severity, conceptualized on the ICF activity limitations and participation restriction paradigm. These concepts provide a broader view of disability that is way beyond the old definition, which was based on "physical impairments", by categorizing an individual's capability to do activities of daily living, without special accommodations or support within their environments. Therefore, disability is viewed through a new lens, and the focus is shifted from impairment, to societal inclusion and participation. In addition, this current study represents a first possibility of studying different aspects of the well-being of persons with disabilities in the country. It also provides a basis for the monitoring of the situation in the future. Therefore, it is an important link in the initiative to establish a regional database.

The researcher recommends for the following:

(1) Capacity building of professionals for better educational assessment and placement;

(2) Robust health and disability policies to address the possible exclusion of PWDs from the services they require;

(3) Integration of special education into teacher training curricula, (a) to reduce exclusion of children with learning and cognitive disabilities, as well as the deaf and hard-at-hearing, and (b) to eliminate of all levies and fees charged by special schools, secondary schools, colleges and universities; and

(4) Support services are made a core component of the new disability policy.

3.11. Summary of the chapter

In summary, the researcher's primary objective in this current study was to establish the prevalence of disabilities in selected counties, in Kenya. The Multi-Stage systematic random sampling, lottery method, used to reach the sample of 1230 participants in urban, urban/rural and rural households, as well as the research ethics observed, was outlined in this chapter. According to Onwuegbuzie and Leech (2007), the method is appropriate to use, when the objective is to generalize the interpretation to the entire population. Multi-stage sampling involves "cluster random sampling whereas subsequent stages involve simple random sampling" (Onwuegbuzie & Leech, 2007). Based on this assumption, the key findings highlighted in this chapter, are that 12.6% of the Kenyan population have some form of disability; the most common being mobility, followed by cognition, visual and self-care disabilities. Of all the PWDs in Kenya, women have a higher prevalence of mobility and cognition disabilities, compared to men. Over 1 in 2 PWDs, aged ≥ 60 years, suffer from frequent pain and fatigue. Common disabilities found in children (2-17) included learning and cognitive disabilities. Over 1 in 3 PWDs in Kenya lack formal education. Of all the PWDs in Kenya, 1 in 4 uses an assistive device, or personal assistance, for their mobility; however, some of the assistive devices used, do not correct the disabilities.

These findings are comparable to those of previous studies conducted in the region, based on the ICF definition and disability assessment tools. There are several implications to these findings, including areas of policy concern; firstly, the higher disability prevalence rate than described in previous surveys, and secondly, the feminization of disability, as well as its attendant implications.

CHAPTER FOUR

AN EXPLORATION OF THE NEEDS FOR AND UTILIZATION OF PWDS-SPECIFIC SUPPORT SERVICES IN KENYA

4.1. Background and Introduction

In this chapter, the researcher describes a qualitative study to explore the need for, and utilization of, disability support services, which is phase 2, part 2A of the research process, as indicated in Chapter 2. It comprises a background to the study, the methodology, findings and discussion, concluding with a summary of the chapter.

4.1.1. Support services and the Capability Approach

The demand for appropriate support services for persons with disabilities is escalating, globally, raising public health policy concern. The term “appropriate support services”, as applied in this current study, denotes the means to function(ing) in environmental contexts (Robeyns, 2005). Based on the conceptual framework used in the study, the Capability Approach, when individuals’ capacities and environmental demands are unmatched, deprivation of capabilities occurs (Mitra, 2006). As stated in chapter one, the deprivation of capabilities, in turn, creates the need for support (Thompson *et al.*, 2009).

4.1.2. Need for disability support services

The few established disability support services are increasingly being overstretched and sometimes do not meet the diverse needs of persons with disabilities [PWDs] (Fisher & Shang, 2013; Trani & Loeb, 2012). Most persons with disabilities need disparate assistive devices and equipment for mobility or sensory functions (hearing and/or seeing), personal assistance, sign language interpreter services, as well as information technology equipment, as means to achieve the equalization of opportunities (WHO, 2001). Studies conducted in both developed and developing countries have revealed that many PWDs need assistance with activities of daily living (ADL). In 2012, the Australian Bureau of Statistics report (2012) indicated that almost 2 in 3 (61%) PWDs needed assistance in at least one ADL. In addition, the USA census 2010 results revealed that at least 4.4% of PWDs needed assistance with some ADL (Brault, 2012).

Studies conducted in sub-Saharan Africa, found that persons with disability after-stroke required more assistance with self-care activities – washing, dressing, bathing, feeding, transferring, or toileting (Southern Africa Stroke Prevention Initiative [SASPI] Team, Connor, Thorogood, Casserly, Dobson & Warlow, 2004); Walker *et al.,* 2000). In Tanzania, for example, Walker *et al.* (2000) found that 60% of PWDs needed assistance with at least one activity of daily living. In a South African study, SASPI Project Team and Thorogood *et al.* (2004) reported that 66% of stroke survivors needed assistance in at least one activity of daily living. Research evidence has revealed that most PWDs have a range of support needs, as they face substantial risks of losing capacity to participate in their social and physical contexts including, schooling, maintaining employment and independence living (WHO, 2011). Other researchers have shown that PWDs face discrimination associated with participation restriction (Bottari *et al.*, 2012; Hardy & Gill, 2004; Batavia & Beaulaurier, 2001). Therefore, the need to build accessible and affordable support systems exists, to ensure the progressive inclusion of all PWDs.

In a survey to examine psychological distress and unmet need among 2,717 adults (aged 18 and over) with dual sensory impairment, Bodsworth, Clare and Simblett (2011) observed that PWDs had a high level of unmet need for support. Mont (2007) documented a report on a study conducted in Uttar Pradesh and Tamil Nadu, in India, asserting that 17.2% of PWDs could only care for themselves with assistive aid-appliance. In a qualitative study, conducted in Cheshire, U.K, the Cheshire Deaf Women's health project surveyed 38 women (13 of whom were hard of hearing and 14, who were deaf sign language users) concerning access to healthcare. The lack of awareness by health staff of how to communicate with them was the most unmet need identified by the respondents (Ubido, Huntington & Warburton, 2002). In a study of 172 adults with visual impairments, living and working in Nigeria, inadequate assistance and inaccessible equipment were the two most significant unmet needs identified by the participants (Wolffe, Ajuwon & Kelly, 2013).

4.1.3. Utilization of Support Services

Researchers have revealed that PWDs utilize various forms and intensities *of individualized supports, based on changing needs for assistance (*Thompson *et* al., 2009). However, the utilization of the needed support depends on whether it is available, accessible and affordable to the PWDs in need. As used in this current study, an available support is a service that is geographically and financially accessible to the individuals in need, while accessible support means that the individual in need can solicit and receive support at a price that is within his/her means (Peters, Garg, Bloom, Walker, Brieger & Hafizur Rahman, 2008; Jacobs, Bigdeli, Annear & Van Damme, 2011). Based on the concept of changing needs for assistance, Braithwaite and Eckstein (2003) noted that PWDs do not only experience low provision of assistance often, but may receive solicited and unsolicited assistance offered by strangers.

However, recent studies suggest that generally there is a low utilization of support services by most PWDs, for various reasons, including structural, social and attitudinal barriers (WHO, 2011; Savill, Stone, Venter & Maunder, 2003). According to the WHO report (2011) and Comas-Herrera *et al.* (2007), most PWDs rely on informal caregivers, for example, family members and friends, for assistance in ADL and instrumental activities of daily living (IADL). In addition, other researchers also report that PWDs rely, almost entirely, on family members and friends, to pay for the types of support services they require, such as assistive devices (Mont, 2007; LaPlante, 1992). Though, some PWDs with severe disabilities, may receive assistive devices from national and/or regional governments or non-governmental organizations.

4.1.4. Lack of support services

Globally, it is estimated that less than 15% of the need for assistive devices/ technologies, and as low as 3% of the need for hearing aids is being met (WHO, 2015). The low access indicates that, there is a substantial gap in the provision and accessibility of support services, including assistive devices/technologies, in many countries, which hinder many PWDs from utilizing mainstream services (Eide & Ingstad, 2013). Research evidence has revealed that most PWDs (75%) often do not get the services they need from service providers, due to a lack of the necessary support services (WHO, 2011; Donnelly *et al*., 2007). According to Mitra (2005), having physical access to a service delivery centre does not guarantee access to the services. This is partly the case because; there could be communication and/or other social barriers between the PWDs and the services providers. For those persons with sensory impairments, information communication may need to be in alternative formats, such as large print, pictures, lip-reading or in sign language. In addition, illiteracy could be a barrier to services access for PWDs in many developing countries, for various reasons, including exclusion from general education (Mitra, 2005). The dumb, deaf, and hard-of-hearing, who have had no formal education, may be unable to read written information or comprehend sign language.

The lack of appropriate support services is not unique to any one country. For example, Xu (2011) observed that only 1-in-20 children with disability, in the UK, received support services from their local authority. Quite often, the majority of PWDs experience difficulty in finding someone to assist them in ADL, including conveying them to and from social and recreational facilities, hospitals, schools, and vocational training centres, as well as places of worship (Kochtitzky, Freeland & Yen, 2011) and are rarely successful (WHO, 2011). The causes of the lack of support services (example assistance with ADL) are diverse and include informal caregivers, who have limited help they can provide, as they have to balance caregiving to PWDs with their other responsibilities, such as caring for a child, or employment (Mitra, Posarac & Vick, 2013; LaPlante, Kaye, Kang & Harrington, 2004).

Whether it is a child, or an adult with disability, who lives alone; to a large extent, and based on customs and traditions, both depend on formal assistance, if available and affordable (Mitra, Posarac & Vick, 2013). Mor, Masterson-Allen, Houts & Siegel (1992) observed that a third of patients reporting the need for assistance had inadequate help, and most unmet needs were associated with the patients' mobility, as well as the inability of their informal support system to provide the assistance needed. Researchers attribute the state of unmet support needs to either having a limited supply, lack of the needed support services, unsupportive environment or personal characteristics (Sands *et al.*, 2006; Havercamp *et al.*, 2004). According to Iezzoni, Killeen and O'Day (2006), the lack of knowledgeable professionals in nearby facilities, PWDs inability to make long trips to health facilities, poverty and lack of health insurance are some causes of the lack of needed support services. In a qualitative study, McElroy, Konde-Lule, Neema, Gitta and The Uganda Sustainable Clubfoot Care Project (2007) observed that the distance to the treatment facility, poverty, and the lack of support from parents, as well as the informal caregivers' other duties were some causes of the lack of needed services.

Additionally, researchers have revealed that personal characteristics, like gender, affect accessibility to needed support. In a study to establish the differences in spousal caregiving, with a sample of 353 married people, diagnosed with cancer, Allen (1994) established that husbands were less likely to assist their partners in ADL and IADL, especially household chores, with which their partners needed help to execute. Allen (1994) noted that the expectations for most caregiving tasks were associated with traditional women's responsibilities, such as cooking, house management and assisting the sick, whereas men view these responsibilities as "malfit" roles. Lima and Allen (2001) observed that women with disabilities were more likely to lack personal assistance, compared to men. It is plausible to state that role expectations, perpetuated through various cultures, may create unsupportive environments, which victimize women with functional decline or disabilities (Lima & Allen, 2001; Allen, 1994). Using self-reports of unmet needs for personal assistance services in ADLs and IADLs, LaPlante *et al.* (2004) established that 29% of people with disabilities reported that they required more support services than they received, and estimated that those with ADL disabilities needed 16 to 19 hours more per week of ADL assistance. Additionally, the reason/s that PWDs, usually, do not receive enough assistance, could be attributable to their personal characteristics, including living alone, divorced or never married, living in households with fewer persons, or are uninsured (Lima & Allen, 2001).

4.1.5. Effects of unmet needs for support services

Unmet needs for support services are prevalent occurrences, affecting PWDs in both developed and developing countries. These are largely attributable to the lack of resources, as well as personal and contextual factors. Based on the Capability Approach conceptual framework, an individual's resources are his/her possessions, cash in hand or assistive devices; while personal factors include age, sex, attitude, level of education, working/employment status, health condition and/or impairment, among other factors (Mitra, 2006).. In addition, contextual factors include inaccessible physical environments (buildings and equipment), lack of assistive technology, negative societal attitudes, the lack appropriate social services, policies, the economy, culture and politics (Trani *et al.*, 2009; Nussbaum, 2003). The interaction of these factors often restricts the range of opportunities available to the individual with a health condition, or impairment (Dubois & Trani, 2009). The ensuing restrictions oppress, exclude, or deprive PWDs' potential choices; thereby exposing them to serious negative consequences for their well-being (Dubois & Trani, 2009; Sen, 2005; Nussbaum, 2003). In a longitudinal study to assess the effect of unmet needs for ADL on nursing care, Gaugler, Kane, Kane and Newcomer (2005) observed that more unmet need for assistance in ADL, predicted admission to a nursing home, loss of follow-up visits and death.

In another longitudinal cohort study, conducted to establish the impact of unmet needs for assistance in ADL, Sands *et al.* (2006) observed that frail elderly PWDs, living without needed assistance in ADL, had a higher risk for acute care admissions. In their study, Desai *et al.* (2001) noted that many PWDs with unmet needs for assistance faced negative consequences, such as the inability to feed when hungry. These negative consequences also include the lack of basic healthcare (Trani & Loeb, 2012; Steinberg, Wiggins, Barmada & Sullivan, 2002), low educational attainment, and unemployment (Trani & Loeb, 2012; Kalyanpur, 2008; Statistics South Africa, 2005). In the USA, a study conducted to assess the knowledge, attitudes, and health care experiences of 45 deaf women, Steinberg *et al.* (2002) noted that unmet needs for sign language interpreters, or sign language interpretation, from healthcare providers, caused PWDs to avoid using the services and to rely on peers for support with any information they needed. In their study, Bat-Chava, Martin & Kosciw (2005) observed that unmet communication needs caused deaf communities experience difficulties accessing information and health care in hospital settings. A typical example is the report by UK, the Cheshire Deaf Women’s health project that less than one in ten deaf women admitted to understanding what the doctor had to say, on individual consultations (Ubido *et al.*, 2002). Researchers have revealed that unmet support needs may result in a high prevalence of underdeveloped human capital. For example, 33.8% of people with moderate-to-severe disabilities, in South Africa (Statistics South Africa, 2005), and 95% of children with disabilities in India, have had no schooling (Kalyanpur, 2008). However, in a study conducted to assess the effects of informal support on the ability to complete ADL, Seeman, Bruce and McAvay (1996) observed that a higher maximum frequency of instrumental support was the strongest predictor of increased the risk of ADL disability among men.

4.2. Factors influencing the utilization of disability support services

A myriad of factors affect the use of disability support services in many countries, ranging from differences in socio-economic status, unequal distribution of support services, inadequately skilled service providers, and discrimination (Hanass-Hancock, 2009; Watermeyer, Swartz, Lorenzo, Schneider & Priestly, 2006).

4.2.1. Socio-economic factors

Persons with disabilities usually face socio-economic difficulties, due to their higher out-of-pocket expenditure, compared to persons without disability. The findings of a study to determine the prevalence and correlates of unmet needs for personal assistance revealed that the likelihood of having one or more unmet needs was associated with lower income, having multiple ADL difficulties, and living alone (Desai, Lentzner & Weeks, 2001). This is partly because persons with severe disabilities, who need fulltime assistance in ADL and IADL, often have difficulties retaining paid personal assistants and are uninsured. In their study, Lima and Allen (2001) observed that insurance status and the availability of social support (access to informal caregivers) were key factors related to the lack of care. In a study of prevalence, determinants and consequences of unmet needs for assistance with ADL, IADL, as well as transportation of adults with disability, in the USA, Allen and Mor (1997) reported the inability to meet medical expenses, having a few or no reliable helpers, and the severity of the impairment as major factors determining unmet needs. Callahan and Cooper (2006), using the USA National Health Interview Survey from 1999-2002 data, to assess the health insurance status and health care access of young adults with disabilities attributable to a chronic condition, revealed that 35% of the 1109 respondents with chronic conditions had an unmet healthcare need, due to the cost of support and lack of insurance cover.

Research evidence suggests that persons with disabilities face many unmet needs for caregiving or help, due to the costs thereof (WHO, 2011; LaPlante, 1992). An analysis of pooled Medical Expenditure Panel Survey data of the 2004-2010 period, conducted by Reichard, Stransky, Phillips, McClain & Drum (2017), examined the delaying, or forgoing of necessary care among people with disabilities, and those without disabilities in general, as well as among the insured. In their study, Reichard *et al.* (2017) observed that even insured adults with multiple chronic conditions, and those in need for assistance in ADL and IADL, reported the inability to afford caregivers, as the key reason for delaying/forgoing necessary healthcare.

In many low income countries, persons with disabilities are over 50% more likely than people without disabilities to report costs as the reason for not accessing healthcare (Banks et al., 2016; WHO, 2011)

Some researchers have revealed that the social statuses of PWDs, such as being divorced, separated, never married and living alone, confer the substantial risk of having no one to care for them, when their health deteriorates (Gaugler *et al.,* 2005; Lima & Allen, 2001). A scoping review, conducted by Merten, Pomeranz, King, Moorhouse and Wynn (2015) on the barriers to cancer screening of persons with disabilities, found that the level of education, income, age, employment, screening history, tobacco use, activity level, and geography affected screening rates.

4.2.2. Unequal distribution of services

In many countries, a lot of disparity and inequity exists regarding in the distribution of services. In South Africa, for instance, there is an unequal distribution of special schools, with the Western Cape accommodating over one fifth of all special schools in the country (Watermeyer *et al*., 2006). In a study to explore the association between blindness and deprivation, in a nationally representative sample of adults in Pakistan, Shah *et al.* and all on behalf of the Pakistan National Eye study Group (2008) observed that access to eye care services were lower in poor areas (75.1%), compared to affluent clusters (80.6%). In addition, research evidence suggests that poor PWDs use public-funded health services more often, and are less likely to access HIV-related support services, compared to the rich ones (Zere & McIntyre, 2003, Hanass-Hancock, 2009). Concerning health care benefits distribution in Kenya, an analysis of data from two nationally representative cross-sectional household surveys, conducted by the Ministry of Health in 2003 and 2007, established that the health system distribution and the level of care is generally pro-rich (Chuma, Maina & Ataguba, 2012). Chuma *et al.* (2012) attributed this situation of health care distribution in Kenya to geographical and financial accessibility. Geographical accessibility has been identified in many studies as a key barrier to healthcare access in developing countries, where more health facilities are located in urban areas than in rural settings, where the majority of PWDs live (McElroy *et al.*, 2007; Iezzoni, Killeen & O’Day, 2006).

Inequity of access to support services is captured in the Inverse Care Law (Hart, 1971), which states, that “the availability of medical care tends to vary inversely with the need for it in the population served”. In other words, there is failure to realize (the objective of social and geographical) equality of access to support services. The disparity is characterized by the location of poorer quality Healthcare facilities in the poorer neighbourhoods (Hart, 1971). Therefore, there is an implication for a disability policy that addresses PWDs needs for inclusion in socioeconomic development, without discrimination. The policy should specify the government’s obligation to increase access for all PWDs to all forms of support services, including devices, implants, equipment, information communication technology and assistance. The policy should, in part, highlight the government’s obligation to building all PWD human capital, by facilitating the development of environments that are conducive to PWDs’ unhindered participation. Additionally, the policy should safeguard the PWDs’ human right of access to necessary commodities (including social security and health insurance), relative to the capability conceptual framework.

4.2.3. Service providers’ skills and other contextual factors

Several studies have identified service providers’ skills as key determinants of the uptake of services by PWDs (Bat-Chava, Martin & Kosciw, 2005; Hemmingsson, Borell & Gustavsson, 2003; Steinberg, Wiggins, Barmada & Sullivan, 2002). In a study on help provided for children with disabilities and the school assistants’ influence on their participation in school, Hemmingsson, Borell and Gustavsson (2003) observed that the school assistants might both facilitate and hinder participation, partly due to their inadequate skills in special needs.

Researchers have revealed that the lack of service providers with sign language skills, including sign language interpreters, makes access to information and health care problematic for the deaf and hard-to-hear communities (Bat-Chava, Martin & Kosciw, 2005; Steinberg *et al.*, 2002). The sheer lack of interpretation services is not only in hospital settings, but also in most forums, including information conveyed via electronic and print media (Hanass-Hancock, 2009). Other researchers have identified inadequate health worker skills and the lack of specialized health services in local hospitals as specific barriers to healthcare (Bernabe-Ortiz *et al.*, 2016; Iezzoni *et al.*, 2011; Drainoni *et al.*, 2006). In addition, Iezzoni *et al.* (2006) and O’Day *et al.* (2002)

noted that the difficulty of using experienced and knowledgeable specialists as the primary care providers was an additional barrier to accessing healthcare.

In a study of health plan selections by persons with functional impairments, O'Day *et al.* (2002) identified the lack of accessible transportation, inaccessible buildings and examination equipment, as significant factors, hindering access to needed healthcare services. Savill *et al.* (2003) identified three barriers to the accessibility of public transport services faced by persons with disabilities in urban areas of four countries (India, Mozambique, Malawi and South Africa), namely, structural, social and psychological. Additionally, Nosek (2000) noted that inaccessible public transportation, the lack of someone to help during hospital visits, and long waiting times for appointments in overcrowded public hospitals, in USA, all discouraged persons with severe disabilities from seeking treatment for health problems, in good time.

Some studies have revealed that service-related barriers faced by persons with disabilities, in developing countries, include physically inaccessible services, limited awareness, complex and unaccountable administrative systems, as well as difficulties meeting the conditions attached to disability benefits (example: cash transfers) and eligibility criteria (Banks et al., 2016; Bernabe-Ortiz *et al.*, 2016; Gooding & Marriot, 2009).

4.2.4. Discrimination

Research reports indicate that PWDs, especially women, experience a vicious cycle of discrimination in most areas of social development, including education, employment, income, marriage and parenting (Hanass-Hancock, 2009; Dube, 2005) and healthcare (Zere & McIntyre, 2003). Hanass-Hancock (2009) argued that women with disabilities are denied the opportunity to make choices in sexual relationships, are violated, are over-protected and may miss school, if the distance walked to school is too long. In the UK, Hague, Thiara and Mullender (2011) conducted a study to assess the needs of women with disabilities, suffering from domestic violence, and the available services. These authors observed that some support services providers ignored, or inappropriately responded, to the condition of the women. Another study, conducted by Smith (2008), to determine the relationship between gender, disability and health care, established that women with disabilities had less access to health care, compared to women without disabilities. This implies that, despite the differences in cultures among world communities, prejudice against women with disabilities is widespread across developed and developing countries. In Northern Ireland, a study conducted by Anderson and Kitchin (2000) observed that women with disabilities received partial physical access to primary health clinics, but had severely limited access to family planning services and information, attributed to prejudice. In Afghanistan and Zambia, Trani and Loeb (2012) observed that women with disabilities had a very low likelihood of attending school.

Extrapolating from this scenario, any country's laws to protect PWDs against discrimination in mainstream contexts, for example, education, vocational training, job reservation and healthcare, among others, are less likely to be effective. The legislation will be effective only, when those countries implement concrete policies and actions to maximize the provision of appropriate support services to all PWDs, irrespective of social status and type of disability (Dube, 2005).

4.2.5. Exclusion from mainstream contexts

Working age adults and children with disabilities experience many disadvantages, due to exclusion from mainstream settings, in both developed and developing countries. An example, are the results of a study conducted in the UK, which established that over 1-in-3 (36%) working-age adults with disabilities experienced difficulty accessing public services, such as employment, compared to only 22% of people without disabilities (Xu, 2013). Additionally, based on an analysis of data from the National Health Interview Survey (NHIS) and the Current Population Survey (CPS), Burkhauser, Daly, Houtenville and Nargis (2002) revealed a trend for the period 1980-1999, during which PWDs were twice more likely to be unemployed, compared to persons without disabilities.

Another study that recognised disadvantage in mainstream contexts, was a longitudinal study conducted in Canada, investigating the rate of unmet healthcare needs (Casey, 2015). In this study, the author observed that PWDs had two to three times the rate of unmet healthcare needs, compared to those without disabilities (Casey, 2015). In their study, in two developing countries, Trani and Loeb (2012) observed that, people with disabilities had lower access to education, healthcare and the labour market, irrespective of their disability status. This reveals the systemic failure to focus on PWDs' needs for support, despite some of the countries having ratified the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD).

The UNCRPD is seen as the most progressive human rights instrument of the 21st century, which sets out a perspective of what human rights imply, in the context of disability. It provides protection for the rights of persons with disabilities, to be treated as equal citizens (WHO, 2011; Mont, 2007). The UNCRPD covers many areas, including accessibility to the environment and information, health, education, employment, access to justice, personal security, and independent living and was adopted by the United Nations in 2006 (Mont, 2007).

4.3. The UNCRPD and policy to eliminate discrimination against PWDs

The UNCRPD articles 9, 19, 24, 25 and 27 on reasonable accessibility to mainstream settings provide state parties to the convention and policy direction for the elimination of discrimination against PWDs (Guernsey *et al.*, 2007; Mont, 2007). For example, article 9 emphasizes the accessibility in physical and built environments, transportation, communication and information, as well as electronic and emergency services. Article 19 emphasizes independent living and inclusion in the community, while article 20 emphasizes that state parties should facilitate personal mobility and make quality assistive aids, devices, assistive technologies and personal assistance available to PWDs (UN General Assembly, 2006). Articles 24, 25, 26 and 27 emphasize the right to education, health, rehabilitation and employment respectively (UN General Assembly, 2006). Therefore, although the provision of accessible and conducive environments, in line with UNCRPD, is important, the provision of support services, quality assistive aids, devices, and assistive technologies is even more important to PWDs. The provision of appropriate support services ensures that PWDs have potential to exercise autonomy/independent living and, can safely move as well as participate in community environments. Only then, can environmental adaptations and modifications become meaningful in the lives of most PWDs. From the PWDs' viewpoint, autonomy relates to the state of being in full control of, and making decisions concerning their lives (Nyman & Lund, 2007). Independence, from this viewpoint, relates to obtaining the support, when and in the manner the assistance is desired (Nyman & Lund, 2007).

4.3.1. Discrimination, Victimization, Harassment and Violence

In many contexts, PWDs are discriminated, victimized or harassed because of their disability (Mitra, Mouradian & McKenna, 2013; Mitra, Manning & Lu, 2012). In a qualitative Canadian study, conducted during 2005 and 2006 on the perception of disability, involving 56 individuals with disabilities, Shier, Graham and Jones (2009) observed that workplace and employer discrimination, as well as labelling, were major work-related barriers. In a UK study, Xu (2013) established that 8-in-10 children with learning disability, and 20% of adults with disabilities, are socially discriminated, harassed and victimized because of their impairment, including recurrent verbal abuse outside their homes. In the England and Wales 2002/2003 crime report, Simmons and Dodd (2003) observed that PWDs were frequent victims of violence or rape.

However, crimes against PWDs are rarely reported, although rampant. In a literature review to describe the prevalence of violence against PWDs, Hughes, Lund, Gabrielli, Powers and Curry (2011) observed no difference in violence against both genders with disabilities, while other researchers suggest that there *are* differences regarding gender and the prevalence of violence. Mitra, Manning and Lu (2012) observed that women with disabilities are more prone to physical abuse, even when they are pregnant, compared to those without disabilities. The gender-based violence is mostly physical and sexual violence (Xu, 2013). Hague *et al.* (2011) and Schuller (2005) also reported that women with disabilities are twice as likely to have been abused and raped, compared to non-disabled women.

In a systematic review and meta-analysis, to synthesize the evidence for the prevalence of violence, as well as the risk of violence towards children with disabilities, Jones *et al*. (2012) revealed that children with disabilities are more likely to be victims of violence, compared to children without disability. Overall, at least 2-in-3 PWDs report that the perpetrators of these revealed types of harassment, are young people, strangers, parents, family members and service providers (Hughes, Lund, Gabrielli, Powers & Curry, 2011; Hague, Thiara & Mullender, 2011).

4.3.2. Inclusion of PWDs in mainstream contexts

Despite the acknowledgment that PWDs have the right to be included in mainstream contexts, advocacy for the removal of human-made social-structural barriers is poor in low and medium income countries. Persons with disabilities are excluded from basic and mainstream services, which they often need, mainly because of social-structural barriers. For example, in a UK survey, Xu (2013) observed that the lack of lifts, parking difficulties, lack of ramps/rails, and footpath design were major barriers. In a study in the USA that described a model of different levels at which the physical environment could influence mobility, Kochtitzky *et al.* (2011) established that older persons, and PWDs, experience restriction in community participation, due to inaccessible buildings, transport systems, and raised curbs. Similarly, in a South African study on PWDs' experiences of barriers in urban and rural settings, Maart, Eide, Jelsma, Loeb and Ka Toni (2007) observed that, those in urban settings experienced barriers in the products and technology (mobility, communication, public and private buildings) category, while those in rural settings perceived their major barriers to be in the services category (housing, legal and education services).

Studies conducted in some sub-Saharan African countries, involving national representative samples, revealed considerable gaps in support services, such as the lack of assistive devices, as well as devices with new technology, with close to half of the PWDs not receiving any (Eide & Ingstad, 2013). Eide & Ingstad (2013) observed that PWDs in the region lacked many services that they needed, including education, mental and physical health, employment, access to information, as well as community participation. In a study on the living conditions among people with activity limitations in Malawi, Loeb and Eide (2004) revealed that 32.9% of school-age children with disabilities did not attend school.

This region's governments' disinclination to provide disability support services, equipment and technology that compensates for sensory impairments, in favour of mobility aids (although minimal) undermines the realisation of potential well-being of individual PWDs with disastrous outcomes (Wehbi & El-Lahib, 2007). Nussbaum, (2007) posits that disability support services, when utilized, augument individual PWD's capabilities and help to reduce activity limitations and participation restrictions.

Despite the increase in functioning (decrements in activity limitations and participation restrictions) amongst PWD's utilizing disability support services, there is an omission, by many governments of resource poor countries, to introduce disability support services as a key pillar of their society's social development and investment priority. From the literature reviewed, the support services (variables) needed and utilized by persons with disabilities is apparently limited to help in ADL/IADL and health care, and to lesser extent mobility devices; therefore, not exhaustive. In addition, studies conducted in other countries, such as the UK (Hague *et al.*, 2011), the USA (Kochtitzky *et al.*, 2011; Reichard *et al.*, 2017), Afghanistan and Zambia (Trani & Loeb, 2012), identified cost, affordability, geographic availability, discrimination, and inadequate help as key factors that influenced the utilization of services needed by persons with disabilities.

However, there is a lack of empirical data on factors influencing the utilization of disability support services in Kenya. Little or no effort has been made to assess the demand, supply and utilization of disability-specific support services among PWDs in sub-Saharan Africa, more specifically in Kenya. The researcher found no study in grey and published literature that had established the demand, supply and factors affecting the utilization of disability-specific support services in Kenya. Kenya also lacks a policy on disability support services, besides the Disability Act (Republic of Kenya, Act 14 of 2003) and the Chapter 4 Bill of rights in the Constitution (Republic of Kenya, 2010, Review Act No. 9 of 2008. The New Constitution of Kenya Promulgation).

This phase of the overall study aimed to reduce this void by exploring the needs for (demand), supply and utilization of disability-specific support services among PWDs, in selected counties in Kenya. This contributes to the preparation of a Disability Policy Brief, and future development of a Disability Policy in Kenya. Disability advocacy groups may also use the data for advocacy of support services for PWDs in future. In America, the implementation of the disability policy, integrating support services and advocacy, resulted in increased access to community resources by vulnerable groups, such as women living in abusive relationships (Sullivan & Bybee, 1999). Thus, disability support services is a key focus of this survey. For this study, the capability approach was used as the conceptual framework.

4.4. Methodology

In this phase (Phase 2, Part 2A), a qualitative sequential exploratory study design was used in the study, while research setting, the target population and sampling are described. In addition, the guide(s) to collect data, the procedure of data collection and data analysis are also described.

4.4.1. Study Design

An exploratory design was selected, using a qualitative study method to collect information concerning the needs of, and utilization of, disability-specific support services, whose entire variables were not apparent from literature and researches, in similar contexts, such as Kenya. As recommended by Creswell and Garrett (2008), and Hanson *et al.* (2005), the study design was chosen because of the lack of empirical data.

The study variables were unknown; therefore, the need for a deeper and broader range of views and perceptions from PWDs and stakeholders concerning the need of, access to, as well as utilization of, disability support services. These broad views were needed to identify the dynamic needs of, and the actual support services, sought by PWDs in Kenya, including the factors that influence them, in order to develop an instrument to assess which of these factors determined their utilization of support services in the quantitative study in part 2B of this phase 2.

4.4.2. Population and Sampling Method

The participants, identified as having disabilities in the survey (Phase 1), who voluntarily agreed to participate in the focus group discussions were purposively recruited (See Chapter 2, section 2.4.2.1.3). The principal researcher also purposively identified key informants in a variety of sectors that deal with disabilities, including rehabilitation, education, associations for persons with disabilities, and social work.

4.4.3. Study Participants

Study participants comprised 52 PWDs, who were organized into six focus groups (each with 8-10 PWDs) that were homogeneous, both sexes included. In addition, six key informants with/without disabilities two from the education sector, one from health sector, two from the national council for persons with disabilities and another from the line ministry responsible for culture and social services) participated in this exploratory study. The reason for recruiting >50 participants in the study was to attain the planned six focus groups, in the recommended group sizes (Morgan, 1996; Onwuegbuzie & Collins, 2007), and to collect data that could provide the whole spectrum of the needs for, and utilization of, disability support services, as well as the factors that mediated, or hindered their utilization.

In practice, focus groups are paired with key informant interviews, because the latter cover greater depth and breadth of the outcome being explored, than the former (Onwuegbuzie & Leech, 2007; Morgan 1996; See also section 2.4.2.1.6 for a description of key informants). Therefore, the approach was appropriate for this exploratory study.

4.4.4. Data Collection Instruments

Two interview guides (Appendices 4A[i], 4A[ii], & 4B), based on the Capability Approach Framework, were constructed and used; one to guide focus group discussions and another to guide the key informants' interviews. The two guides sought information concerning PWDs needs for, and utilization of support services, including the factors that helped, or hindered them from utilizing the support services. The questions in the guides were also focussed on establishing the services they had used.

In addition, the first part of each guide was designed to collect only demographic data from every FGD participant, as well as key informant. The principal researcher, in consultation with the principal supervisor of the research project, had identified experts in disability, who assisted with the construction of the focus group discussion and key informants' interview guides.

4.4.5. Data Collection Procedure

All persons with disabilities identified during the household survey were informed that they could be invited to participate in focus group discussions later, including both males and females. The principal researcher purposively recruited all those who voluntarily agreed to participate in the focus group discussions. They were given the tentative dates, times and venues for focus group discussions in each selected county. The principal researcher also purposively selected and contacted key informants by telephone. When a key informant agreed to be interviewed, a date, time and venue were jointly arranged.

A week prior to the date of the focus group discussions (FGDs) and interviews, reminders were sent by means of telephone calls, as well as two days prior to the date of the meetings. Before the commencement of the focus group discussions, or key informant interviews, the participants were provided with information, verbally and in written format (Appendices 19A[i] & 19B[i]), regarding the purpose of the focus group discussions or key-informant interviews, and the duration of each meeting. During that briefing, each potential participant was informed that audio-recording and written notes would be used to collect data. The importance of keeping the deliberations confidential was also explained to the participants. Thereafter, all the participants signed a focus group confidentiality binding forms (either the English or Kiswahili version, Appendices 19C & 19D); however, the key informants only signed the consent forms (Appendix19A[iii] & 19[iii]).

The research assistants audio-taped the discussions and took field notes for each focus group discussion, as well as each interview with the Key informants, while the principal researcher conducted the focus group discussions, or the key informant interviews (See section 2.4.2.1.6 description of Key informants and diary of appointments for interviews).

4.4.6. Trustworthiness of the collected data

Following Graneheim and Lundman’s (2004) recommendations of ensuring trustworthiness of the research findings, the criteria of the trustworthiness of qualitative data, namely, its credibility, dependability, transferability and confirmability was met, using several strategies.

4.4.6.1. Credibility

To ensure credibility, the chosen method and procedure for identifying participants are described. In addition, the project supervisors reviewed the transcribed data, as well as the analysis memo containing the researcher’s interpretation of the data.

4.4.6.2. Transferability

This current study employed the focus group discussion method and key informant interviews to collect rich data. The paired approach, used in qualitative data collection, is preferred for use in social science studies exploring a phenomenon that is not clearly understood. The results section presents sufficient detail of the participants' verbatim quotations, which allows the reader to assess transferability.

4.4.6.3. Confirmability

The data collection process and analysis are described explicitly for the reader to follow the trail. In this current study, given the researcher's past experience, neutrality was maintained, by including a physiotherapist as a key informant. Additionally, the researcher consulted widely, during the construction of the FGD and key informant interview guides that steered the researcher's focus. In addition, consultative meetings were held with a social research scientist (bound to preserve confidentiality), while developing a coding scheme for data analysis.

4.4.7. Data Analysis

The data gathered from the focus group discussions and key informant interviews were transcribed, verbatim into a Microsoft Word document. Three of the focus group discussions were conducted in Kiswahili, which is one of the official languages in Kenya. The principal researcher is fluent in Kiswahili, and personally conducted the focus group discussions. In addition, the research assistants, who transcribed the data of the focus group discussions, are fluent in both English and Kiswahili.

The data gathered from the others were audio-recorded in the local languages, in which the principal researcher, as well as one research assistant, was fluent. These were later translated from the local language into English. Subsequently, the principal researcher, with assistance of local language interpreters, who had participated in the data collection, cross-checked and verified the transcriptions, using the original handwritten texts and audio-records to ensure that they corresponded. In addition, one research assistant read the transcribed data aloud to the principal researcher, as well as the other research assistant, while they listened. The principal researcher, in turn, read the transcribed data to the two research assistants. This process was followed to ensure that the transcriptions were true representations of what the participants had disclosed.

A code scheme was prepared by consensus between the researcher and a social scientist familiar with the Atlas.ti software. The analysis included; creating codes, using the open coding software option, and the use of the code manager to merge codes. Thereafter, the ATLAS.ti version 6.0 software was used to retrieve the Microsoft Word data files, systematically. Using the code scheme, data coding and classification were done relative to the research objective. The scheme codes included: helpful services; help needed and used; satisfaction with present capability; independence; availability of needed services; basic services; manner in which services are offered; lack of needed services; locally available/accessible support services; suggestions to improve current services; and services needed in future. The integration of the data from the focus groups and that of the key informants was undertaken with the same analytical rigor.

The execution of the analysis was informed by the conceptual framework adopted for this study, and the code scheme was developed by the researcher and the research team, in which the findings were rendered in the form of concepts of themes, developed from the data. The findings of this exploratory study were used to develop a questionnaire to assess the determinants of the utilization of support services, in the selected counties, using quantitative methods covered in the Chapter 5 (referring to Phase 2, Part 2B).

The participants' verbatim quotes are presented to support the narratives. The quotes are presented within inverted commas and italics, to differentiate them from the descriptions under identified themes. The results have been structured relative to the research objective; therefore, materials that were not relevant to this current study were excluded from the verbatim quotation by using the following speech marks (…).

4.4.8. Reflexivity

Self-reflexivity formed a crucial part of this current study, which implies that exceptional professional considerations, transparency and limitations of the role of the principal researcher, including the wealth of experience, socially and professionally, were taken into account. This is despite the fact that the principal researcher had worked for persons with disabilities. It was quite stressful for the principal researcher to synthesize the effects of disability on the socioeconomic and emotional development of the PWDs. However, critical thinking and analytical skills were applied throughout this research process.

4.5. Findings

The ICF contextual factors, and environmental domain, were used as the framework to present the results, relative to the themes and sub-themes that emerged from the analysis of the data, gathered from the focus group discussions, as well as the interviews with the key informants.

4.5.1. Demographic characteristics of Focus Group Participants and Key-informants

The atmosphere for the focus group discussions and key informant interviews was relaxed, unrestricted, and cordial. Fifty-two (52) persons with disabilities participated in six focus group discussions. The first focus group (FG) comprised eight adults aged between 28 and 46 years; the second, ten school-going young people, aged between 13 and 19 years; the third, eight adults aged between 20 and 43 years; the fourth had nine people aged between 44 and 71 years; the fifth, eight people aged between 36 and 65 years; and the sixth FG had nine participants, aged between 16 and 39 years of age. Table 4.1 summarizes the socio-demographic characteristics of the focus groups participants.

Table 4.1: Focus group participants

FGD number	Participant code	Gender	Age	Marital status	Educational level	County of residence	Type of disability
FGD 1	P1	Male	46	married	Primary school	Machakos	physical
	P2	Female	28	single	Primary school	Machakos	physical
	P3	Female	45	Married	< Primary school	Machakos	physical
	P4	Female	50	single	< Primary school	Machakos	physical
	P5	Female	37	single	Primary school	Machakos	physical
	P6	Male	42	Married	Primary school	Machakos	physical
	P7	Female	29	single	Primary school	Machakos	physical
	P8	Male	40	single	< Primary school	Machakos	physical
FGD2	P9	Female	17	single	Primary school	Machakos	physical
	P10	Female	14	single	Primary school	Machakos	physical
	P11	Male	19	single	Vocational Tr	Machakos	physical
	P12	Male	18	single	Primary school	Machakos	physical
	P13	Female	19	single	Vocational Tr	Machakos	physical
	P14	Female	15	single	Primary school	Machakos	physical
	P15	Male	19	single	Secondary school	Machakos	physical
	P16	Male	13	single	Primary school	Machakos	physical
	P17	Female	13	single	Primary school	Machakos	physical
	P18	Female	17	single	Primary school	Machakos	physical
FGD 3	P19	Female	40	single	Primary school	Murang’a	physical
	P20	Male	20	single	Secondary	Murang’a	physical
	P21	Female	38	single	Primary school	Murang’a	physical
	P22	Male	34	Separated	Primary school	Murang’a	physical
	P23	Male	36	Married	Secondary	Murang’a	physical
	P24	Male	34	Married	Secondary	Murang’a	physical
	P25	Female	43	Single	Vocational Tr	Murang’a	physical
	P26	Male	31	Single	Primary school	Murang’a	physical
FGD 4	P27	Male	55	Married	primary	Murang’a	hearing
	P28	Male	71	Married	primary	Murang’a	visual
	P29	Male	50	Married	Vocational Tr	Murang’a	physical
	P30	Female	60	Married	Primary school	Murang’a	physical
	P31	Male	60	Married	Secondary	Murang’a	physical
	P32	Male	70	Married	< primary	Murang’a	physical
	P33	Male	45	Separated	Primary school	Murang’a	physical
	P34	Male	71	Married	Primary school	Murang’a	physical
	P35	Female	44	Separated	Secondary	Murang’a	visual
FGD 5	P36	Male	36	Married	Primary	Nairobi	physical
	P37	Male	45	Married	Secondary	Nairobi	blind
	P38	Female	40	single	Primary school	Nairobi	physical

	P39	Male	54	married	vocational	Nairobi	physical
	P40	Female	50	separated	Primary school	Nairobi	physical
	P41	Female	60	single	Primary school	Nairobi	physical
	P42	Female	56	Married	Primary school	Nairobi	physical
	P43	Male	65	married	college	Nairobi	physical
FGD 6	P44	Female	38	Married	Primary school	Nairobi	Hearing
	P45	Male	39	single	College	Nairobi	physical
	P46	Male	32	single	Secondary	Nairobi	Hearing
	P47	Male	24	single	Secondary	Nairobi	Hearing
	P48	Male	20	single	Secondary	Nairobi	physical
	P49	Male	19	single	Primary school	Nairobi	Hearing
	P50	Male	16	single	Primary school	Nairobi	Hearing
	P51	Female	28	single	Primary school	Nairobi	physical
	P52	Female	32	Married	Primary school	Nairobi	physical

Six key informants, working with PWDs, participated in the study (see Table 4.2). The first key informant was a female social worker, who had a physical disability, and had worked on behalf of PWDs in the head office of the Ministry of Culture and Social Services, for over 20 years, rising from a junior social worker, to the level of national coordinator of disability programmes in the ministry. The second key informant was a middle-aged female, who was a senior special education teacher, and deputy headmistress, at an inclusive school in Machakos County. The third key informant was a middle-aged male with a physical disability, whose background was journalism. He had five years' working experience as a public relations officer at the National Council for Persons with Disabilities (NCPWD) located in an unban setting. The fourth key informant was a male, aged 41 years, with a physical disability, who had three years' work experience as the programmes officer at the NCPWD. Prior to the current posting, he had five years' work experience with PWDs in the rural areas of Kajiado County in Kenya. The fifth key informant was a special education teacher with over seven years' working experience at a rural inclusive school in Murang'a County. Finally, the sixth key informant was a physiotherapist with ten years' experience, three of which were spent working for the Salvation Army schools for children with disabilities in Thika Sub-County, Kiambu County. He was particularly involved in Educational Assessment and Resource Centres (EARC's) that served children with disabilities in school placements and referrals to appropriate resource centres.

Table 4.2: Key Informant characteristics

Participant code	Gender	Age (years)	Occupation	Organization	County
K1	Female	54	Social worker – disabilities	Ministry of Culture and Social Services	Nairobi
K2	Female	35	Senior Teacher - Inclusive school - Deputy Headmistress	Education	Machakos
K3	Male	51	Senior Public Relations Officer	NCPWD	Nairobi
K4	Male	41	Programmes Officer	NCPWD	Nairobi
K5	Male	47	Special Education Teacher	Education	Murang'a
K6	Male	45	Physiotherapist	Ministry of Health	Murang'a

4.5.2. Themes and sub-themes

From the analysis of the qualitative data, the needs, supply and factors affecting the utilization of disability-specific support services, as well as other services, were structured on eight major themes, namely: support services and relationships; assistive devices, technology and built environment; healthcare and rehabilitation; Education and vocational training; other mainstream services; Social welfare; protection against radiation; lastly discriminatory attitude and isolation. Following the analysis, the ICF environmental factors domain was used as the framework for presenting the themes and sub-themes (See Table 4.3).

Table 4.3: Themes and sub-themes that emerged from Focus Group discussions and key-informant interviews

ICF Environmental Factors Domain	Theme	Sub-themes
Support and Relationships	1. Support Services and Relationships	a) Assistance in ADLs /IADLs
		b) Support from family and friends
		c) Support from relationship with professionals
		d) Support from local administration
Products and Technology	2. Assistive devices, technology and built Environment	a) Need, accessibility and affordability or assistive devices
		b) Accessibility of built Environment
Services, Systems and Policies	3. Healthcare and rehabilitation	a) Need for Healthcare and Rehabilitation services
		b) Barriers to Healthcare and Rehabilitation Services
		c) Need for communication support in Healthcare and Rehabilitation Services
	4. Education and vocational training	a) Role of education
		b) Unmet need for support services in Inclusive education
		c) Cash transfer for inclusive education
		d) Limitations of inclusive education
		e)Barriers to special education
		f) Role of vocational training
		g) Unmet need for vocational training
		h) Utilization of vocational skills
	5. Other mainstream services	a) Lack of access to employment,
		b) Lack of access to information and communication,
		c) Utilization of justice, legal and administrative services
		d) Lack of access to transport.
	6. Social Welfare	a) Cash transfer benefit
		b) Health Insurance
		c) Socio-economic empowerment
Natural and Human made changes to environment	7. Protection against radiation	a) Sunscreen cream policy
Attitudes	8. Discriminatory attitude and Isolation	a) Discrimination in hospitals,
		b) Discrimination in public transport,
		c) Discrimination in family
		d) Discrimination in employment,
		e) Harassment and victimization in the justice system
		f) Negative attitudes and isolation in schools
		g) Discrimination in public

4.5.2.1. Theme 1: Support Services and Relationships

Concerning support and relationships, both the FGDs participants and key informants spoke of support, which they outlined as coming from family and friends; assistance in ADLs/IADLs; support from local administration; and relationships with professionals. The participants expressed that they did not have access to paid personal assistants, nor did they receive support, whenever they were in need. Therefore, four sub-themes emerged from the theme of support, namely: Assistance in ADLs/IADLs; Support from family and friends; Support from local administration; and Support from relationships with professionals.

4.5.2.1.1. Sub-theme 1a: Assistance in activities of daily living and instrumental activities of daily living (ADL/IADL)

The FGD participants reported that PWDs occasionally need assistance to perform activities of daily living and instrumental activities of daily living. These include mobility, eating, cooking or bathing and dressing. The following verbatim quotations from two male participants summarize what most of the participants said concerning their need for, and utilization of, personal assistance to perform activities of daily living and instrumental activities of daily living:

> *"I need support to do activities that I'm unable e.g. in building construction I cannot hammer nails properly."* (P 28)

> *"I am not comfortable because I cannot make progress without support."* (P 27)

4.5.2.1.2. Sub-theme 1b: Support from family and friends

The FGD participants, most of whom were not attending school, reported receiving the assistance, they needed to complete activities of daily living, mainly from family members. The following verbatim quotations from three participants expressed their main source of support:

> *"I need a lot of support to accomplish my daily work (...). When washing whole body I need support to take water to the bathroom. Unless with support, I do little. With crutches in my*

> *hands, I do little. My wife supports me, without my wife I am "fixed" at a point."* (P 22)

> "*My children support me in what I do, including my wife*." (P 32)

> *"(...) need to be supported to accomplish all I require"* (P 23)

Besides the support of family members while the PWDs are at home, the participants also expressed that children with disabilities depend on their caretakers, entirely. However, when the children with disabilities attend school, they receive support from friendly teachers. A key informant's and a focus group participant's verbatim quotations explain the utilization of support provided at home and in school settings:

> "*The caretaker of the child with disability therefore provides most of the support services"*. (K 3).

> *"Classmates normally assist... Has been trained by the teachers."* (P 9)

4.5.2.1.3. Sub-theme 1c: Support from relationships with professionals

The FGD participants identified the various professionals that PWDs interacted with, namely, sponsors, healthcare providers, teachers and administrators. In some of their interactions, PWDs experience a sense of belonging, while in others they are maltreated. The first verbatim quotation below from a deaf youth attending a local school is indicative of a cordial relationship with his sponsors. However, some of the deaf participants complained of inaccessibility to required services because of the lack of sign language interpreters (who could assist to communicate their needs to service providers, such as a doctor). The following second verbatim quotation illustrates this PWD's frustration:

> *"I always go to school and then I come to the NFSS office to see people who support me."* (P 42)

> *"lack of interpreter at the hospital makes the whole system mixed up. When I go to hospital I feel confused. I am kept waiting in the line while some people "pass" me just because of lack of an interpreter."* (P.5)

4.5.2.1.4. Sub-theme 1d: Support from Local Administration

According to the FGD participants, local administrators have a wrong perception about the capabilities of PWDs, to the extent that some display unwelcoming attitudes towards them. Some participants are quoted verbatim as having expressed the following:

> *"I attended a deputy County Commissioner's public meeting where I highlighted disability issues, but the officer-in-charge wasn't happy with my contribution, since then the chance of addressing disability issue has been denied."* (P 29)

> *"Especially when they see the white cane, they think this person is sick. I try to tell them to put themselves into our shoes."* (P 41)

4.5.2.2. Theme 2: Assistive devices, technology and built Environment

Regarding assistive devices and the built environment, FGDs participants and key-informants discussed assistive devices, technology and the built environment as a main theme. The theme produced two sub-themes: Need, accessibility and affordability of assistive devices; and Accessibility of built environments.

4.5.2.2.1. Sub-theme 2a: Need, accessibility and affordability of assistive devices

Although the government is reported to be providing assistive devices, it has not been able to meet the national demand for the devices. The participants in this current study reported that assistive devices were important tools, which aid PWDs to complete ADLs and access mainstream services. However, many remain incapacitated, as they neither have access to, nor can they afford to buy the assistive devices.

a) Need for assistive devices

Some participants expressed that the government does not meet their need for assistive devices and support services. A key informant communicated that the government's effort on the population's needs for assistive devices is less than 10% of the national demand. The following verbatim quotation from a key informant highlights the magnitude of unmet need for assistive devices and support services, nationally:

> *"To what extent? We try. Like this year, we are trying to reach a target of 3000 assistive devices. This is not enough against the demand. It may be as little as 5% of the demand for assistive devices in the country. Basically, the government meets barely 5% of the national demand of assistive devices"* (K 3)

Some FGD participants and a key informant reported that neither government, nor local authorities provide visual and hearing aids to PWDs. Moreover, those with severe disabilities, who cannot leave their homes, are at a higher risk of missing assistive aids, whenever donations are bequeathed. A participant in a FGD and a key informant are quoted verbatim as having expressed the following:

> *"The government is not providing these services, only NGO's, well-wishers and politicians provide such services." "The caregivers say they do not access the necessary services as they require and at the right time."* (K 2)

> *"But hearing aids, white canes, walkers and eye glasses were not provided. The local government did not provide many essential things. Only those that went got, the most severe cases who didn't make it from home were not considered."* (P 22)

In addition, the participants stated that only well-wishers and NGOs have provided some PWDs with hearing aids and wheelchairs for mobility. This assertion is apparent in the following verbatim quotations from two participants and one key-informant:

> *"Support for deaf people is only provided by foreign donors but not the government of Kenya."* (P 46)

> *"(...) deaf who go to school get hearing aids but those out of school do not get services (hearing aids)."* (P 43),

> .."*Well-wishers provide some of the services such as provision of wheelchairs….If they cannot get them they look for well-wishers."* (K 3)

As a result of assistive devices not being readily available, PWDs find it difficult to access other mainstream services. Some of the participants spoke of the lack of assistance in mobility, which could have enabled them to access mainstream services, such as education. Some participants lamented the lack of hearing aids and braille services, as expressed in the following verbatim quotations:

> *"….some disabled persons are not able to access education. They lack wheelchairs and other facilities."* (P.12)

> *"If I need to use a computer, the computers outside college are not blindness compliant (may not have braille)."* (P 46)

b) Accessibility of assistive devices

Some of the participants indicated that the government was doing a poor job of meeting the demand for support services. Some participants said they had never received any assistive devices from the government. The following verbatim quotations expressed their lack of access to support services (assistive devices), expected from the government:

> *"Not in the manner that is ideal. Example we may require ten wheelchairs in our locality but only get three supplied. We have to wait supply in the next year and still another PWD with mobility difficulties may crop up to increase the need (demand)"* (K 3)

> “*No assistance from government, for example: wheel chairs. Government provides only instructional materials.”* (K 2)

There were different views on the government’s provision of assistive devices. While some key informants reported that it performed dismally, a key informant defended the government’s performance. The key informant reported that it provides various assistive devices, as well as other support services to PWDs, such as wheelchairs and prostheses. The following verbatim quotation describes the key informant’s perception of the government’s provision of assistive devices:

> *“The government gives the council (NCPWD) a budget annually…NCPWD engages service providers who make wheelchairs, prosthesis and provide them with funding for that.”* (K 4)

c) Affordability of assistive devices

Affordability of new assistive devices, such as callipers, wheelchairs, visual and hearing aids was described as a major barrier that PWDs grapple with. Assistive devices are appropriate supports that help to overcome disability and improve well-being. In most cases, PWDs have to pay for their maintenance and/or for new ones; however, some just cannot afford it. Therefore, they contend with worn-out assistive aids, or the disability itself. The affordability issue was captured in the following verbatim quotations two participants in the FGDs:

> *“I went another time seeking for callipers and was never assisted. I was required to pay money to get them which I did not have.”* (P 50)

> *“Yes,(…)looking for a wheelchair,… never got. The one I use is worn-out.”* (P 14).

4.5.2.2.2. Sub-theme 2b: Inaccessibility of the Built Environment

In both the FGDs and key informant interviews there was consensus that the inaccessibility of the built environments creates a need for assistance and adaptations. Most of the participants expressed that PWDs needed accessible built environments. The following verbatim quotations from two key informants, underscore this need:

> *"Another problem is accessibility of buildings, they do not have ramps, personal assistance is also not provided in the banks."* (K 3)

> *"Most of the areas we live in the built environment such as the doors or toilets are most often narrow and difficult for PWDs to use. They may need to be wider which consumes a lot of space. Private developers or business people who want to maximize on space might not accept this."* (K 4)

The participants articulated that the inaccessibility of the built environment was primarily due to the little, or no regard attached to the plight of PWDs, by owners of buildings, and their drive to maximize space. Some participants reported they lacked essential services, due to inaccessibility of the built environments. They provided instances, where most commercial buildings, such as banks, market stalls, as well as government owned hospitals, offices, and even schools, lacked ramps for wheel-chair access. They observed that the inaccessibility of built environments was a major barrier in their daily lives. The following verbatim quotations from a key informant and a participant in a FGD, highlight the lack of various services required by PWDs, as a result of an inaccessible built environment:

> "*No, Government offices are not disability friendly. In whole town there no disability friendly facilities including banks, supermarkets and retail shops."* (K 2)

> *"These services are unavailable because the facilities are not disability friendly, for example, Polytechnics are not disability friendly…."* (P 33)

The participants declared that they needed disability friendly buildings, market stalls, and hospitals where they live that allow free mobility and independent living for all, irrespective of disability type. The following verbatim quotations refer:

> *"Building accessible roads, business stalls, and market… near where PWDs live."* (P.54)
>
> *"…transport should be accessible. Building accessible roads, business stalls, and market to be near where PWDs live."* (P 52)

The FGD participants described how they manoeuvre their way through chaotic and unfriendly physical environments to reach their workplace, or in search for services. Some participants said these unfriendly physical environments affect their autonomy and independence, to an extent that they need regular assistance for mobility. For instance, they reported having faced insurmountable barriers, while trying to cross the highway adjacent to the National Council for Persons with Disabilities and the Association for Persons with Disabilities in Kenya (APDK) offices, in Westland, to search out services offered at the two organizations. The following verbatim quotations from two participants underline their inability to access needed services:

> *"Inability to move swiftly and so require regular assistance to push my wheelchair. I take a lot of time to reach home and workplace."* (P 29)
>
> *"The location of APDK clinic and National Council for PWDs along Waiyaki way, which is a very busy highway, with speeding cars is not friendly. We cannot access the services bearing in mind that we cannot cross the highway. There is need for a Zebra crossing. All over Kenya. PWDs are not taken care of."* (P 48)

4.5.2.3. Services, Systems and Policies – Theme 3: Healthcare and Rehabilitation

Regarding the effect of services, systems and policies on PWDs, to the FGDs participants and the key-informants, healthcare and rehabilitation; education and vocational training; other mainstream services; as wells as social welfare were perceived as major themes.

The participants expressed concern about access to healthcare and rehabilitation services, which were categorized into three sub-themes, namely: Unmet need for healthcare and rehabilitation services; Barriers to healthcare and rehabilitation services; Need for communication support in healthcare and rehabilitation services.

4.5.2.3.1. Sub-theme 3a: Unmet need for healthcare and rehabilitation services

The participants expressed that the majority of PWDs rarely received the kind of healthcare services they needed. The key-informants and focus group participants generally conceded that healthcare for orthopaedic impairments are examples of services that PWDs needed and rarely received. Some of the participants emphasised the need for a physiotherapist, as well as a speech therapist, to manage their impairments and improve their functioning. The following verbatim quotations from a middle-aged, male participant, as well as a key-informant, who had disabilities, clearly indicates the need for treatment, and the lack of physiotherapy and speech therapy services:

> *"I'm not satisfied; I need treatment for my legs"* (P 6)

> *"Therefore, needs a physiotherapist, Speech therapy, treatment for specific impairments, (...)."*(K 1)

It was also apparent that local hospitals lacked rehabilitation services and only managed minor conditions. The following verbatim quotations from two key-informants, who had disabilities, clearly indicate the lack of access to specialized healthcare and rehabilitation services:

> *"..., the local hospital does not provide rehabilitation services to persons with disabilities other than treatment for minor illnesses."* **(**K 3)

> *"No services that I need are given within my locality e.g. rehabilitation of persons with disabilities."* (K 5)

4.5.2.3.2. Sub-theme 3b: Barriers to healthcare and rehabilitation services

Regarding the factors that affect the utilization of healthcare and rehabilitation services, the participants declared affordability a factor. They were of the opinion that the services, more specifically rehabilitation, were financially draining, expensive and inaccessible to PWDs (due to the lack of resources). For PWDs, travelling to hospital meant using their own resources for transport, and then only those who could afford it. Sustainability of frequent travelling to and from hospital, as the following verbatim quotations indicate, was not feasible for some participants, who lacked resources:

> *"(...) as going to hospital but money got finished. Not able to go now."* (P 11)
>
> *"..no, the services are very poor. No money to go to hospital... sometimes services are not available due to lack of money."* (P 12)

In addition, living long distances away from hospitals and the lack of specialists, were also viewed as significant barriers to the utilization of healthcare and rehabilitation services. Many of the participants expressed concern that they could not get to the hospitals because they lived long distances away, and many could not raise the required fare for transport to and from the hospitals. Additionally, the lack of specialists was another influencing factor, as is apparent, in the following verbatim quotations of the participants:

> *"(...) because the hospital is long distance away and to get money is a problem.* (P 13)
>
> *(..) no specialists for ENT, eyes"* (P 1)

4.5.2.3.3. Sub-theme 3c: Need for communication support in healthcare and rehabilitation services

The participants were dissatisfied with the inequality in healthcare and rehabilitation, and wanted access to these services improved. They indicated that, besides the economic issues (lack of resources) and long distances, the hospital services were inaccessible to some of their own (the deaf and hard-of-hearing) because the majority of the service providers could not communicate in sign language or in other alternative formats. The need for sign language interpreters at service points was a major support, required by some PWDs, to remove the communication barrier in both healthcare and rehabilitation services. The following verbatim quotations from a FGD participant and a key-informant highlight this needed support:

> *"(...) they are treated poorly (wrong diagnosis, improper treatments) due to of lack language to explain what they feel."* (K 6)
>
> *(...) lack of interpreter at the hospital makes the whole system mixed up. When I go to hospital, I feel confused. I am kept waiting in the line while some people "pass" me just because of lack of an interpreter.* (P 43)

4.5.2.4. Theme 4: Education and vocational training

Regarding the building of human capital through education, the FGD participants and key-informants discussed the lack of access to inclusive education, barriers to education, support needed in inclusive education, and limitations of inclusive education. Participants viewed inclusive education as an important strategy that increased the acceptance of children with various disabilities and their overall integration into society. Eight sub-themes emerged from this theme, namely: role of education; unmet needs for support services in inclusive education; Cash transfer for inclusive education; limitations of inclusive education; barriers to special education; role of vocational training; Unmet need for vocational training; and utilization of vocational skills.

4.5.2.4.1. Sub-theme 4a: Role of education

The key-informants and FGD participants agreed that education is the cornerstone for developing human capacity. According to a key-informant, knowledge is a basic need for persons with disabilities, as it could enable them to exploit lifetime opportunities and engage in socio-economic activities. Additionally, they also viewed inclusive school environments as non-discriminatory. Verbatim quotations from a key-informant, who had a disability, and a FGD participant, describe the important role education fulfils in the lives of PWDs:

> *"Of course, we know that education is the key to open doors of success. You use education to market yourself for employment and if you are a person with disability then it means if you do not get enough education job accessibility is limited."* (K 4)

> *"Yes, education services (general) and inclusive education. Integrating PWDs with normal people so that they understand them."* (P 37)

4.5.2.4.2. Sub-theme 4b: Unmet need for support services in inclusive education

The government, in partnership with private groups, is reported to have endeavoured to help children with disabilities access inclusive education. However, participants in the FGDs indicated that, despite the local adoption of inclusive education, the government has not matched this policy shift with the allocation (posting) of appropriate resources, such as special education teachers, and sign language interpreters to the schools. This has resulted in unmet needs for support with sign language interpretation support services, in inclusive education settings, to increase education access for children and adolescents with disabilities and special needs. These include children and adolescents with cerebral palsy, autism, the deaf and hard-of-hearing, as well as the blind, as expressed in the following verbatim quotations:

> *"No professional service is available to children with disabilities in local inclusive schools." "No sign language interpreter (...)."*(K 2)

> *"The school I attended, some of the teachers did not understand sign language so I could not get everything. Some teachers do not understand sign language.* " (P 38)

4.5.2.4.3. Sub-theme 4c: Cash transfer for inclusive education

In an effort to make inclusive education accessible, it is reported that the government transfers cash (equivalent to 20 US dollars at current exchange rate, per child each year) to all schools with special units. The money is intended to assist them to acquire instructional materials used by children with disabilities. The key-informants reported that, the government also provides a special fund for school-going children with disabilities, and high school leavers transiting to colleges and universities. However, they indicated that the fund uptake is very low. A key-informant partly attributed the low uptake of the special fund to the lack of awareness and bureaucracy in the administration of the fund. These strategies, on the part of the government, to increase access to inclusive and special education for all PWDs, are expressed in the following verbatim quotations from two key-informants:

> *"Yes, the government gives some funds, 2,000 Kenya Shillings per child, which assist to buy learning materials needed by children with special needs. Example: instructional materials such as talking books...."* (K 2)

> *"The special education fund is there but applicants are very few due to lack of information. They do not know about the fund. Communication has been a problem.....we are supposed to give university support... We require student identification ...to get that card; they must have registered and paid first semester university fees. Some families are unable...which render the PWD not to be registered."* (K 4)

4.5.2.4.4. Sub-theme 4d: Limitations of inclusive education

The key-informants interviewed in this exploratory qualitative study identified disadvantages faced by children with disabilities, expected to join inclusive public schools. In particular, they said the policy is silent about the education of children with severe physical disabilities (bed-ridden, who need constant care and are in their homes), the blind, the dumb, the deaf and hard-of-hearing, including those with special needs. In addition, they indicated that the lack of appropriate information among caregivers, and the lack of skills among teachers to manage children with special needs, significantly disadvantages those children. The following verbatim quotation from a key-informant expresses these disadvantages:

> *"… some children with physical disabilities in the area are not getting education due to mobility problems (they are unable to reach the school) or lack of proper information by the caretaker or teacher incapacity (to handle the severely disabled). … stay at home because the schools in the locality cannot ….handle such cases."* (K 3)

Some participants identified children with severe mental challenges as most disadvantaged, because they remain out of school, despite the shift to inclusive schooling. They argued that special schools are an important education resource, as not all PWDs would fit in at inclusive schools. Two FGD participants and a key-informant expressed these views in the following verbatim quotations:

> *"Children with severe mental challenge cannot sit in a regular class environment. We need special boarding schools within each locality to serve the locals."* (K 3)

> *"What can help us is if we can get a school for PWDs."* (P 46)

> *"This area lacks a special school. There are only mixed (inclusive) schools."* (P 27)

4.5.2.4.5. Sub-theme 4e: Barriers to special education

Many participants indicated that a sizeable number of PWDs do not access special education, which they attributed to economic reasons, specifically the lack of affordability of the services. They continued that special schools are too expensive, and many PWDs are unable to pay the fee charged, as expressed in the following verbatim quotations from focus group participants:

> *"…no services in the area, except this special school for disabled. Not accessible as money asked for school fees is a problem."* (P 6)

> *"(…) no sometimes services are not available due to lack of money. There may be no money at home for school fees."* (P 12)

Several participants identified poverty as a barrier to special education. Many indicated that the government does not offer PWDs free special education. They claimed that the boarding fee charged in special schools was too high for PWDs, who are poor. Two FGD participants cited this barrier in the following verbatim quotations:

> "*I came to this school and was asked to pay school fees for my child which I could not raise. So child is at home."* (P 3),

> *"I have children that I'm unable to pay school fees for."* (P 27)

4.5.2.4.6. Sub-theme 4f: Role of Vocational Training

Regarding the equipping of PWDs with employable skills, vocational training is essential. The participants and key-informants recognized the fact that vocational training promotes employment (economic inclusion) and participation in society. However, they intimated that the lack of vocational skills result in economic marginalization of individuals. The following verbatim quotations of a male FGD participant and a key informant highlighted this view:

> *"People with disabilities lack job opportunities due to lack of skills and knowhow to do things."* (P 27)

> *"Inaccessible education lead to limited job accessibility, low paying jobs, low economic status."* (K 4)

4.5.2.4.7. Sub-theme 4g: Unmet need for Vocational Training

Some of the participants blamed the lack of vocational training for their statuses (inability to engage in economic activities) and self-dissatisfaction. Moreover, the participants alluded to the lack of polytechnics and colleges, near their locality, that could offer them vocational training. Therefore their need for, and the importance they attribute to vocational training is evident from the following verbatim quotations:

> *"I am not satisfied the way I am but I would if I get training and start a business e.g. tailoring. I can feel satisfied and be able to assist myself".* (P 9)

> *"If I'm taken somewhere and get trained in say tailoring I will be satisfied."* (P 10)

> *"…lack of polytechnic /colleges to train in employable skills."* (P 38)

4.5.2.4.8. Sub-theme 4h: Utilization of vocational skills

Of all the FGD participants, only two had completed vocational training. One of them, a middle-aged male was working as an artisan - repairing shoes. The second participant, a female, stated that she was unable to utilize her tailoring skills, due to the lack of equipment (sewing machine). The following verbatim quotations from two FGD participants indicate the utilization and the barrier to utilization of vocational skills:

> *"I use a tricycle (wheel chair) to go to my workstation. I repair shoes. …..was trained in Muriranja rehabilitation center."* (P 29)

> *"Though I am trained tailor, I don't have a sewing machine to help me get my daily bread."* (P 25)

4.5.2.5. Theme 5: Other Mainstream Services

Regarding other mainstream services, both the FGD participants and the key-informants referred to the lack of access to employment; lack of access to information and communication; utilization of justice, legal and administration, as well as the lack of access transport. These formed the 4 sub-themes of this theme.

4.5.2.5.1. Sub-theme 5a: Lack of access to Employment

During the FGDs, participants reported that it is challenging for PWDs to gain employment, compared to their counterparts without disability. They noted that able-bodied persons are the ones considered employable, even if they had lower qualifications. The following verbatim quotations from two FGD participants express the lack of access to employment for PWDs:

> *"Job opportunities are available but I'm considered unemployable."* (P 27)
>
> *"PWDs are not given equal work/employment opportunities."* (P 52)
>
> *"(…) am denied job opportunities because I am single-handed. Frequent sacking from job."* (P 23)

4.5.2.5.2. Sub-theme 5b: Lack of access to information and communication Services

In this exploratory qualitative study, some key-informants mentioned the existing gap in the accessibility to information services (including entertainment and advertisements) for PWDs. They observed that there was a severe paucity of information in formats that did not discriminate PWDs, especially the dumb, deaf and hard-of-hearing. In addition, key-informants stated that most Television stations do not provide sign language interpretation in their programmes, as expressed in the following verbatim quotations:

> *"For the hearing-impaired (deaf) - sign language interpretation is lacking. There is a huge gap in the area of sign language interpretation in most service points."* (K 4)

> *"Lack of sign language interpreter has also been a problem, only two TV stations KBC and KTN broadcasts have a sign language interpreter at the side. Example In my region there is not a single sign language interpreter so the deaf audience is ignored unless other people give them the information."* (K 3)

Most of the key-informants, some of them with disabilities, reported that PWDs face communication barriers at various service points. In particular, the deaf reported being unable to receive the services they needed, from time to time. They also reported being unable to access information they needed, partly due to service provider's skills, and also the lack of sign language interpreters (to communicate to them) at most social gatherings. The following key informants' verbatim quotations express these views:

> "*No sign language interpreter in the area. No such services are given even in banks, offices or in chief's public meetings. Therefore, the deaf do not attend the chief's public meetings."* (K 2)

> *"No! No! No! No! No! Say, for example, a rural area chief. He goes to his office. He is supposed to serve clients including those with hearing impairment. Does he have an interpreter?"* (K 4)

Sign language interpreters were believed to be significant support for PWDs to communicate with, and to be understood by service providers in most settings, including healthcare and justice/legal settings, among others. The key-informants cited the lack of communication assistance, among the deaf community, as a major barrier to their utilization of mainstream or essential services. This is in public, private enterprises and offices, as well as the media. Even important information from government administrators is inaccessible to the deaf, and hard-of-hearing. The following verbatim quotations of two key-informants highlight this barrier:

> *"Lack of information concerning certain helpful services are circumstances faced by parents/caregivers of PWDs."* (K 3)

> *"If at present you are deaf and go to most government offices, you will not get someone who can give services to you if you only sign language for communication."* (K 4)

4.5.2.5.3. Sub-theme 5c: Utilization of justice, legal and administrative services

Some FGD participants reported that they sought and received justice services, while others reported that they had failed to have their needs met. The need to seek the justice/legal system services varied from discrimination to stigmatization by parents, to conflicts and social problems. The following verbatim quotations from a female and a male participant, explain the utilization of legal and justice system services by PWDs:

> *"My parents stigmatize me. I even reported to the chief."* (P 40)

> "*Yes, when I was young at school my parents were not supporting. I reported to the chief and I was helped by making my parents support me."* (P 38)

***4.5.2.5.4. Sub-theme 5d:* Lack of access to Transport**

The participants articulated their need for transport from one point to another, such as going to school, hospital, workplace or visiting relatives and important others. However, they reported having trouble accessing and using public transport. The majority of them said that most crews of the public transport vehicles (minivans and buses), which they flagged down, left them at the roadside, when they were unable to board the vehicles. This is apparent from the following verbatim quotations of two participants:

> *"The transport system is very unfriendly as the stairs are too high and one may fall. Travelling is a problem, climbing on a*

> *bus is a big problem. The conductors of buses rushes them up and the bus starts to move, may get injured*."(P 50)

> *"Public service vehicles do not stop when you flag it to stop. They refuse to transport us due to disability."* (P 22)

Some PWDs complained that the rainy weather made it even more challenging for them to access public transport, compared to normal days. One participant said the following;

> *"I am discriminated even while travelling in public vehicles. During the rainy season, I suffered a lot. I could not access the bus booking office unless somebody assisted me."* (P.18)

4.5.2.6. Theme 6: Social Welfare

Regarding social welfare, the FGD participants and the key-informants referred to cash transfer, health insurance and socio-economic empowerment. They explained that PWDs needed a social welfare that not only empowers them, but also benefits their children. The theme social welfare generated three sub-themes, namely: cash transfer benefit; health insurance; and socio-economic empowerment.

4.5.2.6.1. Sub-theme 6a: Cash transfer benefit

The FGD participants reported that the Kenyan Government, through the National Council for Persons with Disabilities, disburses cash amounting to 2,000 Kenya Shillings, but only to persons with severe disabilities, who are registered with the NCPWD. Some participants observed that, despite the cash transfer's primary focus being to cushion PWDs and their families economically, its coverage is very low. Several participants believed that the fund administration was oblivious of their individual inability to pay school fees for their own children. The following verbatim quotations from two participants express the PWDs' concerns more clearly:

> *"I am a leader of a group. We were given cards indicating one's specific disability. However, assistance is only given to people with severe disabilities."* (P 31)

> "(…), *without support my child who is in secondary school will be sent home."* (P 29)

4.5.2.6.2. Sub-theme 6b: Health Insurance

A similar sense of being "left out" by the cash transfer scheme is apparent regarding the medical insurance coverage for most PWDs. They reported receiving most of the support for their medical care from their families and well-wishers. Some participants reported that this was due to their inability to pay mandatory monthly contributions to medical insurance schemes, like the National Hospital Insurance Fund [NHIF]. The PWDs felt uneasy about being "left out" of health insurances, and disadvantaged collectively, with their children. The following verbatim quotations refer:

> *"NHIF is a stress because I'm unable to pay monthly contribution due to irregular income hence opted to abandon it."* (P 21)

> "*No medical cover for PWDs."* (P 52)

4.5.2.6.3. Sub-theme 6c: Socio-Economic Empowerment

The FGD participants and key informants discussed the PWDs' general lack of socio-economic empowerment, resulting in their inability to engage in economic activities. They considered that there was a need for the training of PWDs, to enable them to engage in economic activities. They stated that PWDs, who accessed schools, were being empowered, while those out of school were disadvantaged. A FGD participant and a key informant expressed this need in the following verbatim quotations:

> *"Economic empowerment is a key potential intervention but in our locality, nobody has begun it. Those who access schools they are trained how to keep animals, how to farm."*(K 3)

> *"I am not satisfied the way I am but I would if I get training and start a business e.g. tailoring. I can feel satisfied and be able to assist myself."* (P 9)

4.5.2.7. Natural and human made changes to environment – Theme 7: Protection against radiation

Regarding the natural environment and human made changes to the environment, one theme on protection against radiation injury was identified. This theme generated only one sub-theme, Sunscreen cream. The cream protects persons with albinism against overexposure to the ultraviolet rays from the sun.

4.5.2.7.1. Sub-theme 7a: Sunscreen creams policy

The participants reported there was a lack of policy on protecting persons with albinism against sun radiation. In addition, they noted that there was political good-will that has been enabling the National Council for Persons with Disabilities to purchase and supply sunscreen creams. A key informant warned that this good will only be temporary. Without a policy in place, future governments may renege on the provision of sunscreen creams. This fear is apparent from the quote of a key informant, who suffered with albinism.

> *"No, they are not government policy. ...small example: the sunscreen cream we are providing………we have not a single law or policy that gives the government the responsibility of providing sunscreen creams to persons with albinism."* (K 4)

4.5.2.8. Attitudes – Theme 8: Discriminatory Attitudes and Isolation

This section outlines the manifestation of attitudes projected towards PWDs. Under this conceptual area the theme, discriminatory attitudes and isolation was identified during data analysis. Under this theme, discriminatory attitudes projected towards PWDs by healthcare professionals, public transporters, family members, employers, teachers and other children at school, service providers in justice system, as well as members of the community, in general, were identified, which often result in PWDs being isolated. The sub-themes under discriminatory attitudes and isolation included, discrimination in hospitals, discrimination in public transport, discrimination in family, discrimination in employment, harassment and victimization in the justice system, negative attitudes and isolation in schools, as well as discrimination in public.

4.5.2.8.1. Sub-theme 8a: Discrimination in Hospitals

One broad question required the participants to state their experiences, when they sought services from various services providers. The participants described their encounters with healthcare workers in hospitals they visited. They described the attitudes of hospital workers towards PWDs as characterized by discrimination, insults, and denial of services. They cited the hospital workers' attitudes as factors that influenced their utilization of health services. They cited discrimination in hospitals as routine experiences, whenever they went to the facilities. Being insulted in hospitals was a typical manifestation of bad attitudes towards the participants, in particular. Women participants said that hospital workers, particularly the nurses, insulted them, especially when they attended for maternity services. They said that hospital workers did not respect their right (PWDs) to have families. They attribute their view to the health service providers' offensive language and the height of couches used in hospitals to conduct deliveries. The following were verbatim quotations from women, who participated in the focus group discussions regarding their experiences in hospitals:

> *"The services are not given as they should. Example, I got nasty comments like; even you can get a child. I became very annoyed. Are you one of those who are supposed to give birth? During pregnancy, I face a lot of problems, example when I started antenatal clinics, I used to get nasty comments and abuse from nurses. Nurses were telling me "how can you dare become pregnant?"* (P 52)

> *"For pregnant women with disability, maternal health services is very abusive by language and height of delivery couch. They are unaccommodating. Use of abusive language by health care providers."* (P 41)

Some women participants commented that because of their disability they received the incorrect advice (forced to undergo caesarian section) as they are viewed as incapable of normal delivery. The following quote from a female key-informant highlights the "wrong advice":

> "*Pregnant women with disabilities are forced to deliver through surgery because of their disabilities."* (K 1)

In the focus group discussions, some participants reported that they lacked access to healthcare services because of discrimination from health professionals. Some even reported that they were sent away by health professionals in some facilities, without being attended to. The following verbatim quotations refer:

> *"One day I went to Kitui hospital, while in queue I saw the doctor take cards from some people attended to them and left. (...). I felt bad"*. (P 8)
>
> *"When I got sick and sought services from the nearby dispensary, they sent me away. They told me to seek treatment elsewhere."* (P21)

They also articulated that these attitudinal factors made healthcare inaccessible to them. Other participants expressed that clinicians in hospitals do not listen to them, and claim that they are not in their right mind to present their health needs. Some participants stated that healthcare providers mistrust them, and intentionally delay treatment to them. Their perception of mistrust, as expressed in the following verbatim quotations from a young adult male and an adolescent female, is characteristic of the lack of sensitivity towards the status of having a disability, and is perceived as a barrier to the utilization of health services by PWDs:

> "*…nurses give treatment without examining me. The Healthcare workers are rude, send the students away, and ask them to come with parents."* (P 12)

> "*Nurses do not trust me, they tell me to come with my parents to the hospital.*" (P 17)

4.5.2.8.2. Sub-theme 8b: Discrimination in Public Transport

The participants indicated that most public transport service providers displayed unfriendly and dismissive attitudes. These unfriendly and discriminatory attitudes from public transporters are major barriers to PWDs being socio-economically active. Some FGD participants reported being publicly humiliated and discriminated against by some public transporters, in favour of those without disabilities. However, some public transporters transported PWDs out of pity. The following verbatim quotations illustrate the PWDs experiences, while trying to use public transport:

> *"Public service vehicles do not stop when you flag it to stop. They refuse to transport us due to disability."* (P22)

> *"Some vehicles carry us out of pity while others leave us. I don't need pity to get services."* (P52)

Although, some public transporters agreed to transport PWDs to their destinations, the participants accused them for manhandling PWDs, who were unable to board the vehicles (due to incapacity). The lack of moving and handling skills on the part of transporters contributed to their services being poor. A male and a female participant are quoted verbatim as follows:

> *"Poor handling by transport crew. ....crew lift PWDs as if one is not a human being."* (P22)

> *"You get pushed when trying to enter public transport service vehicles and sometimes one falls. I have bitterness."* (P51)

4.5.2.8.3. Sub-theme 8c: Discrimination in Family

Poor attitudes towards PWDs are rife, even within families. The adolescents with disabilities in this exploratory study cited incidents of discrimination by family members, which were viewed as demoralizing. These adolescents stated that family-related discrimination manifested itself in the form of family members treating (handling) them as if they were children. There is also failure on the part of the community to fully accept and embrace PWDs. A key-informant noted that family and community-based discrimination and rejection of PWDs, is rooted in the myths and misconceptions of African cultures and religions. The following verbatim quotations from key-informants reveal the myths and misconceptions concerning disability and people's behaviour:

> *"..., such as the society is not readily accepting this person...The community in which this PWD lives does not readily accept responsibility. That is why you find in many African communities are myths and misconceptions concerning disabilities in the community. We even find religious sects, think one has a disability because they were cursed or your parents must have done something wrong."* (K 5)

> *"Extended family of PWDs is not keen on assisting them except their nuclear family members."* (K 3)

Inequity in educational support from parents is also common practice. The participants expressed instances where they were treatment indifferently (as if they were sub-human) and cited discrimination in the family. The following are verbatim quotations from a key-informant and a FGD participant:

> *"My parents treated me differently. They do not pay school fees properly like for other children of our family."* (P46)

> *"Children with disabilities are taken as lesser human beings at home; they are discriminated even at home. The community has not embraced them."* (K2)

4.5.2.8.4. Sub-theme 8d: Discrimination in Employment

While explaining their experiences with employers, the FGDs participants said it was difficult for persons with disabilities to gain employment, compared to their counterparts without disabilities, as the former are discriminated against and not considered for employment. The able-bodied are considered employable, even with less qualifications than the PWDs, who are discriminated against. Two participants in the FGDs expressed that, despite being educated, they were still discriminated against:

> *"Yes, when I take my C.V looking for job they believe he cannot work, it is not accepted."* (P46)

> *"No, we are not employed…They give a form four-leaver work and discriminate university graduate persons with disabilities. I am educated but I am discriminated."* (P 50)

Some participants in the focus group discussions stated that potential employers toss them the run around and even insult them at times. The participants lamented that some employers used offensive words to address them, while some refused to pay them for work done. They provided examples of persons with disabilities, who were not paid after working as casuals, while their counterparts without disabilities were paid. The following verbatim quotations represent their resentment:

> *"In February, there was a communal work, after working for days persons with disabilities were not paid, but the able bodied were paid."* (P 29)

> *"I came from far in search of a job. We (PWDs) are not given chance to work or get employment opportunities. We are viewed as "rubbish" (taka taka). Harsh words like "ulikuja Nairobi kusaidiwa?"("Did you came to Nairobi to be helped?").* (P 52)

4.5.2.8.5. Sub-theme 8e: Harassment and victimization in Justice System

Regarding PWDs' experiences with accessing justice, the issue of harassment and victimization by law enforcement agents, even without breaking any law or rules, was one of the barriers mentioned by some participants. For instance, a participant recounted a case of a deaf person, who was harassed by police officers. Even those PWDs who sought police intervention, expressed concern about the law enforcement officers, who ignored their need, and treated them as peddlers of drugs and substances, and, subsequently, victimized them. The following verbatim quotations from two participants epitomise the attitude portrayed by service providers in the justice system:

> "*One deaf person was selling sweets and a police officer threw cannabis sativa at him and then accused the man for selling cannabis sativa. The deaf person was arrested. He could not defend himself because there was no sign language interpreter in the police station. He was victimized."* (P 41)

> *"Yes – at Kiria-ini police station I was turned down when I went there to report a case."*(P 24)

Other manifestations of bad attitudes towards PWDs include instances where government administrators (entrusted to safeguard the rights of everyone) themselves harass and insult self-advocates (PWDs) who report disputes or seek their intervention.

> "*I went directly to the deputy County Commissioner to report my case and was referred to another administrator to assist me but was finally beaten / mistreated by the security guards who hit me with an iron bar so as to quieten me."* (P25)

4.5.2.8.6. Sub-theme 8f: **Negative Attitudes and isolation in schools**

Regarding their experiences in educational environments, the participants stated that children and adolescents with disabilities experience negative attitudes at inclusive schools. They continued that peers, classmates and able-bodied people avoid, or isolate them. According to the participants, some teachers believed that children with disabilities should not be in school. The teachers were not friendly to them and preferred not to be associated with them. Accordingly, both children and adolescents with disabilities, resent their disability status, suffer from low self-esteem and isolation, practice self-pity, and are in denial. The following verbatim quotations from two key-informants reveal the kinds of attitudes that pervade school settings:

> "*Some teachers feel that children with disabilities should be segregated from those without disability. Some of the teachers do not accept children with disabilities, especially those with mental disability."* (K3)

> *"Because of such environmental barriers, you find some of the PWDs suffer from low self-esteem and they have self-pity, denial, they are living in a world of their own."* (K5)

4.5.2.8.7. Sub-theme 8g: Discrimination in public

Public participation consisted of community activities and attending public gatherings, called by senior government officers, in which individual members of the public spoke. However, some PWDs experienced discrimination in public, which denied them opportunities to participate in social gatherings. Some participants provided instances of being side-lined in public meetings, by government administrators and organizers of religious meetings. The following verbatim quotations from two participants highlight this kind of attitude towards PWDs:

> *"I attended a deputy County Commissioner's public meeting where I highlighted disability issues, but the officer-in-charge wasn't happy with my contribution, since then the chance of addressing disability issue has been denied."* (P 29)

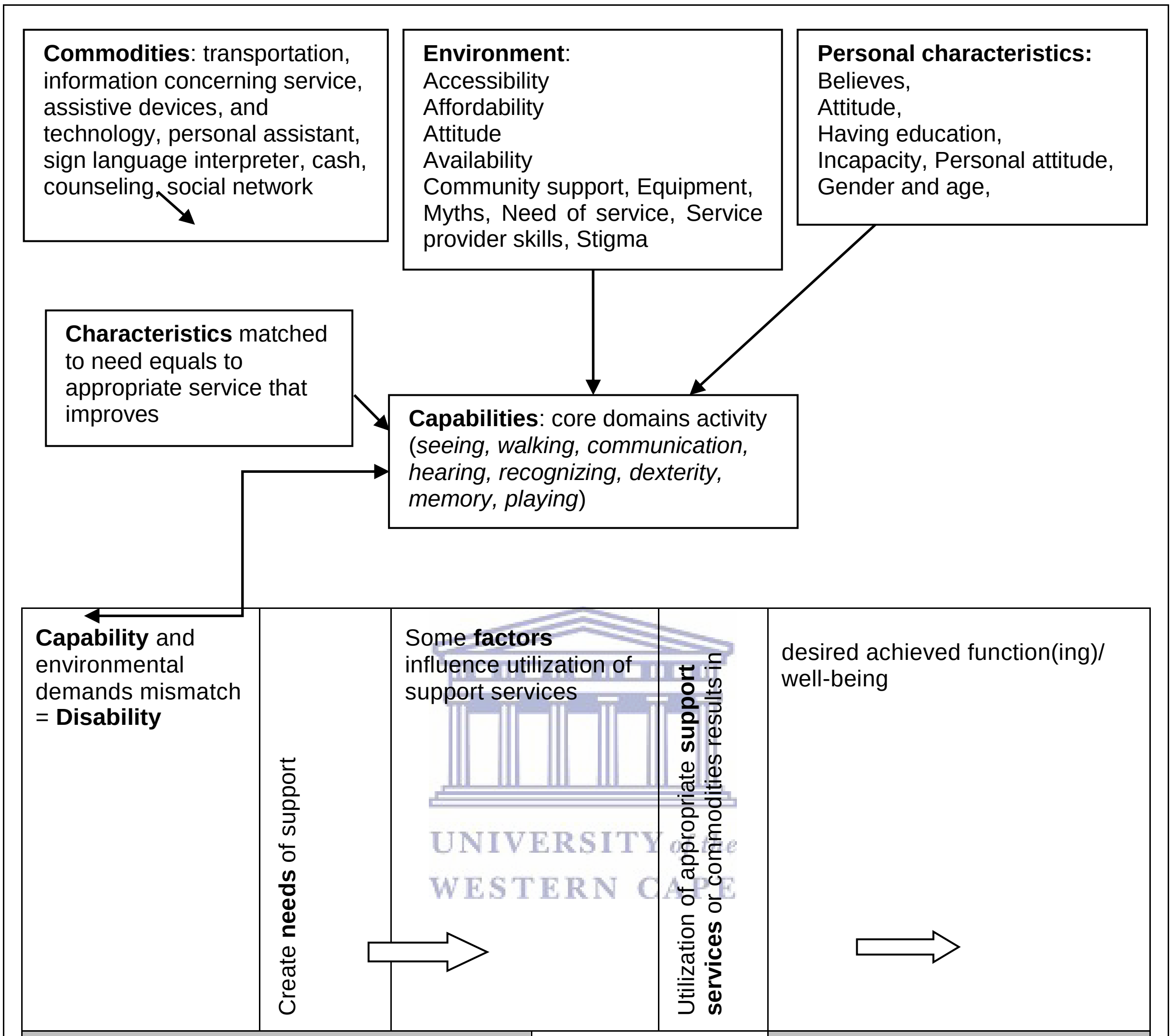
> *"…, this happens in churches and even mosques. PWDs are not elected as leaders of any group. I have tried to educate them that PWDs are not beggars."* (P 41)

"The community, family and friends judge us negatively" were the comments of many FGDs participants. There is also the perception that society does not seem to not accept them, even those, whose role it is to provide PWDs with certain types of support services.

4.6. Application of the Conceptual Framework: The Capability Approach to the findings

An embedded supports model based on the Capability Approach conceptual framework is illustrated in Figure 4.1. The Capability Approach provides the framework, in which factors influencing the utilization of support services among PWDs are summarized.

Figure 4.1: Modified disability supports model within Capability Approach: Conceptual framework



Characteristic of **needed** support services	**Factors** influencing utilization of **support services** combines personal characteristics, environment and commodities	**Utilization of Support services**
Improve function & prevent injury		Rehabilitation
Improve knowledge or capacity		Educational
Develop vocational skills		Vocational training
Give social protection		Social security
Improve access to healthcare		Health services
Create awareness		Information
Improve access legal/justice systems		Legal advice / justice services
Restores communication		Communication, e.g. Sign language interpreter
Promote autonomy and independence		Independent living services

Modified Supports model (Thompson et al., 2009)

The framework shows that personal characteristics interact with the environment in a linear dimension, in which the latter's factors are beyond the individual's control, but can influence his/her characteristics; therefore, a one-way arrowhead. Alternatively, the interaction between commodities and the environment is mutual, implying that both interact to influence each other. Some environmental factors are capable of converting into commodities, while commodities have the potential to convert into environment-related factors; therefore, the two-sided arrow connecting these two concepts. In addition, an embedded supports model identifies the goal, which a specific support service is needed to fulfil.

4.7. Discussion

This exploratory study was conducted in three counties of Kenya, to identify support services needs and its utilization by persons with disabilities. It is clear from the findings that PWDs' needs for support services remain largely unmet. Unfettered use of needed support services, including mainstream services, is crucial for PWDs to maintain functioning, to develop their human capital and effectively participate in society. The following sections discuss the needs for and the utilization of support services by persons with disabilities in these selected counties.

4.7.1. Support and relationships

The need for support and assistance with activities of daily living (ADLs) among PWDs, is a global phenomenon, but the prevalence varies between countries (Australian Bureau of Statistics, 2012; Brault, 2012; Allen & Mor, 1997). In this current study, a male participant (P 28) indicated that he needed support in some IADLs, such as doing construction work, because he could not hammer nails properly. Another participant (P 27) expressed that he was not comfortable, because he could not make any progress without support. This current study's findings are consistent with the findings of a study conducted by Saetermoe et al. (2004), which established that on many occasions, individuals with severe disabilities received support from members of their families to remain active. In most of these cases, the WHO (2011) noted that it is the families of PWDs who assist them to complete their activities of daily living. It is also the families of PWDs who pay for the support services they require (Mont, 2007; Mitra, 2005; LaPlante, 1992). This is consistent with the findings of this current study, as both the FGDs participants and the key-informants reported that spouses, family members and friends were the main sources of support and the assistance for PWDs to complete the activities of daily living. Among the participants of this current study, three males (P 22, P 23 & P 32) informed that they received the assistance and support they needed, for example with washing their whole body, from their spouses. One male (P 32) stated that his children and wife offered him the support he needed; while another participant (P 22) advised that without the assistance of his wife, he becomes "fixed" at one point. Similar findings regarding the need and source of support or assistance to PWDs have been reported in other studies (LaPlante *et al.*, 2004). In a study to explore the social and economic situation of PWDs in India, O'Keefe (2007) observed that family members met over half of the PWDs' needs for assistance and support (in rural Uttar Pradesh and Tamil Nandu).

Therefore, it appears that family members play a crucial role in the lives of PWDs. This implies that the family structure is an important resource to the PWDs' social and work involvement. In the absence of close family members, PWDs are more likely to lack the support and the assistance they need to complete activities of daily living. As a result, they would have serious hygiene problems, lack sanitation, suffer malnutrition and become ill.

The participants in the FGDs, as well as the key-informants, reported that children with disabilities depend on their caretakers entirely for feeding, or preparing food, bathing, dressing and mobility. A key-informant (K 3) stated that the caretaker of the child with disability provides most of the support the child needs. One participant (P 9) intimated that, although not all the time, when children with disabilities attend school, their classmates and friendly teachers provide them with support. This finding is similar to previous research evidence, which suggests that school-going children with disabilities (with low engagement) receive support from teachers, assistants and their peers, in order to participate in structured activities in the classroom (Eriksson, Welander & Granlund, 2007). However, Eriksson *et al.* (2007) observed that children's participation in unstructured activities outside the classroom, such as play, is dependent on their level of engagement and number of social contacts. Engagement is defined as the amount of time a child spends interacting in the social and physical environments, in a developmentally and contextually appropriate manner (McWilliam & Bailey, 1995). Therefore, children with low rates of engagement have lower degrees of autonomy, or lack opportunities for problem solving that are important in later adult life. As reported by one key informant (K 3), while at home, the family members, or their caregivers, initiate the assistance for PWDs to participate in activities. There is, therefore, an implication for policy to compensate the caregivers, who prevent further marginalization of households caring for children with disabilities.

4.7.2. Assistive devices

The UNCRPD classifies assistive devices and technology as a human rights obligation of both states and international donors (Borg, Larsson & Östergren, 2011). Countries that have ratified the UNCRPD have a duty to ensure the accessibility, affordability and availability of high-quality assistive products. However, in many countries, there is a gap in the provision of assistive devices and assistive technologies, as only between 5% and 15% of PWDs in need, actually access them (World Health Organization [WHO], 2012; 2015). This is consistent with the findings of this current study that the PWDs' need for assistive devices is unmet. A key-informant (K 3) advised that the government supplies less than 5% of the national demand for assistive devices. A second key informant (K 2) intimated that only NGOs, well-wishers and politicians provide most of the assistive devices and technology, and not the government. In addition, a male FGD participant (P 22) stated that PWDs, including those who never make it from their homes, are not provided with hearing aids, white canes, walkers and eyeglasses. Similar findings about the low supply of assistive devices and assistive technologies have also been reported in developing countries (Borg, Lindström & Larsson, 2009), including those in the sub-Saharan region (Eide & Ingstad, 2013). For example, in the living conditions among people with activity limitations in Malawi and Namibia, Eide, Van Rooy and Loeb (2003), as well as Loeb and Eide (2004) established that 17% and 18% of the PWDs surveyed, use assistive devices respectively. According to the WHO (2012), the gap of unmet need for assistive devices, and the type of assistive devices accessed, varies across countries. The gap of unmet need for assistive devices and assistive technology, determined in this current study, has implications for PWDs. In addition, there are implications for the inaccessibility and unavailability of mainstream services.

As assistive devices are not readily available, PWDs find it challenging to access mainstream services, such as education. The participants lamented the lack of assistive devices for locomotion, hearing aids and braille services, as major barrier. Among those who participated in this current study, two participants (P 12 & P 46) disclosed that PWDs are unable to access education, due to the lack of devices and assistive technology. One of the two participants (P 12) alleged that some PWDs are unable to access education because they lacked wheelchairs, while the other (P 46) expressed that the computers outside the college he attends, are not blindness-compliant (do not have braille). These deprivations for both PWDs (one with a mobility disability and one who is blind) have implications on their future employability and independent living. Similar effects of deprivations of assistive devices have been reported in previous studies. In a qualitative study of children at a special school in the Western Cape Province of South Africa, Gcaza and Lorenzo (2008) observed that children, who lacked appropriate mobility devices, felt deprived of the chance to participate in education, play, or socially interact. This is a clear indication that assistive devices and technology use have a positive impact on the capabilities of individuals with disabilities. Research evidence has revealed that assistive devices and technologies that are matched to the user's needs and contexts, are effective tools to eliminate the barriers to autonomy, and increase the possibility of utilizing mainstream services, especially education, work and employment (Borg *et al.*, 2012; Yeager, Kaye, Reed & Doe, 2006; Hunt, Soto, Maier & Doering, 2003).

Affordability of new assistive devices, such as braces, wheelchairs, visual and hearing aids was described as a major barrier that PWDs grapple with. Two adolescents, a 15-year-old female (P 14) and a 16-year-old male (P 50) disclosed that they could not afford the assistive devices. The 15-year-old female participant (P 14) stated that she sought after braces once and was never assisted, because she was required to pay to procure them, which she was unable to do. However, the 16-year-old male participant (P 50) expressed that he required a wheelchair, as the one he was using was worn-out, but never received one. This finding is consistent with that of Borg and Östergren (2015), who, in their study to assess reasons for not owning assistive devices and technologies, observed that affordability was the main reason for this outcome. This current study finding also highlights an expectation among service providers for PWDs (or their family) to pay for assistive devices, as happens elsewhere. In a USA study, Carlson and Ehrlich (2006) observed that individual PWDs, or a member of their family (accounting for nearly 40% of all sources), pays for assistive devices and technology, or any special adaptations and accommodations made in the environments, they most commonly used. Consequently, the PWDs, who cannot afford appropriate assistive devices, face difficulties in the activities of daily living, as well as barriers to both basic and critical services. Scherer and Glueckauf (2005) noted that the inability to afford assistive technology (AT) has been a significant barrier to health and psychosocial functioning of individual PWDs. The mere lack of assistive devices and technology has implications for the potential capabilities of individual PWDs, because it deprives them of the possibility to participate without the need for someone else's support. These negative outcomes and the increase of unmet needs for assistive devices have broad socioeconomic and policy implications for personal income, safety on the roads, productivity and inclusion in mainstream contexts.

4.7.3. Built Environment

Regarding products and technology, the FGDs participants and the key-informants reported that the inaccessibility of built environments was a major barrier in the daily lives of PWDs, as it caused them to lack essential services. Two key-informants (K 3 and K 4) stated that the lack of accommodations, such as ramps, in most commercial buildings, namely, banks, market stalls, as well as government offices and hospitals, made the built environment inaccessible. One of the key-informants (K 3) mentioned that accessibility to buildings was challenging, as they lacked ramps, and personal assistance was also not provided, even in the banks. The other key-informant (K 4) expressed that it was difficult for PWDs to use the toilets inside the buildings they live in, because the doors are often too narrow. The key informant (K 3) observed that business people build narrow doors and toilets to maximize on space and might not accept to build wider ones. These findings are consistent with the findings of previous studies, conducted in other countries (Maja, Mann, Sing, Steyn & Naidoo, 2011; Kochtitzky *et al.*, 2011). Xu (2013) observed in a UK survey that the lack of lifts in buildings, parking difficulties, the lack of ramps/rails, and specially designed footpaths were major barriers to PWDs' participation. In a study to describe a model of different levels at which the physical environment can influence mobility in the USA, Kochtitzky *et al.* (2011) observed that PWDs and older persons experience restriction in community participation, due to inaccessible buildings, transport systems, raised curbs, and other barriers. Inaccessibility of the physical, especially the built environment, often results in the exclusion of PWDs from the services they need.

However, a South African study to assess PWDs' experiences of barriers in urban and rural settings, Maart *et al.* (2007) established that those in urban settings experienced barriers in public and private buildings (in mobility and communication), while those in rural settings perceived housing, legal and educational services, to be major barriers. In this current study, the FGD participants described their physical environments as chaotic and unfriendly (unsafe), which affected their capacity to maintain autonomy and independence, to an extent that they needed regular assistance for mobility, as well as to access essential services; for example, they needed assistance to cross highways safely. One FGD participant (P 48) explained that, there was no Zebra crossing on the Waiyaki highway, which is not friendly, because of the speeding cars. Consequently, PWDs cannot access the services of the APDK clinic. Similar to this current study's finding, in a Senior Walking Environment Assessment Tool study, conducted in Portland, Oregon, USA, involving 60 people, aged 55 years and older, Michael, Green and Farquhar (2006) observed that most participants described busy, heavily trafficked roads as unsafe and unpleasant. Another FGD participant (P 29) stated that, because of the inability to move swiftly, he needed regular assistance with his wheelchair, which, *consequently*, increased the time needed to arrive at his workplace or home. In contrast to this current study's findings, Clarke, Ailshire, Bader, Morenoff and House (2008), in a USA study, observed that adults with mobility disabilities, experienced severe restriction to cross a street, which was in poor condition (with cracks, potholes or broken curbs). This implies that PWDs lose their autonomy and independence regularly, precipitating the frequent need for assistance to access essential services. One implication is for a policy that enforces adaptations to existing buildings. Another implication is for a policy to entrench universal design in new building plans.

4.7.4. Access to healthcare and rehabilitation

One of the key principles of the Ministry of Health in Kenya is to ensure access and affordable health care for all (Chuma, Maina & Ataguba, 2012). This implies that the ministry aims to ensure equity in the distribution of healthcare services, based on need for care, and not on the ability to pay (Chuma *et al.*, 2012). However, equal access to health and rehabilitation in a developing country, such as Kenya, is challenging, because most of the health facilities are in major towns, and the poor, most of whom reside in rural settings, must travel long distances to health facilities, as well as pay higher transport costs to access the healthcare facilities, than those living in major towns (Fisher & Shang, 2013; Hjortsberg & Mwikisa, 2002). In this current study, the FGD participants and key-informants agreed that there was a need for health and rehabilitation services; however, the services were not available. An FGD participant (P 6) disclosed that he needed treatment for his legs, while a key-informant (K 3) expressed that the local hospital did not provide rehabilitation services, other than the treatment for minor ailments. Another key-informant (K 5) stated that the services she needed, namely rehabilitation, were lacking in the facility near her home. This indicates that there is some level of unequal access to health and rehabilitation services. Similarly, in Zambia, in an exploratory survey with a sample of 900 households, to assess equality of access to health services, Hjortsberg and Mwikisa (2002) observed the inequality of access to health services between rural and urban settings, with long distances to the nearest health facility, making it very costly for rural dwellers to seek medical care. This observation is consistent with Hart’s (1971) inverse care law, which states that good medical care varies, inversely, with the need for it, in the population served.

In this current study, three FGD participants (P 11, P 12 & P 13) identified the barriers to access healthcare and rehabilitation services as, the distance to a health facility, the inability to pay the cost of transport to and from a health facility, the lack of resources, as well as the lack of needed specialists in the facility. One FGD participant (P 11) reported that he had no money to visit the hospital, while another participant (P 12) declared that services provided in the local health facility were poor, and s/he had no available funds to travel to a bigger hospital. A third FGD participant (P 13) stated that the hospital was a long distance away, and finding money for the fare was a challenge. These findings concur with those of a population-based household survey, conducted in Sudan, Namibia, Malawi, and South Africa, with 9307 persons with disabilities, in which Eide, Mannan, Khogali *et al.* (2015) observed that the costs, lack of transport, unavailability of services, and the inadequate drugs, or equipment, hindered the PWDs’ access to health services. Therefore, the main reasons for the inaccessibility of rehabilitation and healthcare services among PWDs, in most developing countries, has been the unavailability of related, but important services, such as the lack of specialists, transport (including the lack of resources), costs, and long distances (Fisher & Shang, 2013). The 2002-2004 World Health Survey, across 51 countries, reported that affordability was a key reason that persons with disabilities could not access healthcare in low-income countries (WHO, 2011). In the 51 countries, over half of the persons with disabilities could not afford healthcare services, compared to only 1-in-3 persons without disability. Persons with disabilities in low and high economic countries alike experience the inaccessibility of healthcare and rehabilitation, due to the costs. For example, in a cross-sectional survey, to assess disparities in healthcare, using a nationally representative sample in the UK, Lee and Heinemann (2010) established that PWDs were more likely to postpone physician appointments, because of the costs. Similarly, in the USA, Callahan and Cooper (2006) observed that up to 35% of young adults with disabilities, compared to only 15% of able-bodied young adults, reported unmet healthcare needs, owing to the costs thereof. According to access theorists, the cost of transport and having money relates to financial accessibility; distance relates to geographical accessibility; while having needed specialists in local health facilities relates to availability (Peters *et al.*, 2008; Jacobs *et al.*, 2011). Indeed, geographical accessibility (the actual distance travelled to and from health facilities) has been an important factor that negatively influences healthcare utilization (Al-Taiar, Clark, Longenecker & Whitty, 2010; Iezzoni *et al.*, 2006; Allen & Mor, 1997). This implies that the burden of disability will continue to escalate, as long as the financial and geographical accessibility, as well as the availability of specialist services remains a challenge.

4.7.5. Need for Communication support in healthcare and rehabilitation services

Some FGD participants, particularly the deaf and hard-of-hearing, expressed dissatisfaction with rehabilitation and healthcare service providers. They disclosed that most of the providers could not communicate with them in sign language. A key informant (K 6) stated that the deaf and hard-to-hear are poorly treated due to the lack of someone to explain what the individual feels. A FGD participant (P 43) indicated that the lack of a sign language interpreter at the hospital confused the whole system. The participant (P 43) also expressed that, when he goes to the hospital, he feels confused, as he is kept waiting in the queue, because of the lack of an interpreter, while others who are able to communicate, were attended to. This finding confirms the WHO (2011) report that the majority of PWDs usually do not receive the services they need from healthcare workers. Additionally, similar findings on the dissatisfaction with doctor-patient communication have been reported in other research (Barnett, McKee, Smith & Pearson, 2011; Steinberg, Barnett, Meador, Wiggins & Zazove, 2006). Effective doctor-patient communication is an integral part of healthcare and rehabilitation services delivery, and requires accessible interpretation services to be available. The implication for Kenya's deaf and hard-of-hearing is that they are vulnerable to exclusion from accessing basic services, including healthcare and rehabilitation. Therefore, Kenya should ensure that sign language interpretation services are accessible, so that health information communication reaches deaf people and their families.

4.7.6. Lack of access to Education

Some of the FGD participants and key-informants interviewed in this current study, reported that the lack of access to education, including special education, in Kenya, by children and adolescents with disabilities and special needs (the deaf, hard-of-hearing and the blind) was mainly due to financial inaccessibility and unavailability of trained special education teachers, as well as sign language interpreters. A FGD participant (P 38) stated that, at the school she attended, some of the teachers did not understand sign language, so she could not understand everything they taught. One key-informant (K 2) disclosed that local inclusive schools lack sign language interpreters. The lack of access to education, including special needs education, is common among PWDs in developing countries (Filmer, 2008). This current study's finding is in contrast to Fisher and Shang (2013), who established that the lack of access to education, including special education, was because of the geographical inaccessibility of schools, the unavailability of special schools, and the poor quality of information among families with PWDs, especially those living in rural areas. In South Africa, an estimated 33.8% of people with moderate-to-severe disabilities have had no schooling (Statistics South Africa, 2005). Similarly, up to 95% of children with disabilities, who comprise 40% of the total population of persons with disabilities in India, neither have special, nor inclusive education (Kalyanpur, 2008).

Some of the FGDs participants interviewed reported that children with severe physical disabilities (bed-ridden and in their families' homes), and in need of constant care, lack special education services. A key-informant (K 3) disclosed that children with severe physical disabilities, in the area where he lives, were not receiving education, due to mobility problems, the lack of information on the part of the caregiver, and/or the local schoolteacher's inability to handle children with severe disability. The key-informant (K 3) continued that children with severe mental challenges cannot sit in inclusive classrooms. The key-informant noted that no accommodation for children, who are blind, dumb, deaf, hard-of-hearing, as well as those with special needs, has been made, since Kenya began inclusive schooling.

This current study's findings support the findings of a study conducted by Anastasiou and Keller (2014) that revealed the existence of substantial disparities in access to special education among several countries. Anastasiou and Keller (2014) assessed factors that influenced special education coverage in several countries in their study. Inadequate access to special education has been attributed to the unavailability of special education services (Levine, Marder & Wagner, 2007). This is a major policy issue, and as is the case in other developing countries, which have young populations, Kenya's human capital development rate, with respect to special education teacher training, may not match population demand for special education services. Conversely, several other factors may indirectly influence the availability of special education services. For example, financial hardship and poverty have been identified as barriers to the education of children with disabilities (Hughes, Stenhjem & Newkirk, 2007; Levine, Marder & Wagner, 2007). Additionally, research has revealed that many families of children with disabilities experience considerably more material hardship and poverty, than do other families (Parish, Rose, Grinstein-Weiss, Richman & Andrews, 2008). Parish *et al.* (2008) analysed the 2002 wave of the National Survey of America's families. According to Parish, Rose and Andrews (2010); Parish *et al.* (2008); and Fujiura and Yamaki (2000), one-in-four children with disabilities, in general, are living in poor single-parent headed families. Therefore, many children with disabilities, living in poor households, may not be receiving schooling, due to multiple barriers. This begs the question, "Does inclusive education guarantee equal rights to education for all children with disabilities?"

Key informants (K 2 & K 4) reported that the government of Kenya transfers an equivalent of 20 US dollars (2000 Kenya shillings), annually, for each child with disability enrolled in local schools with special units. According to one key-informant (K 2), the cash transfer, as part of providing free primary education, assists the schools to acquire instructional materials. A key-informant (K 4) also mentioned that the government provides a special fund for high school-going children, as well as high school leavers with disabilities, in transition to colleges and universities (whose uptake was very low). The key-informants attributed the low uptake of the special fund to the lack of awareness among PWDs and bureaucracy in the fund administration. Similar cash transfers and support programmes have been reported in other low-medium income countries and have had encouraging results. They include the Bolsa Escola, a minimum-income grant related to primary education in Brazil (Soares, Ribas & Osório, 2010), and the Honduras' PRAF programme (Glewwe & Olinto, 2004). In addition, they include the conditional cash transfer based on school attendance in Nicaragua (Rawlings, 2006), and higher government subsidy to schools categorized as most needy (enrol children with disabilities and special needs) in South Africa (Lomofsky & Lazarus, 2001). In contrast to this current study's findings, Lomofsky and Lazarus (2001) observed that the South African government subsidy was to assist schools to make the necessary accommodations to their physical facilities, and to improve their human resources towards development of inclusive educational contexts.

The effectiveness of the Kenyan cash transfer programme in increasing PWDs access to education services was not an objective for this study. However, well-targeted small-scale programmes, such as the Bolsa Familia and Oportunidades have been able to increase school attendance, and reduce dropout rates, as well as income inequality in a cost-effective manner (Soares, Ribas & Osório, 2010). In contrast to this view, Kremer, Brannen and Glennerster (2013) argue that there is no evidence that the cash transfers increase access to targeted services. In support of this view, Banks *et al.* (2016) posits that cash transfers did not seem to increase the potential for individual well-being and societal economic development. The inadequate resourcing of necessary accommodations in schools in Kenya has implications for the inaccessibility of inclusive schools. In addition, the low access of the special fund has implications for unmet educational needs among adolescents and young adults, in transition from primary school, or secondary school to college and/or university.

4.7.7. Vocational training

Regarding vocational training, the FGD participants referred to the lack of polytechnics and colleges in their locality, from which PWDs could take vocational courses. Therefore, they are of the opinion that their need for vocational training is unmet. Some of the FGD participants blamed the lack of vocational training institutions for their dissatisfaction (P 9, P 38). One FGD participant (P 9) indicated that she was not satisfied with her current situation, and needed some vocational training, in order to start a business; while an adolescent FGD participant (P 10) expressed the need to be trained in tailoring. A middle-aged female participant (P 38) regretted the lack of polytechnics/colleges in the neighbourhood, as it could train PWDs in employable skills.

This current study's finding is consistent with previous studies conducted in the region. For example, in a study on the living conditions of PWDs in Zimbabwe, Eide *et al.* (2003) observed that only a few (22.7%) PWDs had received vocational training. In addition, a study on the living conditions of PWDs in Zambia, Eide and Loeb (2006) also found that only a few (8%) of the PWDs, who said they needed vocational training, received the service. These findings affirm the 2005/2006 Mass Health Employment and Disability Survey, in which Henry, Long-Bellil, Zhang & Himmelstein (2011) established that the inaccessibility to vocational training/rehabilitation was itself a major barrier to employment, or work participation of persons with disabilities.

Two FGD participants, who had completed vocational training, complained that they faced multiple barriers to utilizing their vocational skills, including the lack of employment and appropriate equipment, or tools. One of them, (P 25) complained that, although she was a trained tailor, she did not have a sewing machine to do work with, in order to earn her daily bread. Another FGD participant (P 29), an alumnus of Muriranja vocational rehabilitation centre, who does shoe repairs at the local shopping centre, stated that he uses a tricycle to get to work, although he has to find someone to push him. This is consistent with the findings of a study conducted by Hughes *et al.* (2004), who observed that youth with disabilities, who underwent vocational training, had difficulties finding employment, but occasionally performed odd jobs, such as caring for children. As is the case globally, vocational training and employment rates of PWDs remain low. The 2006 American Community Survey (ACS) estimated that only 36% of the working-age PWDs were in employment, compared to 74% of people without disabilities (Butterworth *et al.*, 2011). This implies that with, or without vocational training, persons with disabilities are at greater risk of economic marginalization.

4.7.8. Lack of employment

Using the World Health Survey to examine differences in employment rates, between persons with, and without disabilities, in other developing countries, Mizunoya and Mitra (2013) discerned that the observable characteristics of persons with, and without disabilities did not explain the employment gap between those with, and without disabilities. Baldwin and Johnson (2000) not only observed low employment rates, but also wage discrimination against persons with disabilities in a United States study. Baldwin *et al.* (2000) attributed this wage discrimination against PWDs to prejudice towards different impairments and productivity. In developing countries, discrimination against PWDs also thrives (Dos Santos-Zingale & McColl, 2006). In a study involving 15 villages in Pudukottai, India, in 2005, Mitra and Sambamoorthi (2008) revealed that the low employment rate of PWDs, compared to the rate of those without disabilities, was attributable to discrimination by prejudiced employers and family members, who discourage PWDs from seeking employment. In this current study, some of the FGD participants reported that PWDs had difficulty finding employment, compared to their counterparts, without disabilities. They intimated that potential employers prefer to employ able-bodied persons, even if they had lower qualifications. Three FGD participants (P 27; P 52; P 23) related their experiences. One of them (P 52) said that she was denied a job opportunity because she was single-handed, and whenever she procured one, she was later dismissed. Another participant (P 23) mentioned that PWDs are not given equal employment opportunities, while the third participant (P 27) stated that, although job opportunities are available, he is considered unemployable.

This finding is consistent with research evidence, which revealed that PWDs encounter barriers to employment, due to their disability, compared to the able-bodied persons (Mitra, Mouradian & McKenna, 2013; Mitra, Manning & Lu, 2012; Shier, Graham & Jones, 2009; Trani, Bakhshi, Noor & Mashkoor, 2009; Census South Africa, 2001). Hughes and Avoke (2010), as well as Yeager *et al.* (2006) described disability itself as the most significant barrier to employment, across all disability groups, with potential loss of benefits and the well-being of people with severe disabilities. Gartrell (2010) argued that the misconception of PWDs' social status, which likens disability to the inability to work, and/or to be employable, shapes their work participation. This implies that the low work participation by PWDs in this current study has little to do with their personal characteristics (in this case, the impairment), but more to do with the outcome (discriminations) of societal perceptions, or prejudices, regarding the individual's capacity to work productively. This effect of discrimination provides plausible hindsight into the causes of the low employment rates among PWDs, compared to those without disabilities.

In a study to estimate the wage differences between persons with, and without disabilities in Uttar Pradesh, India, Mitra and Sambamoorthi (2009) observed that persons with disabilities earned, on average, 8% less than those without disabilities. Mitra, Posarac and Vick (2013) theorized that employment would remain low because of the presumed lower productivity and/or discrimination of PWDs. In addition, Baldwin and Johnson (2006, cited in Mitra *et al.*, 2013) argued that the effect of disability on employment is also influenced by the workplace, its accessibility, handy accommodations and whether there is discrimination, which could hinder access to employment and/or result in lower wages. Disability has also been described as both a cause and an effect of poverty, affecting not only the employment, but also the quality of life of people with severe disabilities, particularly the minorities (Hughes & Evoke, 2010; Iezzoni, McCarthy, Davis & Siebens, 2001). Research in developed countries has revealed that the well-being of PWDs remains poor, compared to that of people without disabilities, even as those countries living conditions for all improved (Bernabe-Ortiz *et al.,* 2016; Loeb, Eide & Mont, 2008). This implies that PWDs are more likely to live in deprivation, as well as marginalization, and ultimately, bequeath poverty to their children as an inheritance, if no actions are taken to break the vicious cycle of poverty.

4.7.9. Lack of information and communication

Most of the key-informants, some with disabilities, reported that there was a lack of information that do not discriminate PWDs, especially the dumb, deaf and hard-of-hearing. They also maintained that the deaf were unable to utilize the services they needed, partly because of lack of information, and due to communication barriers. One key-informant (K 4) mentioned that for the hearing-impaired (deaf), sign language interpretation was lacking in most services. Another key-informant (K 3) stated that not only the electronic media (television stations), but also the administrative regions, lack sign language interpreters. He (K 3) complained that the deaf audience is often ignored, unless others provide them with information. These findings concur with the WHO (2011) and Mitra *et al.* (2011) reports, which suggest that PWDs (and their families) often lack information concerning the available services, or are unaware of their needs.

Some of the key-informants reported that it was also partly because of lack of sign language interpreters in public and private settings, including health facilities, police stations, and government administration offices. Regarding sign language interpretation, one key informant (K 2) added that no such services are provided in banks, offices or the chiefs' public meetings and that the deaf avoid public meetings conducted by chiefs. The key-informants said that many service providers lack the necessary skills for effective communication. Two key informants (K 2 & K 4) expressed that even chiefs, who are local public administrators, do not have sign language interpreters. Consistent with this finding, Steinberg *et al.* (2002) observed that deaf women's inability to access health information was due to the lack of sign language interpreters, or sign language skills among service providers, in a qualitative study with 45 deaf women, concerning their healthcare experiences, conducted in the USA. The deaf women, therefore, avoid the services. Bat-Chava, Martin and Kosciw (2005) observed that deaf communities have trouble communicating with clinicians in healthcare systems, hindering their access to health information and healthcare. In addition, Hanass-Hancock (2009) and Watermeyer *et al.* (2006) observed that, in many countries, many factors affect the use of disability support services, ranging from the lack of skilled manpower (for instance, sign language interpreters), culture and language barriers, including the differences in socio-economic status, as well as the unequal distribution of support services. Eide and Ingstad (2013) found that the non-utilization of support services by PWDs, who participated in their study, was partly due to the lack of education and information; and partly due to mental, physical health and employment status.

In this current study, some key-informants reported that the lack of communication assistance in the deaf community was a major barrier to their utilization of other mainstream services. The key-informants mentioned that communication assistance, through sign language interpreters, would significantly assist PWDs to communicate, and be understood by service providers in private enterprises, public offices, healthcare, as well as the justice and legal system, for instance. There is an implication for the unmet needs of information, education, healthcare, assistive technology, among the deaf and hard-of-hearing community.

4.7.10. Justice/Legal System

Some FGD participants reported that they sought and received justice services, while others reported that their needs for justice were unmet. The need for seeking justice, or legal system services, varied from discrimination, to stigmatization by parents, to conflicts and social problems. A FGD participant (P 40) mentioned that when her parents stigmatized her, she reported the incident to the chief; while another participant (P 38) stated that, when her parents failed to support her, she reported it to the area chief, who compelled the parents to restore their support.

Generally, the participants sought the interventions of the justice system as victims of perpetrated crime, but in some instances, its agencies harassed, victimized or ignored the PWDs. For instance, a participant (P 41) reported that a deaf person was selling sweets, when a police officer threw cannabis sativa at him and, subsequently, accused the man for selling cannabis sativa. Later the police officer arrested the deaf person because he could not defend himself. Another participant (P 24) went to the Kiria-ini police station to report a case and was ignored. This issue was compounded by the failure to record occurrences of crimes committed against PWDs. Similar to this current study's findings, Ortoleva (2010) observed that, although many PWDs have multiple support needs for justice; their rights are not protected, and they are not treated equally before the criminal justice system, as the able bodied individuals are. According to the Australian Human Rights Commission (2013), the unequal attention to PWDs, who are victims of crime, accused of crimes, defendants and offenders, happens in police stations, courts and prisons contexts. In a study to identify barriers that PWDs in Ireland face, when accessing the criminal justice system as victims of crime, Edwards, Harold and Kilcommins (2015) observed a lack of recognition for PWDs as victims of crime, among many agencies of the justice system. The findings in this current study reveal a gap, where agencies of the justice system fail to take issues affecting PWDs seriously, which require further research. In an evaluation regarding the relevance of the Commission on Legal Empowerment of the Poor, through a review of empirical evidence, Borg, Bergman and Östergren (2013) observed that persons with disabilities in low and middle-income countries, experience problems in the domains of access to justice and the rule of law, as well as labour rights. Based on the findings and research evidence of this current study, it is plausible to suggest that PWDs are susceptible to abuse by both the general public, and the agents of the justice system, who are mandated by law to offer them protection. This implies that PWDs are not only vulnerable to violation by society, but are less likely to access their constitutional rights.

4.7.11. Public transport

Some of the FGD participants and key-informants reported that PWDs need transport to and from school, hospital, workplace or visiting relatives and significant others. Two FGD participants (P 22 & P 50) mentioned that public transport vehicles were somehow inaccessible. For example, one FGD participant (P 50) commented that the public transport vehicles are unfriendly, as the steps are too high and may cause individuals to trip and fall, while attempting to mount them. The participant (P 50) added that crew touts rush the passengers to board, and signals the bus to start moving, which could expose PWDs to injury. Another FGD participant (P 22) commented that public transport vehicle crews refuse to transport PWDs, even when they are signalled to stop. In contrast to this current study's findings, Fallis (2013), in a social inclusion research conducted in Ireland, observed that the inaccessibility of public transport services to PWDs was mainly due to the unavailability, as well as the individuals' challenges with boarding and alighting from public transport vehicles, transferring between services, and reaching the station. However, research has revealed that the lack of accessible transportation is a recurrent barrier, globally, that frustrates both the service providers and persons with mobility disability alike, because of missed appointments and the frustration of rescheduling (De Jong, Palsbo & Beatty, 2002). This implies that PWDs are more likely to miss other basic services, including work, due to the lack of accessible transportation.

4.7.12. Social Welfare

Regarding social welfare, the FGD participants and key-informants discussed the need for cash transfers, provision of health insurance cover and socio-economic empowerment. In addition, they commented that PWDs, generally, lack the necessary capacity to engage in economic activities, especially those that never attended school.

4.7.12.1. Cash Transfer and Empowerment

Even though measures of poverty, such as education and employment for those with disabilities, remain contentious, the cash transfer benefit appeared to improve the circumstances of PWDs' households, in terms of financial resources and access to basic services (Leibbrandt, Lilenstein, Shenker & Woolard, 2013; Palmer & Harley, 2012; Loeb, Eide & Mont, 2008). The cash transfer also appeared to be effective in facilitating poor households to educate their children, with potential for long-term empowerment (Gooding & Marriot, 2009), while helping to reduce poverty (De Janvry, Sadoulet, Solomon & Vakis, 2006). In this current study, the FGD participants and key-informants reported that access to schools was a powerful tool for the empowerment of PWDs. One key participant (K 3) stated that economic empowerment, as a tool, uplifts PWDs' skills. A FGD participant (P 9) also professed that she would only be satisfied, when given the training to start a business. In contrast to the findings of this current study, which focusses on the role played by cash transfers, studies conducted in Brazil and Zambia revealed that cash transfers had helped PWDs to access education, basic health services and transport, as well as facilitate social interaction (Hunter & Sugiyama, 2009; Gooding & Marriot, 2009; Standing, 2008).

In this current study, the FGD participants observed, that although the cash transfer's primary focus was to cushion PWDs and their families economically, its coverage was very low. The very low coverage of the cash transfer scheme causes many PWDs to feel "left out." Two FGD participants (P 31 & P 29) expressed their desire for the cash benefit. One participant (P 31) stated that although they were issued NCPWD registration cards, the cash transfer only benefited those with severe disabilities. Another participant (P 29) admitted that, if it were not for the cash benefit, her child, who was in high school, would have been sent home. Consistent with this current study findings, researchers have revealed that funding for disability cash transfers is often limited, constraining the number of PWDs who benefit (Banks *et al.*, 2016; Gooding & Marriot, 2009). A study to assess the needs of PWDs, and their inclusion in the cash transfer scheme, using a sample of 3684 participants in Peru, Bernabe-Ortiz *et al.* (2016) observed that, despite PWDs' high needs for social protection, they were less likely to be enrolled in the cash transfer scheme. In Viet Nam, only 5% of persons with severe disabilities receive government cash transfers (Palmer *et al.*, 2012). An important implication for cash transfers is its potential to protect children from child labour and the preservation of the potential development of their human capital; thereby, helping households to attain a state of well-being through improved health (Leibbrandt *et al.,* 2013; Gooding & Marriot, 2009; Emmet, 2006)

4.7.12.2. Health Insurance

In developed countries, a larger proportion of the population and, to a lesser extent, those with disabilities, may be able to afford a contributory health insurance scheme. Chen and Newachek (2006) posit that health insurance protects families of children with special needs from financial problems and hardships, irrespective of income. Despite the benefit, in most developing countries, contributory health insurance schemes cover a small proportion of the population, as it targets mainly those in formal employment (Mitra, 2005). In this current study, some of the participants in the FGDs reported that there was no health insurance for PWDs, which implies that most of them depend entirely on their families and well-wishers for healthcare support. A FGD participant (P 52) stated there was no medical cover for PWDs, while another participant (P 21) informed that she was unable to pay monthly subscription to the National Hospital Insurance Fund [NHIF]. The lack of health insurance caused PWDs to feel disadvantaged, along with their children. This gap in health insurance coverage is not unique to this current study, as it is reported in other studies, including ones conducted in developed countries. For example, in a study to assess trends in the disparities of access to health care in the USA, Mahmoudi and Meade (2015) observed a persistent gap of unmet healthcare needs between persons with, and without disabilities, related to the lack of health insurance. In a related study, using the 1999 to 2002 National Health Interview Survey data to assess insurance status and healthcare access of 1,109 young adults with, and 22481 without disabilities, Callahan and Cooper (2006) established that the lack of health insurance was significantly associated with unmet healthcare needs among young adults with disabilities. The lack of health insurance in this current study has financial implications for both the individual PWD and his/her family members seeking healthcare and rehabilitation services. In a study to assess self-reported barriers to healthcare between uninsured working-age adults with, and without disabilities, Iezzoni *et al.* (2011) observed that adults with disabilities reported the barriers to healthcare and the inability to acquire the necessary medications significantly more often, than those without disabilities.

4.7.13. Protection against radiation

Research suggests that there are tens-of-thousands of people living with albinism in Africa (Hong, Zeeb & Repacholi, 2006). Due to the lack of protective melanin, persons with albinism are very vulnerable to developing altered cosmetic appearance, sunburn, photo-ageing of the skin and solar keratosis (Lund & Taylor, 2008), including skin cancers and low vision (Maia, Volpini, Santos & Rujula, 2015; Lund & Taylor, 2008; Hong, Zeeb & Repacholi, 2006). To lessen the effects of the sun's ultraviolet rays, persons with albinism need to apply sunscreen creams, wear wide brimmed hats, protective clothing and special sunglasses, which are inaccessible to the poor, most of whom live in rural areas (Lund & Taylor, 2008). The participants in the FGDs and the key-informants interviewed, reported that there was no policy to protect persons with albinism against the sun's ultraviolet radiation. A key-informant (K 4) stated that the sunscreen cream that was being provided to people with albinism was not based on any written law, or government policy. However, the participants disclosed that the National Council for Persons with Disabilities relies on the prevailing political goodwill to secure financial resources to purchase and supply sunscreen lotions to persons with albinism. In contrast to this finding, Lund and Taylor (2008) established that South Africa's health policy provides for the provision of sunscreen protection, a generic SPF 15 sunscreen cream, free of charge, through its regional hospitals. However, these creams are inaccessible, due to the barriers of time and the expense of travelling to the outlets, as well as the limited availability of the creams (Lund & Taylor, 2008).

In this current study, a key informant commented that, without a policy in place, future governments may renege on the provision of sunscreen creams. This implies that, there is an urgent need to take advantage of the prevailing political goodwill to formulate a policy to address the sun protection, its breadth of health consequences, prevention strategies and common barriers to sun protection (Wright, Albers, Oosthuizen & Phala, 2013; Hong, Zeeb & Repacholi, 2006). Such a policy will document the government's commitment to the provision of free or subsidized sunscreens, low vision aids and sunglasses to persons with disabilities, including albinism, especially the poor living in rural areas.

4.7.14. Relationship with professionals

The PWDs' relationships with professionals have been perceived to reinforce social exclusion, for example, being made to feel that they have no contribution to make, as well as feeling harassed and bullied (Morris, 2001). The findings of this current study reinforce this perception, as the participants reported that their relationships with professionals were not always cordial. Among those who participated in the study, three participants' (P 5, P 29 & P 41) comments indicated social exclusion, or disaffection regarding their relationship with professionals, while one participant (P 42) felt socially accepted. According to the three participants who felt disaffection, one (P 5) remarked that she went to hospital and felt frustrated and confused, because she was kept waiting in the queue, while other people "passed" her by, because of the lack of an interpreter. Another participant (P 41) stated that, when professionals see a PWD with a white cane, they assume the person is sick. She added that she tried to tell the professionals to put themselves in the PWDs shoes. The third participant (P 29) revealed that a deputy county commissioner (administrator) once gave him a chance to educate the public on disability issues; however, since then he has been deprived the opportunity to educate the public. Consistent with this finding, Dos Santos-Zingale and McColl (2006) established that PWDs in Sierra Leone are treated poorly; are neither considered as equal citizens, nor given equal opportunities. According to Morris (2001), the goal of the perpetrators of exclusion, is to demolish PWDs' self-esteem and confidence, by creating a stigma and weakening their capacity to participate in decision-making, or to be autonomous. Therefore, there is an implication for policy to protect PWDs against these vices and to facilitate their realization of all human rights.

4.7.15. Factors influencing utilization of disability support services

Equitable access to support services, in most developing countries, is challenging because of various underlying factors (Eide, Mannan *et al.*, 2015), including the attitude of society towards PWDs, prejudice, and the lack of services (Groce & Murray, 2013; Drainoni *et al.*, 2006). The findings of this current study reveal that PWDs experience significant barriers, such as negative attitude, discrimination and isolation to access and/or utilize support and mainstream services.

4.7.15.1. Negative attitude, Discrimination and Isolation in health facilities

Among the key-informants interviewed and the focus group participants, many reported that negative attitude, discrimination and isolation were key factors that hinder the accessibility of services to PWDs in various sectors of Kenya. Two FGD participants (P 52 & P 41) remarked that routinely PWDs are discriminated against, insulted, delayed and denied services in hospitals. One FGD participant (P 52) related that she had received nasty comments from nurses, such as, "are you one of those who are supposed to give birth?"…"how can you dare become pregnant?" She got very annoyed. Another FGD participant (P 41) stated that maternal services are very abusive to pregnant women with disability, in both language and the height of the delivery couches, which are unaccommodating. In addition, a key informant (K 1) mentioned that women with disabilities are coerced to deliver through surgery because of their disabilities. Similar attitudes towards PWDs have been reported in previous studies. The findings of this current study are consistent with those of a study conducted by Mavuso and Maharaj (2015), in South Africa, revealing that the need of women with disabilities for sexual and reproductive health services, incensed healthcare workers, who in turn refused to advise them on alternative family planning methods. According to Schopp, Sanford, Hagglund, Gay and Coatney (2002), as well as Elwan (1999), negative attitudes towards PWDs is common practice in health facilities, in developing countries, especially towards women. However, negative attitudes towards PWDs is not unique to developing countries, but also occurs in developed countries. In a small-scale qualitative study involving 12 women with physical disabilities, in Australia, to explore their experiences of breast cancer screening, Peters and Cotton (2015) observed that they felt ignored, not listened to, helpless, alone, afraid, tortured and humiliated. The negative attitudes, directed at PWDs by healthcare providers, have implications for unmet healthcare needs, suffering, increased disability and the possibility of preventable deaths, which is a human rights issue.

Other factors associated with negative attitude and discrimination, reported by the key-informants and the focus group participants, included, misconceptions by some individuals concerning PWDs, disrespect, insensitivity, service provider's reluctance to provide the services that PWDs need. A FGD participant (P 8) related that he once went to Kitui Hospital, and while in the queue, the doctor came and collected the cards from some of the people, attended to them and left without attending to him, which made him (P 8) feel bad. Another FGD participant (P 21) shared that she was sick one day and went to a nearby dispensary for medication, but was sent away and told to seek treatment elsewhere. Consistent with this current study's finding, previous researches reveal that PWDs, for instance, those with communication impairments, are ignored by clinicians and other staff working in health facilities, and instead speak to their companions, rather than directly to them (O'Day *et al.,* 2002). In addition, in a qualitative study of people with mobility disability, to assess their experiences during and after the conflict in Sierra Leone, Dos Santos-Zingale and McColl (2006) observed that PWDs experienced prejudice while seeking healthcare services. Groce and Murray (2013) attribute discrimination or rejection of PWDs by society, to myths and misconceptions perpetuated in African cultures and religions. The finding of this study implies that PWDs have unmet healthcare needs attributable to negative attitudes and discrimination by healthcare workers.

4.7.15.2. Discrimination in Public transport

Another sector factor, reported by the FGD participants in this current study, was unfriendliness and discrimination in public transport, in favour of the able-bodied persons. In some incidents, public transport crew (service providers) are said to have manhandled those who were unable to board the public transport vehicles. A FGD participant (P 22) disclosed that public transport vehicles fail to stop, whenever they signal them to. The FGD participant (P 22) continued that the public transport crew lift PWDs, as if they are not human beings, while another FGD participant (P 51) disclosed that the crew pushed them to enter the vehicle, sometimes causing them to stumble.

The findings of this current study contrast with those of a study conducted by Rosenkvist, Risser, Iwarsson, Wendel & Ståhl (2009), who observed that the reasons why PWDs, living in Malmö, Sweden, were not using public transport, were either both real and imagined usability problems, or the PWDs had changed (from buses or trains) to other modes of transport. However, though the factors found in Kenya and the Sweden contexts are different, they have similar outcomes of reduced accessibility to opportunities, goods and services and reinforce other factors that promote social exclusion (Kenyon, Lyons & Rafferty, 2002; Kenyon, Rafferty & Lyons, 2003). This implies that PWDs have unmet transportation needs, attributable to negative attitudes and discrimination by public transport workers, and, therefore, are less likely to access mainstream services.

4.7.15.3. Discrimination within the family

In this current study, certain focus group participants reported that some families treat their children with disabilities differently, and tend to favour their non-disabled siblings. One FGD participant (P 46) indicated that his parents treated him differently, and did not the pay school fees, as they did for their other children. A key informant (K 2) also expressed that children with disabilities are treated as lesser human beings in the home, and are discriminated against. This finding concurs with Palmer's (2011) view that families may discriminate against PWDs, by distributing the households' expenses in favour of members without disability. The act of discrimination within the family, because of disability, with respect to educating children with disabilities, may have long-term implications on their educational attitudes and outcomes (of low or no education), as they transit into adulthood. Supporting this view, Rule and Modipa (2012), in a qualitative study to evaluate educational attitudes and experiences of adults with disabilities in South Africa, observed that adults with disabilities had had negative experiences of education, as children.

4.7.15.4. Discrimination in Employment

In this current study, the key-informants and focus group participants identified discrimination and isolation as barriers faced by PWDs, when accessing and maintaining employment. Two FGD participants (P 29 & P 52) provided examples of how some employers address PWDs, using harsh words, or refusing to pay them for work done. One of the FGD participants (P 29) related an incident, when they were employed as casual workers in a community project. However, after working for several days, the PWDs were not paid, but the able bodied workers were. Another FGD participant (P 52) maintained that PWDs are not given work opportunities. She (P 52) added that PWDs are viewed with contempt, and are usually thrown harsh words like, “Did you come to Nairobi to be helped?” This current study’s finding confirms the findings of Maja *et al.* (2011) and Elwan (1999), which revealed that PWDs’ inability to secure and maintain employment is attributable to work-related discrimination, as well as the negative attitudes held by employers, and other employees, towards them. Employer and workplace discrimination, as well as negative perceptions, have been identified as major work-related barriers encountered by PWDs (Shier, Graham & Jones, 2009; Census South Africa, 2001), due to their disability (Mitra, Mouradian & McKenna, 2013; Mitra, Manning & Lu, 2012; Baldwin & Johnson, 1995). One FGD (P46) participant mentioned that, although he has been looking for a job, potential employers are convinced he is unable to work, while another participant (P 50) added that, not even a PWD, who is a university graduate, procures employment; instead employers discriminate against them in favour of O’level leavers. Discrimination in the labour market, as well as the negative attitudes of society towards PWDs, is also responsible for their generally low socio-economic status (Dos Santos-Zingale & McColl, 2006; Census South Africa, 2001). According to Bernabe-Ortiz *et al.* (2016), denial of employment, adversely affects PWDs, as it weakens their chances of socio-economic participation (to earn income and provide for their families), and deprives them of potential financial resources, necessary for their well-being. Therefore, this current study’s findings concur with other research findings, which imply that PWDs have unmet employment needs. These are attributable to the negative attitudes and discrimination by individuals in society, fellow workers and employers.

4.7.15.5. Harassment and victimization in the Justice System

Some of the FGD participants reported that law enforcement agents (police) themselves were a barrier to justice. The agents of the justice system are said to ignore, harass and victimize PWDs through their actions. A FGD participant (P 41) offered an example of a case where police officers incriminated a deaf person as a pusher of cannabis sativa (prohibited plant product) and charged him in court. Another two FGD participants (P 24 & P 25) related unsatisfactory outcomes after seeking help from the justice system. One of the FGD participants (P 24) disclosed that he reported a case at a police station, but was turned away, while the other (P 25) shared that she had gone to report a case to a Deputy County Commissioner, only to be attacked with an iron bar by his security to shut her up. The findings of this current study concurs with the findings of a study conducted by Borg, Bergman and Östergren (2013), who assert that the mishandling of PWDs by service providers of the justice system, namely, the police, is common practice, globally.

This current study's findings also concur with the Australian Human Rights Commission (2013) report, which indicated that a significant prevalence of persons with disabilities in need of communication supports, or who need multiple supports, are not treated fairly before the justice system. Additionally, this unfairness exploits PWDs, who are victims of violence or rape (Dodd, 2004). The unfair treatment also manipulates PWDs, accused of crimes in police stations or courts, to mention but a few institutions. This unfair practice among service providers in the justice system may be attributed, partly, to negative attitudes and assumptions held by some of the individuals in that sector, such as, PWDs are unreliable, or incapable of giving evidence, or participating in legal proceedings (Australian Human Rights Commission, 2013). There is, therefore, an implication for a policy that advocates the rights of PWDs. A second implication is that PWDs experience unmet justice needs. This is attributable to negative attitudes and discrimination by agents of the justice system and public administration.

4.7.15.6. Negative attitudes in schools

The FGDs participants and key-informants reported that, in schools, children and adolescents with disabilities experience negative attitudes from teachers, peers, classmates and other able-bodied people. A key-informant (K 3) related that some teachers are of the opinion that children with disabilities (CWD) should be segregated. In addition, the key-informant (K 3) added that those teachers do not accept the CWDs, especially those with mental disability. Another keyinformant (K 5) indicated that some PWDs suffer low self-esteem, self-pity and denial.

Consistent with the findings of this current study, Avramidis, Bayliss and Burden (2000) observed that teachers, who are the key agents of the operationalization of the inclusive school policy, are often unwilling to meet the needs of children with disabilities. Research evidence suggests that this kind of attitude from teachers may be explained by the fact that the inclusion of children with disabilities into regular schools is often effected in an *ad hoc* manner, without making systematic changes to the schools' establishment (Avramidis *et al.,* 2000). This implies that schools lack the necessary support staff, teachers with instructional expertise, as well as adapted physical facilities, fit for children with disabilities.

4.7.15.7. Discrimination in public

Some FGDs participants reported that adults with disabilities experience discrimination in public gatherings and in religious activities. A FGD participant (P 29) attested to having spoken about the plight of PWDs in a general public meeting, which did not please a public administrator. Since then, he (P 29) has been deprived of any other opportunity to speak to a similar forum. Another FGD participant (P 41) expressed that, despite her effort to educate the public on the potential of PWDs, they are not elected as leaders in community groups. This current study's findings are consistent with those of a study conducted by Dos Santos-Zingale and McColl (2006), who observed in Sierra Leone, that PWDs are not given opportunities to participate in general public meetings. However, the findings of this current study contrast with Xu's (2013) findings in the UK that 4-in-5 children with learning disabilities, and 1-in-4 adults with disabilities suffer from discrimination, harassment, violation, victimization and abuse outside the home, because of their disability. According to the WHO (2011) report, negative attitudes and discrimination of PWDs by society are social barriers to opportunities for them to interact with other people, socially network, make friends and meet life partners. It may be safe to state here that PWDs, especially those with severe impairments, live on the fringes of society, are at high risk of exclusion and isolation, even by agents of public administration. Discrimination by agents of public administration has huge implications for the well-being of PWDs as individuals, and collectively as a population with special needs. This is because agents of public administration, working at the community level are implementers of policies, and, therefore, increase the risk of unmet support needs among PWDs.

4.8. The ICF and the application of the Capability Approach Conceptual Framework to the findings

This current study highlights the needs of persons with disabilities, in select counties of Kenya, under the various domains of the ICF. However, besides discrimination, the ICF did not highlight the effect of factors such as gender, available resources and the economic constraints of the PWDs, which may increase the disability that results from impairment (Mitra, 2006). The negative consequences of these factors' interactions on the status of persons with impairments have potential to deepen their level of marginalization and isolation from society.

Based on the Capability Approach perspective, disability is only one of several factors, such as age and gender, which interact to marginalize PWDs and isolate them from mainstream contexts, in which the able-bodied develop their social and human capital, earn income, create wealth, socialize and exercise liberty/independence. Therefore, viewed from the Capability Approach perspective, the findings of this current study have broader policy implications, in that, the national disability programme ought to change its focus from service provision, to the enhancement of PWDs' basic capabilities to function (overall well-being), which is the basis for humans to achieve equal opportunities and choices (Trani *et al.*, 2009). The development of policy should transcend the debate on income, to developing basic capabilities among PWDs, for example, providing access to good nutrition and sufficient food, quality healthcare, safe living and working conditions, creating awareness about sanitation and disease prevention (Trani & Loeb, 2012).

4.9. Limitation of the study

A limitation of this current study is the lack of triangulation. However, the study reveals a gap in support services supply or provision; inaccessibility and under-utilization of services, such as rehabilitation, education, vocational training and healthcare, inter alia. This clearly demonstrates the need for the development of a policy on (appropriate) support services, to promote the supply and provision of these important services to PWDs in Kenya.

4.10. Summary of the chapter

This study aimed to explore the PWDs-specific support services needs and utilization in selected counties in Kenya. The individual's resources were identified as the primary domain from which their support needs to function (to participate in mainstream activities) arises. The results revealed that, because of the absence of appropriate support services, assistive devices and assistive technology, disability had set in. The lack of appropriate support services revealed in this current study has several implications. These include the lack of choice, low level of education and/or illiteracy, underemployment and unemployment. Future research should determine the cost implications of support services on households, and appraise the effectiveness of support services used by PWDs to improve their well-being. The next chapter focuses on an attempt to determine the predictors of the utilization of support services by PWDs, in the selected counties in Kenya.

4.14 Conclusion

In conclusion, the findings of this exploratory study revealed that, despite the great need for support services, personal assistance, sign language interpretation, assistive devices and assistive technology, most of them are unmet. The study also revealed that a gap exists in the utilization of secondary services such as healthcare, rehabilitation, education and special education, vocational training, employment, information and communication, as well as public transport services, influenced by various factors. These factors include negative attitudes, discrimination, isolation, abuse, victimization, harassment, unfriendly service providers, denial of services, being ignored, un-accommodative delivery couches (obstetrics), unaffordability, lack of money/resources, costs and distance to facilities, which influence the needs of PWDs, as well as their utilization of support and mainstream services. These findings have implications for the unmet needs for support and mainstream services among PWDs. There is also an implication for a disability policy (that focuses on building the basic capabilities of PWDs), which promotes the PWDs' potential to take up opportunities, as well as participate in mainstream activities on an equal basis with others.

CHAPTER FIVE

PREDICTORS OF THE UTILIZATION OF SUPPORT SERVICES BY PWDS IN KENYA

5.1. Introduction

In this chapter, the background of the study, the methodology, findings, discussion and a summary of the chapter, relating to the predictors of the utilization of support services by PWDs in Kenya, are described. Before the discussion of the findings, a brief discussion of the study participants is presented to clarify who the participants were. The relevance of the study findings to disability policy is elaborated on at the end of the discussion.

5.2. Predictors of the utilization of support services

Environmental, personal and resource-related factors that may predict utilization of support services and their outcomes, are receiving disproportionate attention in research on persons with disabilities (PWDs), globally (Foley *et al.*, 2012), raising public health policy concerns. Based on the conceptual framework used in this current study, the Capability Approach, the term "utilization" refers to the act of use, application, consumption or uptake of a service by a person to meet his/her needs (Robeyns, 2005; Clark, 2005). Nussbaum (2007) and Thompson *et al.* (2009) posit that the utilization of a support service occurs when the environmental demands outweigh the person's capabilities and coping resources. One type of utilization of a service is related to the utilization of the support received to completing the activities of daily living (Loja *et al.,* 2013).

The concept of utilization of support services may be viewed from the perspective of individual's choice that is primarily driven by environmental demands, personal characteristics and availability of resources (Vanleit, 2008; Nussbaum, 2007; Mitra, 2006). Inadequate choices or alternatives to select from, which are mostly experienced by PWDs, across all age-groups, result in increased difficulty to access the services that they need, such as health care and rehabilitation, including vocational rehabilitation, as well as education services (Castro, Cieza & Cesar, 2010; Nisbet *et al.*, 2006).

Although previous studies, focusing on the outcomes of PWDs utilizing support services, revealed factors that predict those outcomes; however, studies that focus on the factors influencing the utilization of support services by PWDs, are generally inconclusive (Foley *et al.*, 2012).

Some of the previous studies only identified the factors related to PWDs' utilization of support services, but little attempt was made to establish the predictors. For example, Prodinger *et al.* (2010) identified the physical, social attitudinal and policy factors as influencing vocational participation, or the social life of people with multiple sclerosis in Austria and Switzerland. In a study to explore the characteristics of young people reporting unmet needs for assistive devices, Lindsay and Tsybina (2011) observed that income was a key predictor for using a mobility device to 20-24-year-olds, but not to 15-19-year-olds; therefore, it deserves further study. Lindsay et al. (2011) also established that family structure and the spoken language influenced the likelihood of using a communication assistive device. Despite the use of support services and assistive devices, predictors of using sign language are an important component for human functioning

5.2.1 Utilizing Sign language

For both convenience and theoretical reasons, most researchers seek to determine predictors of a successful outcome (educational attainment, employment, independent living, and health) in utilizing the specific services (related to those particular outcomes) among PWDs with homogenous impairments. For example, studies involving deaf and hard-of-hearing students at post-secondary level (Convertino, Marschark, Sapere, Sarchet & Zupan, 2009); people with orthopaedic disabilities (Chan, Cheing, Chan, Rosenthal & Chronister, 2006); and women with disabilities seeking health and preventive care (Chevarley, Thierry, Gill, Ryerson & Nosek, 2006).

In addition, researchers have revealed that each outcome of a service has its own predictors, which are either environment-related factors, personal characteristics or resource-related factors. Environment-related factors are physical, social or attitudinal in nature, and are beyond the control of PWDs, as opposed to personal characteristics and available resources (Prodinger *et al*., 2010). For instance, in a study to determine the effects of American Sign Language (ASL) proficiency on the reading comprehension skills and the academic achievement of 85 deaf and hard-to-hear signing students with different levels of ASL proficiency, Hrastinski and Wilbur (2016) observed that students' ASL proficiency significantly predicted their academic success.

This implies that, predictors of the utilization of some types of support services are important variables that should inform the design, planning and provision of support services to PWDs. It also implies that government planners should identify the predictors of each kind of service in order to distribute the often-scarce resources rationally, to reduce inequity. This is because inequity and lack of support services have been linked to several negative outcomes for PWDs. These negative outcomes include low level of education, low employment rate (Gudlavalleti *et al.*, 2014), lower average incomes, idleness (Blackorby, 1993), depression (Iezzoni, McCarthy, Davis & Siebens, 2001), exclusion and social isolation (Erickson & Lee, 2008; Mont, 2007; Batavia & Beaulaurier, 2001).

Consequently, these negative outcomes are associated with higher poverty rates and the erosion of an individual's self-esteem, as well as a poor quality of life for PWDs. Combined poverty and disability, further increase family vulnerability to diverse poverty, stress, depression and loss of social support, as they use more and more resources on healthcare and rehabilitation (WHO, 2011; Mont, 2007; Newacheck, Inkelas & Kim, 2004). Additionally, research has revealed that parents, exhibiting signs of stress, due to the disability of their children, are likely to lose family support (Sipal & Sayin, 2013).

5.2.2. Accessibility of support services

Available research evidence reveals that multiple factors (environmental, person or resource-related), including poverty, predict the accessibility of support services. For example, in a study to estimate national health, preventive healthcare, and health care access of adults with disabilities in USA, Chevarley *et al.*, 2006) established that resource-related factors, financial problems or limitations in insurance, were the main reasons why women with disabilities did not receive general medical care, dental care, prescription medicines, or eyeglasses. On the other hand, in a prospective cohort study of 2,639 elderly people, using the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC), Carbone *et al.* (2013) observed that personal characteristics (knee pain, and balance problems) among people aged 73 years or older, predict the use of assistive walking devices.

5.2.3. Vocational rehabilitation

In a study to examine the effects of gender differences among vocational rehabilitation service providers on the employment outcome of 1,696 transition-aged participants with Autism Spectrum Disorders in USA, Sung, Sánchez, Kuo, Wang & Leahy (2015) established that vocational rehabilitation factors (job placement and on-the-job supports) predicted successful employment. In addition, Sung *et al.* (2015) observed that counselling and guidance, as well as job search assistance, predicted successful employment among males. In addition, in a study with 109 vocationally disabled adults, conducted in Uppsala, Sweden, to identify the factors that predict the outcome of vocational rehabilitation, Melin and Fugl-Meyer (2003) identified that a high belief in vocational reward, a high sense of coherence, as well as having a relatively high level of education, predicted a positive outcome. Other studies have revealed that substantial counselling and general educational development training are associated with employment outcomes for those with mental and physical impairments (Dutta *et al.*, 2008). In another USA study, using data extracted from the Rehabilitation Service Administration (RSA)-911 dataset of 74,861 people with orthopaedic disabilities in vocational rehabilitation programmes, Chan *et al.* (2006) determined that supplementary security income, and/or social security and disability insurance benefits, significantly predicted employment outcomes.

In contrast, in a study to evaluate the utilization and effectiveness of transition services, Baer *et al.* (2003) ascertained that vocational education (work-study participation, attending a rural school), and having a learning disability were the best predictors of full-time employment, after completing college. According to Dutta *et al.* (2008), vocational rehabilitation services factors, such as job placement, on-the-job support, maintenance, and other services, including medical care for acute conditions, are significant predictors of employment access across all impairment groups. The study of Dutta *et al.* (2008) examined the effect of vocational rehabilitation services on the employment outcomes of 15,000 people with sensory/communicative, physical and mental impairments, using data extracted from the US Department of Education, Rehabilitation service administration Case Service report.

Besides the employment outcome, researchers have also identified other factors that predict some services. For example, in an analysis of a 1999-2002 Medical Expenditure Panel Survey (MEPS) for 3,183 community dwelling women with disabilities, aged between 54-64 years, Wei, Findley and Sambamoorthi (2006) determined that, the usual source of care and health insurance were significant predictors of the receipt of clinical preventive services, across all types. However, in a study involving Hispanic clients (n=5,830) with traumatic brain injury in the USA, Da Silva Cardoso, Romero, Chan, Dutta and Rahimi (2007) ascertained that transportation services was a significant predictor for successful rehabilitation.

5.2.4. Transition

In a study to assess the utilization and effectiveness of secondary and transition services, in the USA, Baer *et al.* (2003) established that participation in regular academic work, and attending a suburban school setting, are significant predictors of post-secondary education. Test *et al.* (2009), in a systematic review of secondary transition correlational literature, to identify school-related predictors of improved post-school outcomes (education, employment and independent living) among youth with disabilities, identified high self-care skills as a significant predictor of independent living, employment and attaining higher education. In an earlier national longitudinal transition study, examining human capital (education and training) and structural factors (family and community background) for post-school success among youth with disabilities (n=939), Blackorby (1993) ascertained that both structural and human capital predicted post-school success.

Others studies established that significant associations exist between various factors and some supportive services. For example, in their study to evaluate the demand and utilization of health services by old persons with intellectual disability, McCarron *et al.* (2011) determined that the lack of personal assistance was associated with inaccessibility of public transport among people with intellectual disabilities. Researchers have also revealed that other factors, including age, impairment and place of residence, influence the development of language in deaf or hard-of-hearing children (Stamp, Schembri, Evans & Cormier, 2016). In a study regarding the effects of residence on vocabulary in British Sign Language (BSL), among 25 deaf participants in the UK, Stamp *et al.* (2016) observed that a deaf person's place of residence and age, predicted his/her use of vocabulary. This implies that both structural and social factors, including the living setting (environment) and the disability itself, influence PWDs' utilization of a range of services.

5.2.5. Sign language skills

Sign language is an important communication tool, and plays an important role in schools with hard-of-hearing and deaf children (Allen & Anderson, 2010). Consistent with this view, the evaluation of the difference in the characteristics of students, who attended special schools and those who attended regular schools, conducted by Shaver, Marschark, Newman & Marder (2013), determined that youth, who went through special education had greater levels of hearing loss, used sign language and had more difficulty speaking and conversing with others. Sign language helps children to interact with others and conveys educational instructions more easily to the hard-of-hearing children. However, since the introduction of inclusive education in Kenyan schools in 2009, most hard-of-hearing children attend regular school classrooms, where the primary language of instruction is spoken language (Bii & Taylor, 2013). This the status quo, despite consistent reports indicating that the skills of teachers in inclusive schools do not match the special education needs of children with special needs, specifically, the hard-of-hearing and the deaf (Kenya National Commission on Human Rights [KNCHR], 2014). This implies that the inaccessibility of education is on-going, because teacher skills do not match the special education needs of hard-of-hearing, the deaf and other children with special needs. This scenario has implications for the hard-of-hearing and deaf children's educational outcome.

However, research has revealed that two factors may predict hard-of-hearing and deaf children's education. First, the parents' communication skills, and second the parents' hearing status, contribute significantly to hard-of-hearing and deaf children's education. In a study, in the USA, to evaluate the impact of school-based, teacher-rated parental involvement on some child outcomes: language development, early reading skills, and socio-emotional development, Calderon (2000) ascertained that parental communication skill is a significant predictor of their children's positive language and academic development. In addition, Mitchell and Karchmer (2004) also established that parental hearing status predicts the school in which the child is enrolled, as well as the use of sign language, both at school and at home. This highlights a key role parents play in the education of their children with special needs.

5.2.6. Healing services

The lack of suitable formal interventions among PWDs has also been instrumental in driving them to search for alternative solutions to cure their impairment. The tendency by PWDs to seek cures is characterized by the utilization of traditional/faith healers services and is more prevalent in resource scarce settings. In an Iraqi study, to determine the predictors of utilizing indigenous healing services among patients of Arabic and Kurdish ethnicities, with psychiatric disorders, aged ≥18 years, and attending Erbil and Najaf teaching and referral hospital, Rahim, Saeed, Farhan & Aziz (2015) ascertained that only ethnicity significantly predicted indigenous healer consultations. Although no predictor of utilizing faith healers' services has been identified, Ame and Mfoafo-M'Carthy (2016), as well as Roberts (2001) observed that Ghana has 45,000 traditional healers, whose services are utilized by close to 70% of people with mental illness. The authors argue that the high incidence of consulting traditional healers in Ghana is partly due to the inaccessibility of public health institutions. Most of these studies have been conducted in developed countries, such as the USA (Sa Silva Cardoso *et al.*, 2007), Austria and Switzerland (Prodinger *et al.*, 2010) and the UK (Stamp *et al.*, 2016), and to a lesser extent, in medium-low economic countries, such as Iraq (Rahim *et al.*, 2015). However, in most African countries where close to one billion people live in scarce resource settings, little information is available concerning the predictors of the utilization of support services by PWDs. More specifically, no studies have assessed the predictors of the utilization of disability support services in Sub-Saharan African countries that the researcher is aware of, or more specifically in Kenya.

As the prevalence of persons with disabilities has increased in recent years owing to improved life expectancy, and concomitant increase in the non-communicable disease burden in the region (Aboderin, 2010), identifying factors that significantly influence the use of various disability support services, could assist policy development and planning for such services, and may also indicate directions for future disability support funding. Therefore, the purpose of this current study was to reduce this void, by determining the predictors of the utilization of disability support services in the selected counties of Kenya.

Predictors of an outcome, in effect, have a higher likelihood to influence the focus of efforts by service providers to promote the acquisition of the intended outcome. For instance, with improved capabilities a PWD may have autonomy and independence. This could go a long way in promoting acquisition of other outcomes, such as, employability, independent living and economic wellbeing of individual PWDs. Further, known predictors of a service outcome are good entry points for deploying resources efficiently and for service delivery that have higher likelihood of improving the situations of PWDs and their families.

5.3. Methodology

5.3.1. Study Design

A cross-sectional survey utilizing a quantitative design was conducted in three Counties in Kenya to determine the predictors of the utilization of support services by PWDs.

5.3.2. Population and Sampling

Because the prevalence of disability was observed to be 12.6% (n=155) of the 1,230 participants in the initial survey, the current survey conveniently sought to recruit all 155 participants with disabilities, identified during the household survey, in the selected counties. Only 133 of the 155 PWDs (including children aged 5 years and over), were present in their homes at the time of data collection. Any child, who was identified with a disability in the first survey, and had not reached the age of 5 years at the time of this current survey, was excluded from the study, to avoid proxy-response bias (Beadle-Brown *et al.*, 2012; Shields & Shooshtari, 2001; Shields, 2000). Therefore, in addition to the 133, a randomly selected sample, including 18 youth and 2 teachers with disabilities from the Salvation Army Joytown Secondary School in the Thika sub-county of Kiambu County, were included in this quantitative part of the overall research. The strategy employed in this current study is consistent with accepted practices, when sampling difficult to reach sub-populations, which entails the use of multiple sampling methods (Kalton & Anderson, 1986).

5.3.3. Data Collection Instrument

The determinants of the utilization of support services were measured using an interviewer-administered survey questionnaire. The questionnaire used in this study had been developed, validated and tested for reliability by the principal researcher, based on the findings of the exploratory qualitative study (see Chapter 4). This instrument comprised two sections: (1) Section A, comprised demographic items (such as age, gender, geographical area of residence, level of education, marital status and income, as well as type of disability); (2) Section B, comprised 15 questions on disability support services (*outcome variables*), using a Likert 4-point scale. For example, question one of section B inquired, and was coded as follows: “The following factors influence your utilization of rehabilitation services. (Would you say?) 1= completely disagree, 2=disagree, 3= agree and 4= completely agree.

5.3.4. Pilot Study

As mentioned in Chapter 2, a pilot study of the draft questionnaire was conducted on 9 eligible volunteers with disabilities, in Kiambu County, was observed to need an average of 25 minutes to complete, and was understood fairly well by the participants. However, all errors in translation were corrected and the participants’ suggestions on the questionnaire stem integrated, before the tools were used in the main study (see 2.4.1.6.2 of Chapter two).

5.3.5. Exploratory Factor Analysis (EFA)

An Exploratory Factor Analysis was conducted to identify a small number of latent dimensions (factors), which could explain the interrelatedness in the data, provided by the variables in each of the 15 subscales. This included data for rehabilitation, assistive devices, educational, vocational training, counselling PWDs, counselling parents/family, social security, health, health information, faith healer, legal advice, sign language, personal assistant, independent living, and transportation subscales. Only the key factor with three variables each and loadings of .70, were retained for multiple linear regression analysis. See section 2.4.2.2.3.3 and Table 2.3 for results of the EFA.

5.3.6. Procedure for collecting data

As discussed in chapter 2, the study instrument was translated into the main language of the selected communities. The principal researcher contacted all the 155 PWDs identified during the household survey (by telephone or through their local leaders where communication by telephone was difficult) and arranged for an appropriate time to meet with them. As planned, the principal researcher and research assistants revisited the households in the villages, where the PWDs lived, and administered the questionnaire to 133 PWDs present in their homes at the time, as well as a further 18 youth attending the Joytown Secondary School, together with two of their teachers, living with disability.

The guardians of those who could not participate, due to either age or illiteracy, voluntarily provided written consents for them to participate in the survey. The principal researcher, or research assistants administered the questionnaire to those who could not complete it. However, any child identified as having a disability in the first survey, and who had not reached the age of 5 years at the time of this survey, was excluded from the study to avoid proxy-response bias. An interpreter of the local dialect accompanied the research team to assist in data collection. At the Salvation Army Joytown Secondary School, the principal researcher and the research assistants, with the assistance of the duty master (on a mandate from the headmistress), acquired class lists of forms II, III and IV students. The principal researcher added the names of the five teachers at the school, who had disabilities to the form IV list to ensure adherence to the random selection criteria. Using a skip three and picking the fourth name, yielded 7, 5 and 8 respondents from the form II, III and IV respectively. The following section outlines the data management and analysis.

5.3.7. Data Management and Analysis

The data were captured in a Microsoft Excel worksheet. To ensure the correctness of the data entry, the data were entered twice. Both data sets were imported into the Statistical Package for Social Sciences. Thereafter, descriptive statistics was conducted, using the SPSS for each data set and comparing correctness. Variables data discrepancies were identified; therefore, the data from the questionnaires were re-entered, and descriptive statistics was repeated.

Subsequently, dummy variables were created in SPSS to aid in the multiple linear regression analysis of the dependent and independent variables. Regarding independent variables (age, marital status and education level), each variable was computed, where they were nominal or ordinal with more than three categories. When these were transformed into dummy variables, they were given only three categories.

The education categories were computed as: (1) Primary school and below; (2) Higher education; (3) Special school. The marital status categories were computed as: (1) Single; (2) Married; and (3) Other arrangements. The income categories were computed as: (1) Low income, >50,000 to 200,000; (2) Medium to high income, >200,000 (3) Refused to say. The age categories were computed as: (1) 5-17 years; (2) 18-59 Years; (3) 60 years and older. The disability categories were computed as: (1) Physical disability [musculo-skeletal]; (2) sensory disabilities [organs visual and hearing]; (3) and other (albinism, psychological and other) disabilities. All factors items under each supportive service were recoded into different variables, and their values transformed into two categories, namely, agree (both completely agree and agree), and disagree (both completely disagree and disagree).

The transformation of factors was necessary because they were on a 4-point Likert scale, which was unsuitable for multivariate analysis (Petrie & Sabin, 2009: p. 112). For goodness of fit of each model, see 2.4.2.2.5 of Chapter 2. Multi-variate analysis is a statistical measure to determine the impact, or effect of various factors, to a single outcome, in this case, the utilization of a disability support service (Katz, 2006: p. 120).

5.3.7.1. Variables

- **Outcome variables**

  The outcome variables used in this current study were the support services used by PWDs, namely: rehabilitation; assistive devices; education; vocational training; counselling for the PWD, as well as the parent/family of the PWD; social security; health; health information; faith healer; legal advice/justice; sign language; personal assistant; autonomy/independent living; and transport.

- **Predictor variables**

  The predictor variables included, the demographic characteristics (that included age, gender, education level, family annual income, marital status and type of disability), and fifteen sets of sub-scale items (co-variants), used for this current study. However, co-variants such as incapacity, accessibility, availability, affordability, attitude of service provider and need for the particular service, were common items in all subscales, while service provider skills, appropriate transport, social network, information concerning the service, and appropriate support services, were common items in most of the subscales. Co-variants that were unique for each subscale, were as follows: under (1) Rehabilitation - equipment and social network; (2) Mobility and assistive devices - condition of the assistive devices, training in the use of the device, and community support; (3) education - other; (4) vocational training - personal attitude, equipment, and having basic education. Co-variants also included (5 & 6) counselling for PWD, as well as parent/family - myths concerning disability, beliefs, personal attitude, stigma, conducive environment for counselling, and having group support; (7) social security - cash transfer; (8) Health - health seeking behaviour, reputation of healthcare provider, equipment at the facility, community support, subsidized by the government. In addition there were (9) health information - other; (10) faith healer - other; (11) legal advice/justice - gender-based violence; (12) sign language interpreter - employee of government; (13) personal assistant skills - retention of personal assistant, privacy, need for autonomy, accessibility of the physical environment, community support and paid by government; (14) independent living skills - privacy, need for autonomy, accessibility of the physical environment, independent living skills, and community support; and (15) in transport - assistive devices.

5.3.7.2. Analysis

Thereafter, data relating to socio-demographic variables were summarized using descriptive statistics and presented as frequencies and percentages in a table and a chart. Multiple linear regression statistical tests were then performed first using demographic characteristics (age, gender, income, level of education and type of disability) as factors that predict the utilization of services (that is, the outcome). Secondly, Multiple linear regression tests on extracted factors were conducted with the factor items entered hierarchically, starting with the one that had the highest loading, and ending with the one that had the lowest loading (backward method) as the independent variables, while the service variable was entered as the dependent (outcome)variable.

5.4. Results

5.4.1. Introduction

The demographic characteristics and multiple linear regression analysis of the utilization of all support services (outcome variables), based on Principal components (determinant rotated factors) items, and a summary of the key findings are presented. Of the targeted 155 PWDs, only 153 completed the questionnaire. One questionnaire was discarded because important data on some demographic variables, and many items in the sub-scales was missing.

5.4.2. Demographic characteristics

Among the PWDs, who participated in this study (n=152), 55.9% (n=85) were females and 44.1% (n=67) were males. According to the participants' main disability types, 77.9% (n=116) had physical disability, while 10.7% (n=16) had hearing disability (see Figure 5.1).

Nearly one-in-three (n=49) PWDs had no formal education, and 3-in-4 participants lived in poverty (n=116). Table 5.1 summarizes the distribution of the participants, according to age category, level of education and family annual income based on gender.

Figure 5.1 Distribution of the Participants by Self-reported Disability

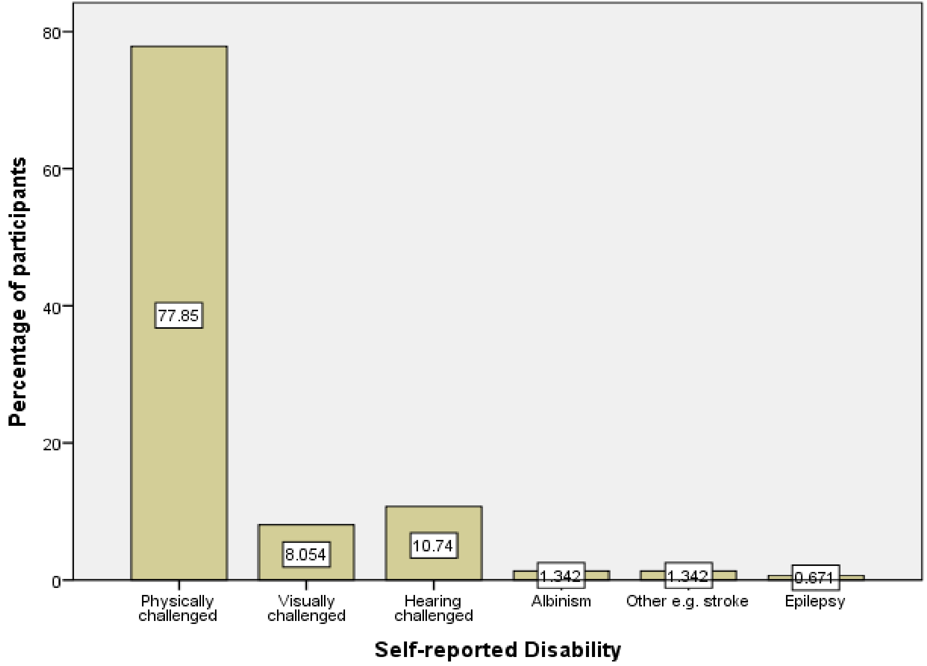


Table 5.1: Distribution of participants' age-categories, level of education and family income by gender

Characteristic	Gender	
	Male	Female
Age Category		
5-17 Years	19 (12.5%)	18 (11.8%)
18-32 Years	4 (2.6%)	8 (5.3%)
32-45 Years	13 (8.6%)	8 (5.3%)
46-59Years	7 (4.6%)	11 (7.2%)
60 years and over	24 (15.8%)	40 (26.3%)
Level of education		
No formal schooling	25 (17.7%)	24 (18.4%)
Primary School	24 (15.8%)	41 (27%)
Secondary school	6 (3.9%)	9 (5.9%)
College/University	3(2%)	3(2%)
Vocational Training	1(0.7%)	3 (2%)
Special School	6 (3.9%)	1 (0.7%)
Total	**67 (44.1%)**	**85 (55.9%)**
Family's income		
< KES 50,000	53 (35.1%)	63 (41.7%)
KES 50,001-100,000	11 (7.3%)	17 (11.3%)
KES 100,001-200,000	1(0.7%)	2 (1.3%)
KES 300,000 or more	1 (0.7%)	3(2%)
Total	**66 (43.7%)**	**85 (56.3%)**

5.4.3. Results of a Multiple linear regression analysis of the predictors of various services

To examine the predictors of utilization of support services, a multiple linear regression analysis was conducted.

5.4.3.1. Multiple linear regression analysis of the predictors of educational services

A multiple linear regression analysis was calculated to predict the utilization of educational services, based on demographic variables (gender and annual income). The regression analysis (see Table 5.2), with factor scores R^2 = 0.032 (regression model 5), revealed that the utilization of rehabilitation services =1.623; -0.147 (gender). Therefore, gender was established to be a significant predictor (*p*= .047).

Table 5.2: Results of multiple linear regression analysis of the predictors of educational services

Service:	Factor	B	β	t	sig.	CI for B	df1,df2	R^2	*F* change	*Sig. F Change* *P Value*
Educational services model 5	Constant	1.623		7.749	.000	1.209-2.036				
	Gender	-.147	-.163	-1.999	**.047**	-.292- -.002	1, 144	.032	.335	.564
	Annual income	.314	.149	1.833	.069	-.025-.653				

5.4.3.2. Multiple linear regression analysis of the predictors of vocational training service

A multiple linear regression analysis was calculated to predict the utilization of vocational training services, based on accessibility, availability and information on vocational training. A significant regression equation was found (*F* (3,147) = 57.584, *p*< .001) with an adjusted R^2 of .531. The regression analysis, with factor scores R^2 = .531 (vocational training factor 1 regression model 1), revealed that the utilization of vocational training = .341; +0.257 times for each accessibility category; +0.546 times for each information on vocational training category, where accessibility is coded as 1=disagree, 2= agree, and information on vocational training is coded as 1= disagree, 2= agree. Additionally, the regression analysis with demographic factor scores R^2 = 0.036 (regression model 5) showed that the utilization of vocational training =1.133; +0.120 for each age category.

Therefore, age category, accessibility and information on vocational training were found to be significant predictors of vocational training services.

Table 5.3: Results of multiple linear regression analysis of the predictors of vocational training services

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R²	*F* change	*Sig. F Change*
Vocational Training – Factor 1 Model 1	Constant	.341		3.300	.001	.137-.546				
	Accessibility	.257	.263	3.052	.003	.091-.424				
	Availability	-.003	-.003	-.042	.967	-.161-.155	3, 147	.531	57.584	.000
	Information on training	.546	.548	7.606	.000	.404-.688				
Vocational training – Demographic factors - Model 5	Constant	1.133		5.188	.000	.695-1.570				
	Age category	.120	.196	2.421	**.017**	.022-.217	1, 144	.036	.424	
	Annual income	.225	.099	1.223	.223	-.139-.590				

5.4.3.3. Multiple linear regression analysis of the predictors of Health services

A multiple linear regression analysis was calculated to predict the utilization of Health services, based on annual income and level of education. The regression analysis, with factor scores $R^2 = 0.030$ (regression model 5), revealed that the utilization of Health services =1.607; -0.135 (level of education). Therefore, level of education was found to be a significant predictor (*p*= .041) of health services.

Table 5.4: Results of multiple linear regression analysis of the predictors of health services

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R²	*F* change	*Sig. F Change*
Health Services Demographic factors - Model 5	Constant	1.607		8.886	.000	1.250-1.965				
	Annual income	.312	.156	1.885	.061	-.015-.639	1, 144	.030	.130	.000
	Education level	-.135	-.171	-.2.061	**.041**	-.264-.006				

5.4.3.4. Multiple linear regression analysis of the predictors of counselling services for PWDs

A multiple linear regression analysis was calculated to predict the utilization of counselling services by PWDs, based on beliefs, attitude, and myths concerning disability. A significant regression equation was found (*F* (3,148) = 4.363, *p*= .006) with an adjusted R^2 of .063. The regression analysis, with factor scores $R^2 = 0.071$ (regression model 3), revealed that the utilization of counselling services by PWDs = 1.464; +0.229 times more for each belief. Therefore, beliefs were found to be significant predictors of counselling services (*p*= .001).

Table 5.5: Results of multiple linear regression analysis of the predictors of counselling services for PWDs

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R^2	*F* change	*Sig. F Change* *P Value*
Counselling services for PWDs - Factor 2 Model 1	Constant	1.419		12.552	.000	1.195-1.642				
	Beliefs	.166	.201	1.684	.094	-.029-.360	3, 148	.063	4.363	.006
	Attitude	.035	.042	.415	.679	-.130-.200				
	Myths	.061	.073	.657	.512	-.123-.245				
Model 2	Constant	1.436		13.713	.000	1.229-1.643	1, 148	.068	.172	.679
	Beliefs	.183	.221	2.042	.043	.006-.359				
	Myths	.068	.081	.750	.454	-.112-.249				
Model 3	Constant	1.464		15.027	.000	1.272-1.657				
	Beliefs	.229	.277	3.530	.001	.101-.357	1, 149	.071	.562	.454

5.4.3.5. Multiple linear regression analysis of the predictors of Faith Healer services

A multiple linear regression analysis was calculated to predict the utilization of Faith Healer services, based on affordability, incapacity, accessibility and attitude of service provider. The regression equation was not significant (*F* (4,147) = 16.479, *p*< .001), with an adjusted R^2 of 0.291. The regression analysis, with factor scores R^2 = .291 (regression model 3), revealed that the utilization of Faith Healer services = 0.478; + 0.306 times for each accessibility; + 0.305 times for attitude of service provider, where accessibility is coded as 1= disagree, 2= agree and attitude of service provider is coded as 1= disagree and 2= agree. Therefore, accessibility and attitude of service provider were found to be significant predictors of the utilization of Faith Healer services (*p*< .001).

Table 5.6: Results of multiple linear regression analysis of the predictors of Faith Healer services

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R^2	*F* change	*Sig. F Change* *P Value*
Faith Healer services - Factor 1 Model 1	**Constant**	.433		3.588	.000	.195-.672				
	Affordability	.084	.086	.927	.355	-.095-.263	4, 147	.291	16.479	.000
	Incapacity	.093	.095	.909	.365	-.109-.295				
	Accessibility	.219	.227	.2.182	.031	.021-.418				
	Attitude of service providers	.250	.257	2.874	.005	.078-.422				
Model 2	**Constant**	.448		3.744	.000	.211-.684				
	Affordability	.095	.097	1.057	.292	-.082-.272	1, 147	.292	.826	.365
	Accessibility	.268	.278	3.157	.002	.100-.436				
	Attitude of service providers	.270	.278	3.210	.002	.104-.436				
Model 3	**Constant**	.478		4.118	.000	.249-.708				
	Accessibility	.306	.317	3.976	.000	.154-.148	1, 148	.291	1.117	.292
	Attitude of service providers	.305	.314	3.934	.000	.152-.458				

5.4.3.6: Multiple linear regression analysis of the predictors of communication (sign language interpreter) services

A multiple linear regression analysis was calculated to predict the utilization of communication (sign language interpreter) services, based on government employee, affordability and service provider skills. A significant regression equation was found (*F* (3,148) = 74,154 *p*< .001), with an adjusted R^2 of .592. The regression analysis, with factor scores R^2 = .592 (regression model 1), revealed that, the utilization of sign language interpreter services was = .145; +.265 times more for each government employee; + .165 times more for affordability; and + .461 times more for service provider skills, where government employee is coded as 1= disagree, 2= agree, affordability is coded as 1= disagree, 2= agree, and service provider skills is coded as 1= disagree, 2= agree. In addition, the regression analysis, with factor scores R^2 = 0.040 (demographic variables regression model 1), revealed that the utilization of sign language interpreter services =.691; + .395 (annual income). Therefore, annual income was observed to be a significant predictor (*p*= .035) of sign language interpreter services, alongside government employee, affordability and service provider skills.

Table 5.7: Results of multiple linear regression analysis of the predictors of communication (sign language interpreter) services

Service	**Factor**	**B**	**β**	**t**	**sig.**	**CI for B**	**df1, df2**	**R^2**	***F* change**	***Sig. F Change* *P Value***
Sign language interpreter services – Factor 2 Model 1	**Constant**	.145		1.700	.091	-.023-.313				
	Employee	.265	.251	3.390	.001	.111-.420	3, 148	.592	74.154	.000
	Affordability	.164	.153	2.173	.031	.015-.312				
	Service provider skills	.461	.478	6.797	.000	.327-.594				
Sign language interpreter services – Demographic factors Model 1	Constant	.691		2.336	.021	.106-1.276				
	Age category	-.082	-.136	-1.362	.175	-.200-.037				
	Gender	-.055	-.057	-.690	.491	-.211-.102				
	Annual income	.395	.176	1.124	**.035**	.027-.162	6, 141	.040	2.034	.065
	Education level	.093	.105	1.249	.214	-.054-.239				
	Marital status	.177	.173	1.734	.085	-.016-.251				
	Disability	.121	.124	1.514	.132	-.037-.278				

5.4.3.7. Multiple linear regression analysis of the predictors of personal assistance services

A multiple linear regression analysis was calculated to predict the personal assistance services, based on age category, gender, annual income and level of education, marital status and disability. The multiple linear regression analysis, with factor scores R^2 = 0.004 (regression model 1), revealed that the utilization of personal assistance services was =1.282; +.177 times more for each gender. Therefore, gender was found to be a significant predictor personal assistance services (*p*= .036).

Table 5.8: Results of multiple linear regression analysis of the predictors of personal assistance services

Service	Factor	B	β	t		sig.	CI for B	df1, df2	R^2	*F* change	*Sig. F Change* *P Value*
Personal assistance services Model 1	**Constant**	1.282		4.080		.000	.661-1.903				
	Age category	.043	.069	.676		.500	-.083-169				
	Gender	.177	.178	2.114		**.036**	.011-.343	6, 141	.004	1.108	.361
	Annual income	-.184	-.079	-.934		.352	-.574-.206				
	Education level	.056	.060	.707		.481	-.100-.211				
	Marital status	-.035	-.049	-.482		.631	-.177-.108				
	Disability	.087	.085	1.024		.307	-.081-.254				

5.4.3.8. Multiple linear regression analysis of the predictors of independent living services for PWDs

A multiple linear regression analysis was calculated to predict the independent living services of PWDs, based on autonomy, privacy and accessibility of the physical environment. A significant multiple linear regression equation was found (F (3,146) = 32.895, $p < .001$), with an adjusted R^2 of .391. The regression analysis, with factor scores R^2 = .391 (factor 1 regression model 1), revealed that the utilization of independent living services for PWDs = .534; +.624 times more for need for autonomy (p< .001), where need for autonomy was coded as 1= disagree, 2= agree. Additionally, the multiple linear regression analysis, with factor scores R^2 = .029 (demographic variable - regression model 1), the utilization of independent living services for PWDs = .983; + 0.169 times more for each education level. Therefore, education level was observed to be a significant predictor (*p*= .026) for independent living together with autonomy.

Table 5.9: Results of multiple linear regression analysis of the predictors of independent living services for PWDs

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R^2	*F* change	*Sig. F Change P Value*
Independent living services for PWDs- Factor-1 Model 1	**Constant**	.534		3.700	.000	.249-.819				
	need for autonomy	.624	.616	7.454	.000	.458-.789	3, 146	.391	32.895	.000
	privacy	.022	.022	.274	.784	-.139-.183				
	accessibility of environ	.021	.021	.318	.751	-.108-.150				
Independent living services for PWDs- Demographic factors Model 1	**Constant**	.983		3.273	.001	.389-1.576				
	Age category	-.041	-.068	-.679	.498	-.162-.079				
	Gender	.051	.053	.638	.525	-.107-.210				
	Annual income	.028	.012	.146	.884	-.345-.400	6, 141	.029	1.723	.120
	Education level	.169	.189	2.243	**.026**	.020-.318				
	Marital status	.131	.192	1.907	.059	-.005-.267				
	Disability	.132	.134	1.629	.105	-.028-.292				

5.4.3.9. Multiple linear regression analysis of the predictors of transport services

A multiple linear regression analysis was calculated to predict utilization of transport services based on demographic variables (age category, gender, annual income, education level, marital status and disability). The regression analysis, with factor scores $R^2 = 0.018$ (regression model 1), revealed that the utilization of transport services =1.388; +.178 for each education level. Therefore, education level was found to be a significant predictor (*p*= .015) of transport services.

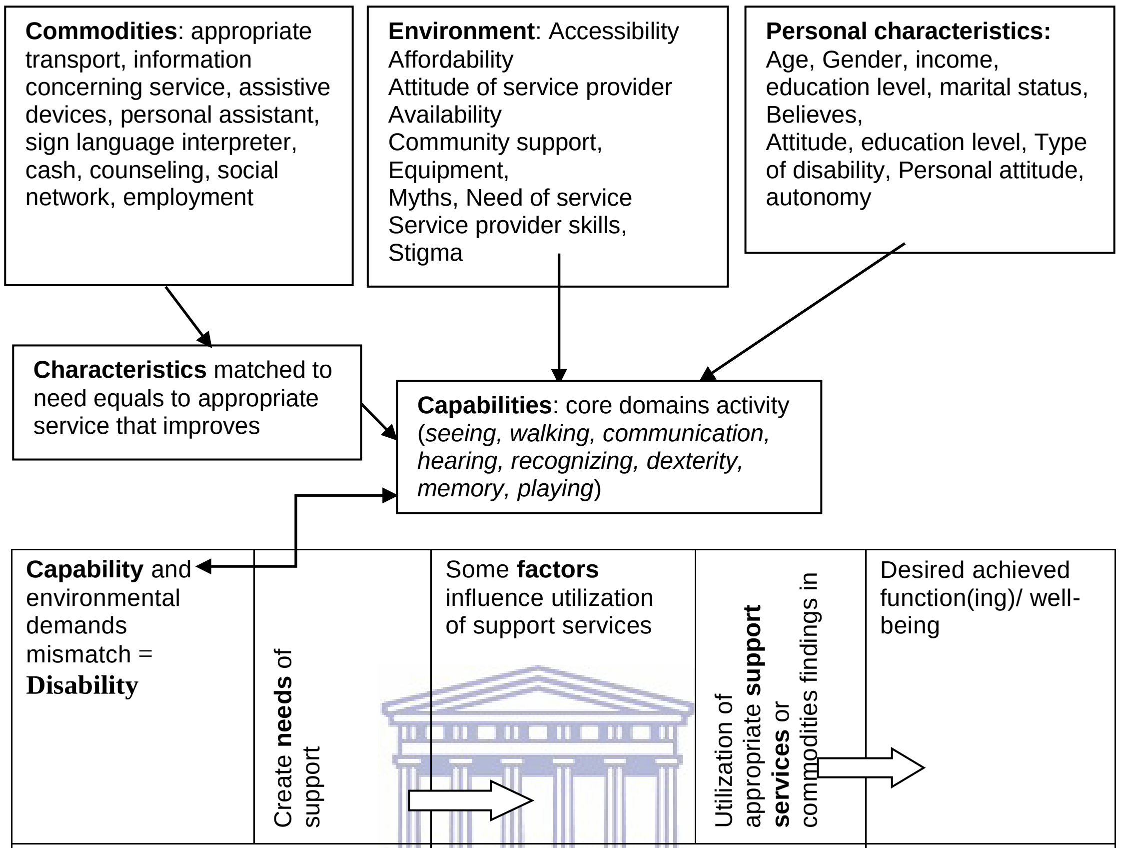
Table 5.10: Results of multiple linear regression analysis of the predictors of transport services

Service	Factor	B	β	t	sig.	CI for B	df1, df2	R^2	*F* change	*Sig. F Change P Value*
Transport services Model 1	**Constant**	1.388		4.821	.000	.819-1.957				
	Age category	-.057	-.099	-.975	.331	-.172-.059				
	Gender	.018	.020	.236	.814	-.134-.170	6, 141	.018	1.448	.200
	Annual income	-.066	-.031	-.365	.716	-.423-.291				
	Education level	.178	.209	2.463	**.015**	.035-.320				
	Marital status	.125	.191	1.891	.061	-.006-.255				
	Disability	.004	.004	.050	.960	-.149-.157				

5.4.4. Application of the conceptual framework to the findings

Figure 5.2 (on following page) summarises the predictors of the utilization of various support services (desired function), based on the Capability Approach framework and the supports model.

Figure. 5.2: Analysis of results in the context of the conceptual framework



Characteristic of **needed** support services	**predictors of** utilization **support services**	**Utilization of Support services**
Improve function & prevent injury	Nil	Rehabilitation
Knowledge or capacity improvement	Gender	Educational
Vocational skills	Age group, accessibility, Information	Vocational training
Social protection	none	Social security
Access to healthcare	Education level	Health services
Awareness	Nil	Information
Access legal/justice systems	Nil	Legal advice/justice services
Communication	Income, government employee, affordability and service provider skills	Communication e.g. Sign language interpreter
Activities of daily living	Gender	Personal assistance
Autonomy and independence	autonomy and education level	Independent living
Transportation	Education level	Transport
Demystification	Nil	Counselling services by parents/family of PWDs

Modified Supports model (Thompson et al., 2009)

5.5. Discussion

5.5.1. Introduction

The researcher is of the opinion that the most daunting challenge to a disability policy in Kenya, is the provision of timely, appropriate and high quality support services to its most vulnerable citizens, the PWDs. This study examined the variables that may influence the utilization of a variety of services by this sub-population. The findings suggest that PWDs often require an array of support services, but the needed services are not often available. In addition, the findings confirm that some of the factors identified in the exploratory qualitative survey predict the utilization of the various services. This implies that these factors could predict the predisposition of a PWD to use a given support service, based on the individual's needs (Nussbaum, 2007). These findings are discussed in the following sections.

5.5.2. Predictors of education

Rather than assess the factors, which predict successful outcomes of services provided to persons with disabilities, this current study focused on personal, environmental and resource factors, predicting use of disability support services. This current study established that gender predicted participation in education. This finding differs, to a certain extent, from the finding of a study conducted by Allen and Anderson (2010), which indicated that age, cochlear implant use and mode of communication at home, collectively, predicted some students' participation in inclusive education. The finding of this current study also differs slightly from those of other previous studies, indicating that parental involvement in children's schooling and students' academic preparation, predicted academic performance (Convertino *et al*., 2009; Calderon, 2000). The focus of the Convertino *et al*. (2009) and Calderon (2000) studies differ from that of this current study, as they investigated the predictors of educational outcomes, while this current study assessed the predictors of using disability support services, as well mainstream services.

Before the introduction of inclusive schooling, the deaf and hard-of-hearing students received education in specialized schools for the deaf. However, since the transition to inclusive education, most hard-of-hearing children, as well as those with other disabilities now spend their time in regular school classrooms, where the primary language of instruction is spoken language. However, sign language is perceived to play a role in schools for the deaf (Allen & Anderson, 2010). From this current study, being a government employee (teachers in education sector) and service provider skills (for example, a teacher's sign language skills), predict the utilization of sign language, and by extension, access to education and other support services. In contrast to this view, Shaver *et al.* (2013) established that students, who pass through special schools, had greater levels of hearing loss, were more likely to use sign language and were more challenged to speak and converse with others. This implies that education is an illusion, where service provider skills do not match the needs of persons with disabilities, despite the fact that persons with disabilities are in regular classrooms. However, very few studies have assessed the factors that predict the schooling of persons with disabilities. It is plausible to state that, inattention to the factors, which predict the schooling of PWDs, negatively affects inclusive education. This implies that factors that predict PWD schooling, require further research.

5.5.3. Predictors of vocational training

There is a dearth of literature on the predictors of vocational training utilization. Vocational training is a strategy within vocational rehabilitation that aims to help the PWD to become self-supporting or employable (Marnetoft, Selander, Bergroth & Ekholm, 2001). A few researchers have explored the effect of vocational rehabilitation on employment outcomes of persons with various disabilities, namely, communicative/ sensory, physical and mental impairments (Sung *et al.*, 2015; Chen, Sung & Pi, 2015; Dutta *et al.,* 2008; Baer *et al.,* 2003). In addition, a few have investigated factors that predict the capacity for work (Eagar, Green, Gordon, Owen, Masso & Williams, 2006), as well as successful transitioning to adult life (Foley *et al.*, 2012).

In this current study, age, accessibility of vocational training and having information concerning vocational training, predicted vocational training. In contrast, a study conducted by Wilson (2000) in the USA, to examine the effects of race, work history, source of support at application and education, established that a change of the type of primary support, predicted the likelihood of being accepted for vocational training. The difference between the two studies emanate from their objectives. This current study sought to identify factors that predicted support services, while the latter one examined the effects of demographic factors and work history on the eligibility for vocational training. Some previous studies have also investigated factors that are predictive of vocational status (Benedict et al., 2005), vocational functioning or employability (Rogers, Anthony, Cohen & Davies, 1997), and post-high school education for youth with disabilities (Chiang et al., 2012).

The lack of sufficient research evidence on the predictors of support services utilization, more specifically vocational training, has several implications. First, it may indicate that there is a low access to vocational training/college and university education for persons with disabilities (PWDs). Secondly, it may indicate that PWDs are under-represented in the skilled labour market (Gudlavalleti, *et al*., 2014). However, research focussed on the various factors that influence vocational training uptake, is of paramount importance, because it has potential to highlight target areas for future actions that would not only improve the transition to adulthood of youth with disabilities, but also help in vocational planning.

5.5.4. Predictors of counselling services

This current study also established that an individual's belief regarding disability, predicted the use of counselling services. In contrast to this current study's finding, Pressman, Pipp-Siegel, Yoshinaga-Itano and Deas (1999) established that parental sensitivity, after undergoing psychological counselling, predicted expressive language gain among deaf, and hard-of-hearing (D/HH) children. The difference between this current research finding and that of Pressman et al. (1999) is attributable to the objectives for each study, respectively. Pressman et al. (1999) assessed the outcome of parental counselling on language development in D/HH children, while this current study assessed whether factors, identified in the previous qualitative study, predicted the use of counselling services by PWDs. Few studies have evaluated the predictors of vocational counselling outcomes, rather than the predictors of using vocational rehabilitation counselling service per se (Dutta *et al.*, 2008). Vocational counselling is a component of vocational rehabilitation counselling, which consists of discrete therapeutic counselling, personal adjustment counselling, counselling that addresses illnesses, family or social issues, and any other type of counselling provided to persons with disabilities, in order to procure employment (Dutta *et al.*, 2008).

However, several implications are evident from this current study. First, the lack of active participation by parents/guardians of PWDs undertaking secondary education, may negatively affect its outcome. Secondly, the lack of counselling skills on the part of service providers may greatly hinder the attainment of quality service outcomes.

5.5.5. Predictors of communication services

In this current study, income, affordability and service provider skills, as well as being a government employee, predicted the use of sign language interpretation. Similar to this current study's findings, Mitchell and Karchmer (2004) established that parental hearing status predicts the use of sign language at home. In addition, the use of sign language at home, which is consistently predicted by parental hearing status, predicts the type of school the child presently attends and the use of signing in the school. The only dissimilarity between this current study and the study of Mitchell and Karchmer (2004), is attributable to the differences in their objectives. Whereas, this current study sought to identify the predictors of the use of various disability support services, including communication, the study of Mitchell et al. (2004) sought to determine the importance of knowing whether or not deaf and hard-of-hearing children have one or more hearing impaired parents.

The lack of research evidence on factors that predict the use of communication services, such as sign language interpretation, implies that PWDs' needs are most often unmet. Additionally, persons with disabilities may lack services because of the government employees' inability to communicate in sign language, unaffordable sign language interpretation services and poverty. The lack of signing skills among public servants further marginalizes persons with communication problems.

5.5.6. Predictors of legal/justice services

There is lack of literature that specifically assesses the predictors of legal/justice services, both locally and globally. In this current study, no factors predicted the use of legal/justice services. At present, no studies have identified predictors of legal/justice services that are available for comparison with this current study, despite a rigorous search of literature by the principle researcher. Moreover, most of the available literature interrogates the predictors of criminality in persons with disabilities (PWDs), which does little, or nothing, to meet their need for legal/justice services. For instance, in a review of research evidence on factors influencing contact with the criminal justice system, Holland, Clare and Mukhopadhyay (2002) observed that contact with the criminal justice system is predicted by maleness and being a youth.

The paucity of research evidence on the predictors of using legal/justice services, decreases the likelihood of the State fulfilling article 12 of the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Article 12 of the UN Convention requires State parties to provide PWDs with the support they need, from time to time, in exercising their legal rights, and to treat PWDs as possessing legal capacity, including the capacity to act on an equal basis with others (UN, 2009). There is implication for future researcher to focus on predictors of utilization of legal/justice systems' services.

5.5.6. Predictors of faith healer services

The present study found that, accessibility and service provider attitudes were significant predictors of faith healer services. These findings support the suggestions of Ame and Mfoafo-M'Carthy (2016), as well as Roberts (2001) that the easy accessibility of faith healers and the inaccessibility of public health institutions influence individuals to consult traditional healers. However, the findings of this current study contradict the findings of Rahim *et al.* (2015), who observed that ethnicity predicts faith healer consultation. The finding indicates that faith healer services uptake may be driven by both geographic availability and user attitude. Additionally, it may indicate that faith healer services are as important as any other support service, to majority of PWDs, who have a low level of education and are poor. There is, therefore, an implication for policy to facilitate the redistribution of human and material resources from urban to rural areas, where the majority of PWDs live.

5.5.7. Predictors of Personal Assistance

In a study to identify the determinants of community-based-care costs, Liu, McBride and Coughlin (1990), using the National Long-Term Care Channelling Demonstration Project data, established that male gender predicted personal assistance and housekeeping costs, which is similar to this current study's finding that gender predicted personal assistance. Other studies have identified age, ADL or IADL limitations, living alone and financial status as predictors of the need for assistance in house cleaning, meal preparation and shopping for elderly persons with disabilities (Coughlin, McBride, Perozek, & Liu, 1992; Liu, McBride & Coughlin, 1990).

According to Meinow, Kåreholt and Lagergren (2005), ADL and IADL dependency and cognitive impairment were the most significant predictors of more hours of home help; however, income and regular access to informal help were not. Other studies have revealed that ADL limitations, such as, indoor mobility and transfers are linked to increased dependence on personal assistance (Taylor & Hoenig, 2004). In addition, the use of equipment was associated with fewer hours of personal assistants, among people with ADL limitation (Hoenig, Taylor Jr & Sloan, 2003). Many of the studies that have examined the predictors of personal assistance, have targeted the elderly in society (Meinow, et al., 2005; Hoenig, et al., 2003; Coughlin et al., 1992; Liu, McBride & Coughlin, 1990). This implies that there has been a general lack of attention paid to PWDs, regarding their need for personal assistance. Therefore, the need exists for further research to investigate the predictors of personal assistance among PWDs.

5.5.8. Predictors of autonomy/ independent living

Interestingly, this current study established that the level of education and autonomy/independence in activities of daily living [ADLs], as well as the instrumental activities of daily living [IADLs]) predicted independent living. This current study's finding is similar to that of studies, in which Test, Mazzotti, et al. (2009), as well as Blackorby (1993) observed that educational attainment and high self-care skills (autonomy in ADLs/ IADLs) predicted independent living. Conversely, research evidence has revealed that PWDs, who lack appropriate support, are at risk of dependence on others for assistance and unproductive living (LaPlante *et al.*, 2004), isolation and discrimination (Bottari *et al.*, 2012; Batavia & Beaulaurier, 2001). In addition, caregivers of PWDs lose opportunities to earn income and most live in poverty (Mitra, Posarac & Vick, 2011). This implies that both the PWDs and their caregivers accrue economic disadvantage and poverty because of the disability.

5.5.9. Predictors of transport

Finally, this current study established that only the level of education predicted the use of transport services. In contrast, McCarron *et al.* (2011) observed that the lack of personal assistance was associated with the inaccessibility of public transport for many individuals with disabilities, especially those with intellectual disabilities. The difference in the findings may be attributed to the difference in the two studies' objectives and the two settings of socio-economic differences. This current study was conducted in a poor resource setting, where most of the PWDs have little access to appropriate transportation, while the study of McCarron *et al.* (2011) study was conducted in a resource-rich country, the UK. In the UK, persons with disabilities have relatively good access to appropriate transportation and social security, such as the severe disablement allowance and the disability living allowance (McVicar, 2008). In Kenya, only persons with severe disabilities are eligible for the government cash transfer; however, the coverage is low.

Of greater importance is the observation that, the level of education predicts the use of transport by persons with disabilities. It is plausible to suggest that the level of education-determining the use of transport has an implication on the socio-economic participation of persons with disabilities. Consistent with this suggestion, Carter, Austin and Trainor (2011) observed that the availability of accessible transportation (to persons with disabilities) predicts work participation. Additionally, in an Australian study, involving youth with significant disabilities, Lee (2015) identified social networks and functional skills to be strong predictors of social and community participation. This implies that the lack of formal or low level of education, which translates to a state of low human capital, may negatively influence the creation of social networks and economic participation among PWDs.

5.6. Limitations

The limited information collected enabled the principal researcher to assess the predictors of the utilization of a variety of disability support services, among the sample of PWDs, but did not include information about the frequency and duration of the service utilization. The area covered and size of the sample reached, may be too small for a population of over forty million people. This also limits the precision of the measurement used, and could contribute to potential measurement error. Such an error may limit the findings' generalizability. The study was cross-sectional and the sampling was generally purposive. This calls for a longitudinal approach of the studied objective.

5.7. Conclusion

In conclusion, the study has revealed that gender significantly predicts the utilization of education and personal assistance, while age and access to appropriate information predicts the use of vocational training services. It further revealed that being educated significantly predicts the utilization of, not only healthcare services, but also transport services, and being able to living independently. Where services are unavailable, accessibility and the attitude of faith healers predict the PWDs' use of the faith healer services. More importantly, individual income, finding a government employee with sign language skills, and the ability to afford the service, significantly predict the use of support services by the deaf and difficult-of-hearing persons.

Several implications became apparent from these findings. Some of them being gender disparity, as well as the unmet needs for education and personal assistance. In addition, there is an implication of unmet need for vocational training among PWDs, who do not access information. It also implies that the PWDs, majority of whom are poor, have low educational and employment outcomes, have unmet healthcare, transport needs, and are more than likely dependent on others. Besides, there are implications of unmet needs for support services among PWDs with low or no education, low income, or are deaf and difficult-of-hearing. These implications suggest the need to provide personal assistance to all PWDs, as and when they need assistance, irrespective of gender. These implications also suggest the need to provide information on vocational training opportunities to all PWDs, transiting from primary and secondary schools, who are unable to pursue other courses in tertiary institutions. Additionally, they suggest the need to provide free access to healthcare, and a social safety net for basic needs and affordable transportation. Therefore, a supportive policy framework is necessary, which outlines the types of support services; who needs them; his/her context; and the strategies to ensure that PWDs utilize them. Ultimately, it implies, matching support services to the need, characteristics and context of the person with disability.

5.8. Summary of the chapter

The literature review reveals that the predictors of an outcome are environmental, personal characteristics or resource-related. The study reveals that gender plays a significant role in education and need for personal assistance. It has also indicated that age, accessibility of, as well as information on vocational training, play a significant role in the utilization of vocational training. Additionally, it reveals that an individual’s level of education significantly predicts access to healthcare and transport services, including independence in the activities of daily living and the instrumental activities of daily living. However, the lack of services has been observed to result in the PWDs seeking Faith healer services, as the latter’s accessibility and attitude of service provider, may be attractive. Worth mentioning is the fact that the deaf and hard-of-hearing have not been receiving the services they need, often due to the lack of sign language interpretation in many offices. A PWDs income, finding an employee of the government with sign language skills, as well as affordability, were identified to be significant in predicting the utilization of support services. Therefore, there are several implications for personal assistance, assistive equipment/technology, rehabilitation and education, irrespective of gender. There is also an implication for making information on vocational training opportunities accessible to PWDs in transition to working age. Further implications for policy that provide PWDs with free access to healthcare and social security exist, to ensure access to the basic needs and affordable transportation. In conclusion, the study proposes a policy framework that engenders the matching of support services to the needs, characteristics and contexts of persons with disabilities.

CHAPTER SIX

OVERALL SUMMARY OF THE STUDY FINDINGS, IMPLICATIONS AND POLICY BRIEF

6.1. Introduction

In this section, a summary of the findings of the three studies including their implications are discussed. The implications for policy derived from the three studies are also presented, including the disability policy brief.

6.2. Overall summary of the study

The lack of internationally comparable data on the prevalence of disability in Kenya, and the need for, as well as utilization of, support services by PWDs, were major gaps, which this current study aimed to address, and as a consequence, reduce. On this premise, and using a mixed methods, sequential exploratory study, a high disability prevalence rate was observed in the household survey, which is comparable to the rates reported in previous studies conducted in the region. The household survey also produced disaggregated data, which revealed that mobility disability was the most prevalent disability, followed by visual, cognition and self-care disabilities, in reducing prevalence. Among all the PWDs in the household survey, women, compared to men, were more likely to suffer mobility and cognition disabilities, while among children, cognitive and learning disabilities were the most prevalent. Consistent with previous research evidence, through the household survey it was established that over 1-in-3 PWDs lacked formal education. Additionally, 1-in-4 of the PWDs used assistive devices, which did not correct their disabilities.

In the qualitative exploratory study, 52 purposively selected individuals with disabilities (for focus group discussions), as well as six key informants, identified the PWDs' needs for, and utilization of, support services. They outlined the PWDs support from family, friends and personal assistance, sign language interpretation, assistive devices and assistive technology; although these were largely unmet. In addition, they outlined the PWDs' need for services, such as healthcare and rehabilitation; education and special education; vocational training; employment; information and communication; justice and legal services; social welfare and public transport. However, in this current study, a gap was identified in the PWDs' use of these services, which was largely attributed to environmental factors, including negative attitudes, discrimination, isolation, abuse, victimization, harassment, unfriendly service providers, denial of services, being ignored, awkward height of delivery (childbirth) couches, costs, distance, lack of facilities and qualified resource persons, namely, special education teachers and health specialists. To some extent, the gap in the use of support services was attributed to an individual PWD's resources (affordability, lack of money) and personal characteristics (impairment). From the exploratory study, it was discernible that utilization of support services is a choice that is influenced largely by environmental demands, availability of resources and an individual's characteristics.

There is, however, inconclusive evidence about these factors predicting the utilization of support services by persons with disabilities. Consequently, the factors identified in the exploratory study, as well as from research evidence, that influenced the use of support and mainstream services, were used to develop the predictors of support services questionnaire. Subsequently, the questionnaire was tested and found to be valid and reliable. Using a cross-sectional study, the questionnaire was administered on 153 respondents with disabilities, to determine factors that predicted utilization of support services by PWDs. The study revealed that gender predicted utilization of education and personal assistance services. An individual's age, as well as accessibility to information, significantly predicted the utilization of vocational training services. In addition, the level of education significantly predicted the utilization of healthcare and transport services. The individual's level of education and autonomy, significantly predicted independent living. Beliefs significantly predicted utilization of counselling services, while unmet needs for services, resulted in PWDs seeking Faith-healer services. Apparently, the accessibility and the attitude of Faith healers predicted PWDs use of their services. Additionally, it is worth noting that the deaf and hard-of-hearing had not been receiving the services they need, for an extended period, often due to the lack of sign language interpretation in many offices and meetings. This study also established that, the annual family income, being a government employee, affordability as well as service provider skills, predicted utilization of sign language interpreter services by the deaf and hard-of-hearing persons.

From these findings, it is apparent that several factors interact to predict the utilization of support and other mainstream services. In addition, some independent factors (gender, education level and autonomy) have significant predictive influence over the use of certain support services. Considering the implications of the lack of support services and mainstream services, including the lack of choices; low level of education and/or illiteracy; as well as unemployment and underemployment, further research is necessary to identify appropriate means to address the widening gap of access to support and mainstream services. Future research is also necessary to assess the conditions in which PWDs live and the impact of the disability on family and society.

Following the application of the capability approach on the findings in the current study, it was apparent that the freedom to use disability support services is largely influenced by the individuals' capabilities, that is, their personal characteristics (impairment, age, sex, level of education), taking into account their resources (money, family income, assistive devices, help and employment) and environmental demands (height of delivery couches, cost of service and distance) as opposed to a care approach. Instead, the application of a care approach would provide information on problems with availability, accessibility, affordability and incoordination of services, including lack of funding, staffing problems and staff incompetencies (WHO, 2011). Application of the former, that is, the capability approach highlights the outcome as the inability to attain the expected functioning.

Overall, this current study unveils internationally comparable data on disability and PWDs' support services needs and utilization in Kenya. In addition, it highlights the implications of the findings, which are attributable to unmet needs for support services, personal assistance, assistive devices/assistive technology, healthcare, rehabilitation, education services, vocational training and transport.

6.3. Implications for physiotherapy education, practice and future research,

Overall, the findings of this research have implications for physiotherapy education and practice, that is, in creating support structures for PWDs with limited material resources, to enable them to seize available opportunities to participate on an equal basis with others. In addition, there are implications for the physiotherapy curriculum, to include sign language skills training. There are also implications for physiotherapy research, to increase the service providers' knowledge and understanding of relationships among individual persons with disabilities, support services and mainstream services.

6.4. Implications for Policy

The findings of this current study have implications for a policy framework that focuses on building the basic capabilities of PWDs, and promotes a support model that matches the provision of support services to PWDs' needs, their characteristics and contexts, in order to reduce the gap of unmet support needs. The envisaged policy framework should include guidelines outlining the types of support services, who needs them, who provides them, as well as individual PWDs' contexts and the strategies, to ensure that PWDs utilize them. The policy should ensure the PWDs access quality assistive aids, devices and assistive technologies, personal assistance and sign language interpretation. In addition, it should compensate personal assistants/caregivers of persons with severe disabilities, ensure affordable transportation, healthcare and rehabilitation services, as well as social security (ensure equitable cash transfer). The policy should also ensure access to inclusive education, skilled human resources in schools and hospitals, among other service facilities. Principally, the policy should prioritize the enforcement of antidiscrimination, education, employment and building legislations, to penalise perpetrators of discrimination, negative attitudes and the status quo. Such a policy would, in all probability, promote PWDs' potential to take up opportunities in daily living, and participate in mainstream activities on an equal basis with others.

6.5. Policy Brief

6.5.1. Executive Summary

The proportion of persons with disabilities (PWDs) reporting unmet needs for support services is on the increase. Despite evidence that support services enable PWDs to participate on an equal basis with others, unmet needs for support services continue to hinder PWDs from accessing mainstream services, including healthcare, rehabilitation, education/special education, vocational training, employment and public places. This is, in part, attributable to the lack of policy on disability in Kenya, more specifically, on support services. The aim of this brief is to highlight an existing gap for support services, the causes, the consequences and potential solutions. This highlight is envisaged to contribute to the endeavour of developing a disability policy for Kenya.

Principles within the policy brief:

- Access to appropriate and relevant support services.
- Socio-economic integration and inclusion.
- Mainstreaming.

6.5.2. High proportion of persons with disabilities reporting unmet needs for support services

The proportion of persons with disabilities, reporting unmet needs for support services, is on the increase, threatening to impede their future. This is despite Kenya ratifying the United Nations Convention on the Rights of Persons with Disabilities (UNCRPD). Article 20 of the UNCRPD clearly identifies quality assistive devices, assistive technologies, personal assistance and sign language interpretation, as the means to facilitate PWDs' personal mobility, and to promote their inclusion, autonomy, as well as independent living. To date, barely 5% of the needs for support services, of Kenyans with disabilities are met, which is much lower than the global estimate of 15%. This translates to over nine-in-ten PWDs, who rely entirely on family members, friends and well-wishers for support in activities of daily living.

Although the family serves as a crucial support system in meeting the needs of PWDs, one-in-three PWDs require more personal assistance services in ADLs and IADLs than they receive. Children with disabilities need personal assistance, assistive technology, sign language interpretation, Braille, augmentative and alternative modes, means, and formats of communication in the classroom, which *they* rarely receive. Quite often, PWDs' need for someone to assist them in getting to social and recreational facilities, hospitals, schools, and vocational training or places of worship, is rarely met. However, according to credible information, having physical access to a service delivery facility, does not guarantee access to the services. This is, partly, because communication and/or other social barriers between persons with disabilities and the service providers may exist. For example, a person with a hearing or visual impairment need for information may need the communication to be in alternative formats, such as large print, pictures, lip-reading or in sign language, which a health facility might lack. The dumb, deaf, and hard-of-hearing persons, who have no formal education, may be unable to read written information, or comprehend sign language provided in a workshop. Therefore, it appears that a sizeable proportion of PWDs do not receive the services they need from service providers. The question that begs an answer is whether this is a systemic failure to focus on service provision, or is it the withholding of support services?

6.5.3. Causes of the problem

Whether based on customs or traditions, children, as well as adults with disabilities, depend on informal assistance, if available and affordable. However, unmet support needs are known to result from having a limited supply of assistance. For example, informal caregivers, who have limited help to offer, as they have to balance caregiving with other tasks, such as caring for a child and working outside. Statistics show that inadequate skills among assistants might hinder children with special needs from participating in desired activities. In addition, role expectations perpetuated through various cultures and negative societal attitudes create unsupportive environments, which sometimes cause potential helpers to withhold support from women with functional decline, or disabilities. Culture expectations for most caregiving tasks such as cooking, housekeeping and assisting the sick are associated with women.

Unmet support needs are also caused by the lack of the required assistive devices (mobility, hearing and visual aids) and assistive technologies (*computers with braille etc*). In addition, unmet needs for support services are caused by the lack of knowledgeable professionals (special education teachers, sign language interpreters, rehabilitation and medical specialists among others), who can provide the required services in nearby facilities. This is a major problem in Kenya, as in other countries in the region, because the availability of most support services, including healthcare, tends to vary inversely with the need for it, in the population served. The disparity is characterized by the lack of required professionals (physiotherapists, orthopaedic technologists, occupational therapists, surgeons) and the location of poor quality facilities in the poorer neighbourhoods. Therefore, the PWDs' inability to make long trips to better quality health facilities, results in unmet needs for the required services. Physically inaccessible examination equipment, inaccessible public transportation, inaccessible buildings, lack of awareness, complex administrative systems and difficulties meeting the conditions attached to disability benefits (example the cash transfers), as well as the eligibility criteria are significant factors hindering PWDs from accessing needed support services. However, the lack of information, lack of health insurance and of support from significant others, are known to result in unmet needs. Statistics show that some support services providers discriminate, ignore or inappropriately respond to the condition of PWDs. In addition, the lack of a policy framework to maximize the provision of support services to PWD's, as well as the economy, have a major impact on access to support services.

Lack of income on the part of individual PWDs, poverty and poor family and friends ties are major risks for unmet needs for support services. This is partly true because persons with severe disabilities who need fulltime assistance in self-care activities including washing, dressing, bathing, feeding, transferring or toileting and instrumental activities of daily living often have difficulties retaining paid personal assistants or have few or no reliable helpers. In our context, over 50% of persons with disabilities are more likely to report costs as the reason for unmet needs for support services. In several surveys including one done in Kenya recently, the likelihood of having one or more unmet needs for support services has been linked to low income, high out-of-pocket expenses and having multiple self-care difficulties.

In Kenya it is usual to find PWDs who do not receive enough assistance because of their age, gender, low level of education, poor communication skills, having divorced or separated, never married, living alone or living in households with fewer persons. This is in addition to individual PWD's health condition or impairment hindering access to healthcare and general education.

6.5.4. Undesirable consequences for society

Despite the fact that support services help or enable PWDs to perform on an equal basis with others, lack of appropriate support services diminishes their likelihood to acquire education, vocational training or gainful employment. Children with disabilities who lack appropriate support or assistance at the right time become over-age before they can access school. They technically lack access to formal education and special education and by default lack vocational training and employment. For persons with disabilities, getting appropriate support services often involves extraordinary expenses, caregivers forgoing opportunities to earn income or living without help.

Existing evidence indicates that unmet needs for support services hinders PWDs (working age adults, youth and children) from accessing basic healthcare, education, and vocational training and employment services. Most importantly, those whose needs for support are unmet have poor outcomes including increased susceptibility to illness, illiteracy, low educational attainment and unemployment. These poor outcomes interact to restrict the range of opportunities available to PWDs. The restriction oppresses, excludes and deprives individuals with disabilities potential choices. For example, unemployed adults are less likely to lead independent lives, live in poor households and barely afford basic needs. This exposes them to serious consequences on their wellbeing including isolation due to poverty, increased morbidity (preventable infections, non-communicable and nutritional diseases), hospitalization, loss of follow-up visits and death. Poverty drives them to the extreme margins of society, which undermines their ability to send their children to school. When poverty becomes intolerable, PWDs are often neglected, isolated and disrespected by their family members. As if this is not enough, the poor PWDs end up bequeathing their children poverty as an inheritance.

Persons with disabilities with unmet need for assistance to feed when hungry may suffer malnutrition. Unmet need for support in schooling increases the prevalence of underdeveloped human capital. Human capital includes health, education and work, each of which may be undermined by disability/impairment. In hospitals, unmet need for sign language interpretation makes people who are deaf or hard-of-hearing to have trouble accessing information and healthcare. In our healthcare settings, less than one out of ten people who are deaf or hard-of-hearing understand what the doctor says to them whenever they visit the doctor alone. Some of them even avoid using the services and rely on peers for support with information they need. For these reasons, the provision of support services, quality assistive devices and assistive technologies as well as sign language interpretation to PWDs is very important.

Provision of appropriate support services ensures that PWDs have potential to exercise autonomy and increases the likelihood for them to live independently. Only after PWDs' unmet needs for support are met can environmental adaptations and modifications and mainstream services become meaningful in their lives. Therefore, support services are a key pillar of our society's social development and a priority investment.

Table 6.1. PWDs met and unmet need for assistive devices and sign language

Assistive device/Sign language		Need Met		Need Unmet		Total
	Use status	**Frequency**	**%**	**Frequency**	**%**	**Frequency (%)**
Visual aid	Yes	5	3.2	11	7.1	16 (10.3)
	No	82	52.9	57	36.8	139 (89.7)
	Total	87	**56.1**	68	43.9	**155**
Hearing aid	Yes	1	0.7	2	1.3	3 (1.9)
	No	123	79.4	29	18.7	152 (98.1)
	Total	124	80	31	20	**155**
Mobility aid	Yes	1	0.7	38	25.6	39 (26.4)
	No	56	37.8	53	35.8	109 (73.6)
	Total	57	38.5	91	61.5	**148**
Sign language	Yes	1	0.9	2	1.9	3 (2.8)
	No	83	78	20	18.9	103 (97.2)
	Total	84	79.2	22	20.8	**106**
Note: Only a few whose needs were met using devices, while those of the majority were unmet						

6.5.5. Solutions to the problem of unmet needs

The nuisance of unmet needs calls for a disability policy framework, within which pre-school and school-age children, youth-in-transition, adults and older adults with disabilities needs for support services could be addressed. Many of the problems for support services, encountered by PWDs, require financial resources to ensure their ability to retain caregivers. Other problems require the capacity building of caregivers and professionals working with PWDs. In addition, certain problems require the provision of quality assistive devices (for mobility, hearing and visual aids) and assistive technologies, including Braille and sign language interpretation (short term, and long term).

More importantly, some unmet needs require an awareness-raising campaign as an on-going endeavour to change societal expectations and attitudes towards PWDs, especially women. Above all, individual PWD's service needs should be aligned (across gender, age categories and contexts) to workers' skills and/or matched with appropriate assistive technology, or corrective devices. For example, teachers and support workers with the relevant skills (special education) should manage the children with disabilities and special needs in inclusive schools. Another example is, engaging physiotherapists, orthopaedic technologists, occupational therapists, or medical specialists, to provide rehabilitation, or specialized healthcare, to PWDs within the contexts of their living arrangements. This involves reaching out to PWDs free-of-charge (government sponsored health insurance to PWDs), which removes the barriers they encounter with transportation, including additional costs and long travel distances. Besides receiving information in disability-friendly formats, PWDs should also receive education, including special education at all levels, as well as in whichever educational facility.

To ensure the realization of this objective, the government should develop a national disability policy to address the physical facility infrastructure and accommodation, the adaptations to be made to the environment, and adapted equipment to be disability-friendly (for example, examination couches in hospitals). In addition, a policy that provides for disability-friendly administrative systems, that is, unbureaucratic, and unconditional is long overdue. A strong national disability policy that establishes an inspectorate to enforce the legislation, such as the Disability Act of 2003 rule of 5% employment, the law on new building plans, the use of universal designs, the public officers' code of conduct, as well as the law prohibiting the discrimination of PWDs is important to arrest the status quo. With the devolution of most services, the policy should provide for all county governments to provide disability-friendly transport to all PWDs.

Cognizant of the effectiveness of treatments for both communicable and non-communicable diseases, as well as traumatic conditions and the improved life expectancy of Kenyans, the urgency for a comprehensive disability policy cannot be over-emphasized. There is an urgent need to increase the skills base, innovation, availability of infrastructure, facilities and equipment used by PWDs. Therefore, the policy should incubate and midwife innovative local solutions for posterity.

Recommendations for policy

Policy should:

1. Provide free and accessible health and rehabilitation specialist services and increase coverage;
2. Provide personal assistance and quality assistive devices, hearing and visual aids, Braille and text-voice converting technologies;
3. Provide rescindable means-tested cash transfer to unemployed PWDs and/or a stipend for caregivers of PWDs in need of constant assistance;
4. Provide free and accessible education and special education irrespective of level - from kindergarten, special class to vocational training and university;
5. Build capacities of professionals and teacher trainees in sign language; and
6. Provide adequate technology and a fitting work force, as well as adapt settings and infrastructure to meet the needs of PWDs.

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6.6. Significance of the study

As stated previously, the lack of comparable data globally, regionally, and particularly in Kenya, on the magnitude of the need for support services and the utilization thereof by PWDs, is a major gap which this current study aimed to reduce. As envisaged, this current study provides high quality data on the prevalence of disabilities, the demand for support services and utilization thereof by PWDs in Kenya. The evaluation of the findings has revealed gaps in the access of PWDs to support services, assistive aids, devices and assistive technologies. These derived findings have helped the researcher to decipher the implications they bring to bear on PWDs health, education and work outcomes. In addition, these implications inform the policy brief. It is envisaged that the disability brief will catalyse and inform the disability policy review in the country.

Policy makers, planners and researchers with interest in disability issues, could in future use this new information as reference material. In addition, physiotherapists, rehabilitation professionals and social workers, public health and social services managers and not-for-profit organization personnel (doing disability and social work) could use it to design interventions that promote the inclusion of PWDs in mainstream societal activities (providing for equality and equity in environments, social, financial and healthcare services). The findings of this current research could also inform advocacy activities for justice and equal rights for all PWDs in future. Research has revealed that advocacy interventions, which provide support and increased access to resources for vulnerable populations, similar to the one that participated in this current study, have a high chance of success and replication across countries. Two such examples are: the PROFILES Nutrition advocacy that began in Bangladesh and spread to Philippines and Ghana; and the accessibility to community resources and support by women living in abusive relationships in America, which saw community-wide reduction of the menace (Burkhalter, Abel, Aguayo, Diene, Parlato & Ross, 1999; Sullivan & Bybee, 1999). Therefore, it is envisaged that new programmes could integrate support services and increase the inclusion of individual PWDs. These have potential to liberate their self-esteem, confidence and increase their participation in education, vocational training and work, as well as lower their morbidity and mortality rates (WHO, 2011; Erickson & Lee, 2008). This will confer improved quality of life, as a benefit from the inclusion of PWDs in their societies' lives and, therefore, give impetus to the UN CRPD agenda.

CHAPTER SEVEN

SUMMARY, CONCLUSION AND RECOMMENDATIONS

7.1. Summary

This current study highlighted that the prevalence of disabilities is higher than that reported in a previous national survey and the 2009 census in Kenya. However, this finding is comparable to surveys conducted in the region. Disaggregation of the data revealed that mobility, followed by cognition, visual and self-care disabilities are the commonest, in reducing prevalence. Among children, learning and cognitive disabilities are the commonest. Women, compared to men, have higher prevalence rates of mobility and cognition disabilities. In addition, over half of the elderly PWDs suffer from pain and fatigue. Even more significantly, illiteracy was higher among PWDs than among persons without disabilities. While one in four PWDs uses personal assistance, or an assistive device, some of the assistive devices used, do not correct the disabilities.

This current study's findings suggest that there is a gap of unmet needs of support services, assistive devices, assistive technologies and sign language interpretation, as well as the existence of other environmental barriers. Besides high costs and long distances, the provision of most services is also characterized by systemic negative attitudes, discrimination and isolation, as well as abuse. These inadequacies make access to healthcare, rehabilitation, education and special education, vocational training, employment, information and transport services, a problematic experience. In addition, females with disabilities face greater disadvantages, compared to males with disabilities, when accessing support and education services. This study also revealed that age and access to information, predicts vocational training, while the level of education predicts access to health, transport services and living independently. It was noted that the deaf and hard-of-hearing persons' income, ability to afford, and access to, competent government employees, predict their use of needed services. This implies that PWDs in Kenya, as in other countries in the region, are highly susceptible to unmet needs because of their low levels of education, are poor and marginalized.

Therefore, there is an exigency for a Disability Policy Framework that focuses on the improvement of PWDs' basic capabilities. As espoused by Amartya Sen (Mitra, 2006), the improvement of PWDs' basic capabilities (individual's characteristics, resources and living environment) potentially empowers them to make choices, as well as to seize opportunities, on an equal basis with others.

7.2. Conclusion

In conclusion, this current study established disability distribution and prevalence rates across age groups and between sexes that are similar to those reported in other studies. No other information of this kind has been generated in, or for Kenya. Additionally, the exploration of needs for support services among PWDs revealed that, despite the immeasurable need for support services, assistance in ADLs and instrumental ADLs, communication, including auxiliary aids and assistive technology, most of them are still unmet. The study also revealed that individuals' resources, contextual and personal factors predict the utilization of support and other services, such as transport, health, education and vocational training and being able to living independently. More importantly, this current study established that the majority of the PWDs, are poor, have low educational and employment outcomes. Because of these low social and economic outcomes, individual PWD's human and social capital remains underdeveloped, diminishing their likelihood to exploit opportunities, on an equal basis with others.

Therefore, there is an exigency for a Disability Policy Framework that focuses on the improvement of PWDs' basic capabilities. As espoused by Amartya Sen (Mitra, 2006), the improvement of PWDs' basic capabilities (individual's characteristics, resources and living environment) potentially empowers them to make choices, as well as to seize opportunities, on an equal basis with others.

7.3. Recommendations

The principal researcher recommends that the development of a policy on disability should focus on building a policy framework to improve the basic capabilities of PWDs. This kind of policy has a high likelihood of assisting individual PWDs to increase their potential, as well as take up opportunities, on an equal basis with others. Efforts invested to remove barriers that hamper the development of individual PWD's human and social capitals, will be worthwhile. More specifically the principal researcher recommends the following measures:

1. The provision of personal assistance, sign language interpretation services and quality assistive devices, aids and assistive technologies to PWDs;
2. The provision of a stipend, or financial compensation to caregivers of PWDs, who need constant personal assistance;
3. The provision of training in sign language and alternative communications to all professions, for example, in health, rehabilitation, judiciary, security and social workers and teacher trainees, in order to increase access to information and communication;
4. The provision of accessible healthcare and rehabilitation services, and, where necessary, health insurance;
5. The provision of accessible education, or appropriate special education, irrespective of the level - from kindergarten/special class to university;
6. The promotion of special education, as a core area in the curricula of public and private teacher training colleges (from ECDE to University);
7. The provision of capacity building and training of professionals in disability-related skills;
8. The provision of implementation policies for the various services, such as health, re-habilitation, education, and employment services;
9. The provision of work force, infrastructure and technology that match the demand for services by PWDs;
10. The provision of employment to PWDs, as provided in the Disability Act. The principal researcher recommends that the word *"endeavour"* be deleted from the Disability Act of 2003, and replace with *"shall ensure"*; and
11. The provision of protection of PWDs against social vices.

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APPENDICES

APPENDIX: 1A

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Questionnaire for Screening Adults only

Instructions: Mark √ in the space provided.

S/No.	***PART A: Demographic and Background information***				
1)	Gender	Male =1			
		Female =2			
2)	Age (in Years)	---			
3)	Race	1. Black	2. White	3. Asian	4. Other
4)	Highest level of formal education	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24 Adult class = 25	Vocational training school = 4 College/Diploma = 5 University = 6 Post-graduate = 7 Never attended school = 8 Left school = 9 Don't know = 10	
5)	Reason for not attending school	0=Not enough money 1= Illness 3= Because of disability	4 =School not accessible 5 =Other (specify)……………………….. 9=Don't know		
6)	Reason left school.	1= Failing/underachiever 2 = Early Pregnancy 3 =Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
7)	Marital status	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify		
8)	What describes your current work status best?	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify……………………		
9)	Mode of Transportation	Public =1 Personal car =2	Personal motorbike = 3 Other (specify)……=4		
10)	What is your main source of income?	Employment =1 Business =2 Disability grant =3	Retirement benefits=4 Support from children = 5		

<table>
<tr><td>11)</td><td>What is your family's income?</td><td>1) Less than Kshs.50,000
2) KShs. 50,001 to 100,000
3) KShs. 100,001 to 200,000</td><td>4) KShs. 200,001 to 300,000
5) KShs. 300,001 or more
6) Refused to say</td></tr>
<tr><td></td><td colspan="3"><i>Part B: Functional domains</i>
"I would like to ask you some questions about difficulties you may have in doing certain activities". Tick as appropriate (√)</td></tr>
<tr><td>12)</td><td colspan="3">Do you have difficulty seeing, even if wearing glasses? Would you say…?
a. No - no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
<tr><td>13)</td><td colspan="3">Do you have difficulty hearing, even if using a hearing aid? Would you say…?
a. No- no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
<tr><td>14)</td><td colspan="3">Do you have difficulty walking or climbing steps? Would you say…?
a. No- no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
<tr><td>15)</td><td colspan="3">Do you have difficulty remembering or concentrating? Would you say…?
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
<tr><td>16)</td><td colspan="3">Do you have difficulty (with self-care such as) washing all over or dressing? Would you say…?
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
<tr><td>17)</td><td colspan="3">Using your usual (customary) language, do you have difficulty communicating, for example understanding or being understood? Would you say…?
a. No – no difficulty
b. Yes – some difficulty
c. Yes – a lot of difficulty
d. Cannot do at all</td></tr>
</table>

THANK YOU

APPENDIX 1B.

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail:

Questionnaire for screening children aged 5-17 years only

Instructions: Mark √ in the space provided.

S/No.	***PART A: Demographic and Background information***				
12)	Gender	Male =1			
		Female =2			
13)	Age (in Years)	-------			
14)	Race	1. Black	2. White	3. Asian	4. Other
15)	Highest level of formal education:	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24	Vocational training school = 4 College/Diploma = 5 Never attended school = 8 Left school = 9 Don't know = 10	
16)	Reason for not attending school.	0=Not enough money 1= Illness 2= Lack of interest 3= Because of disability	4 =School not accessible 5 =Other (specify)……………... 9=Don't know		
17)	Reason left school	1= Failing/underachiever 2 = Early Pregnancy 3 = Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
18)	Marital status of…… 1= Father……….. 2= Mother………. 3= Guardian	1= Single 2= Married 3= Separated 4= Divorced	5= Widowed 6= Cohabiting 7= Other : Specify		
19)	Work status of ……? 1= Father……….. 2= Mother………. 3= Guardian	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify……………		
20)	Mode of Transportation	Public =1 Family car =2	Family bicycle/motorbike = 3 Other (specify)……=1		
21)	Guardian /Parents main source of income:	Employment =1 business =2	disability grant =3 retirement benefits=4		

22)	What is your family's income?	7) Less than Kshs.50,000 8) KShs. 50,001 to 100,000 9) KShs. 100,001 to 200,000	10) KShs. 200,001 to 300,000 11) KShs. 300,001 or more 12) Refused to say
	PART D: Functional domains "I would like to ask you some questions about difficulties your child may have in doing certain activities". Tick as appropriate (√)		
CFD 3	Does (*name*) have difficulty seeing? Would you say (*name*) has:…….?		No difficulty .... 1 Some difficulty.................. 2 A lot of difficulty …......... 3 Cannot do at all.................. 4
CFD 4	Does (*name*) use a hearing aid? "If the answer is "2" go to CFD6		Yes.................................... 1 No...................................... 2
CFD 10	Compared with children of the same age, does (*name*) have difficulty walking? Would you say (*name*) has:…….?		No difficulty......................1 Some difficulty..................2 A lot of difficulty...............3 Cannot do at all..................4
CFD 11	Does (name) have difficulty with SELFCARE such as feeding or dressing him/herself? Would you say (*name*) has:…..?		No difficulty........................1 Some difficulty....................2 A lot of difficulty................3 Cannot do at all 4
. CFD 12	When (*name*) speaks, does he/she have difficulty being understood by people inside this household? Would you say (*name*) has:…..?		No difficulty........................1 Some difficulty....................2 A lot of difficulty................3 Cannot do at all 4
CFD 13	When (name) speaks, does he/she have difficulty being understood by people outside of this household? Would you say you have:………..?		No difficulty .... 1 Some difficulty ....2 A lot of difficulty................3 Cannot do at all 4
CFD 14	Compared with children of the same age, does (*name*) have difficulty learning things? Would you say (*name*) has: ……..?		No difficulty........................1 Some difficulty................... 2 A lot of difficulty................ 3 Cannot do at all...................4
CFD15.	Compared with children of the same age, does (*name*) have difficulty remembering things ? Would you say (*name*) has:…….?		No difficulty...................... 1 Some difficulty.................. 2 A lot of difficulty................3 Cannot do at all...................4
CFD 16	How often does (*name*) seem anxious, nervous or worried? Would you say (*name*) has:……….?		Daily................................. 1 Weekly.............................. 2 Monthly.............................. 3 A few times a year .... 4 Never……………………..5

CFD17.	How often does (*name*) seem sad or depressed? Would you say….?	Daily................................. 1 Weekly.............................. 2 Monthly............................. 3 A few times a year .... 4 Never……………………..5
CFD18	Compared with children of the same age, how much difficulty does (*name*) have controlling his/her behaviour? Would you say……?	None………………...…….1 The same or less…………..2 More………………………3 A lot more…………………4
CFD19	Does (*name*) have difficulty focusing on an activity that he/she enjoys doing? Would you say (*name*) has….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……...….3 Cannot do at all………..….4
CFD20	Does (*name*) have difficulty accepting changes in his/her routine? Would you say (*name*) has…….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……...….3 Cannot do at all………..….4
CFD21	Does (*name*) have difficulty making friends? Would you say (*name*) has…….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……...….3 Cannot do at all………..….4

THANK YOU

APPENDIX 1C

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail:

Questionnaire for Screening children aged 2-4 years only

Instructions: Mark √ in the space provided.

S/No.	*PART A: Demographic and Background information*				
23)	Gender	Male =1			
		Female =2			
24)	Age (in Years)	2 Years =1	3 years = 2	4 years =3	
25)	Race	1. Black	2. White	3. Asian	4. Other
26)	Level of formal education of: 1= Father……….. 2= Mother………. 3= Guardian	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24	Vocational training school = 4 College/Diploma = 5 Never attended school = 8 Left school = 9 Don't know = 10	
27)	Reason for not attending school. 1= Father……….. 2= Mother………. 3= Guardian	0=Not enough money 1= Illness 2= Lack of interest 3= Because of disability	4 =School not accessible 5 =Other (specify)……………... 9=Don't know		
28)	Reason left school	1= Failing/underachiever 2 = Early Pregnancy 3 = Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
29)	Marital status of 1= Father……….. 2= Mother………. 3= Guardian	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify		
30)	Work status of….? 1= Father……….. 2= Mother……… 3= Guardian	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify………		
31)	Family's annual income?	1. Less than Kshs.50,000 2. KShs. 50,001 to 100,000 3. KShs. 100,001 to 200,000	4. KShs. 200,001 to 300,000 5. KShs. 300,001 or more 6. Refused to say		

	Part D: Functional domains "I would like to ask you some questions about difficulties your child may have in doing certain activities". Tick as appropriate (√)	
CFD3.	Does (*name*) have difficulty seeing? Would you say (*name*) has:…….?	No difficulty .... 1 Some difficulty......... 2 A lot of difficulty...... 3 Cannot do at 4
CFD4.	Does (*name*) use a hearing aid? *"if the answer is "2" go to CFD6*	Yes.......................... 1 No............................ 2
CFD10.	Compared with children of the same age, does (*name*) have difficulty walking? Would you say (*name*) has:…….?	No difficulty...............1 Some difficulty...........2 A lot of difficulty........3 Cannot do at all...........4
CFD11.	Does (*name*) have difficulty understanding you? Would you say (*name*) has:…..?	No difficulty...............1 Some difficulty...........2 A lot of difficulty........3 Cannot do at all 4
CFD12.	Do you have difficulty understanding (*name of child*)? Would you say you have:………..?	No difficulty .... 1 Some difficulty ....2 A lot of difficulty........3 Cannot do at all 4
CFD13.	Compared with children of the same age, does (*name*) have difficulty learning things? Would you say (*name*) has: ……..?	No difficulty...............1 Some difficulty.......... 2 A lot of difficulty....... 3 Cannot do at all..........4
CFD15.	Compared with children of the same age, does (*name*) have difficulty playing? Would you say (*name*) has:……….?	No difficulty .... 1 Some difficulty.......... 2 A lot of difficulty....... 3 Cannot do at all.......... 4

CHILD FUNCTIONING AND DISABILITY (AGE 2-4) CFD

THANK YOU

APPENDIX 2A

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa

Tel: +27 21-959, Fax: 27 21-959

e-mail:

Questionnaire for Adults only

Instructions: Mark √ in the space provided.

S/No.	***PART A: Demographic and Background information***				
32)	Gender	Male =1			
		Female =2			
33)	Age (in Years)	---			
34)	Race	1. Black	2. White	3. Asian	4. Other
35)	Highest level of formal education	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24 Adult class = 25	Vocational training school = 4 College/Diploma = 5 University = 6 Post-graduate = 7 Never attended school = 8 Left school = 9 Don't know = 10	
36)	Reason for not attending school	0=Not enough money 1= Illness 3= Because of disability	4 =School not accessible 5 =Other (specify)………………………...... 9=Don't know		
37)	Reason left school.	1= Failing/underachiever 2 = Early Pregnancy 3 =Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
38)	Marital status	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify		
39)	What describes your current work status best?	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify………………………		
40)	Mode of Transportation	Public =1 Personal car =2	Personal motorbike = 3 Other (specify)……=4		
41)	What is your main source of income?	Employment =1 Business =2 Disability grant =3	Retirement benefits=4 Support from children = 5 Support from family = 6		
42)	What is your family's income?	13) Less than Kshs.50,000 14) KShs. 50,001 to 100,000 15) KShs. 100,001 to 200,000	16) KShs. 200,001 to 300,000 17) KShs. 300,001 or more 18) Refused to say		

Part B: Functional domains

"I would like to ask you some questions about difficulties you may have in doing certain activities". Tick as appropriate (√)

	VISION
VIS_1*	Do you wear glasses? 1. Yes 2. No
VIS_2*	Do you have difficulty seeing, [*If VIS_1 = 1:* even when wearing your glasses? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
VIS_3	Do you have difficulty clearly seeing someone's face across a room [*If VIS_1 = 1:* even when wearing your glasses]? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
VIS_4	Do you have difficulty clearly seeing the picture on a coin [*If VIS_1 = 1:* even when wearing your glasses]? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
Vis_5	How often do you use your glasses? Would you say…? 1. All of the time 2. Some of the time 3. Rarely 4. Never
	HEARING
HEAR _1*	Do you use a hearing aid? 1. Yes 2. No
HEAR _2*	Do you have difficulty hearing, [*If HEAR_1 = 1:* even when using a hearing aid(s)]? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
HEAR _3	How often do you use your hearing aid(s)? Would you say…? 1. All of the time 2. Some of the time 3. Rarely 4. Never
HEAR _4	Do you have difficulty hearing what is said in a conversation with one other person in a quiet room [*If HEAR_1 = 1:* even when using your hearing aid(s)]? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty

<table>
<tr><td></td><td>4. Cannot do at all / Unable to do</td></tr>
<tr><td><i>HEAR_5</i></td><td>Do you have difficulty hearing what is said in a conversation with one other person in a noisier room [<i>If HEAR_1 = 1:</i> even when using your hearing aid(s)]? Would you say…?
1. No difficulty
2. Some difficulty
3. A lot of difficulty
4. Cannot do at all / Unable to do</td></tr>
<tr><td></td><td>MOBILITY</td></tr>
<tr><td>MOB_1*</td><td>Do you have difficulty walking or climbing steps? Would you say…?
1. No difficulty
2. Some difficulty
3. A lot of difficulty
4. Cannot do at all / Unable to do</td></tr>
<tr><td>MOB_2*</td><td>Do you use any equipment or receive help for getting around?
1. Yes
2. No (<i>Skip to MOB_4.</i>)
<i>7. Refused / 9. Don’t know</i> (<i>Skip to MOB_4.</i>)</td></tr>
<tr><td>MOB_3*</td><td>Do you use any of the following?
<table>
<tr><th></th><th>1. Yes</th><th>2. No</th><th><i>7. Refused</i></th><th><i>9 Don’t Know</i></th></tr>
<tr><td>a) Cane or walking stick?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>b) Walker or Zimmer frame?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>c) Crutches?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>d) Wheelchair or scooter?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>e) Artificial limb (leg/foot)?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>f) Someone’s assistance?</td><td></td><td></td><td></td><td></td></tr>
<tr><td>g) Other (please specify):</td><td></td><td></td><td></td><td></td></tr>
</table></td></tr>
<tr><td>MOB_4*</td><td>Do you have difficulty walking 100 meters on level ground, that would be about the length of one football field or one city block [<i>If MOB_2 = 1:</i> without the use of your aid]? Would you say…?
1. No difficulty
2. Some difficulty
3. A lot of difficulty
4. Cannot do at all / Unable to do <i>(Skip to MOB_6.)</i></td></tr>
<tr><td>MOB_5*</td><td>Do you have difficulty walking half a km on level ground, that would be the length of five football fields or five city blocks [<i>If MOB_2 = 1:</i> without the use of your aid]? Would you say…?
1. No difficulty
2. Some difficulty
3. A lot of difficulty
4. Cannot do at all / Unable to do</td></tr>
<tr><td>MOB_6*</td><td>Do you have difficulty walking up or down 12 steps? Would you say…?
1. No difficulty
2. Some difficulty
3. A lot of difficulty
4. Cannot do at all / Unable to do

<i>If MOB_2 = 2, skip to next section.</i>
<i>If MOB_3 = D “Wheelchair”, skip to next section.</i></td></tr>
<tr><td>MOB_7</td><td>Do you have difficulty walking 100 meters on level ground, which would be about the length of one football field or one city block, when using your aid? Would you say…?
1. No difficulty
2. Some difficulty</td></tr>
</table>

	3. A lot of difficulty 4. Cannot do at all / Unable to do *(skip MOB_8)*
MOB_8	Do you have difficulty walking half a km on level ground, that would be the length of five football fields or five city blocks, when using your aid? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
	COMMUNICATION
COM_1*	Using your usual language, do you have difficulty communicating, for example understanding or being understood? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
COM_2	Do you use sign language? 1. Yes 2. No
	COGNITION (REMEMBERING)
COG_1*	Do you have difficulty remembering or concentrating? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do (*If COG-1 = 1, skip to next section).*
COG_2	Do you have difficulty remembering, concentrating, or both? Would you say…? 1. Difficulty remembering only 2. Difficulty concentrating only (*skip to next section; self-care)* 3. Difficulty with both remembering and concentrating
COG_3	How often do you have difficulty remembering? Would you say…? 1. Sometimes 2. Often 3. All of the time
COG_4	Do you have difficulty remembering a few things, a lot of things, or almost everything? Would you say…? 1. A few things 2. A lot of things 3. Almost everything
	SELF-CARE
SC_1	Do you have difficulty with self-care, such as washing all over or dressing? Would you say… 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
	UPPER BODY
UB_1*	Do you have difficulty raising a 2 litre bottle of water or soda from waist to eye level? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty

	4. Cannot do at all / Unable to do
UB_2 *	Do you have difficulty using [your/his/her] hands and fingers, such as picking up small objects, for example, a button or pencil, or opening or closing containers or bottles? Would you say…? 1. No difficulty 2. Some difficulty 3. A lot of difficulty 4. Cannot do at all / Unable to do
	AFFECT **(ANXIETY AND DEPRESSION)** “Please answer according to whatever medication you may be taking.”
ANX_1*	How often do you feel worried, nervous or anxious? Would you say…? 1. Daily 2. Weekly 3. Monthly 4. A few times a year 5. Never
ANX_2*	Do you take medication for these feelings? 1. Yes 2. No (*If “Never” to ANX_1 and “No” to ANX_2, skip to DEP_1.)*
ANX_3*	Thinking about the last time you felt worried, nervous or anxious, how would you describe the level of these feelings? Would you say…? 1. A little 2. A lot 3. Somewhere in between a little and a lot
DEP_1*	How often do you feel depressed? Would you say…? 1. Daily 2. Weekly 3. Monthly 4. A few times a year 5. Never
DEP_2 *	Do you take medication for depression? 1. Yes 2. No (*If “Never” to DEP_1 and “No” to DEP_2, skip to next section.)*
DEP_3*	Thinking about the last time you felt depressed, how depressed did you feel? Would you say…? 1. A little 2. A lot 3. Somewhere in between a little and a lot
	PAIN “Please answer according to whatever medication you may be taking”
PAIN_1*	In the past 3 months, how often did you have pain? Would you say…? 1. Never (*If “Never” to PAIN_1, skip to next section.)* 2. Some days 3. Most days 4. Every day
PAIN_2*	Thinking about the last time you had pain, how much pain did you have? Would you say…? 1. A little 2. A lot 3. Somewhere in between a little and a lot
	FATIGUE
TIRE	In the past 3 months, how often did you feel very tired or exhausted? Would you say…?

D_1	1. Never (*If “Never” to TIRED_1, skip to next section.)* 2. Some days 3. Most days 4. Every day
TIRE D_2	Thinking about the last time you felt very tired or exhausted, how long did it last? Would you say…? 1. Some of the day 2. Most of the day 3. All of the day
TIRE D_3	* Thinking about the last time you felt this way, how would you describe the level of tiredness? Would you say…? 1. A little 2. A lot 3. Somewhere in between a little and a lot

THANK YOU

APPENDIX 2B

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail:

Questionnaire for aged 5-17 years only

Instructions: Mark √ in the space provided.

S/No.	*PART A: Demographic and Background information*				
43)	Gender	Male =1			
		Female =2			
44)	Age (in Years)	-------			
45)	Race	1. Black	2. White	3. Asian	4. Other
46)	Highest level of formal education:	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24	Vocational training school = 4 College/Diploma = 5 Never attended school = 8 Left school = 9 Don't know = 10	
47)	Reason for not attending school.	0=Not enough money 1= Illness 2= Lack of interest 3= Because of disability	4 =School not accessible 5 =Other (specify)……………... 9=Don't know		
48)	Reason left school	1= Failing/underachiever 2 = Early Pregnancy 3 = Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
49)	Marital status of…… 1= Father……….. 2= Mother………. 3= Guardian	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify		
50)	Work status of ……? 1= Father……….. 2= Mother………. 3= Guardian	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify……………		
51)	Mode of Transportation	Public =1 Family car =2	Family bicycle/motorbike = 3 Other (specify)……=1		
52)	Guardian /Parents main source of income:	Employment =1 business =2	disability grant =3 retirement benefits=4		

53)	What is your family's income?	19) Less than Kshs.50,000 20) KShs. 50,001 to 100,000 21) KShs. 100,001 to 200,000	22) KShs. 200,001 to 300,000 23) KShs. 300,001 or more 24) Refused to say

Part B: Functional domains

"I would like to ask you some questions about difficulties your child may have in doing certain activities". Tick as appropriate (√)

CFD 1	Does (*name*) wear glasses or contact Lenses? If the answer is "2" go to CFD3	Yes .... 1 No.................................... 2
CFD 2	When wearing his/her glasses, does (*name*) have difficulty seeing? Would you say (*name*) has:……? "if the answer is " 1,2,3 or 4" go to CFD4	No difficulty .... 1 Some difficulty .... 2 A lot of difficulty .... 3 Cannot do at all 4
CFD 3	Does (*name*) have difficulty seeing? Would you say (*name*) has:…….?	No difficulty .... 1 Some difficulty.................. 2 A lot of difficulty …........... 3 Cannot do at all.................. 4
CFD 4	Does (*name*) use a hearing aid? "If the answer is "2" go to CFD6	Yes.................................... 1 No...................................... 2
CFD 5	When using his/her hearing aid(s), does (*name*) have difficulty hearing noises like peoples' voices or music? Would you say (*name*) has:………? If the answer is " 1,2,3 or 4" go to CFD7	No difficulty...................... 1 Some difficulty.................. 2 A lot of difficulty............... 3 Cannot do at all...................4
CFD 6	Does (*name*) have difficulty hearing noises like peoples' voices or music? Would you say (*name*) has:……..?	No difficulty........................1 Some difficulty....................2 A lot of difficulty.................3 Cannot do at all...................4
CFD 7	Does (*name*) use any equipment or receive assistance for walking? if the answer is "2" go to CFD 10	Yes.................................... 1 No...................................... 2
CFD 8	When using his/her equipment or	No difficulty.................... 1

	Assistance, does (*name*) have difficulty WALKING? Would you say (*name*) has:………..?	Some difficulty................. 2 A lot of difficulty............. 3 Cannot do at all 4
CFD 9	Without using his/her equipment or assistance, does (*name*) have difficulty WALKING? Would you say (*name*) has:……….? If the answer is “1, 2 or 3 ” go to CFD 11	Some difficulty .... 1 A lot of difficulty .... 2 Cannot do at all 3
CFD 10	Compared with children of the same age, does (*name*) have difficulty walking? Would you say (*name*) has:…….?	No difficulty......................1 Some difficulty..................2 A lot of difficulty...............3 Cannot do at all..................4
CFD 11	Does (name) have difficulty with SELFCARE such as feeding or dressing him/herself? Would you say (*name*) has:…..?	No difficulty........................1 Some difficulty....................2 A lot of difficulty................3 Cannot do at all 4
. **CFD 12**	When (*name*) speaks, does he/she have difficulty being understood by people inside this household? Would you say (*name*) has:…..?	No difficulty........................1 Some difficulty....................2 A lot of difficulty................3 Cannot do at all 4
CFD 13	When (name) speaks, does he/she have difficulty being understood by people outside of this household? Would you say you have:………..?	No difficulty .... 1 Some difficulty ....2 A lot of difficulty................3 Cannot do at all 4
CFD 14	Compared with children of the same age, does (*name*) have difficulty learning things? Would you say (*name*) has: ……..?	No difficulty........................1 Some difficulty................... 2 A lot of difficulty................ 3 Cannot do at all...................4
CFD15.	Compared with children of the same age, does (*name*) have difficulty remembering things ? Would you say (*name*) has:…….?	No difficulty...................... 1 Some difficulty.................. 2 A lot of difficulty................3 Cannot do at all...................4
CFD 16	How often does (*name*) seem anxious, nervous or worried? Would you say (*name*) has:……….?	Daily................................. 1 Weekly.............................. 2 Monthly............................. 3 A few times a year .... 4 Never……………………..5
CFD17.	How often does (*name*) seem sad or depressed? Would you say….?	Daily................................. 1 Weekly.............................. 2 Monthly............................. 3 A few times a year 4

		Never……………………..5
CFD18	Compared with children of the same age, how much difficulty does (*name*) have controlling his/her behaviour? Would you say……?	None…………………..……1 The same or less…………..2 More………………………3 A lot more…………………4
CFD19	Does (*name*) have difficulty focusing on an activity that he/she enjoys doing? Would you say (*name*) has….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……..….3 Cannot do at all………..…4
CFD20	Does (*name*) have difficulty accepting changes in his/her routine? Would you say (*name*) has…….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……..….3 Cannot do at all………..…4
CFD21	Does (*name*) have difficulty making friends? Would you say (*name*) has…….?	No difficulty……………..1 Some difficulty…………..2 A lot of difficulty……..….3 Cannot do at all………..…4

THANK YOU

APPENDIX 2C

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail:

Questionnaire for children aged 2-4 years only

Instructions: Mark √ in the space provided.

S/No.	***PART A: Demographic and Background information***				
54)	Gender	Male =1			
		Female =2			
55)	Age (in Years)	2 Years =1	3 years = 2	4 years =3	
56)	Race	1. Black	2. White	3. Asian	4. Other
57)	Level of formal education of: 1= Father……….. 2= Mother………. 3= Guardian	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24	Vocational training school = 4 College/Diploma = 5 Never attended school = 8 Left school = 9 Don't know = 10	
58)	Reason for not attending school. 1= Father……….. 2= Mother………. 3= Guardian	0=Not enough money 1= Illness 2= Lack of interest 3= Because of disability	4 =School not accessible 5 =Other (specify)……………... 9=Don't know		
59)	Reason left school	1= Failing/underachiever 2 = Early Pregnancy 3 = Lack of interest	4 = Illness 5 = Other (specify) 9 = Don't know		
60)	Marital status of 1= Father……….. 2= Mother………. 3= Guardian	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify		
61)	Work status of….? 1= Father……….. 2= Mother……… 3= Guardian	1= Employed 2= Self-employed, e.g. own business or farming 3= Non-paid work, e.g. volunteer/ charity 4= Student	5= Housekeeping /house maker 6= Retired 7= Unemployed (health reasons) 8= Other specify………		
62)	Family's annual income?	7. Less than Kshs.50,000 8. KShs. 50,001 to 100,000 9. KShs. 100,001 to 200,000	10. KShs. 200,001 to 300,000 11. KShs. 300,001 or more 12. Refused to say		

	Part B: Functional domains "I would like to ask you some questions about difficulties your child may have in doing certain activities". Tick as appropriate (√)	
CFD1.	Does (*name*) wear glasses or contact Lenses? If the answer is "2" go to cfd3	Yes .... 1 No............................ 2
CFD2.	When wearing his/her glasses, does (*name*) have difficulty seeing? Would you say (*name*) has:……?	No difficulty .... 1 Some difficulty .... 2 A lot of difficulty ..... 3 Cannot do at all 4
CFD3.	Does (*name*) have difficulty seeing? Would you say (*name*) has:…….?	No difficulty .... 1 Some difficulty......... 2 A lot of difficulty...... 3 Cannot do at 4
CFD4.	Does (*name*) use a hearing aid? *"if the answer is "2" go to CFD6*	Yes.......................... 1 No............................ 2
CFD5.	When using his/her hearing aid(s), does (*name*) have difficulty hearing noises like peoples' voices or music? Would you say (*name*) has:………? *If the answer is " 1,2,3 or 4" go to CFD7*	No difficulty............. 1 Some difficulty.......... 2 A lot of difficulty....... 3 Cannot do at all...........4
CFD6.	Does (*name*) have difficulty hearing noises like peoples' voices or music? Would you say (*name*) has:……..?	No difficulty.............1 Some difficulty..........2 A lot of difficulty.......3 Cannot do at all..........4
CFD7.	Does (*name*) use any equipment or receive assistance for walking? *If the answer is "2" go to CFD 10*	Yes........................... 1 No............................. 2
CFD8.	When using his/her equipment or assistance, does (*name*) have difficulty Walking? Would you say (*name*) has:………..?	No difficulty............ 1 Some difficulty......... 2 A lot of difficulty...... 3 Cannot do at all 4
CFD9.	Without using his/her equipment or assistance, does (*name*) have difficulty walking? Would you say (*name*) has:……….? *If the answer is "1, 2 or 3 " go to CFD 11*	Some difficulty .... 1 A lot of difficulty ..... 2 Cannot do at all 3
CFD10.	Compared with children of the same age, does (*name*) have difficulty walking? Would you say (*name*) has:…….?	No difficulty...............1 Some difficulty...........2 A lot of difficulty........3 Cannot do at all...........4

CFD11.	Does (*name*) have difficulty understanding you? Would you say (*name*) has:…..?	No difficulty...............1 Some difficulty...........2 A lot of difficulty........3 Cannot do at all 4
CFD12.	Do you have difficulty understanding (*name of child*)? Would you say you have:………..?	No difficulty .... 1 Some difficulty ....2 A lot of difficulty........3 Cannot do at all 4
CFD13.	Compared with children of the same age, does (*name*) have difficulty learning things? Would you say (*name*) has: ……..?	No difficulty...............1 Some difficulty.......... 2 A lot of difficulty....... 3 Cannot do at all..........4
CFD14.	Compared with children of the same age, does (*name*) have difficulty learning the names of common objects? Would you say (*name*) has:…….?	No difficulty............. 1 Some difficulty.......... 2 A lot of difficulty........3 Cannot do at all...........4
CFD15.	Compared with children of the same age, does (*name*) have difficulty playing? Would you say (*name*) has:……….?	No difficulty .... 1 Some difficulty.......... 2 A lot of difficulty....... 3 Cannot do at all.......... 4

CHILD FUNCTIONING AND DISABILITY (AGE 2-4) CFD

THANK YOU

APPENDIX 3

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Instructions: Mark √ in the space provided.

S/No.	***Household (hh) questionnaire***						
1.	Number of household members	1, 2 , 3, 4, 5, 6, 7, ___					
2.	Ages of household members	(1)….. (2)….(3),…(4)…....(5)…..(6)……-					
3.	Highest level of formal education of hh member 1,2,3,4,5,…	(1)…., (2)….(3)….(4)……(5)…..(6)…..					
		Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16 Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24 Adult class = 25 Vocational training school = 4 College/Diploma = 5 University = 6 Post-graduate = 7 Never attended school = 8 Left school = 9 Don't know = 10					
4.	Reason for (hh member 1,2,3,4,5…) not attending school.		1	2	3	4	5
		0=Not enough money					
		1= Illness					
		2= Lack of interest					
		3= Because of disability					
		4= School not accessible					
		5=Other (specify)					
		9=Don't know					
5.	Reason for (hh member 1,2,3,4,5…) left school.	1= Failing/underachiever					
		2 = Pregnancy					
		3 = illness					
		4 = Other (specify)					
		9 = Don't know					
6.	Marital status of hh member 1,2,3,4,5,..		1	2	3	4	5
		1= Single					
		2= Married					
		3= Separated					
		4= Divorced					
		5= Windowed					
		6= Cohabiting					
		7= Other : Specify					

7.	What describes current work status of hh member 1,2,3,4,5,.. best?		1	2	3	4	5
		1= Employed					
		2= Self-employed, e.g. own business or farming					
		3= Non-paid work, e.g. volunteer/ charity					
		4= Student					
		5= Housekeeping / house maker					
		6= Retired					
		7= Unemployed (health reasons)					
		8= Other specify……………					
8.	Type of housing		Yes	No			
		1= Stone building	1	2			
		2= Semi-permanent building	1	2			
9.	If you stay in Semi-permanent building, would you say it is made of….?	1= Bricks 2= Mud or Clay. 3= Timber	4= iron sheet 5= Paper				
10.	Residence	1. Urban	2. Rural				
11.	Source of water	1= Pipe 2= Well 3= Spring 4= Rain	5= Dam 6= kiosks 7= sourced from vendors				
12.	Volume of water per person/ day	1-3 Liters =1 4-6 Liters =2 7-9 Liters =3	10-13 Liters =4 14-16 Liters =5 More than 16 Liters =6				
13.	Sanitation	1= Connected to sewer 2= Septic Tank 3= Pit Latrine	4= Bucket 5= open defecation 6 = flying toilet				
14.	Number of toilets/latrines	1, 2, 3, 4……….					

APPENDIX 4A(i)

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Focus Group Discussion Guide

Instructions: Mark √ in the space provided.

/No.	***PART A: Demographic and Background information***			
63)	Gender	Male =1		
		Female =2		
64)	Age (in Years)	----		
65)	Highest level of formal education	Nursery = 01, 02 Standard 1 = 11 Standard 2 = 12 Standard 3 = 13 Standard 4 = 14 Standard 5 = 15 Standard 6 = 16	Standard 7 = 17 Standard 8 =18 Form 1 = 21 Form 2 = 22 Form 3 = 23 Form 4 = 24 Adult Class =25	Vocational training school = 4 College/Diploma = 5 University = 6 Post-graduate = 7 Never attended school = 8 Left school = 9 Don't know = 10
66)	Marital status	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify…………..	
67)	Type of impairment (Disability)?	1= Physical challenged 2= Visually challenged 3= Hearing challenged	4= Mentally challenged 5= Albinism 6= Other: Specify……………	

Part B: FOCUS GROUP DISCUSSION GUIDE

Opening remarks

Welcome to our meeting today. Relax and enjoy every bit of this wonderful discussion. Let us take 3 minutes to do self-introduction.

Let me begin by informing you that the principal researcher is a PhD student in the Department of Physiotherapy at the University of the Western Cape. As part of the study he is expected to conduct research. The aim of the current study is to **"Develop of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya**." One key objective of this study is "to determine the Persons-with-Disabilities-specific support services needs and utilization in Kenya. In order to fulfil this objective, you have been selected to participate in the study.

Please take a few minutes to carefully read the consent form and to complete the survey form. We will assist you in case of difficulty. The purpose of the survey is to give us a general idea of the characteristics of those who are here. The purpose of the consent form is to assure you understand your rights as a participant in this group.

As you might be aware, people sometimes experience difficulty with day-to-day activities that they may need or want to do. They may find it increasingly challenging to: move around where and when they want (with or without aids or assistance), to perform activities in and around their house or take care of their money. They may need assistance in self-care. Or they may experience difficulties in social life and relationships. Or may fail to get employment or to help and support other people.

This team is interested in your experiences and your ideas about the type of services that are helpful to you, either now or as you get older, to help you live where you would like and to continue participating in activities that you enjoy.

25) Let us begin by discussing how you manage to complete activities of daily living, i.e. What keeps you participating in your favourite activities?

[probes]

- Please explain further and give an example?
- Can you tell us more about that? Please describe what you mean?
- Are there any problems /obstacles you experience while performing your favourite activities?
- Does anyone have a different experience?

26) Given your present status, what helps you to maintain your health and ability to participate in your favorite activities?

[Probes]

- Please explain further,
- Please give me an example of what you mean.
- Does lack of what you just said prevent you from performing your favorite activities?
- Does anyone have a different experience?

27) Bearing in mind your case, are you able to attain and maintain your desired level of satisfaction?

[Probes]

- Please explain further,
- Please give me an example of what you mean.
- Can you tell us more about that?
- Does anyone have a different experience?

28) Let us discuss how you manage to maintain your autonomy / independence [work or at home] and continue to participate in your favourite activities.

[probes]

- Please explain further and give an example?
- Can you tell us more about that?
- Please describe what you mean?
- Does anyone have a different experience?

29) Let us now turn to the issue of availability and accessibility of services needed by persons with disabilities.

a. Please explain further
b. Have you ever had problems finding or arranging for the support you need?

30) Does the government or local authority provide the services (*e.g. education, transport, medical care*) you need from time to time?

[probes]

- Please give me an example of what you mean?
- Does anyone have a different experience?

31) Concerning the services that are currently offered, I'd like you to tell us how you view the manner they are being offered.

[probes]

- Please explain further
- Have you ever been abused or discriminated against while seeking the help that you needed?
- How did you react?

32) Have you ever sought services from any government agency or organization that they were unable to deliver?

[probes]

- What do you think was the source of the problem?
- How could we do a better job of getting people to know about services that are offered to persons with disabilities in this area?
- Is there anything else regarding service availability and access that you think we should know?

33) Bearing in mind the services currently being offered to persons with disabilities in your area. Which of the services that you know about can help you or other persons with disabilities maintain their functioning and to participate in activities they enjoy?

[probes]

- Could you elaborate on that?
- Please give me an example of what you mean?
- Are there any other useful services you can think of?
- Are there any other ideas?

34) Bearing in mind the services currently being offered to persons with disabilities in your area. Which of the services that you know about can help you or other persons with disabilities maintain their health and to participate in activities they enjoy?

[probes]

- Could you elaborate on that?
- Please give me an example of what you mean?
- Are there any other useful services you can think of?
- Are there any other ideas?

35) Concerning the services currently being offered to persons with disabilities in your area. Which of the services that you know about can help you or other persons with disabilities maintain their independence and to participate in activities they enjoy?

[probes]

- Could you elaborate on that?
- Please give me an example of what you mean?
- Are there any other useful services you can think of?
- Are there any other ideas?

36) Concerning the services that are currently offered, I'd like you to tell me how you think these services could be improved.

37) If the services are improved, how would they be different from the way they are now?

[probes]

- If you have ever received any of these kinds of services, what was it about your experience that made you satisfied or dissatisfied?
- What could the organizations do to improve the services they offer to persons with disabilities?
- Is there anything else regarding the improvement of existing services you think may help?

38) Using your imagination, think about the kind of services that are lacking and could help local persons with disabilities live independent, healthier and more satisfied lives.

[probes]

- How do you think a service like that would work?
- Can you give me an example of what you mean?
- Are there any new services that you think would be useful?

39) Are you a registered member of (the local branch) the association for persons with a similar disability?

[probes]

- If no, please explain why?
- Is there someone with a different experience?
- What is the importance of being a member of an association?

We are coming to the end of our session today. ***Principal researcher to provide summary of FGD.*** If any information given during this FGD is unclear, the researcher may call you again to seek further clarification.

We would like to thank you all for coming and for your participation. You gave wonderful ideas and we appreciate it. As you leave, do not forget to see the assisting researcher to receive your fare back home. Thank you once more for your participation.

APPENDIX 4A(ii)

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S/N.		***Sehemu ya ujumbe wa mtu binafsi***		
1.		Jinsia	Kiume	
			Kike	
2.		Umri wako		
3.		Kiwango cha juu cha elimu rasmi Highest level of formal education	Shule ya msingi	
			Shule ya sekondari	
			Mafunzo ya Ufundi	
			Chuo cha ufundi	
			Chuo Kikuu	
4.		Sababu ya kukamilisha ngazi ya pili juu ya elimu.	a) Upungufu wa maslahi b) Ukosefu wa mtu kuwasaidia kutembea c) Ukosefu wa ada ya shule d) Wengine, bayana................................. e) mengine jibu…………………………	
5.		Hali ya ndoa	Pekee	1.
			Ndoa	2.
			Kinachotenganishwa	3.
			Talaka	4.
			Mjane	5.
			Kinyumba na	6.
			Nyingine	7.
6.		Chanzo cha mapato		
7.		Kama mkono, kwa nini?	…………………………………………… ……………………………………………	
8.		Ni mapato ya familia yako ya kila mwaka ya nini	40) Chini ya Kshs.50,000 41) KShs. 50,001 to 100,000 42) KShs. 100,001 to 200,000 43) KShs. 200,001 to 300,000 44) KShs. 300,001 au zaidi	
9.		Jinsi unaishi	Independent katika jamii	1.
			Kusaidiwa	2.
			Niko Hospitalini	3.

			Nyingine, TAJA	4.
10.		Ni wewe kutumia misaada saidizi?	Ndiyo…….. Laa……….	5.
11.		Kama ni laa kwa numbari 10 basi taja aina ya kifaa *(Kwa mfano, kusikia misaada, magongo, fimbo, Wheelchair)*	……………………………………	
12.		Je, una mlezi au mtu mwingine ambaye kusaidia wewe katika shughuli unaweza kufanya?	Ndiyo…….. Laa……….	

Sehemu ya B: mwongozo wa majadiliano ya Kikundi

Hotuba ya ufunguzi

Karibu mkutano wetu leo. Kupumzika na kufurahia kila kidogo ya mjadala huu wa ajabu.

"Hebu kuanza kwa taarifa kwamba Mtafiti mkuu ni mwanafunzi wa PhD katika Idara ya viungo vya mwili katika Chuo Kikuu cha Western Cape.

Kama sehemu ya masomo yake anatarajiwa kufanya utafiti. Lengo la utafiti ni 'Ku unda Model kwa Utetezi wa Support Services kwa Walemavu wa hapa Kenya"

Lengo muhimu la somo hili ni katika kujua huduma maalum watu-na-walemavu wanahitaji na hutumia hapa Kenya." Ili kutimiza lengo hili, umechaguliwa kushiriki katika utafiti huu.

Tafadhali chukua dakika chache kusoma kwa makini ridhaa hii na kukamilisha fomu hiyo fupi ya utafiti. Madhumuni ya kaikamilisha fomu hii ya utafiti ni kutupa wazo la jumla ya sifa za walio hapa. Madhumuni ya fomu ya ridhaa ni kuhakikishia unelewa haki yako kama mshiriki katika kundi hili.

Kama mnavyo fahamu, wakati mwingine watu hukabiliwa na ugumu mwingi zaidi katika shughuli wanahitaji au wanataka kufanya za kila siku. Wanaweza kupata changamoto inaozidi wanapotaka 'kuzunguka mahali na wakati wanaotaka (wakisaidiwa na au bila misaada), kufanya shughuli zao, ndani na nje ya nyumba yao, au kuchunga fedha zao.

wanaweza kuwa wanahitaji msaada wa huduma ya kibinafsi. Au wanaweza kupata matatizo katika maisha ya mahusiano na kijamii. Au mtu anaweza kushindwa kupata ajira au kuwasaidia na watu mwingine.

Nia ya timu hii ni kujua changamoto ulizopata na mawazo yako juu ya aina ya huduma iliyo na manufaa kwenu. Aidha sasa au kama wewe unavyoendelea kuwa na umri, ili kukusaidia kuishi pahali ungependa na kuendelea kufanya matendo au shughuli unazopenda.

1. Hebu tuanze na kujua nini kinacho kuzuiya, au nini ukifikiria kinaweza kukuzuiya, uwe na uwezo wa kudumisha utendakazi wako, kufurahi, kuwa na afya, usalama, na uhuru shuleni, kazini au nyumbani na hata kuendelea kushiriki katika shughuli uzipendazo.
   [fwatilizo]
   - Tafadhali eleza zaidi?
   - Je, unaweza kutuambia zaidi kuhusu hilo?
   - Tafadhali eleza nini unamaanisha.
   - Je, kuna mtu mwingine aliye na changamoto tofauti alizopata?

2. Tukikumbuka vikwazo kikundi kimeelezwa, ningependa mfikiri kuhusu jinsi gani tunaweza

kusaidia watu wenye ulemavu kuondokana na vikwazo hizo.

3. Kuanzia na huduma sasa ni kuwa inayotolewa kwa watu wenye ulemavu katika eneo lako. Ambayo ya huduma unajua kuhusu inaweza kukusaidia au watu wengine wenye ulemavu kudumisha yao kazi, furaha, afya, usalama na uhuru, na kushiriki katika shughuli wao kufurahia?

   [fwatilizo]

   - Je, unaweza kufafanua juu ya hilo?
   - Tafadhali nipe mfano wa nini maana?
   - Je, kuna huduma yoyote nyingine muhimu unaweza kufikiria?
   - Je, kuna mawazo mengine yoyote?

4. Kuhusu huduma za kwamba sasa inayotolewa, Ningependa mniambie jinsi gani unafikiri huduma hizi zinaweza kuboreshwa.

5. Kama huduma ni bora, jinsi gani wao kuwa tofauti na njia wao ni sasa?

   [fwatilizo]

   - Kama wamewahi yoyote ya aina hii ya huduma, ni ipi kuhusu uzoefu wako kwamba alifanya kuridhika au haridhiki?
   - Je, inaweza mashirika kufanya ili kuboresha huduma wao kutoa kwa watu wenye ulemavu?
   - Je, kuna kitu kingine chochote kuhusu uboreshaji wa huduma zilizopo unafikiri inaweza kusaidia?

6. Kutumia mawazo yako, kufikiri juu ya aina ya huduma ambayo ni kukosa na inaweza kusaidia watu ndani na ulemavu kuishi huru, maisha ya afya na furaha.

7. Kutumia mawazo yako, kufikiri juu ya aina ya huduma ambayo ni kukosa na inaweza kusaidia watu ndani na ulemavu kuishi huru, maisha ya afya na furaha.

   [fwatilizo]

   - Ni jinsi gani unafikiri huduma kama kwamba ingekuwa kazi?
   - Je, unaweza kunipa mfano wa nini maana?
   - Je, kuna huduma yoyote mpya ambayo unafikiri bila kuwa na manufaa?
   -

8. Hebu sasa kugusia suala la upatikanaji na upatikanaji wa huduma zinazohitajika na watu wenye ulemavu.

9. Umewahi na matatizo ya kupata au kupanga kwa ajili ya msaada unahitaji?

10. Kuhusu huduma za kwamba sasa inayotolewa, Ningependa wewe kuniambia jinsi ya kuona namna wao ni kuwa inayotolewa.

    [fwatilizo]

    - Tafadhali kueleza zaidi

- Umewahi vibaya au kubaguliwa kwa ajili ya kutafuta msaada kwamba inahitajika.
- Ni jinsi gani kuguswa?

11. Je, umewahi walitaka huduma kutoka shirika la yoyote ndani au shirika kwamba walikuwa hawawezi kutoa?

[fwatilizo]

- Tafadhali tueleze kuhusu uzoefu wako.
- Unafikiri ni chanzo cha tatizo?
- Jinsi tunaweza kufanya kazi nzuri ya kupata watu kujua kuhusu huduma zinazotolewa kwa watu wenye ulemavu katika eneo hili?
- Je, kuna kitu kingine chochote kuhusu huduma upatikanaji na kwamba upatikanaji unafikiri tunapaswa kujua?

12. Je, sasa kufanya kazi yoyote kujitolea katika shule za mitaa yako, kanisa au taasisi nyingine?

13. Kama siyo, unaweza kuwa na hamu ya kuwa na kushiriki katika kazi za kujitolea katika jamii?

[fwatilizo]

- Tafadhali tueleze aina ya kazi ya kujitolea kufanya.
- Kama hujafanya kazi ya kujitolea, nini kilichokuzuia kujitolea?
- Je, una njia ya kupata mahali ambapo unaweza kujitolea?
- Jinsi muhimu ni kwamba watu wenye ulemavu na fursa ya kutoa nyuma kwa jamii zao kwa kujitolea?

Sisi ni yule wa mwisho wa kipindi chetu cha leo, tungependa kuwashukuru wote kwa ajili ya kuja na kwa ushirikiano wako. Alitoa mawazo ya ajabu na sisi kufahamu ni.
Kama wewe kuondoka, usisahau kuona mtafiti kusaidia kupokea nauli yako kurudi nyumbani.
Asante kwa mara nyingine zaidi kwa ushiriki wako.

APPENDIX 4B

INTERVIEW GUIDE FOR KEY INFORMANTS – SERVICE PROVIDERS

I'm conducting this study to identify the needs of PWDs in three selected Counties. Any information shared herein will be treated with utmost respect and confidentiality. Please respond to all the questions. I'm grateful for your time and support.

1. Demographic data

   Gender male female

2. Position held in the institution? E,g. OT, Social Worker, Special Special Education Teacher etc

3. Do you have any pre-requisite skills to offer PWD needed services? YES NO.

   If YES, which skills do you have?------------------
   If NO, which skills do you require?-------------------

4. Are you aware of people in this area who live with a disability?
   a. Are they accessing support or needed services?
   b. If yes, please explain where the PWDs go to access support or needed services
   c. And how they get there--

5. What are some of the problems you have known are faced by PWDs in accessing support or needed services?
   a. What are the major challenges of living with disability?
   b. What are the circumstances and issues faced by parents/caregivers of persons with disabilities?

6. What services are used by PWDs?
   - What services will be needed in the future?
   - What concerns do persons affected by disability have with respect to services?

7. Are support services accessible to PWDs in your area
   - Please explain further
   - Who provides them?
   - Are these services government policy or are just provided by well-wishers?

8. Which interventions are in place to lessen disability and participation restrictions among PWDs in your area
   - Please explain further
   - Who provides them?
   - Who is sponsoring (government/church organization/NGO/donor etc)?

9. In your view, how do PWDs get the help or assistance they require?

    - Please explain further
    - Which other dignified ways would they get the assistance they require?

10. To your knowledge, does the new constitution provide for support services to persons with disabilities of all ages?

    - Please explain
    - Do government programs provide free interpretation services to PWDs?
    - What about personal assistance programmes?

11. To what extent does Government support development, production, distribution and supply of assistive devices and equipment to PWDs?

    - Please explain further
    - Are the equipment accessible?
        - Do all PWDs get them free of charge or purchase them?
        - What about the pricing?
    - Are rehabilitation services for the use of assistive devices and equipment made available to PWDs in your region?

12. To what extent is special education/vocational training of PWDs accessible?

    - Please explain further
    - Is there a special fund to enhance its accessibility?

APPENDIX 5A

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QUESTIONNAIRE PHASE 2B

/No.	***PART A: Demographic and Background information***		
68)	Gender	1=Male	2=Female
69)	Age (in Years)	----	
70)	County of residence	1. Murang'a 2. Machakos	3. Nairobi
71)	Highest level of formal education	1. No formal education 2. Less than primary school 3. Primary school 4. Secondary school	5. College/university 6. Vocational training 7. Special school
72)	Marital status	1= Single 2= Married 3= Separated 4= Divorced	5= Windowed 6= Cohabiting 7= Other : Specify………….
73)	Type of impairment (Disability)?	1= Physical challenged 2= Visually challenged 3= Hearing challenged	4= Mentally challenged 5= Albinism 6= Other: Specify……………
74)	Annual income i. Parents ii. Guardian iii. Personal	13. Less than Kshs.50,000 14. KShs. 50,001 to 100,000 15. KShs. 100,001 to 200,000	16. KShs. 200,001 to 300,000 17. KShs. 300,001 or more 18. Refused to say
75)	Association membership	1. Society for the blind 2. Society for the deaf 3. Mentally challenged 4. Albinism society 5. UDF	6. Association for the Physically Disabled of Kenya (APDK) 7. National council for PWDs 8. Other: please specify

Part B: Factors influencing Utilization of Support Services (Please tick **(√)** appropriate response, inside box provided)

Key: 1= completely disagree, 2= disagree, 3= agree, 4= completely agree

1. The following factors influence your utilization of **rehabilitation services** (*e.g. physiotherapy, occupational therapy, speech and hearing therapy etc.*). (Would you say ...?)	Completely Agree	Agree	Disagree	Completely Disagree
a) Incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near and provided)				

d) Having appropriate support services (sign language interpreter, personal assistant)				
e) Affordability				
f) Attitude of service provider				
g) Appropriate transport				
h) Service provider skills				
i) Equipment at the facility				
j) Need for rehabilitation				
k) Other: please specify:				
2. The following factors influence your utilization of **Assistive devices service** *(e.g. wheelchair, crutches, hearing/visual aids, Braille etc.).* (Would you say ...?)	Completely Agree	Agree	Disagree	Completely Disagree
a) Incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (personal assistant)				
e) Affordability				
f) Personal attitude				
g) Condition of the assistive device				
h) rehabilitation services (training in use of devices)				
i) Need for assistive devices				
j) Community support				
k) Other : please specify				
l)				
3. The following factors influence your utilization of **Educational services** *(e.g. special school, regular schooling, etc.).* (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Personal attitude				
e) Having appropriate support services (personal assistant)				
f) Affordability				
g) Appropriate transport				
h) Service provider skills				
i) Need for education				
j) Other: please specify:				
4. The following factors influence your utilization of **Vocational training services** *(e.g. skills training; carpentry, artisan,*				

mechanic, tailoring etc.). (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Personal attitude				
e) Attitude of service provider				
f) Having appropriate support services (personal assistant)				
g) Affordability				
h) Appropriate transport				
i) Service provider skills				
j) Equipment at the facility				
k) Need for vocational training				
l) Other: please specify:				
5. The following factors influence your utilization of **Counselling for person with disability** *(e.g. psychologist, psychiatrist, social worker, school counsellor, support group etc.)*. (Would you say ...?)	Completely Agree	Agree	Disagree	Completely Disagree
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (personal assistant)				
e) Affordability				
f) Service provider skills				
g) Myths concerning disability				
h) Believes				
i) Attitude				
j) Stigma				
k) Conducive environment for counselling				
l) Having support group				
m) Need for counselling				
n) Other: please specify:				
6. The following factors influence your guardian's utilization of **Counselling for parent/family** of person with disability *(e.g. in information sharing and problem solving, support group, stress, social stigma, protection, etc.)*. (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (personal assistant)				
e) Affordability				

f) Service provider skills				
g) Myths concerning disability				
h) Believes				
i) Attitude				
j) Stigma				
k) Conducive environment for counselling				
l) Having support group				
m) Need for counselling				
n) Other: please specify:				
7. The following factors influence your utilization of **social security services** for persons with disability *(e.g. social worker, disability grant, NSSF, Financial assistance to family, etc.).* (Would you say?)	Completely Agree	Agree	Disagree	Completely Disagree
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (personal assistant)				
e) Long distance				
f) Personal attitude				
g) Need for assistive devices				
h) Other : please specify social security services (stipend for PWDs)				
i) Appropriate transport				
j) Other: please specify:				
8. The following factors influence your utilization of **health services** *(e.g. primary health care clinic, hospital, home health care services; VCT Services, reproductive health services, etc.).* (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (sign language interpreter, personal assistant)				
e) Affordability				
f) Attitude of service provider				
g) Appropriate transport				
h) Service provider skills				
i) Personal health seeking behavior				
j) Reputation of healthcare provider				
k) Equipment at the facility				

l) Community support				
m) Subsidized by government				
n) Need for health services				
o) Other: please specify:				
9. The following factors influence your utilization of **Health information** *(e.g. from media, at schools, clinics, hospital etc.)***.** (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (sign language interpreter, personal assistant)				
e) Affordability				
f) Attitude of service provider				
g) Appropriate transport				
h) Service provider skills				
i) Need for health information				
j) Other: please specify:				
k)				
10. The following factors influence your utilization of **faith healer** *(religious or witchdoctor)*. (Would you say ...?)	Completely Agree	Agree	Disagree	Completely Disagree
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists or is near)				
d) Having appropriate support services (sign language interpreter, personal assistant)				
e) Affordability				
f) Attitude of faith healer				
g) Appropriate transport				
h) Service provider skills				
i) Need for healing				
j) Other: please specify:				
11. The following factors influence your utilization of **Legal advice/justice services.** (Would you say ...?)				
a) Accessibility				
b) Availability				
c) Attitude of service provider				
d) Affordability				
e) Having appropriate support services (sign language interpreter, personal assistant)				
f) Gender-based violence				
g) Discrimination				

h) Inequity (dispossession of property/inheritance)				
i) Violation of human rights				
j) Need for legal advice /justice				
k) Other: please specify:				
12. The following factors influence your utilization of **Sign language interpreter.** (Would you say ...?)				
a) incapacity (disability itself)				
b) Accessibility (can or cannot get)				
c) Availability (service exists)				
d) Affordability				
e) Attitude of service provider				
f) Service provider skills				
g) Need for sign language interpreter				
h) Employee of government				
i) Other: please specify:				
13. The following factors influence your utilization of **Personal assistant** (e.g. help in **ADL** Washing whole body, dressing Cooking, Eating/drinking, Going to toilet, Getting up and going to bed, decision making , managing money etc **OR** in **IADL e.g.** Doing shopping, Housekeeping etc)**.** (Would you say ...?				
a) incapacity (disability itself)				
b) Affordability				
c) Personal assistant skills				
d) Retention of the personal assistant				
e) Privacy				
f) Need for autonomy / independence				
g) Accessibility of the physical environment				
h) Paid for by government				
i) Other: please specify:				
14. The following factors influence your utilization of **Independent Living services *(e.g.*** *Independent living skills training, Mobility in community environment, etc)***.** (Would you say?)	Completely Agree	Agree	Disagree	Completely Disagree
a) Privacy				
b) Need for autonomy / independence				
c) Accessibility of the physical environment				
d) Incapacity (disability itself)				
e) Independent living skills				
f) Need for independent living				
g) Affordability				
h) Community support				
i) Other: please specify:				
15. The following factors influence your utilization of				

Transportation services. (Would you say ...?				
a) Incapacity (disability itself)				
b) Accessibility				
c) Availability				
d) Affordability				
e) Assistive devices				
f) Attitude of service provider				
g) Having appropriate support services (sign language interpreter, personal assistant)				
h) Need for appropriate transport				
i) Other: please specify:				

Thank you

APPENDIX 5B

UNIVERSITY OF THE WESTERN CAPE

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e-mail:

/No.	***Sehemu ya: Demographia na habari kuhusu anayetoa maelezo***		
76)	Jinsia	1-Mme	2-Mke
77)	Umri (Miaka)	----	
78)	Kaunti unapoishi	4. Murang'a 5. Machakos	6. Nairobi
79)	Kiwango cha juu kabisa cha masomo	8. Hakuna masomo 9. Chini ya shule ya msingi 10. Shule ya msingi 11. Shule ya upili	12. Chuo / Chuo kikuu 13. Masomo ya ufundi 14. Shule maalum
80)	Hali ya ndoa	1= Single 2= nimeolewa au oa 3= tumetengana 4= talaka	5= mjane 6= naishi na mwezangu lakini hatujaoana 7=mengine : eleza…………..
81)	Aina ya ulemavu?	1= viungo vya mwili 2= uwezo wa kuona (Kipofu au wasio ona) 3= utovu wa uwezo wa kusikia (kiziwi)	4= Akili punguani 5= mualbino (Zeru zeru) 6=nyingine: eleza……………
82)	Mapatp ya mwaka iv. wazazi v. mfadhili vi. binafsi	19. chini ya Kshs.50,000 20. KShs. 50,001 hadi 100,000 21. KShs. 100,001 hadi 200,000	22. KShs. 200,001 hadi 300,000 23. KShs. 300,001 au zaidi 24. Sitaki kusema
83)	Chama au muungano	9. Chama cha wasio ona 10. Chama cha wasio sikia 11. Walio na akili punguani 12. Chama cha zeruzeru 13. UDF	14. Muungano wa watu wasio jiweza wa Kenya (APDK) 15. National council for PWDs 16. mengine: taja

Sehemu ya C: Mambo yanayoathiri matumizi ya huduma saidizi (Weka alama (**√**) panapo jibu katika sehemu uliyopewa)

Key: 1= sikubali kabisa, 2= sikubali, 3= nakubali, 4= nakubali kabisa

6. mambo yafuatayo yanaathiri matumizi yako ya huduma ya kukusaidia kuweza kushinda ulemavu (kama*: tiba ya mwili, tiba ya kutenda kazi,tiba ya kusikia na kuzungumza* na kadhalika) (Would you say ...?)	nakubali kabisa	nakubali	sikubali	Sikubali kabisa

l) kukosa uwezo (ulemavu wako)				
m) kupata huduma (naweza au siwezi pata				
n) kupata kwa urahisi huo huduma (huduma upo au uko karibu na unapatikana)				
o) kuw a na huduma saidizi unaofaa ulemavu wangu (maklimani wa lugha ya ishara,msaidizi)				
p) kuweza kulipia huduma				
q) mtazamo wa anayetoa huduma				
r) njia ya usafiri				
s) ujuzi wa anayetoa huduma				
t) vifaa vinavyotumika katika utoaji wa huduma				
u) mahitaji ya urekebishaji				
v) mengine : taja				
7. mambo yafuatayo yanaathiri matumizi yako ya viombo visaidizi (Kama:kiti cha gurudumu,magongo,visaidizi vya kusikia,miwani,braille n.k) (ungesemaje ...?)	Nakubali kabisa	nakubali	sikubali	Sikubali kabisa
m) kutojiweza (ulemavu)				
n) uwezo wa kupata (naweza kupataau siwezi)				
o) urahisi wa kupata (pahali pa kupata ni karibu au papo)				
p) kuwa na visaidizi vinavyostahili (mtu anayeweza kusaidia)				
q) uwezo wa kuwa na vifaa				
r) mtazamo wa kibinafsi				
s) hali ya chombo kisidizi				
t) huduma ya urekebishaji na ukarabati (kufunzwa insi ya kutumia chombo kisaidizi)				
u) hitaji la chombo kisaidizi				
v) jamii kusimama na wewe				
w) mengine : taja				
8. Mambo yafuatayo yanaathiri matumizi ya huduma wa elimu au masomo *(mfano:. Shule maaluml,shule za kawaida,n.k)*. (ungesema ...?)				
k) kutojiweza (ulemavu)				
l) unapatikana (unaweza au hauwezi)				
m) Kupatikana kwa huduma kwa urahisi (huduma una patikana karibu)				
n) Mtazamo wa kibinafsi				
o) Kupata huduma saidizi zinazostahili (msaidizi binafsi)				
p) kujimudu kifedha				
q) Kuwepo kwa jinsi ya usafiri				
r) Ujuzi wa anayetoa huduma				
s) Mahitaji ya elimu Zaidi				

t) Other: mengine : taja				
9. Mambo yafuatayo huathiri matumizi ya vyuo vya ufundi *(kama useremala, ukarabati,ufundi wa nguo,kutngeneza magari,na ujuzi wa kutenda kijumla*. (ungesema ...?)				
m) kutojiweza (ulemavu)				
n) unapatikana (unaweza au hauwezi)				
o) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
p) Mtazamo wa kibinafsi				
q) Mtazamo wa anayetoa huduma				
r) Kupata huduma saidizi zinazostahili (msaidizi binafsi)				
s) kujimudu kifedha				
t) Kuwepo kwa jinsi ya usafiri				
u) Ujuzi wa anayetoa huduma				
v) Kuwepo kwa vifaa katika kituo cha huduma				
w) Hitaji la mafunzo ya masomo ya kiufundi				
x) Mengine: Eleza				
10. Mambo yafuatayo huathiri matumizi ya kupata wasia kwa watu walio na ulemavu *(mfano. Mwanasaikolojia, daktari wa akili, mafanyi kazi wa maisha ya jamii, mtoa wasia shuleni, kikundi cha kuhimizana n.k)*. (ungesema ...?)	Nakubali kabisa	nakubali	sikubali	Sikubali kabisa
o) kutojiweza (ulemavu)				
p) unapatikana (unaweza au hauwezi)				
q) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
r) Kupata huduma saidizi zinazostahili (msaidizi binafsi)				
s) Uwezo wa kifedha				
t) Ujuzi wa anyetoa huduma				
u) Hadithi kuhusu ulemavu				
v) imani				
w) mtazamo				
x) unyanayapaa-mawazo ya kijamii yasiyo na msingi				
y) Kuwepo na mazingira yanayofaa kwa kutoa na kupata wasia				
z) Kuwa na kikiundi cha kuhimizana				
aa) Hitaji la kupata wasia				
bb) Mengine: Eleza				
7. Mambo yafuatayo huathiiri mfadhili wako au mzazi katika matumizi ya wasia kwa mzazi au jamii ya mtu aliye na ulemavu *(mfano: katika kupasha habari na kusuluhisha shida,kikundi sha kuhimizana, unyanyapaa wa kijamii,mawazo yanayomfinyila*				

mtu n.k (ungesema ...?)				
o) kutojiweza (ulemavu)				
p) unapatikana (unaweza au hauwezi)				
q) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
r) Kupata huduma saidizi zinazostahili (msaidizi binafsi)				
s) Uwezo wa kifedha				
t) Ujuzi wa anyetoa huduma				
u) Hadithi kuhusu ulemavu				
v) imani				
w) mtazamo				
x) unyanayapaa-mawazo ya kijamii yasiyo na msingi				
y) Kuwepo na mazingira yanayofaa kwa kutoa na kupata wasia				
z) Kuwa na kikiundi cha kuhimizana				
aa) Hitaji la kupata wasia				
bb) Mengine: Eleza				
16. Mamabo yafuatayo yanaathiri uwezo wako wa kupata matumizi ya huduma wa usalama wa kijamii *(mfano. Mfanayakazi wa kijamii,msaada kwa walemavu, NSSF, msaada wa kifedha kwa jamii n.k).* (ungesema……..?)	Nakubali kabisa	nakubali	sikubali	Sikubali kabisa
k) kutojiweza (ulemavu)				
l) inapatikana (unaweza au hauwezi)				
m) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
n) Kupata huduma saidizi zinazostahili (msaidizi binafsi)				
o) Masafa marefu				
p) Mtazamo wa kibinafsi				
q) Hitaji la vyombo visaidizi				
r) mengine : tafadhali onyesha ikiwa kuna mapato yanayotolewa na serikali kwa jamii iliyoathirika kwa watu walio na ulemavu				
s) Njia ya usafiri inayostahili				
t) Mengine: Eleza				
17. Mambo yafuatayo yanaathiri matumizi ya huduma za afya *(mfano:huduma za afya za msingi, hospitali,huduma za afya nyumbani; huduma ya VCT,huduma ya afya ya uzazi,n.k).* (unasema aje……?)				
p) kutojiweza (ulemavu)				
q) inapatikana (unaweza au hauwezi)				
r) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
s) Kupata huduma unaostahili (mkalimani wa lugha ya ishara ,msaidizi wa kibinafsi)				
t) Uwezo wa kifedha				

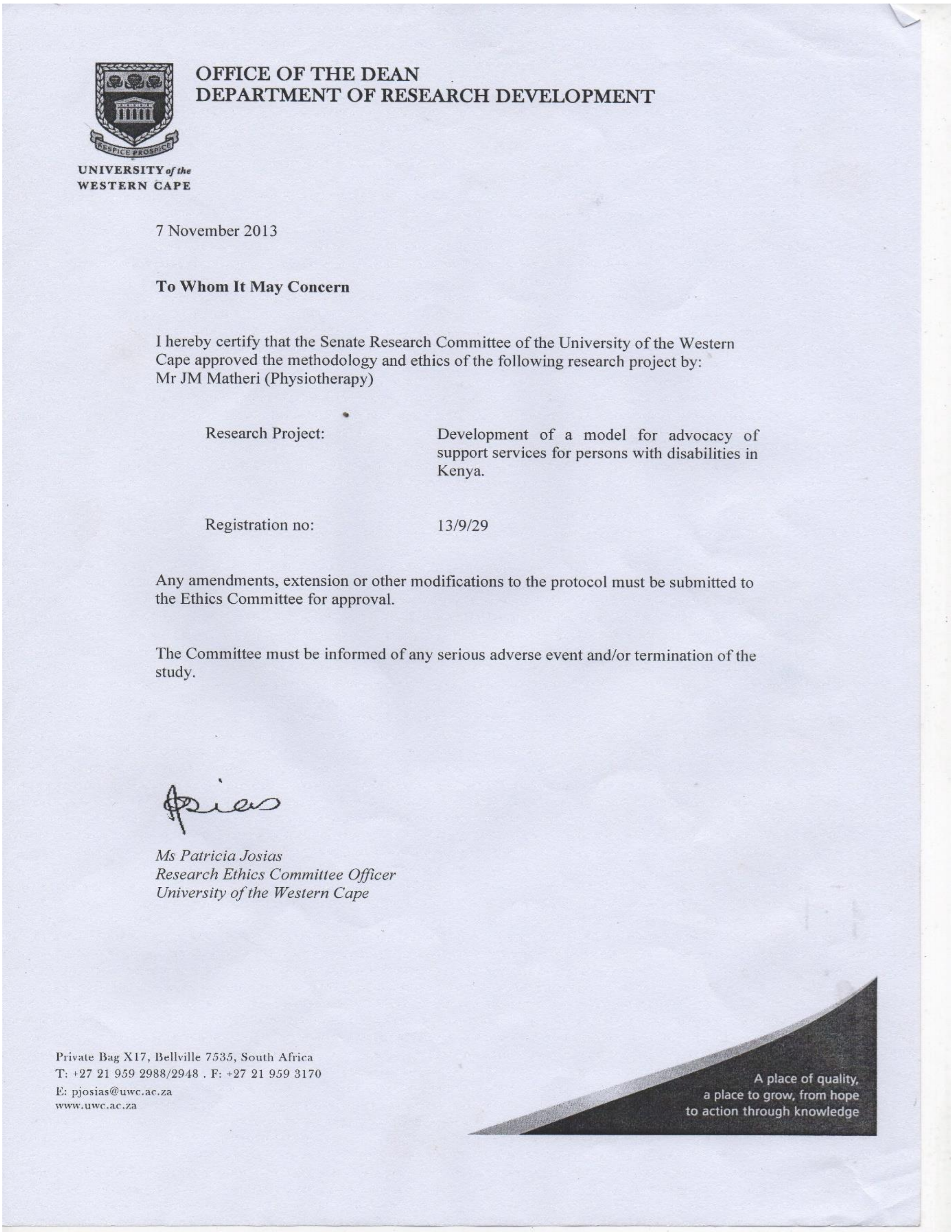
u) Mtazamo wa mhudumu				
v) Njia ya usafiri inayostahili				
w) Ujuzi wa mtoaji huduma				
x) Uzoefu wa kutunza afya ya kibinfsi				
y) Sifa za anayetoa huduma za afya				
z) Vifaa vinavyopatikana katika kituo cha afya				
aa) Usaidizi kutoka kwa jamii				
bb) Ruzuku ya serikali (Malipo kupunguzwa na serikali)				
cc) Hitaji la huduma wa kiaafya				
dd) Mengine: Eleza				
18. Mambo yafuatayo yanaathiri matumizi ya habari ya kiafya *(mfano: kutoka kwa vyombo vya habari,shuleni,kliniki au zahanati,hospitali n.k)*. (ungesema....?)				
l) kutojiweza (ulemavu)				
m) inapatikana (unaweza au hauwezi kupata)				
n) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
o) Kupata huduma unaostahili (mkalimani wa lugha ya ishara ,msaidizi wa kibinafsi)				
p) Uwezo wa kifedha				
q) Mtazamo wa mhudumu				
r) Njia ya usafiri inayostahili				
s) Mtazamo wa mhudumu				
t) Hitaji ya maelezo Zaidi ya kiafya				
u) Mengine: Eleza				
v)				
19. Mambo yafuatayo yanaathiri matumizi ya wauguzi wanaotumia imani *(kidiniau mganga)*. (ungesema ...?)	Nakubali kabisa	nakubali	sikubali	Sikubali kabisa
k) kutojiweza (ulemavu)				
l) inapatikana (unaweza au hauwezi kupata)				
m) Kupatikana kwa huduma kwa urahisi (huduma ina patikana karibu)				
n) Kupata huduma unaostahili (mkalimani wa lugha ya ishara ,msaidizi wa kibinafsi)				
o) Uwezo wa kifedha				
p) Mtazamo wa muuguzi wa imani				
q) Njia ya usafiri inayostahili				
r) Ujuzi wa muuguzi wa imani				
s) Hitaji la kupona				
t) Mengine: Eleza				
20. Mambo yafuatayo yanaathiri matumizi yako ya wasia wa kisheria au huduma za haki (ungesema ...?)				

l) kutojiweza (ulemavu)				
m) inapatikana (unaweza au hauwezi kupata)				
n) Mtazamo wa anayetoa huduma				
o) Uwezo wa kifedha				
p) Kupata huduma unaostahili (mkalimani wa lugha ya ishara ,msaidizi wa kibinafsi)				
q) Unyanaysaji wa kijinsia				
r) kubaguliwa				
s) Ukosefu wa usawa (kunyang’anywa mali na urithi)				
t) Kudhulumiwa kwa kukoseshwa haki za kibinadamu				
u) Hitaji la wasia wa kisheria				
v) Mengine: Eleza				
21. Mambo yafuatayo yanaadhiri matumizi ya mkalimani wa lugha ya ishara (ungesema ...?)				
j) kutojiweza (ulemavu)				
k) inapatikana (unaweza au hauwezi kupata)				
l) kupatikana kwa huduma (Huduma ipo)				
m) Uwezo wa kifedha				
n) Mtazamo wa anayetoa huduma				
o) Ujuzi wa mhudumu				
p) Hitaji la mkalimani wa lugha ya ishara				
q) Mfanyi kazi wa serikali				
r) mengine: tafadhali taja				
22. Mambo yafuatayo yanaadhiri matumizi ya msaidizi binafsi (Mfano: kuoga, kuvaa, kupika,kula,kunywa,kuenda msalani,kuamka,,kuenda kulala, kufanya maamuzi, kushughulikia matumizi ya pesa zako ama kuenda sokoni, kutunza nyumba (unasemaje ...?				
j) kutojiweza (ulemavu)				
k) Uwezo wa kifedha				
l) Ujuzi wa msaidizi binafsi				
m) Kuendelea kuwepo kwa msaiizi binafsi				
n) faragha				
o) hitaji ya kuwa huru				
p) kuweza kupatikana kwa mandhari inayopitika katika maeneo				
q) kulipiwa na serikali				
r) mengine: taja				
23. Mambo yanayoadhiri matumizi ya huduma za kuishi huru ***(mfano.mafunzo ya uwezo wa kuishi huru***,*uwezo wa kutembea katika maeneo ya jamii* **.** (unasemaje…….?)	Nakubali kabisa	nakubali	sikubali	Sikubali kabisa
j) faragha				
k) hitaji la kuwa huru				
l) uwezo wa kutembea katika mazingira				
m) kutojiweza (ulemavu)				

n) ujuzi wa uwezo wa kuishi huru				
o) hitaji la kuishi huru				
p) uwezo wa kifedha				
q) kuhimizwa na jamii				
r) mengine: tafadhali taja				
24. Mambo yafuatayo yanaadhiri matumizi ya vyombo vya huduma ya usafiri (ungesema ...?				
j) kutojiweza (ulemavu)				
k) kupatikana kwa vyombo hitajika				
l) kuwepo kwa vyombo hitajika				
m) uwezo wa kifedha				
n) vyombo visaidizi				
o) mtazamo wa mhudumu				
p) kuwa na vyombo visaidizi vinavyostahili (mkalimani wa lugha ya ishara, msaidizi binafsi)				
q) hitaji la vyombo vya usafiri				
r) mengine: taja				

ASANTE!

APPENDIX 6: UWC Senate Research Committee letter of approval



RESPICE PROSPICE
UNIVERSITY of the
WESTERN CAPE

OFFICE OF THE DEAN
DEPARTMENT OF RESEARCH DEVELOPMENT

7 November 2013

To Whom It May Concern

I hereby certify that the Senate Research Committee of the University of the Western Cape approved the methodology and ethics of the following research project by:
Mr JM Matheri (Physiotherapy)

Research Project:	Development of a model for advocacy of support services for persons with disabilities in Kenya.
Registration no:	13/9/29

Any amendments, extension or other modifications to the protocol must be submitted to the Ethics Committee for approval.

The Committee must be informed of any serious adverse event and/or termination of the study.

Ms Patricia Josias
Research Ethics Committee Officer
University of the Western Cape

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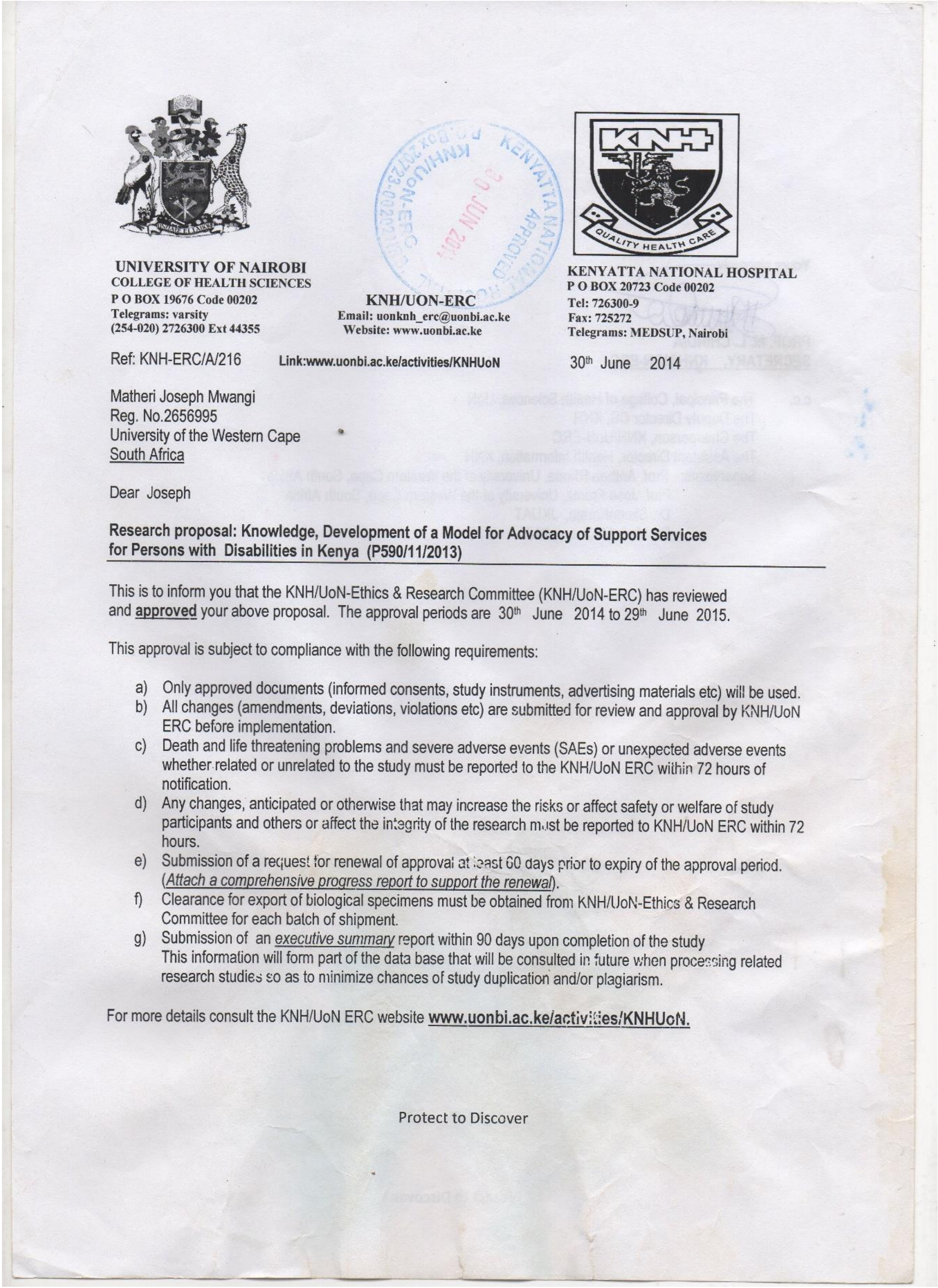
E: pjosias@uwc.ac.za
www.uwc.ac.za

A place of quality,
a place to grow, from hope
to action through knowledge

Appendix 7: University of Nairobi Ethics and Research Committee letter of approval



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH/UON-ERC
Email: uonknh_erc@uonbi.ac.ke
Website: www.uonbi.ac.ke

KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

30 JUN 2014

Ref: KNH-ERC/A/216

Link:www.uonbi.ac.ke/activities/KNHUoN

30th June 2014

Matheri Joseph Mwangi
Reg. No.2656995
University of the Western Cape
South Africa

Dear Joseph

Research proposal: Knowledge, Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya (P590/11/2013)

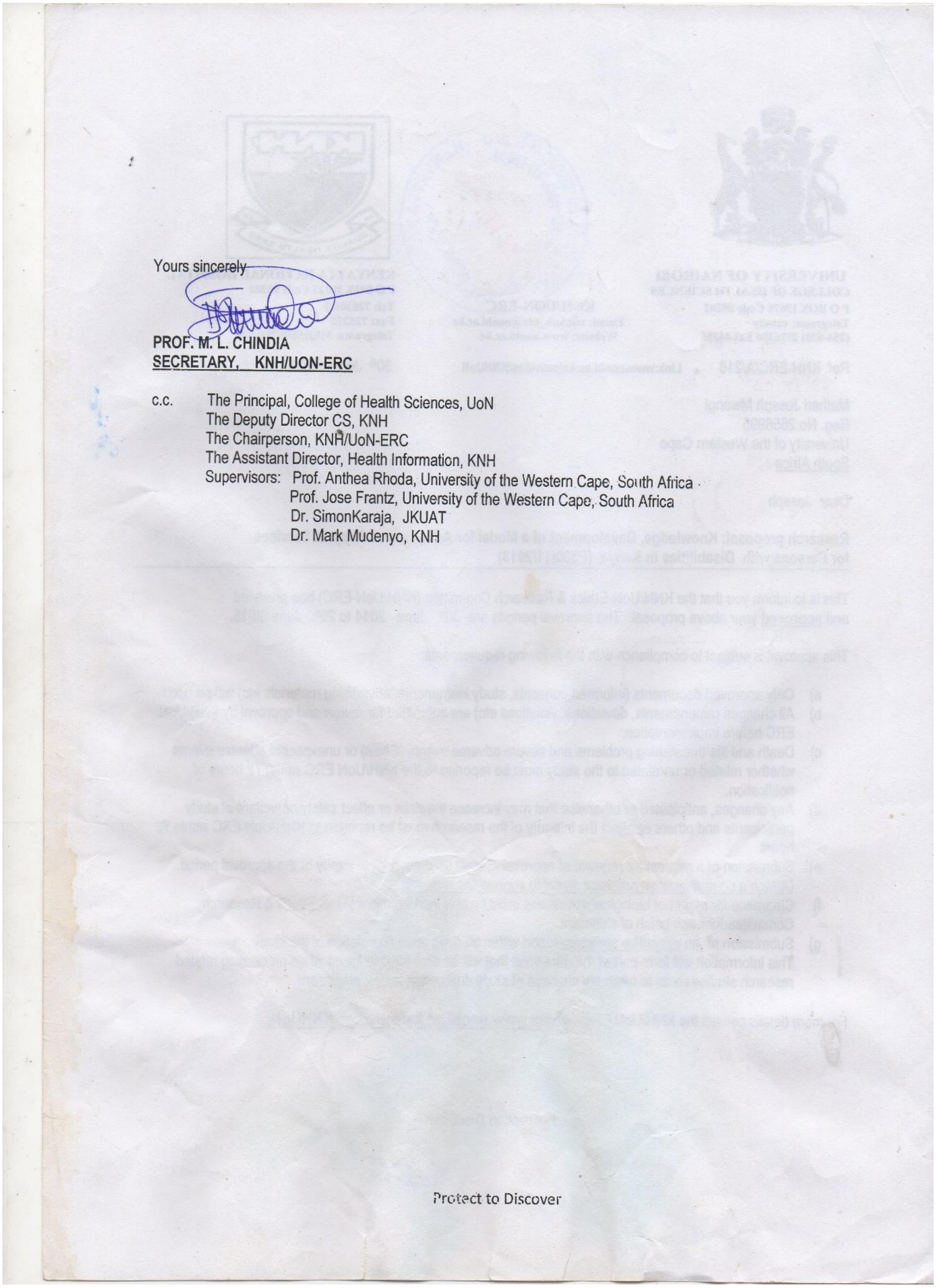
This is to inform you that the KNH/UoN-Ethics & Research Committee (KNH/UoN-ERC) has reviewed and **approved** your above proposal. The approval periods are 30th June 2014 to 29th June 2015.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.
g) Submission of an *executive summary* report within 90 days upon completion of the study
This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN ERC website **www.uonbi.ac.ke/activities/KNHUoN.**

Protect to Discover

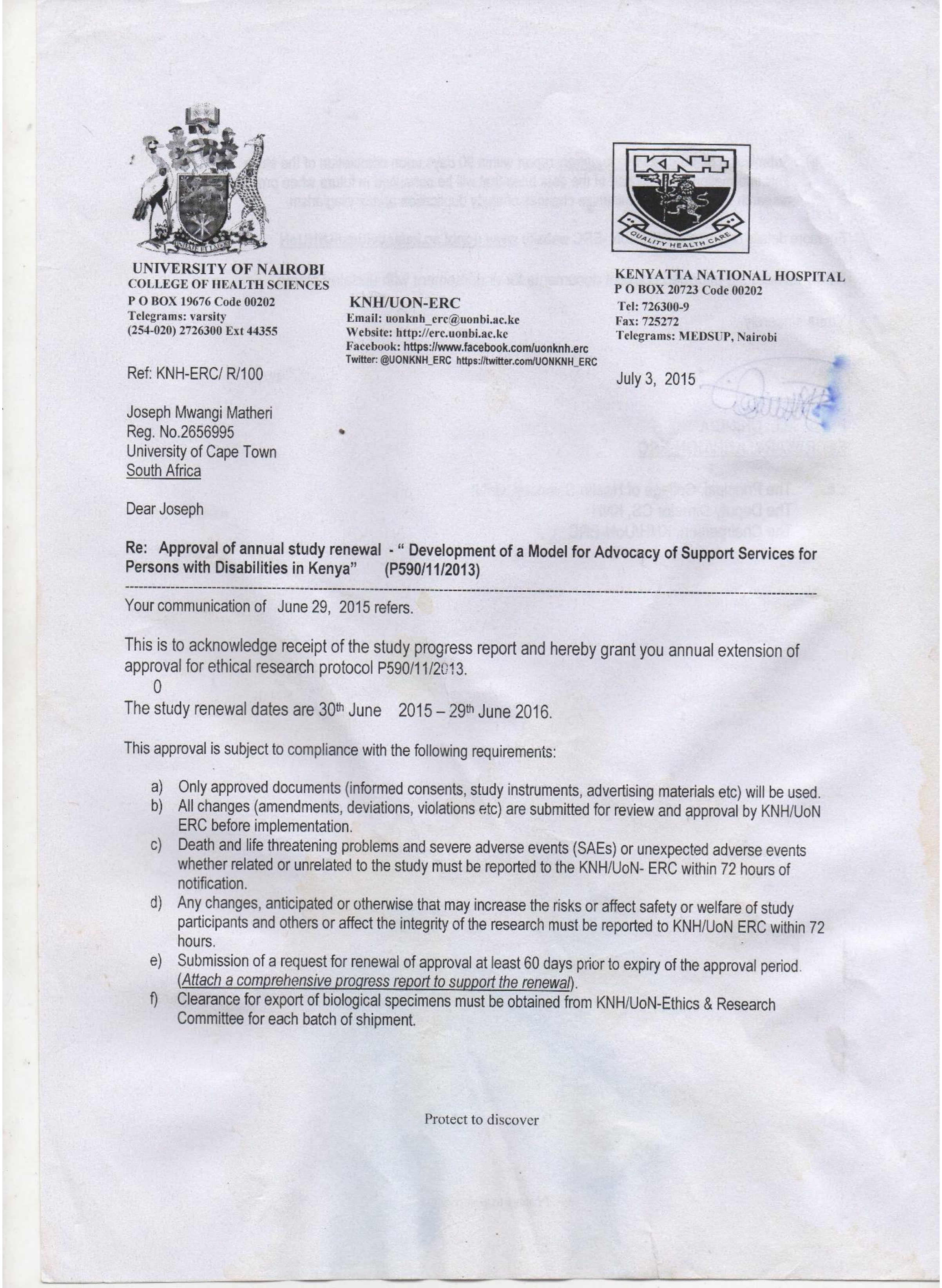


Yours sincerely

PROF. M. L. CHINDIA
SECRETARY, KNH/UON-ERC

c.c. The Principal, College of Health Sciences, UoN
The Deputy Director CS, KNH
The Chairperson, KNH/UoN-ERC
The Assistant Director, Health Information, KNH
Supervisors: Prof. Anthea Rhoda, University of the Western Cape, South Africa
Prof. Jose Frantz, University of the Western Cape, South Africa
Dr. SimonKaraja, JKUAT
Dr. Mark Mudenyo, KNH

APPENDIX 8: University of Nairobi Approval of annual renewal letter



UNIVERSITY OF NAIROBI
COLLEGE OF HEALTH SCIENCES
P O BOX 19676 Code 00202
Telegrams: varsity
(254-020) 2726300 Ext 44355

KNH/UON-ERC
Email: uonknh_erc@uonbi.ac.ke
Website: http://erc.uonbi.ac.ke
Facebook: https://www.facebook.com/uonknh.erc
Twitter: @UONKNH_ERC https://twitter.com/UONKNH_ERC

QUALITY HEALTH CARE
KENYATTA NATIONAL HOSPITAL
P O BOX 20723 Code 00202
Tel: 726300-9
Fax: 725272
Telegrams: MEDSUP, Nairobi

Ref: KNH-ERC/ R/100

July 3, 2015

Joseph Mwangi Matheri
Reg. No.2656995
University of Cape Town
South Africa

Dear Joseph

Re: Approval of annual study renewal - " Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya" (P590/11/2013)

Your communication of June 29, 2015 refers.

This is to acknowledge receipt of the study progress report and hereby grant you annual extension of approval for ethical research protocol P590/11/2013.

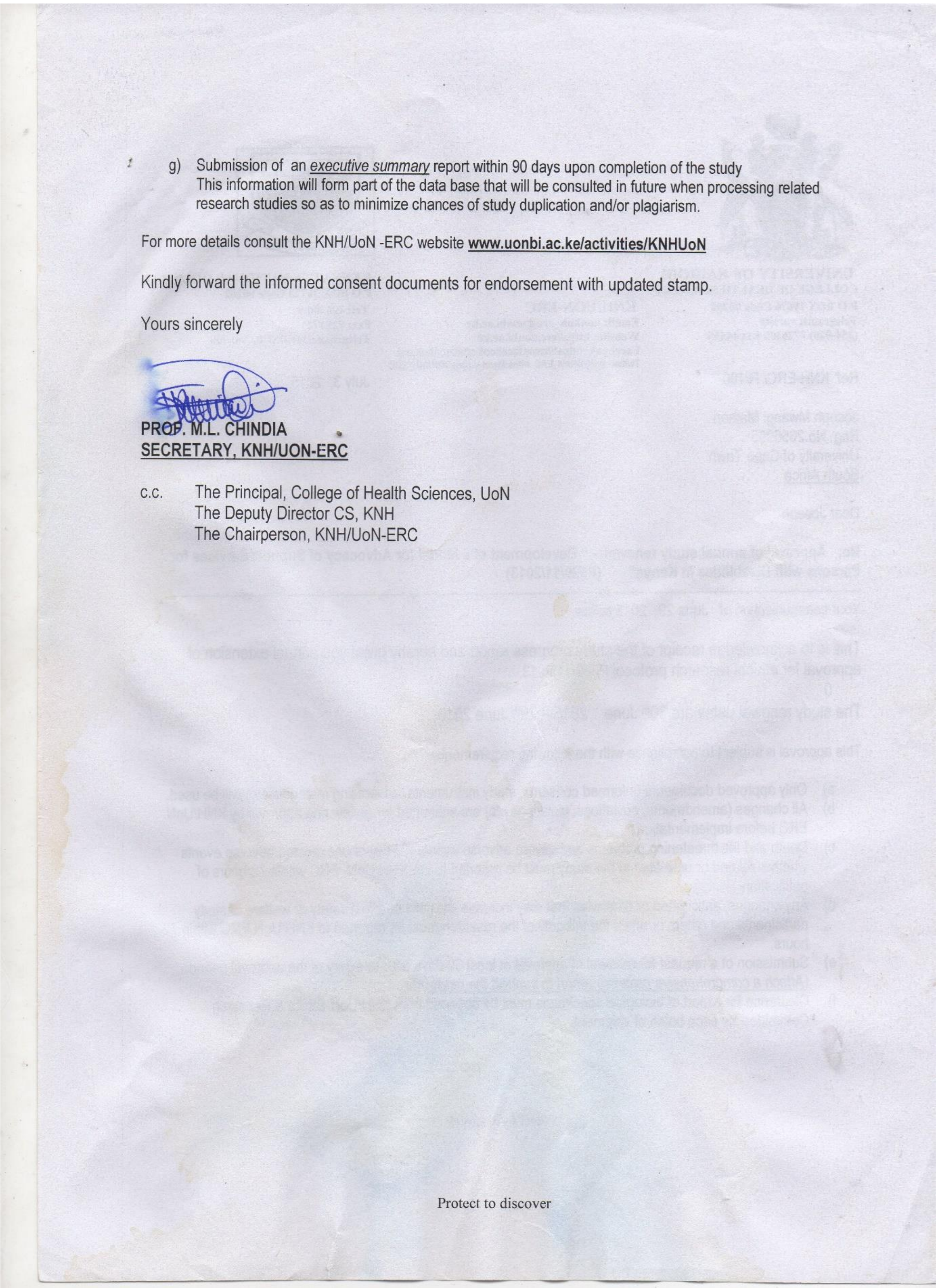
0

The study renewal dates are 30th June 2015 – 29th June 2016.

This approval is subject to compliance with the following requirements:

a) Only approved documents (informed consents, study instruments, advertising materials etc) will be used.
b) All changes (amendments, deviations, violations etc) are submitted for review and approval by KNH/UoN ERC before implementation.
c) Death and life threatening problems and severe adverse events (SAEs) or unexpected adverse events whether related or unrelated to the study must be reported to the KNH/UoN- ERC within 72 hours of notification.
d) Any changes, anticipated or otherwise that may increase the risks or affect safety or welfare of study participants and others or affect the integrity of the research must be reported to KNH/UoN ERC within 72 hours.
e) Submission of a request for renewal of approval at least 60 days prior to expiry of the approval period. (*Attach a comprehensive progress report to support the renewal*).
f) Clearance for export of biological specimens must be obtained from KNH/UoN-Ethics & Research Committee for each batch of shipment.

Protect to discover



g) Submission of an *executive summary* report within 90 days upon completion of the study
This information will form part of the data base that will be consulted in future when processing related research studies so as to minimize chances of study duplication and/or plagiarism.

For more details consult the KNH/UoN -ERC website **www.uonbi.ac.ke/activities/KNHUoN**

Kindly forward the informed consent documents for endorsement with updated stamp.

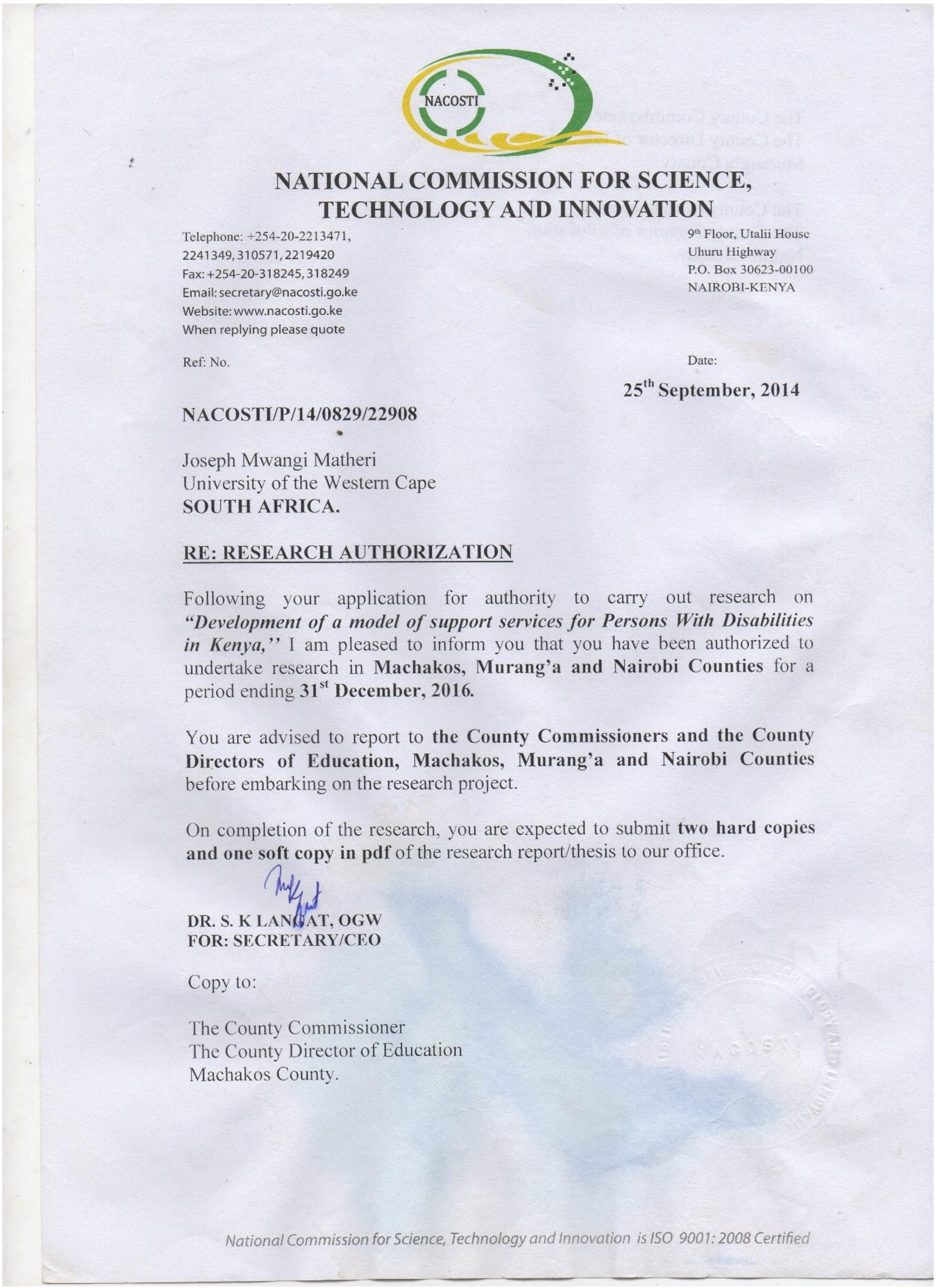
Yours sincerely

PROF. M.L. CHINDIA
SECRETARY, KNH/UON-ERC

c.c. The Principal, College of Health Sciences, UoN
The Deputy Director CS, KNH
The Chairperson, KNH/UoN-ERC

Protect to discover

APPENDIX 9: National Commission for Science, Technology and Innovation Letter of authorization to conduct research



NACOSTI

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

NACOSTI/P/14/0829/22908

Date:

25th September, 2014

Joseph Mwangi Matheri
University of the Western Cape
SOUTH AFRICA.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Development of a model of support services for Persons With Disabilities in Kenya,''*** I am pleased to inform you that you have been authorized to undertake research in **Machakos, Murang'a and Nairobi Counties** for a period ending **31st December, 2016.**

You are advised to report to **the County Commissioners and the County Directors of Education, Machakos, Murang'a and Nairobi Counties** before embarking on the research project.

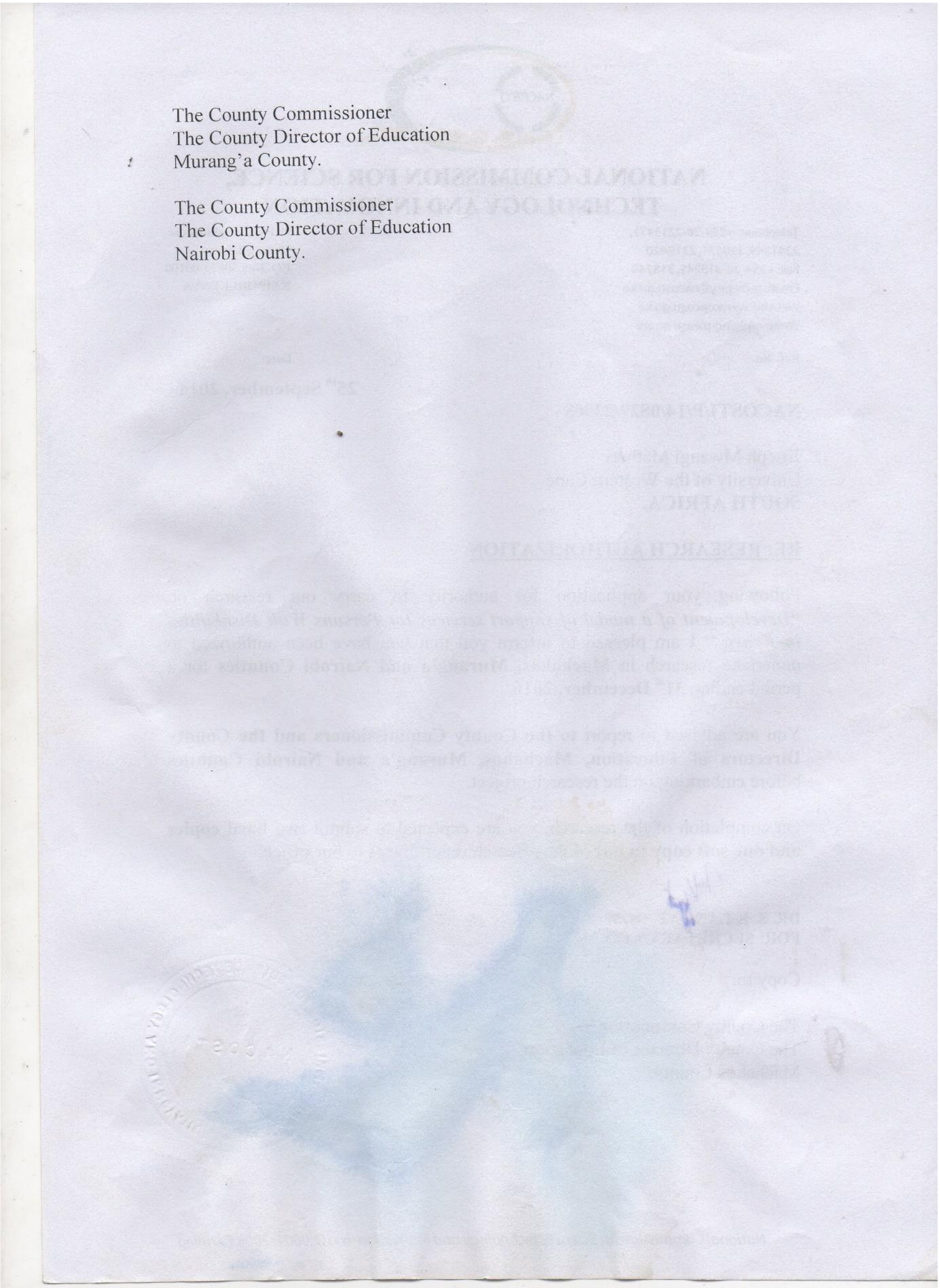
On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. S. K LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Machakos County.

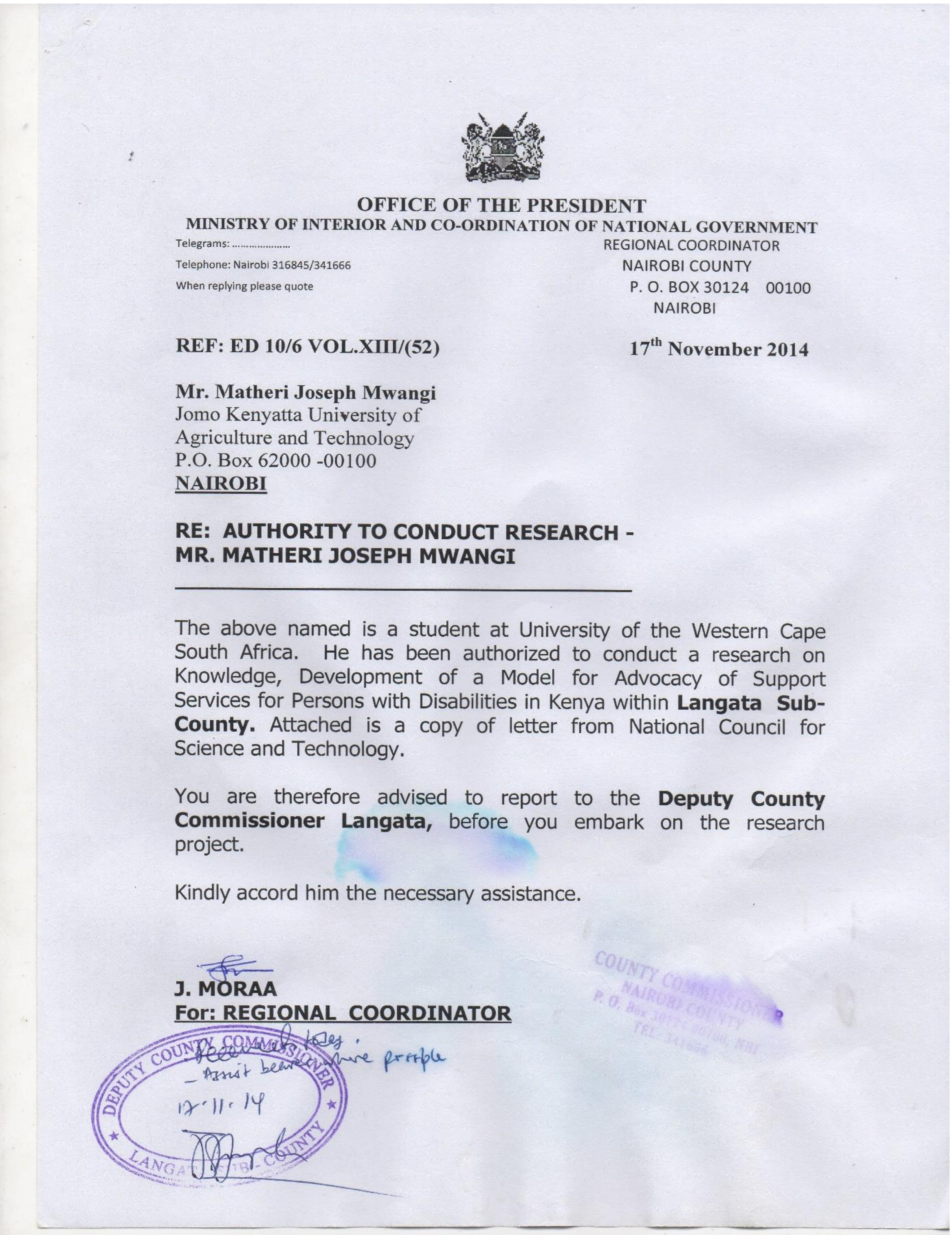
National Commission for Science, Technology and Innovation is ISO 9001: 2008 Certified



The County Commissioner
The County Director of Education
Murang'a County.

The County Commissioner
The County Director of Education
Nairobi County.

APPENDIX 10: Langata Sub-County Letter of authorisation to conduct research



OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
Telegrams: ………………
Telephone: Nairobi 316845/341666
When replying please quote

REGIONAL COORDINATOR
NAIROBI COUNTY
P. O. BOX 30124 00100
NAIROBI

REF: ED 10/6 VOL.XIII/(52)

17th November 2014

Mr. Matheri Joseph Mwangi
Jomo Kenyatta University of
Agriculture and Technology
P.O. Box 62000 -00100
NAIROBI

RE: AUTHORITY TO CONDUCT RESEARCH -
MR. MATHERI JOSEPH MWANGI

The above named is a student at University of the Western Cape South Africa. He has been authorized to conduct a research on Knowledge, Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya within **Langata Sub-County.** Attached is a copy of letter from National Council for Science and Technology.

You are therefore advised to report to the **Deputy County Commissioner Langata,** before you embark on the research project.

Kindly accord him the necessary assistance.

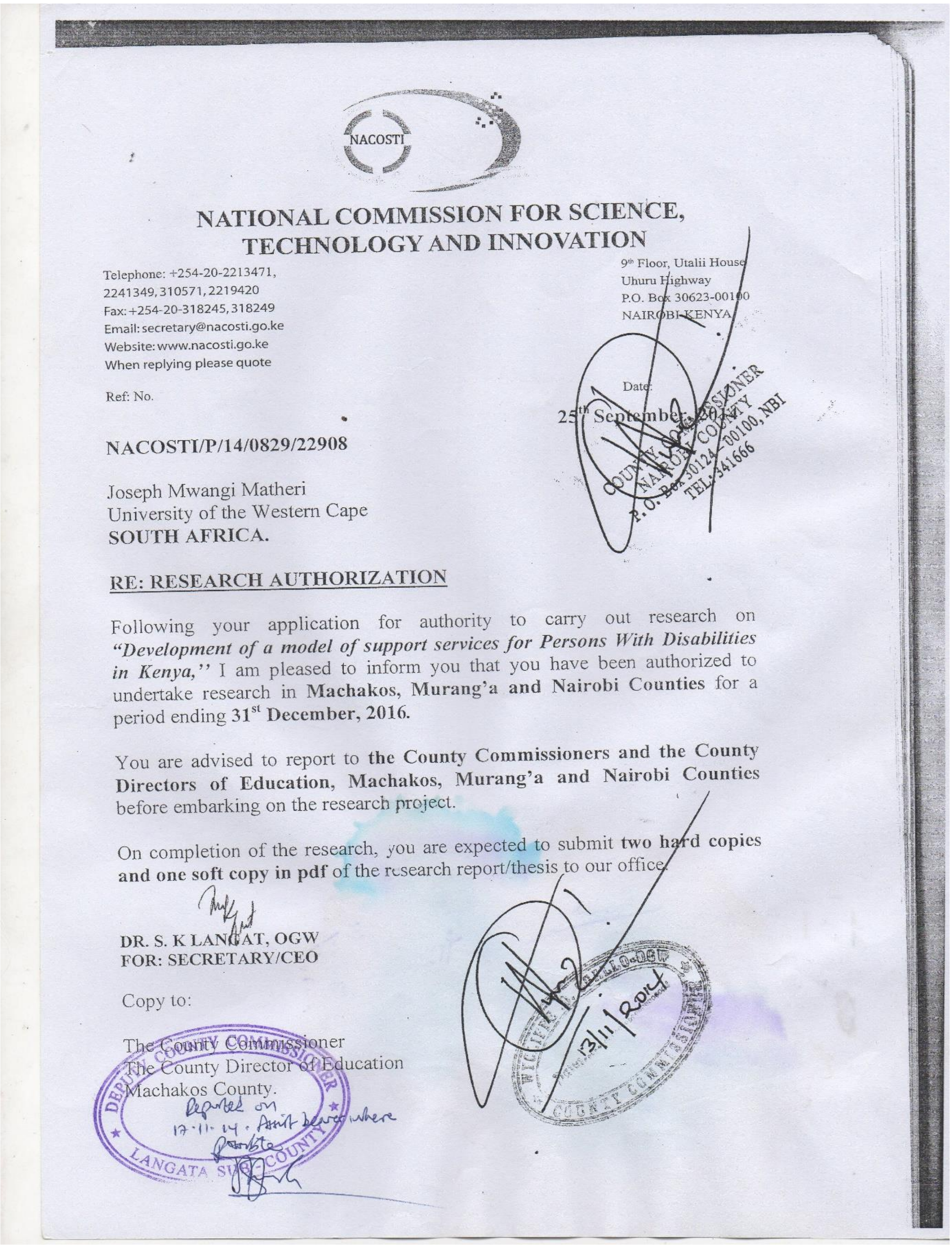
J. MORAA
For: REGIONAL COORDINATOR

DEPUTY COUNTY COMMISSIONER
LANGATA SUB-COUNTY

Received [illegible].
– Assist [illegible] people
17·11·14

COUNTY COMMISSIONER
NAIROBI COUNTY
P. O. Box 30124-00100, NBI
TEL. 341666

APPENDIX 11: National Commission for Science, Technology and Innovation Letter



NACOSTI

NATIONAL COMMISSION FOR SCIENCE,
TECHNOLOGY AND INNOVATION

Telephone: +254-20-2213471,
2241349, 310571, 2219420
Fax: +254-20-318245, 318249
Email: secretary@nacosti.go.ke
Website: www.nacosti.go.ke
When replying please quote

9th Floor, Utalii House
Uhuru Highway
P.O. Box 30623-00100
NAIROBI-KENYA

Ref: No.

Date:

NACOSTI/P/14/0829/22908

25th September, 2014

COUNTY COMMISSIONER
NAIROBI COUNTY
P.O. Box 30124-00100, NBI
TEL: 341666

Joseph Mwangi Matheri
University of the Western Cape
SOUTH AFRICA.

RE: RESEARCH AUTHORIZATION

Following your application for authority to carry out research on ***"Development of a model of support services for Persons With Disabilities in Kenya,"*** I am pleased to inform you that you have been authorized to undertake research in **Machakos, Murang'a and Nairobi Counties** for a period ending **31st December, 2016.**

You are advised to report to **the County Commissioners and the County Directors of Education, Machakos, Murang'a and Nairobi Counties** before embarking on the research project.

On completion of the research, you are expected to submit **two hard copies and one soft copy in pdf** of the research report/thesis to our office.

DR. S. K LANGAT, OGW
FOR: SECRETARY/CEO

Copy to:

The County Commissioner
The County Director of Education
Machakos County.

DEPUTY COUNTY COMMISSIONER
LANGATA SUB-COUNTY

Reported on
17·11·14 · Assist bearer where possible

WYCLIFFE [illegible] OGW
COUNTY COMMISSIONER
13/11/2014

APPENDIX 12: Murang'a County Letter of authorisation to conduct research

REPUBLIC OF KENYA

THE PRESIDENCY
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT

Telephone: 060-2030467
Email: ccmuranga@gmail.com

When replying please quote

COUNTY COMMISSIONER
MURANG'A COUNTY
P. O. BOX 7-10200
MURANG'A

REF.NO.PUB.24/11/VOL.1/82

13th November, 2014

Joseph Mwangi Matheri,
University of the Western Cape,
SOUTH AFRICA.

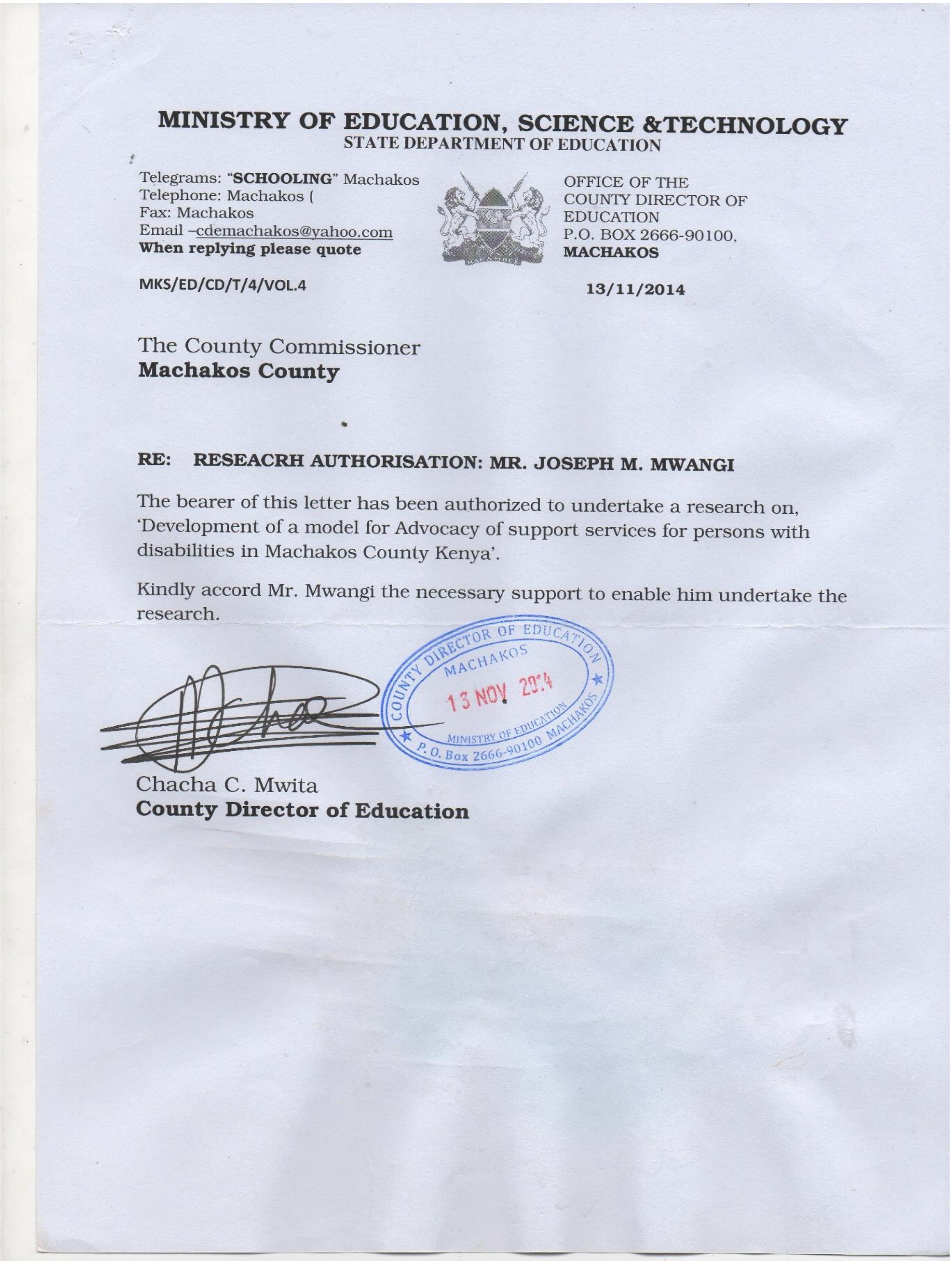
RE: RESEARCH AUTHORIZATION

In reference to a letter NACOSTI/14/0829/22908 dated 25th September, 2014 from the National Commission for Science, Technology and Innovation regarding the above subject, You are hereby authorized to carry out research on ***"Development of a model of support services for Persons with Disabilities "*** within Murang'a County for a period ending 31st December, 2016

COUNTY COMMISSIONER
MURANG'A COUNTY

J. K. Kuria
For: **COUNTY COMMISSIONER**
MURANG'A COUNTY

APPENDIX 13: Letter from the Ministry of Education, Science and Technology to Machakos County



MINISTRY OF EDUCATION, SCIENCE &TECHNOLOGY
STATE DEPARTMENT OF EDUCATION

Telegrams: "**SCHOOLING**" Machakos
Telephone: Machakos (
Fax: Machakos
Email –cdemachakos@yahoo.com
When replying please quote

OFFICE OF THE
COUNTY DIRECTOR OF
EDUCATION
P.O. BOX 2666-90100,
MACHAKOS

MKS/ED/CD/T/4/VOL.4

13/11/2014

The County Commissioner
Machakos County

RE: RESEACRH AUTHORISATION: MR. JOSEPH M. MWANGI

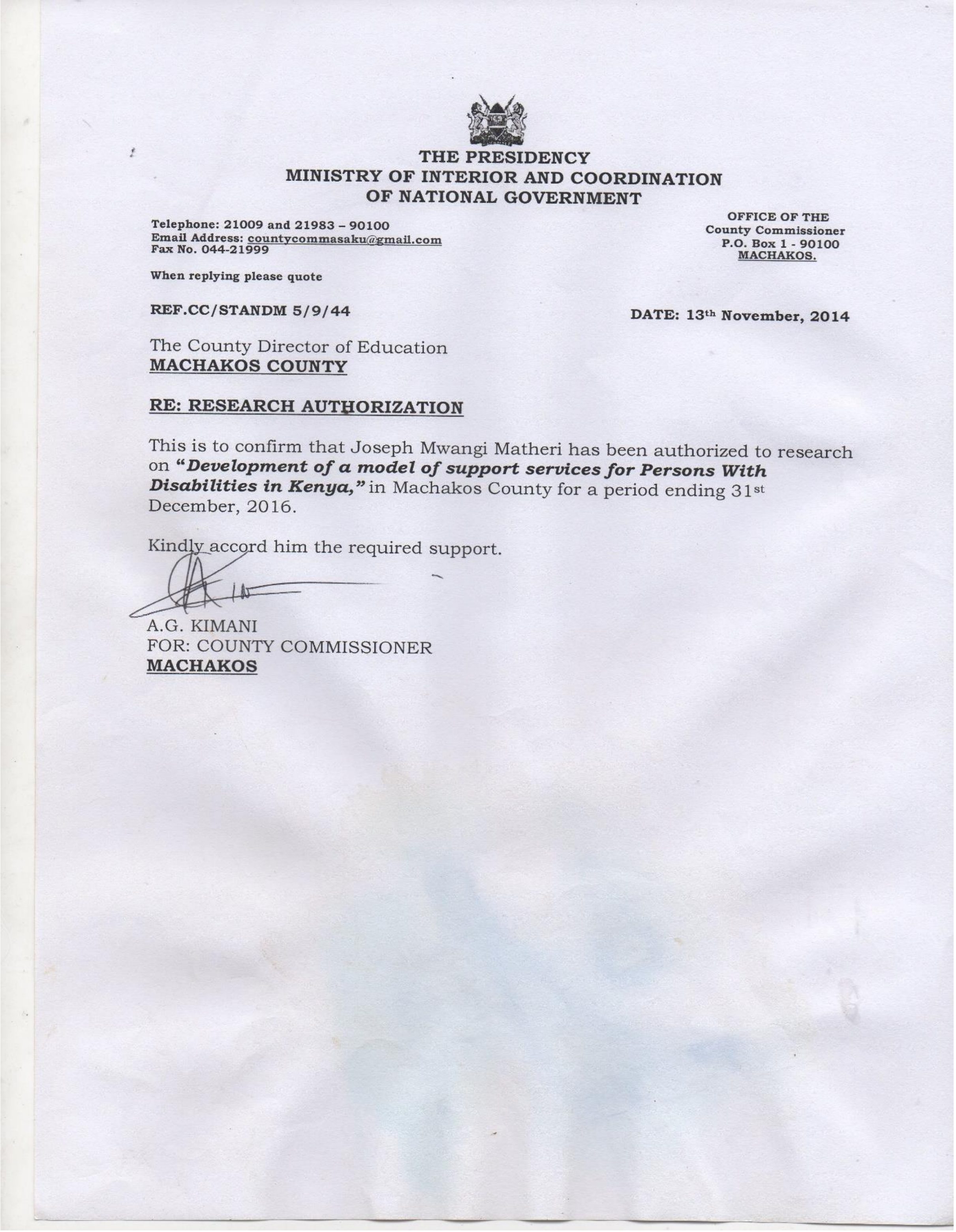
The bearer of this letter has been authorized to undertake a research on, 'Development of a model for Advocacy of support services for persons with disabilities in Machakos County Kenya'.

Kindly accord Mr. Mwangi the necessary support to enable him undertake the research.

13 NOV 2014

Chacha C. Mwita
County Director of Education

APPENDIX 14: Machakos County Letter of authorisation to conduct research



THE PRESIDENCY
MINISTRY OF INTERIOR AND COORDINATION
OF NATIONAL GOVERNMENT

Telephone: 21009 and 21983 – 90100
Email Address: countycommasaku@gmail.com
Fax No. 044-21999

OFFICE OF THE
County Commissioner
P.O. Box 1 - 90100
MACHAKOS.

When replying please quote

REF.CC/STANDM 5/9/44

DATE: 13th November, 2014

The County Director of Education
MACHAKOS COUNTY

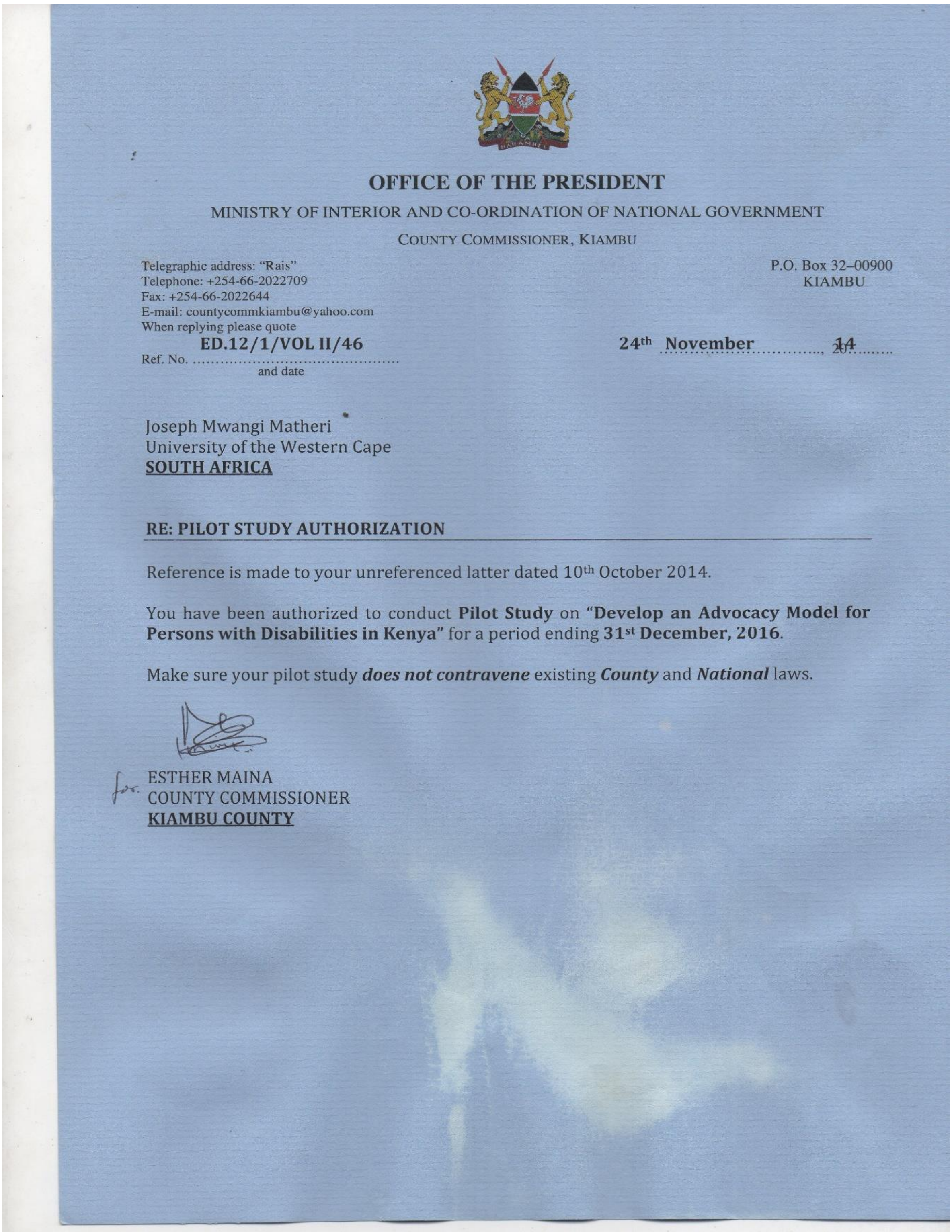
RE: RESEARCH AUTHORIZATION

This is to confirm that Joseph Mwangi Matheri has been authorized to research on ***"Development of a model of support services for Persons With Disabilities in Kenya,"*** in Machakos County for a period ending 31st December, 2016.

Kindly accord him the required support.

A.G. KIMANI
FOR: COUNTY COMMISSIONER
MACHAKOS

APPENDIX 15: Kiambu County Commissioner Pilot Study Authorisation



OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND CO-ORDINATION OF NATIONAL GOVERNMENT
COUNTY COMMISSIONER, KIAMBU

Telegraphic address: "Rais"
Telephone: +254-66-2022709
Fax: +254-66-2022644
E-mail: countycommkiambu@yahoo.com

P.O. Box 32–00900
KIAMBU

When replying please quote
Ref. No. **ED.12/1/VOL II/46**
and date

24th November, 20**14**

Joseph Mwangi Matheri
University of the Western Cape
SOUTH AFRICA

RE: PILOT STUDY AUTHORIZATION

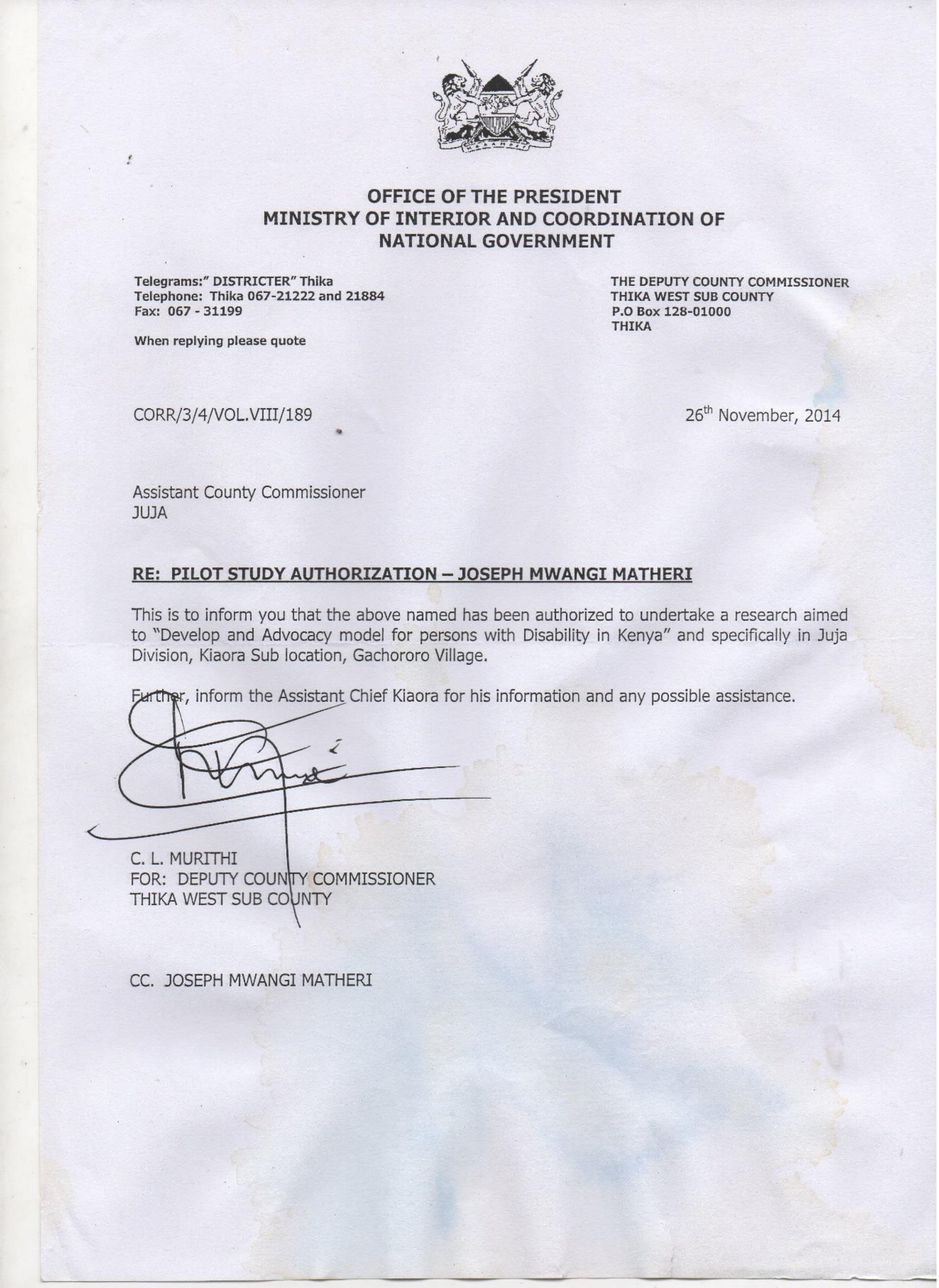
Reference is made to your unreferenced latter dated 10th October 2014.

You have been authorized to conduct **Pilot Study** on **"Develop an Advocacy Model for Persons with Disabilities in Kenya"** for a period ending **31st December, 2016**.

Make sure your pilot study ***does not contravene*** existing ***County*** and ***National*** laws.

for. ESTHER MAINA
COUNTY COMMISSIONER
KIAMBU COUNTY

APPENDIX 16: Thika West Sub-County Pilot Study Authorisation



OFFICE OF THE PRESIDENT
MINISTRY OF INTERIOR AND COORDINATION OF
NATIONAL GOVERNMENT

Telegrams:" DISTRICTER" Thika
Telephone: Thika 067-21222 and 21884
Fax: 067 - 31199

When replying please quote

THE DEPUTY COUNTY COMMISSIONER
THIKA WEST SUB COUNTY
P.O Box 128-01000
THIKA

CORR/3/4/VOL.VIII/189

26th November, 2014

Assistant County Commissioner
JUJA

RE: PILOT STUDY AUTHORIZATION – JOSEPH MWANGI MATHERI

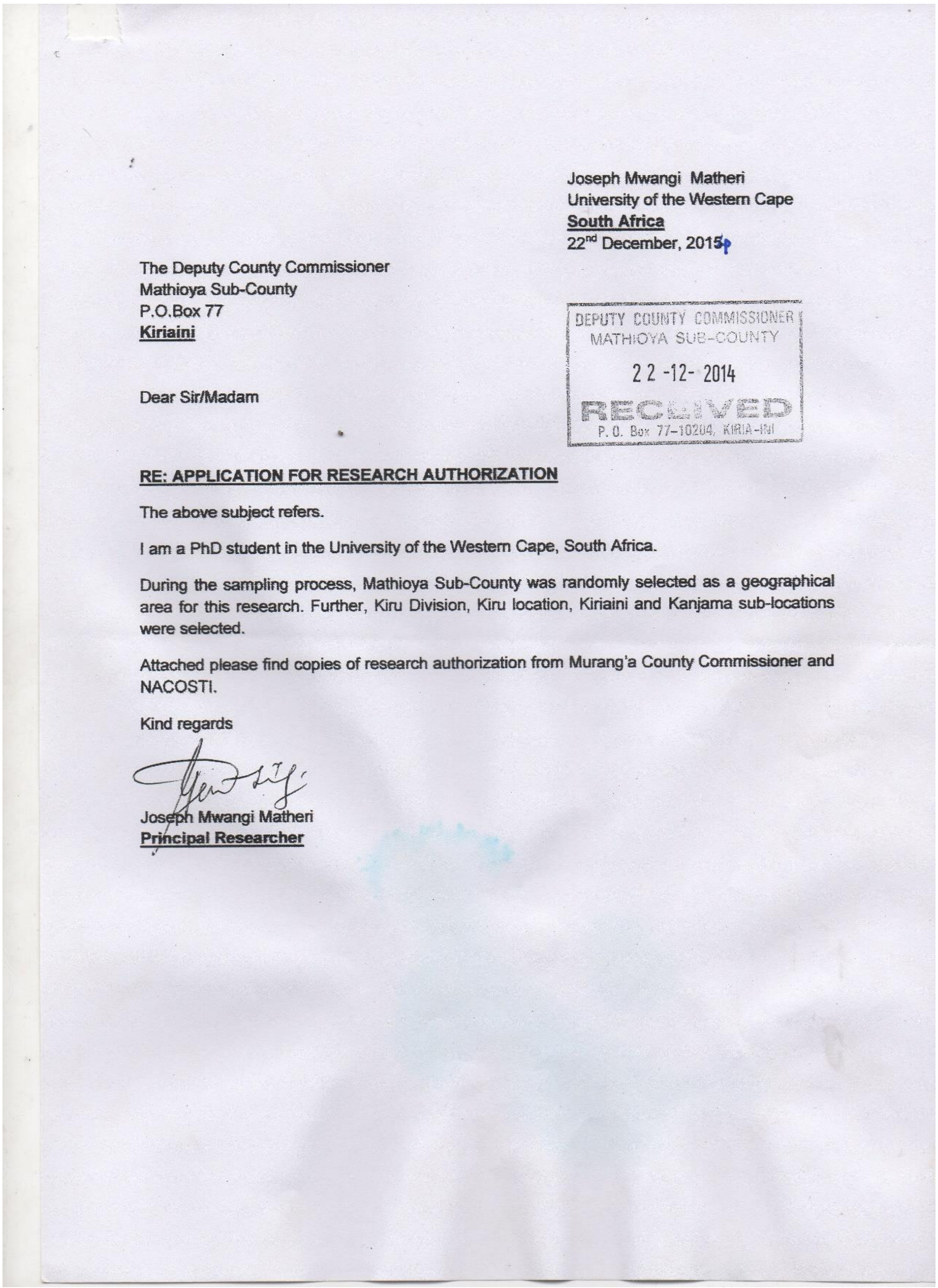
This is to inform you that the above named has been authorized to undertake a research aimed to "Develop and Advocacy model for persons with Disability in Kenya" and specifically in Juja Division, Kiaora Sub location, Gachororo Village.

Further, inform the Assistant Chief Kiaora for his information and any possible assistance.

C. L. MURITHI
FOR: DEPUTY COUNTY COMMISSIONER
THIKA WEST SUB COUNTY

CC. JOSEPH MWANGI MATHERI

APPENDIX 17: Application for research authorisation in Mathioya Sub-County



Joseph Mwangi Matheri
University of the Western Cape
South Africa
22nd December, 2015 4

The Deputy County Commissioner
Mathioya Sub-County
P.O.Box 77
Kiriaini

DEPUTY COUNTY COMMISSIONER
MATHIOYA SUB-COUNTY
22 -12- 2014
RECEIVED
P. O. Box 77–10204, KIRIA-INI

Dear Sir/Madam

RE: APPLICATION FOR RESEARCH AUTHORIZATION

The above subject refers.

I am a PhD student in the University of the Western Cape, South Africa.

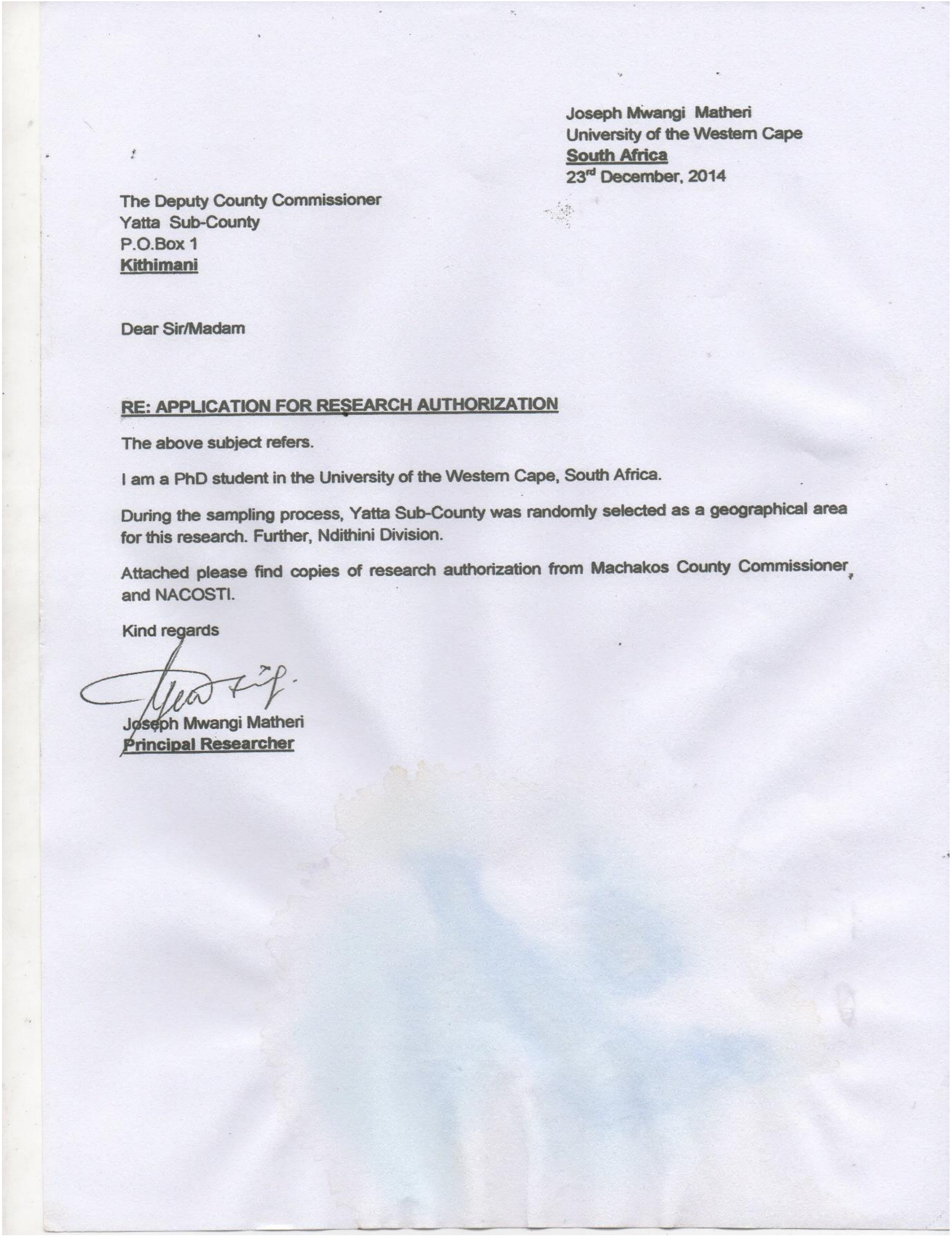
During the sampling process, Mathioya Sub-County was randomly selected as a geographical area for this research. Further, Kiru Division, Kiru location, Kiriaini and Kanjama sub-locations were selected.

Attached please find copies of research authorization from Murang'a County Commissioner and NACOSTI.

Kind regards

Joseph Mwangi Matheri
Principal Researcher

APPENDIX 18: Application for research authorisation in Yatta Sub-Co



Joseph Mwangi Matheri
University of the Western Cape
South Africa
23rd December, 2014

The Deputy County Commissioner
Yatta Sub-County
P.O.Box 1
Kithimani

Dear Sir/Madam

RE: APPLICATION FOR RESEARCH AUTHORIZATION

The above subject refers.

I am a PhD student in the University of the Western Cape, South Africa.

During the sampling process, Yatta Sub-County was randomly selected as a geographical area for this research. Further, Ndithini Division.

Attached please find copies of research authorization from Machakos County Commissioner, and NACOSTI.

Kind regards

Joseph Mwangi Matheri
Principal Researcher

APPENDIX 19A(i): Information Sheet

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

INFORMATION SHEET

Dear Participant,
*I, am a postgraduate student doing a PhD degree in the department of physiotherapy at the University of the Western Cape. As part of the study I'm expected to conduct research. The title of my research is "***Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya**." Information gathered in this study will be important in planning a holistic approach to promoting access of persons with disabilities support services. This shall be helpful to persons with disabilities and their families in the country.

If you agree to participate in this study I will consult with you to arrange a suitable time and day for the collection of the relevant information. Participation in the study will involve filling a questionnaire taking at least 20 minutes. The information you give will be treated with utmost respect and confidentiality.

This provides you with an opportunity to appreciate and contribute to scientific research that may provide information about disability experience and support services for Persons with disabilities that could be useful to healthcare workers and human rights advocacy groups among others.

There is absolutely minimal risk to you for participating in this study. It is expected that you will experience minimal discomfort or stress from the questions asked in the interview. You don't have to respond to every question or provide information you do not want to provide and can withdraw from participating at any time. Referral to a professional counselor in case you suffer unexpected negative experiences will be made.

Occasionally, a follow-up interview might be necessary to clarify some information. The researcher could request your participation for the follow-up interview before a lapse of two years.

All participants will be identified using codes and the information kept in secure filling cabinet or safe so as to safeguard their anonymity and all the individuals directly or indirectly referred to in the questionnaire or audio tapes. In the future the researcher will destroy all code lists.

If you have any questions or concerns before or after the study, you may contact me through phone or email given hereunder.

Contact numbers of researcher: **Joseph Mwangi Matheri**
Phone: +254 725 761 845; Email: 2656995@uwc.ac.za or mmatheri@gmail.com

Should you have any questions regarding this study and your rights as a research participant or if you wish to report any problems you have experienced related to the study, please contact:

Head of Physiotherapy Department: Supervisor - Prof Anthea Rhoda email: arhoda@uwc.ac.za **OR**
Dean of the Faculty of Community and Health Sciences:
University of the Western Cape, Private Bag X17, Bellville 7535
This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee. **OR**
Kenyatta National Hospital/University of Nairobi – Ethical Research Committee Secretary
Email: uonknh_erc@unobi.ac.ke

APPENDIX 19A(ii): Consent Form *(participant aged under 18 years)*

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

I...the guardian of ....agree that my son/daughter participates in the study being conducted by Mr Joseph Mwangi Matheri a post-graduate student doing doctor of philosophy degree in the department of physiotherapy at the University of the Western Cape, South Africa. He has informed me that this is a study for his doctor of philosophy degree designed to gather information that will assist in the ***"development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya."***

I understand that:

— Participation is voluntary and will involve interview taking at least 20 minutes mutually as agreed upon by me and the researcher.

— The benefits I may expect from the study are; (a) an appreciation of scientific research and (b) an opportunity to contribute to scientific research that may provide information about support services for Persons with disabilities that could be useful to healthcare workers and providers and human rights advocacy groups among others.

— The researcher does not foresee any risks to my son/daughter participating in this study and it is expected that he/she will experience minimal discomfort or stress from the questions asked.

— He/she does not have to respond to every question or provide information he/she does not want to provide and can withdraw from participating at any time.
— The researcher may contact me within two years to request for clarification of responses my son/daughter will give in the interview.

— Codes identifying participants will be kept in secure filling cabinet or safe so as to safeguard the anonymity of my son/daughter and all the individuals directly or indirectly referred to in the questionnaire(s). I understand that in the future the researcher will destroy all codes lists.

— Only people associated with the study will see/listen to his/her responses. To protect privacy pseudonyms will be assigned for publications and presentations, unless written consent is provided. His/her responses will not be associated with his/her name: instead his/ her name will be converted to a code number when the researcher stores the data.
— The researcher will answer any other questions about the research either before or after the research. If I have other questions or concerns I can address them to the researcher by email or phone.

Contact numbers of researcher: Joseph Mwangi Matheri
Phone: +254 725 761 845; Email: 2656995@uwc.ac.za or mmatheri@gmail.com

Head of Physiotherapy Department: Supervisor - Prof Anthea Rhoda email: arhoda@uwc.ac.za **OR**
Dean of the Faculty of Community and Health Sciences:
University of the Western Cape, Private Bag X17, Bellville 7535
This research has been approved by the University of the Western Cape’s Senate Research Committee and Ethics Committee. **OR**
Kenyatta National Hospital/University of Nairobi – Ethical Research Committee Secretary
Email: uonknh_erc@unobi.ac.ke

Signature: Witness:

I Agree/decline; to participate in this study (videotaped/audiotaped] during my participation in this study and I understand I may withdraw from participating at any time

APPENDIX 19A(iii): Consent Form *(participant aged over 18 years)*

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

I...agree to participate in the study being conducted by Mr Joseph Mwangi Matheri a post-graduate student doing doctor of philosophy degree in the department of physiotherapy at the University of the Western Cape, South Africa. He has informed me that this is a study for his doctor of philosophy degree designed to gather information that will assist in the "**Development of a Model for Advocacy of Support Services for Persons with Disabilities in *Kenya*.**"

I understand that:

- Participation is voluntary and will involve interview taking at least 20 minutes mutually as agreed upon by me and the researcher.
- The benefits I may expect from the study are; (a) an appreciation of scientific research and (b) an opportunity to contribute to scientific research that may provide information about support services for Persons with disabilities that could be useful to healthcare workers and human rights advocacy groups among others.
- The researcher does not foresee any risks to me participating in this study and it is expected that I will experience minimal discomfort or stress from the questions asked.
- I do not have to respond to every question or provide information I do not want to provide and I can withdraw from participating at any time.
- The researcher may contact me within two years to request for clarification of responses I will give in the interview.
- Codes identifying participants will be kept in secure filling cabinet or safe so as to safeguard the anonymity of myself and all the individuals directly or indirectly referred to in the questionnaire(s). I understand that in the future the researcher will destroy all codes lists.
- Only people associated with the study will see/listen to my responses. To protect privacy pseudonyms will be assigned for publications and presentations, unless written consent is provided. My responses will not be associated with my name: instead my name will be converted to a code number when the researcher stores the data.
- The researcher will answer any other questions about the research either before or after the research. If I have other questions or concerns I can address them to the researcher by email or phone.

Contact numbers of researcher: Joseph Mwangi Matheri
Phone: +254 725 761 845; Email: 2656995@uwc.ac.za or mmatheri@gmail.com

Head of Physiotherapy Department: Supervisor - Prof Anthea Rhoda email:
arhoda@uwc.ac.za **OR**
Dean of the Faculty of Community and Health Sciences:
University of the Western Cape, Private Bag X17, Bellville 7535
This research has been approved by the University of the Western Cape's Senate Research Committee and Ethics Committee. **OR**
Kenyatta National Hospital/University of Nairobi – Ethical Research Committee Secretary
Email: uonknh_erc@unobi.ac.ke

Signature: Witness:

I Agree/decline; to participate in this study (videotaped/audiotaped] during my participation in this study and I understand I may withdraw from participating at any time

APPENDIX 19B(i): Information Sheet – Swahili version

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

Ndugu mshiriki

Mimi, ni mwanafunzi anae somea shahada ya PhD katika idara ya tiba ya mwili katika Chuo Kikuu cha Western Cape. Kama sehemu ya masomo hayo ninatarajiwa kufanya utafiti. Kickwa cha utafiti wangu ni **' Kunda njia za Utetezi wa huduma zifaazo kwa Watu wenye Ulemavu nchini Kenya.**' Kwa hiyo, ili kukamilisha lengo hili, moja ya malengo muhimu ni kuamua msaada watu-na-ulemavu maalum mahitaji ya huduma na matumizi katika Kenya. Hii inahitaji

Hii inahitaji majadiliano katika kundi kuhusu huduma na msaada kwa watu wenye ulemavu. Katika mazingira kwa njia ya utafiti, maelezo yatakayotolewa itanaswa sauti kama kumbukumbu kwa kutumia mkanda na kuandikwa juu ya karatasi. Taarifa zitakazokusanywa katika utafiti huu zitakuwa muhimu katika mipango ya mfumo wa jumla wa kukuza upatikanaji wa huduma na misaada ya watu wenye ulemavu. Napia katika kusaidia watu wenye ulemavu na familia zao katika nchi ya Kenya kwa muda mrefu.

Kama unakubali kushiriki katika utafiti huu mimi nitashauriana na wewe kupanga muda muafaka na siku kwa minajili ya ukusanyaji wa habari husika. Kushiriki katika utafiti huu utahusisha kushiriki kikamilifu katika majadiliano ya kundi itakayochukua angalau dakika tisisni (90). Habari utakazotoa zitawekwa kama siri na kwa heshima kubwa.

Hii inakupa fursa kubwa kuchangia utafiti wa kisayansi ambayo inaweza kutoa taarifa juu ya changamoto zinazowakabili walemavu za kihuduma na misaada ya kibinafsi. Hii inaweza kuwa na manufaa kwa wafanyakazi wa idara ya afya, utetezi wa haki za binadamu na kwa makundi ya walemavu miongoni mwa wengine. Kuna hatari ndogo kabisa kuwa kushiriki katika utafiti huu.

Inatarajiwa kuwa utakuwa na usumbufu ndogo au dhiki kutoka kuulizwa maswali wakati wa majadiliano ya kundi. Sio lazima ujibu kila swali au kutoa taarifa usizotaka kutoa na unaweza kukosa kushiriki wakati wowote. Utaelekezwa kwa mshauri mtaalamu katika ukipatikana unateseka kusiyotarajiwa.

Mara kwa mara, kuwezekana watafiti kukufuata ili uweze kufafanua baadhi ya habari iliyo kuwa muhimu wakati wa mahojiano. Mtafiti inaweza kuomba ushirika kama huo wa mahojiano kabla ya miaka miwili kuisha. Washiriki wote watatambuliwa kwa kutumia kodi na habari zao zitawekwa salama kwa sefu ili kuhifadhi usalama wa majina ya watu wote waliyoshiriki kwa utafiti. Katika siku zijazo mtafiti mkuu ataharibu orodha yote ya kanuni na kanda. Kama una maswali yoyote au wasiwasi kabla au baada ya utafiti, unaweza kuwasiliana na mimi kwa njia ya simu au barua pepe.

Ukiwa una maswali yoyote kuhusu utafiti huu au haki yako kama mshiriki au kama una matatizo yoyote tafadhali unaweza kuwasiliana wasiliana, na wafuatao:

Arafa za mtafiti: **Joseph Mwangi Matheri** Cell Phone: +254 725 761 845; Barua pepe: 2656995@uwc.ac.za or mmatheri@gmail.com

Nyapara msimamizi Mkuu wa utafiti - Prof Anthea Rhoda email: arhoda@uwc.ac.za **OR**
Dean kitengo cha Community and Health Sciences:
University ya Western Cape, Private Bag X17, Bellville 7535
Utafiti huu umepitishwa na kamati ya utafiti na uadilifu ya University ya Western Cape.
Na pia ile ya
Kenyatta National Hospital/University ya Nairobi. Barua pepe: uonknh_erc@unobi.ac.ke

APPENDIX 19B(ii): Consent form – Swahili version *(participant aged under 18 years)*

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

FOMU YA IDHINI

Jina la Utafiti wa Mradi: Kunda njia za Utetezi wa huduma zifaazo kwa Watu wenye Ulemavu nchini Kenya

Kwa uhuru na kwa hiari yangu ninakukubali kushiriki katika kundi hili la mjadala kuhusu huduma na misaada kwa watu wenye ulemavu. Nimekukubali sauti yangu iwekwe kuwa mkanda wakati wa ushirika wangu katika utafiti huu wa dakika tisaini. Nakubaliana sitatoa taarifa yoyote itakayojadiliwa na kundi hili. Mjadala huu unafanywa na timu ya Bwana Matheri Joseph Mwangi ambaye ni mwanafunzi katika Chuo Kikuu cha Western Cape, Afrika Kusini.

Naelewa kwamba madhumuni ya utafiti ni kuwa na majadiliano ya kundi na kutoa maoni yangu ya changamoto za huduma na misaada zinazowakabili watu wenye ulemavu katika eneo langu.

Majadiliano itahusu changamoto chanya na hasi za kuwa na ulemavu, za kikazi, walemavu wanavyoishi kwa kujitegemea, na huduma zinazotolewa na mashirika kama vile afya, ukarabati, elimu, vituo vya muhula, huduma za jamii au NGO.

Naelewa kwamba utambulisho wangu hautafunuliwa na kwamba naweza kuondoka kwa utafiti au kuondoka chumbani wakati wowote bila ya kutoa sababu. Naelewa kwamba hata kama au sitashiriki, na maoni yoyote nitakayotoa wakati wa majadiliano, haitaathiri faida yangu au haki ya kupokea huduma kwa wakati huu au katika siku zijazo.

Naelewa kwamba sitaweza kupokea faida yoyote moja kwa moja kutoka kushiriki katika utafiti, lakini kushiriki kwangu kunaweza kusaidia wengine katika siku zijazo. Ninaelewa kwamba nitapokea Shilingi mia tano (500) za Kenya ya nauli yangu. Nimejibiwa maswali yangu yote kuhusu utafiti huu kwa lugha minayoelewa. Pia nimeelzwa chenye ninahitajika kufanya wakati wa utafiti. Nimesoma na kuelewa maelezo haya na nimekubali kushiriki katika utafiti huu.

Jina la mshiriki .... Sahihi ya mshiriki..........................

Shahidi .... " Tarehe ....

Kama, una maswali yoyote kuhusu utafiti huu au unataka ripoti ya matatizo yoyote kuhusiana na utafiti huu, tafadhali wasiliana na mtafiti mkuu, au msimamizi au katibu KHN / UON - ERC.

Arafa za mtafiti: **Joseph Mwangi Matheri** Cell Phone: +254 725 761 845; Barua pepe: 2656995@uwc.ac.za or mmatheri@gmail.com

Nyapara msimamizi Mkuu wa utafiti - Prof Anthea Rhoda email: arhoda@uwc.ac.za **OR**
Dean kitengo cha Community and Health Sciences:
University ya Western Cape, Private Bag X17, Bellville 7535
Utafiti huu umepitishwa na kamati ya utafiti na uadilifu ya University ya Western Cape.
Na pia ile ya
Kenyatta National Hospital/University ya Nairobi. Email: uonknh_erc@unobi.ac.ke

APPENDIX 19B(iii): Consent Form – Swahili version *(participant aged over 18 years*

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: 2656995@uwc.ac.ke or mmatheri@jkuat.ac.ke

FOMU YA IDHINI

Jina la Utafiti wa Mradi: Kunda njia za Utetezi wa huduma zifaazo kwa Watu wenye Ulemavu nchini Kenya

Kwa uhuru na kwa hiari yangu ninakukubali kushiriki katika kundi hili la mjadala kuhusu huduma na misaada kwa watu wenye ulemavu. Nimekukubali sauti yangu iwekwe kuwa mkanda wakati wa ushirika wangu katika utafiti huu wa dakika tisaini. Nakubaliana sitatoa taarifa yoyote itakayojadiliwa na kundi hili. Mjadala huu unafanywa na timu ya Bwana Matheri Joseph Mwangi ambaye ni mwanafunzi katika Chuo Kikuu cha Western Cape, Afrika Kusini.

Naelewa kwamba madhumuni ya utafiti ni kuwa na majadiliano ya kundi na kutoa maoni yangu ya changamoto za huduma na misaada zinazowakabili watu wenye ulemavu katika eneo langu.

Majadiliano itahusu changamoto chanya na hasi za kuwa na ulemavu, za kikazi, walemavu wanavyoishi kwa kujitegemea, na huduma zinazotolewa na mashirika kama vile afya, ukarabati, elimu, vituo vya muhula, huduma za jamii au NGO.

Naelewa kwamba utambulisho wangu hautafunuliwa na kwamba naweza kuondoka kwa utafiti au kuondoka chumbani wakati wowote bila ya kutoa sababu. Naelewa kwamba hata kama au sitashiriki, na maoni yoyote nitakayotoa wakati wa majadiliano, haitaathiri faida yangu au haki ya kupokea huduma kwa wakati huu au katika siku zijazo.

Naelewa kwamba sitaweza kupokea faida yoyote moja kwa moja kutoka kushiriki katika utafiti, lakini kushiriki kwangu kunaweza kusaidia wengine katika siku zijazo. Ninaelewa kwamba nitapokea Shilingi mia tano (500) za Kenya ya nauli yangu. Nimejibiwa maswali yangu yote kuhusu utafiti huu kwa lugha minayoelewa. Pia nimeelzwa chenye ninahitajika kufanya wakati wa utafiti. Nimesoma na kuelewa maelezo haya na nimekubali kushiriki katika utafiti huu.

Jina la mshiriki .... Sahihi ya mshiriki..........................

Shahidi .... " Tarehe ....

Kama, una maswali yoyote kuhusu utafiti huu au unataka ripoti ya matatizo yoyote kuhusiana na utafiti huu, tafadhali wasiliana na mtafiti mkuu, au msimamizi au katibu KHN / UON - ERC

Arafa za mtafiti: **Joseph Mwangi Matheri** Cell Phone: +254 725 761 845; Barua pepe: 2656995@uwc.ac.za or mmatheri@gmail.com

Nyapara msimamizi Mkuu wa utafiti - Prof Anthea Rhoda email: arhoda@uwc.ac.za **OR**
Dean kitengo cha Community and Health Sciences:
University ya Western Cape, Private Bag X17, Bellville 7535
Utafiti huu umepitishwa na kamati ya utafiti na uadilifu ya University ya Western Cape.
Na pia ile ya
Kenyatta National Hospital/University ya Nairobi. Barua pepe:: uonknh_erc@unobi.ac.ke

APPENDIX 19C: Focus group Confidentiality Binding form

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: mmatheri@jkuat.ac.ke or mmatheri@gmail.com

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FOCUS GROUP CONFIDENTIALITY BINDING FORM

Title of Research Project: "**Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya**."

The study has been described to me in language that I understand. My questions about the study have been answered. I understand what my participation will involve and I agree to participate of my own choice and free will. I understand that my identity will not be disclosed to anyone. I understand that I may withdraw from the study at any time without giving a reason and without fear of negative consequences or loss of benefits. I understand that confidentiality is dependent on participants' in the Focus Group maintaining confidentiality. I hereby agree to the following:

__ I agree to uphold the confidentiality of the discussions in the focus group by not disclosing the identity of other participants or any aspects of their contributions to members outside of the group.

Should you have any questions regarding this study or wish to report any problems you have
experienced related to the study, please contact the study coordinator:

Participant's name……………………………………….
Participant's signature…………………………………..
Date………………………

APPENDIX 19D: Focus group Confidentiality Binding form (Swahili version)

UNIVERSITY OF THE WESTERN CAPE

Private Bag X 17, Bellville 7535, South Africa
Tel: +27 21-959, Fax: 27 21-959
e-mail: mmatheri@jkuat.ac.ke or mmatheri@gmail.com

FOMU YA KUWEKA SIRI

Title of Research Project: **"Development of a Model for Advocacy of Support Services for Persons with Disabilities in Kenya."**

Utafiti huu umenakiliwa kwangu kwa lugha ninayo elewa. niliridhika na majibu niloyo pewa kuhusu maswali niliyo uliza kuhusu utafiti huu. Ninaelewa kuwa kuhusika katika utafiti huu na kwa kupenda kwangu sio kusurutishwa kwa njia yoyote ile. Naelewa kuwa njina langu halitahusishwa na habari zozote zinazotokana na utafiti huu nay a kwamba naweza kuondoka wakati wowote bila kupeana sababu. Sitakuwa na uoga wa jeraha au hasara. Naelewa ya kuwa wote wanaohusika kataika maongeo ndio wenye jukumu ya kuweka mazungumzo kuwa siri. Kwa hivyo ninakubali yafuatayo:

__ nitaweka maneneo tutakayongea hapa kwa siri na kwangu binafsi.

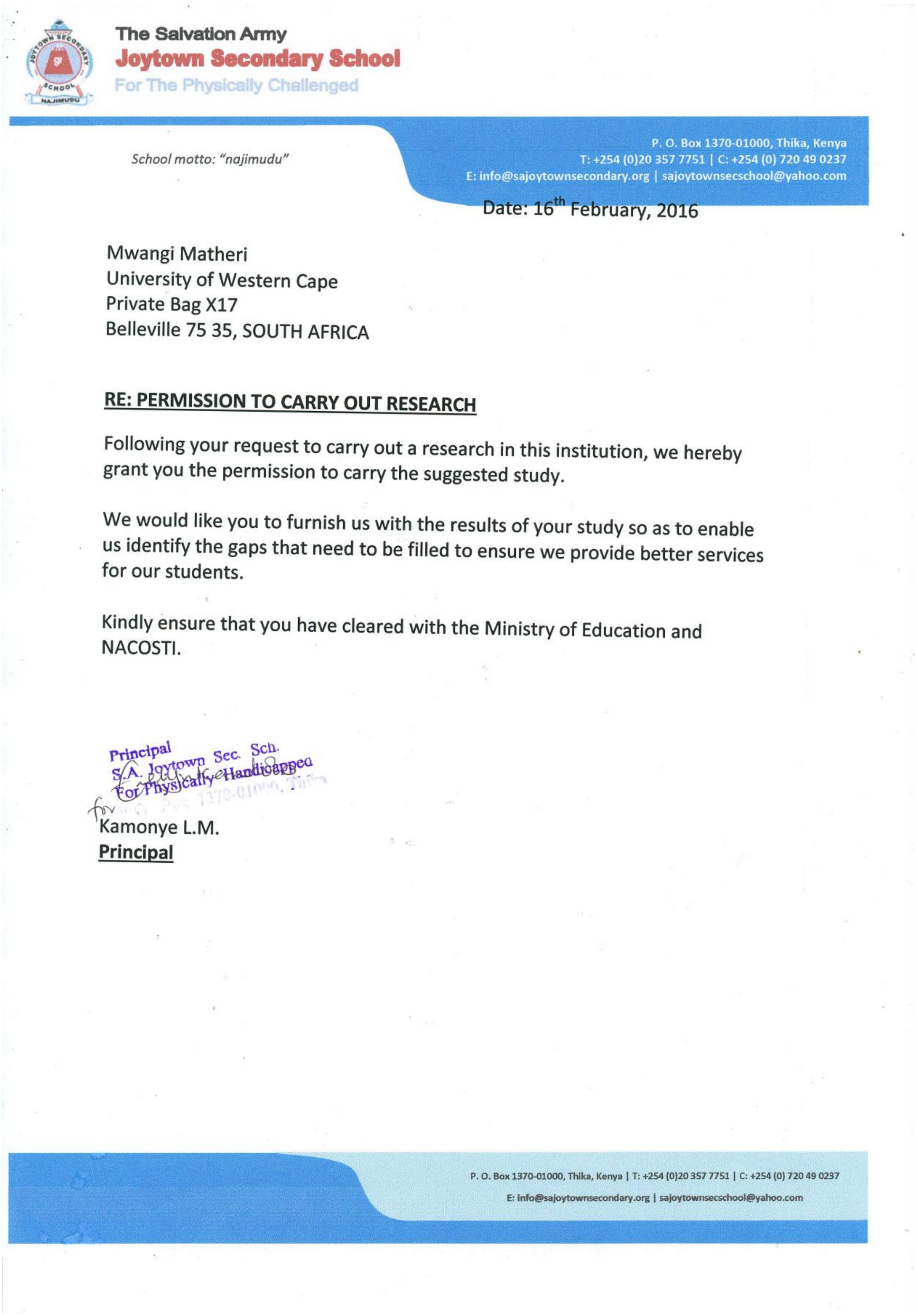
- Nikiwa na maswali kuhusu utafiti huu ama ripoti ya shida Fulani inayotokana na utafiti huu, nitamuhusisha kinara mweneywe.

Njina langu ………………………………………..

Kidole ………………………………..

Tarehe ………………………

APPENDIX 20: Request for permission to conduct research at Joytown Secondary School



The Salvation Army
Joytown Secondary School
For The Physically Challenged

School motto: *"najimudu"*

P. O. Box 1370-01000, Thika, Kenya
T: +254 (0)20 357 7751 | C: +254 (0) 720 49 0237
E: info@sajoytownsecondary.org | sajoytownsecschool@yahoo.com

Date: 16th February, 2016

Mwangi Matheri
University of Western Cape
Private Bag X17
Belleville 75 35, SOUTH AFRICA

RE: PERMISSION TO CARRY OUT RESEARCH

Following your request to carry out a research in this institution, we hereby grant you the permission to carry the suggested study.

We would like you to furnish us with the results of your study so as to enable us identify the gaps that need to be filled to ensure we provide better services for our students.

Kindly ensure that you have cleared with the Ministry of Education and NACOSTI.

Principal
S.A. Joytown Sec. Sch.
For Physically Handicapped
P. O. Box 1370-01000, Thika

for
Kamonye L.M.
Principal

P. O. Box 1370-01000, Thika, Kenya | T: +254 (0)20 357 7751 | C: +254 (0) 720 49 0237
E: info@sajoytownsecondary.org | sajoytownsecschool@yahoo.com

APPENDIX 21: Exploratory Factor Analysis

Exploratory Factor Analysis

1. Rehabilitation

Pattern Matrix[a]

	Factor	
	1	2
Appropriate transport influence your utilization of rehabilitation services	.935	
service provider skills influence your utilization of rehabilitation services	.804	
Attitude of service provider influence your utilization of rehabilitation services	.695	
Affordability influence your utilization of rehabilitation services	.612	
Equipment at the facility influence your utilization of rehabilitation services	.553	
Accessibility influence your utilization of rehabilitation services	.471	
Having appropriate Support services influence your utilization of rehabilitation services	.325	
Incapacity influence your utilization of rehabilitation services		
Information influence your utilization of rehabilitation services		.764
Social Networks influence your utilization of rehabilitation services		.720
Availability influence your utilization of rehabilitation services		.358

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 5 iterations.

2. Education

Pattern Matrix[a]

	Factor	
	1	2
Appropriate transport influence your utilization of Educational services	.862	
Affordability influence your utilization of Educational services	.778	
service provider skills influence your utilization of Educational services	.647	
Availability influence your utilization of Educational services	.377	
Having appropriate Support services influence your utilization of Educational services		.634
Incapacity influence your utilization of Educational services		.616
Accessibility influence your utilization of Educational services		.611
Personal attitude influence your utilization of Educational services		.457

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

3. Vocational training

Pattern Matrix[a]

	Factor		
	1	2	3
Accessibility influence your utilization of Vocational training services	.951		
Availability influence your utilization of Vocational training services	.853		
Information on Vocational Training influence your utilization of Vocational training services	.785		
Incapacity influence your utilization of Vocational training services	.684		
Affordability influence your utilization of Vocational training services	.590		
Having basic education influence your utilization of Vocational training services	.535		
service provider skills influence your utilization of Vocational training services	.521		
Having appropriate Support services influence your utilization of Vocational training services		.733	
Personal attitude influence your utilization of Vocational training services		.722	
Attitude of service provider influence your utilization of Vocational training services	.341	.589	
Equipment influence your utilization of Vocational training services		.480	.477
Appropriate transport influence your utilization of Vocational training services	.361		.670

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 10 iterations.

4. Counselling parents/family

Pattern Matrix[a]

	Factor	
	1	2
Availability factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.755	
service provider skills factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.732	
Affordability factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.686	
Conducive environment for counselling factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.515	
Accessibility factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.494	

Having support group factors influence your guardian’s utilization of Counselling for parent/family of person with disability	.475	
Believes factors influence your guardian’s utilization of Counselling for parent/family of person with disability		-.926
Attitude factors influence your guardian’s utilization of Counselling for parent/family of person with disability		-.710
Myths concerning disability factors influence your guardian’s utilization of Counselling for parent/family of person with disability		-.644
Incapacity factors influence your guardian’s utilization of Counselling for parent/family of person with disability		-.484
Stigma factors influence your guardian’s utilization of Counselling for parent/family of person with disability		-.405
Having appropriate Support services factors influence your guardian’s utilization of Counselling for parent/family of person with disability		

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

5. Social Security

Pattern Matrix[a]

	Factor	
	1	2
Appropriate transport influence your utilization of social security services for persons with disability	.637	
Information concering the services influence your utilization of social security services for persons with disability	.631	
Social security (cash transfer) influence your utilization of social security services for persons with disability	.530	
Long distance influence your utilization of social security services for persons with disability	.519	
Personal attitude influence your utilization of social security services for persons with disability	.480	
Having appropriate Support services influence your utilization of social security services for persons with disability		
Availability influence your utilization of social security services for persons with disability		-.896
Accessibility influence your utilization of social security services for persons with disability		-.582
Incapacity influence your utilization of social security services for persons with disability	.383	-.405

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

6. Health Services

Pattern Matrix[a]

	Factor	
	1	2
Availability influence your utilization of health services	.716	
Attitude of service provider influence your utilization of health services	.654	
Accessibility influence your utilization of health services	.642	
Incapacity influence your utilization of health services	.624	
Affordability influence your utilization of health services	.577	
Equipment influence your utilization of health services	.491	.371
Reputation of H/Care provider influence your utilization of health services	.463	
Subsidized by government influence your utilization of health services		
Having appropriate Support services influence your utilization of health services		
personal health behaviour influence your utilization of health services		.646
Service provider skills influence your utilization of health services		.610
Appropriate transport influence your utilization of health services	.406	.516
Community support influence your utilization of health services		.402

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 20 iterations.

7. Health Information

Pattern Matrix[a]

	Factor	
	1	2
Appropriate transport influence your utilization of Health information	.849	
Attitude of service provider influence your utilization of Health information	.832	
Affordability influence your utilization of Health information	.542	
Social Network influence your utilization of Health information		
Accessibility influence your utilization of Health information		.663
Incapacity influence your utilization of Health information		.624
Availability influence your utilization of Health information		.381
Having appropriate Support services influence your utilization of Health information		.331

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 8 iterations.

8. Faith healer

Pattern Matrix[a]

	Factor	
	1	2
Affordability influence your utilization of faith healer	.866	
Incapacity influence your utilization of faith healer	.839	
Accessibility influence your utilization of faith healer	.792	
Attitude of service provider influence your utilization of faith healer	.782	
Appropriate transport influence your utilization of faith healer	.678	
Availability influence your utilization of faith healer	.494	
Service provider skills influence your utilization of faith healer	.484	.365
Social network influence your utilization of faith healer		.974
Having appropriate Support services influence your utilization of faith healer		.570
Information concerning faith healer influence your utilization of faith healer	.420	.443

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

9. Legal advice/justice

Pattern Matrix[a]

	Factor	
	1	2
Discrimination influence your utilization of Legal advice/justice services.	.878	
Gender-based violence influence your utilization of Legal advice/justice services.	.718	
Violation of human rights influence your utilization of Legal advice/justice services.	.680	
Inequity influence your utilization of Legal advice/justice services.	.667	
Having appropriate Support services influence your utilization of Legal advice/justice services.	.389	
Support group influence your utilization of Legal advice/justice services.	.326	
Availability influence your utilization of Legal advice/justice services.		.834
Incapacity influence your utilization of Legal advice/justice services.		.662
Affordability influence your utilization of Legal advice/justice services.		.554
Attitude of service provider influence your utilization of Legal advice/justice services.	.323	.547

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

10. sign language interpreter

Pattern Matrix[a]

	Factor	
	1	2
Employee of government influence your utilization of Sign language interpreter	.895	
Affordability influence your utilization of Sign language interpreter	.833	
Service provider skills influence your utilization of Sign language interpreter	.728	
Attitude of service provider influence your utilization of Sign language interpreter	.699	
Incapacity (disability itself) influence your utilization of Sign language interpreter	.658	
Availability influence your utilization of Sign language interpreter	.565	
Accesibility influence your utilization of Sign language interpreter		-.843

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 9 iterations.

11. Personal assistant

Pattern Matrix[a]

	Factor	
	1	2
Social Network influence your utilization of Personal assistant to help in ADL or IADL	.765	
Community support influence your utilization of Personal assistant to help in ADL or IADL	.740	
Accessibility of the Physical Environment influence your utilization of Personal assistant to help in ADL or IADL	.594	
Paid for government influence your utilization of Personal assistant to help in ADL or IADL	.385	
Privacy influence your utilization of Personal assistant to help in ADL or IADL	.365	
Incapacity influence your utilization of Personal assistant to help in ADL or IADL		-.902
Affordability influence your utilization of Personal assistant to help in ADL or IADL		-.601
Personal assistant skills influence your utilization of Personal assistant to help in ADL or IADL		-.547
Retention of the personal assistant influence your utilization of Personal assistant to help in ADL or IADL		-.540

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 9 iterations.

12. Independent living

Pattern Matrix[a]

	Factor	
	1	2
Need for Autonomy / Independence influence your utilization of Independent Living services	.904	
Privacy influence your utilization of Independent Living services	.851	
Accessibility of the Physical Environment influence your utilization of Independent Living services	.708	
Independent living skills influence your utilization of Independent Living services	.540	
Incapacity influence your utilization of Independent Living services	.527	
Social network influence your utilization of Independent Living services		.784
Community support influence your utilization of Independent Living services		.713
Affordability influence your utilization of Independent Living services		.518

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

13. Transportation services

Pattern Matrix[a]

	Factor	
	1	2
Availability influence your utilization of Transportation services.	.787	
Affordability influence your utilization of Transportation services.	.736	
Accessibility influence your utilization of Transportation services.	.600	
Attitude of service provider influence your utilization of Transportation services.	.389	
Assistive devices influence your utilization of Transportation services.		.776
Incapacity influence your utilization of Transportation services.		.625
Having appropriate support services influence your utilization of Transportation services.		.578

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 7 iterations.

14. **Assistive devices**

Pattern Matrix[a]

	Factor	
	1	2
Social network influence your utilization of Assistive devices service	.789	
Personal attitude influence your utilization of Assistive devices service	.741	
Rehabilitation services influence your utilization of Assistive devices service	.617	
Information influence your utilization of Assistive devices service	.603	
condition of assistive device influence your utilization of Assistive devices service	.590	
Having appropriate Support services influence your utilization of Assistive devices service	.572	
Community support influence your utilization of Assistive devices service	.444	
Affordability influence your utilization of Assistive devices service	.351	
Availability influence your utilization of Assistive devices service		.628
Accessibility influence your utilization of Assistive devices service		.627
Incapacity influence your utilization of Assistive devices service		.492

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 4 iterations.

15. Counseling for person with disability

Pattern Matrix[a]

	Factor	
	1	2
Availability influence your utilization of Counselling for person with disability	.871	
Accessibility influence your utilization of Counselling for person with disability	.770	
Affordability influence your utilization of Counselling for person with disability	.660	
Conducive environment for counselling influence your utilization of Counselling for person with disability	.565	
service provider skills influence your utilization of Counselling for person with disability	.481	
Incapacity influence your utilization of Counselling for person with disability	.453	
Having support group	.440	
Having appropriate Support services influence influence your utilization of Counselling for person with disability your utilization of Counselling for person with disability	.320	
Believes influence your utilization of Counselling for person with disability		.827
Attitude influence your utilization of Counselling for person with disability		.773
Myths concerning disability influence your utilization of Counselling for person with disability		.716
Stigma influence your utilization of Counselling for person with disability		.419

Extraction Method: Principal Axis Factoring.

Rotation Method: Oblimin with Kaiser Normalization.[a]

a. Rotation converged in 6 iterations.

APPENDIX 22A: Statistics table

Statistics

Age

N	Valid	1230
	Missing	0
Mean		27.28
Median		22.00
Mode		12^a
Std. Deviation		19.684
Range		98
Minimum		2
Maximum		100
Sum		33554
Percentiles	25	12.00
	50	22.00
	75	38.00

a. Multiple modes exist. The smallest value is shown

APPENDIX 22B: Statistics Table

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2	15	1.2	1.2	1.2
	3	31	2.5	2.5	3.7
	4	28	2.3	2.3	6.0
	5	26	2.1	2.1	8.1
	6	28	2.3	2.3	10.4
	7	32	2.6	2.6	13.0
	8	34	2.8	2.8	15.8
	9	26	2.1	2.1	17.9
	10	34	2.8	2.8	20.7
	11	27	2.2	2.2	22.8
	12	43	3.5	3.5	26.3
	13	31	2.5	2.5	28.9
	14	43	3.5	3.5	32.4
	15	38	3.1	3.1	35.4
	16	32	2.6	2.6	38.0
	17	38	3.1	3.1	41.1
	18	35	2.8	2.8	44.0
	19	25	2.0	2.0	46.0
	20	25	2.0	2.0	48.0
	21	17	1.4	1.4	49.4
	22	16	1.3	1.3	50.7
	23	22	1.8	1.8	52.5
	24	23	1.9	1.9	54.4
	25	25	2.0	2.0	56.4
	26	18	1.5	1.5	57.9
	27	19	1.5	1.5	59.4
	28	26	2.1	2.1	61.5
	29	7	.6	.6	62.1
	30	30	2.4	2.4	64.6
	31	8	.7	.7	65.2
	32	25	2.0	2.0	67.2
	33	7	.6	.6	67.8
	34	8	.7	.7	68.5
	35	38	3.1	3.1	71.5

36	12	1.0	1.0	72.5
37	17	1.4	1.4	73.9
38	15	1.2	1.2	75.1
39	8	.7	.7	75.8
40	27	2.2	2.2	78.0
41	7	.6	.6	78.5
42	15	1.2	1.2	79.8
43	10	.8	.8	80.6
44	4	.3	.3	80.9
45	18	1.5	1.5	82.4
46	5	.4	.4	82.8
47	8	.7	.7	83.4
48	14	1.1	1.1	84.6
49	8	.7	.7	85.2
50	14	1.1	1.1	86.3
51	5	.4	.4	86.7
52	11	.9	.9	87.6
53	3	.2	.2	87.9
54	11	.9	.9	88.8
55	7	.6	.6	89.3
56	4	.3	.3	89.7
57	3	.2	.2	89.9
58	2	.2	.2	90.1
59	3	.2	.2	90.3
60	12	1.0	1.0	91.3
61	5	.4	.4	91.7
62	8	.7	.7	92.4
63	4	.3	.3	92.7
64	12	1.0	1.0	93.7
65	4	.3	.3	94.0
66	3	.2	.2	94.2
67	6	.5	.5	94.7
68	1	.1	.1	94.8
69	6	.5	.5	95.3
70	7	.6	.6	95.9
71	3	.2	.2	96.1
72	2	.2	.2	96.3
73	4	.3	.3	96.6

	74	6	.5	.5	97.1
	75	8	.7	.7	97.7
	76	6	.5	.5	98.2
	77	1	.1	.1	98.3
	78	5	.4	.4	98.7
	80	4	.3	.3	99.0
	81	3	.2	.2	99.3
	82	1	.1	.1	99.3
	84	4	.3	.3	99.7
	85	1	.1	.1	99.8
	86	1	.1	.1	99.8
	95	1	.1	.1	99.9
	100	1	.1	.1	100.0
	Total	1230	100.0	100.0	

APPENDIX 23A: SPSS cross tabulations

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Reasons for not attending school * Gender	**118**	**9.6%**	**1112**	**90.4%**	**1230**	**100.0%**
Reasons for leaving school * Gender	**60**	**4.9%**	**1170**	**95.1%**	**1230**	**100.0%**

Crosstab

			Gender		Total
			male	Female	
Reasons for not attending school	Not enough money	Count	29	31	60
		% within Reasons for not attending school	48.3%	51.7%	100.0%
		% within Gender	58.0%	45.6%	50.8%
		% of Total	24.6%	26.3%	50.8%
	illness	Count	4	0	4
		% within Reasons for not attending school	100.0%	0.0%	100.0%
		% within Gender	8.0%	0.0%	3.4%
		% of Total	3.4%	0.0%	3.4%
	Lack of interest	Count	2	3	5
		% within Reasons for not attending school	40.0%	60.0%	100.0%
		% within Gender	4.0%	4.4%	4.2%
		% of Total	1.7%	2.5%	4.2%
	Disability	Count	4	8	12
		% within Reasons for not attending school	33.3%	66.7%	100.0%
		% within Gender	8.0%	11.8%	10.2%
		% of Total	3.4%	6.8%	10.2%
	School not accessible	Count	3	11	14
		% within Reasons for not attending school	21.4%	78.6%	100.0%
		% within Gender	6.0%	16.2%	11.9%

		% of Total	2.5%	9.3%	11.9%
	Other	Count	0	7	7
		% within Reasons for not attending school	0.0%	100.0%	100.0%
		% within Gender	0.0%	10.3%	5.9%
		% of Total	0.0%	5.9%	5.9%
	Don't know	Count	8	8	16
		% within Reasons for not attending school	50.0%	50.0%	100.0%
		% within Gender	16.0%	11.8%	13.6%
		% of Total	6.8%	6.8%	13.6%
Total		Count	50	68	118
		% within Reasons for not attending school	42.4%	57.6%	100.0%
		% within Gender	100.0%	100.0%	100.0%
		% of Total	42.4%	57.6%	100.0%

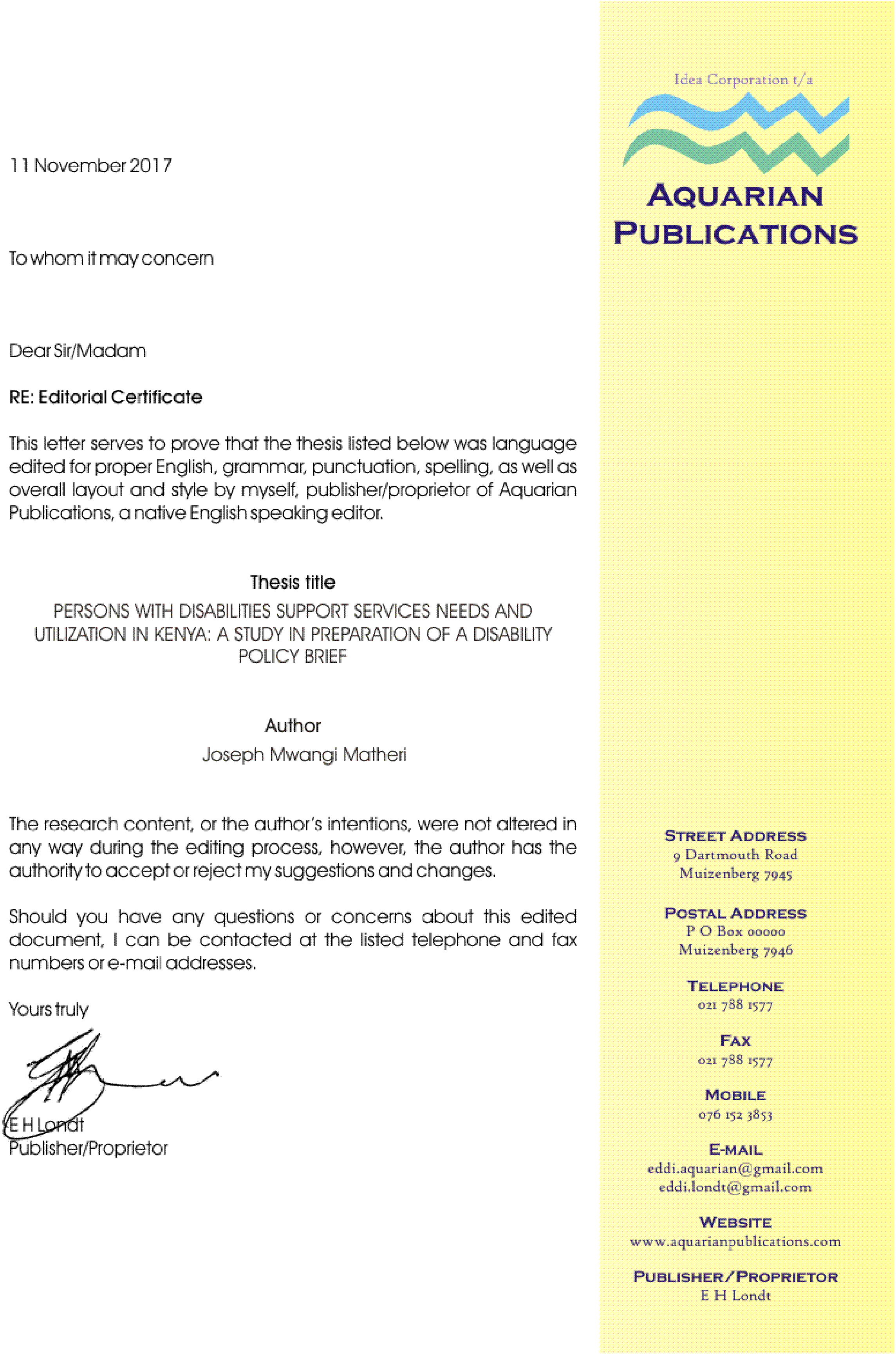
APPENDIX 23B: SPSS cross tabulations

Crosstab

			Gender		Total
			male	Female	
Reasons for leaving school	Failing/ underachiever	Count	5	2	7
		% within Reasons for leaving school	71.4%	28.6%	100.0%
		% within Gender	16.7%	6.7%	11.7%
		% of Total	8.3%	3.3%	11.7%
	Early pregnancy	Count	0	11	11
		% within Reasons for leaving school	0.0%	100.0%	100.0%
		% within Gender	0.0%	36.7%	18.3%
		% of Total	0.0%	18.3%	18.3%
	Lack of interest	Count	5	1	6
		% within Reasons for leaving school	83.3%	16.7%	100.0%
		% within Gender	16.7%	3.3%	10.0%
		% of Total	8.3%	1.7%	10.0%
	Illness	Count	2	2	4
		% within Reasons for leaving school	50.0%	50.0%	100.0%
		% within Gender	6.7%	6.7%	6.7%
		% of Total	3.3%	3.3%	6.7%
	Not enough money	Count	12	11	23
		% within Reasons for leaving school	52.2%	47.8%	100.0%
		% within Gender	40.0%	36.7%	38.3%
		% of Total	20.0%	18.3%	38.3%
	Don't know	Count	4	3	7
		% within Reasons for leaving school	57.1%	42.9%	100.0%
		% within Gender	13.3%	10.0%	11.7%
		% of Total	6.7%	5.0%	11.7%
	War/fighting for liberation	Count	2	0	2
		% within Reasons for leaving school	100.0%	0.0%	100.0%
		% within Gender	6.7%	0.0%	3.3%

	% of Total	3.3%	0.0%	3.3%
Total	Count	30	30	60
	% within Reasons for leaving school	50.0%	50.0%	100.0%
	% within Gender	100.0%	100.0%	100.0%
	% of Total	50.0%	50.0%	100.0%

APPENDIX 24: Editorial Certificate



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Author

Joseph Mwangi Matheri

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