UNIVERSITY OF CAPE COAST

CLOTHING CHALLENGES OF PEOPLE WITH MOBILITY IMPAIRMENT IN KOMENDA-EDINA-EGUAFO-ABREM MUNICIPALITY- CENTRAL REGION, GHANA

ELIZABETH ARTHUR

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CLOTHING CHALLENGES OF PEOPLE WITH MOBILITY IMPAIRMENT IN KOMENDA-EDINA-EGUAFO-ABREM MUNICIPALITY- CENTRAL REGION, GHANA

BY

ELIZABETH ARTHUR

Thesis submitted to the Department of Vocational and Technical Education of the Faculty of Science and Technology Education, College of Education Studies, University of Cape Coast, in partial fulfilment of the requirements for the award of Master of Philosophy degree in Home Economics Education (Clothing and Textiles)

SEPTEMBER 2021

DECLARATION

Candidate's Declaration

I hereby declare that this dissertation is the result of my own original research and that no part of it has been presented for another degree in this university or elsewhere.

Candidate's Signature ……..…… Date ……..

Name: Elizabeth Arthur

Supervisor's Declaration

I hereby declare that the preparation and presentation of the dissertation were supervised in accordance with the guidelines on supervision of dissertation laid down by the University of Cape Coast.

Supervisor's Signature ……..…….. Date ……..……

Name: Mrs. Doreen Tetteh Cofie

ABSTRACT

The purpose of this study was to examine the design details of general garments in order to assess how People with Mobility Impairment (PWMIs) in Komenda Edina-Eguafo-Abrem (KEEA) municipality are satisfied with these garments in the Ghanaian market. The study adopted the mixed method survey design and collected data from 201 respondents from Enyindakrom, Kissi, Elmina, Besease, and Komenda located in the KEEA municipality. Questionnaire and interview guide were used as the main instruments for the data collection. Using Statistical Package for Service Solution (SPSS) version 26.0, data was analyzed quantitatively using mean, frequency counts and percentages, and correlation analysis at 5% level of significance while the interview guide questions were analyzed qualitatively to support the findings. Findings revealed that PWMIs in general, are dissatisfied with their ready-made garment attributes. PWMIs are satisfied with the construction quality of the altered ready-made garment. Findings further revealed that in selecting garment, attributes such as option to customize, fits, short sleeves, among others are considered important. Although, there was a positively weak significant relationship, between the quality of life of PWMIs and the Functional, Expressive and Aesthetic (FEA) element of clothing, it indicated that a well thought clothing design that blends functionality, expressive and aesthetic elements of clothing, would have the ability to improve, to a certain degree, the quality of life of PWMIs and vice versa. It was therefore recommended that, when PWMIs take their garments to designers, they should be able to tell them the problems that they have and to point out the design features that they want in their customized garments to increase satisfaction level in their garments.

KEY WORDS

Aesthetics

Clothing

Disability

Expressive

Functionality of a garment

Mobility impairment

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DEDICATION

To my husband, Mr. Frank Assifuah and my three children, Kweku Assifuah, Kobina Assifuah and Maame Esi Assifuah.

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LIST OF ACRONYMS

FEA	Functional, Expressive and Aesthetic elements of Clothing Design
KEEA	Komenda-Edina-Eguafo-Abrem
PWMIs	People With Mobility Impairments
QOL	Quality of Life
WHO	World Health Organization
WHOQOL	World Health Organization Quality of Life

CHAPTER ONE

INTRODUCTION

Basically, mobility impairment is explained as inability of a person to use one or more of his or her extremities, lack of strength to walk, grasp, or lift objects due to varying conditions of physical disorders (Bobila, 2016). This can be caused by a variety of factors, including disease, an accident, or a congenital issue, as well as neuromuscular and orthopaedic abnormalities. Spinal cord damage, paralysis, muscular dystrophy, and cerebral palsy are some of the conditions that can be included (Brault, 2012). Mobility impairment could be acquired with age problem (Lazear, Govero, Smith, Platt, Fernandez, Miner, & Diamond, 2016).

Past review of experience in Ghana over decades, shows that people with mobility impairment face difficulties in finding suitable clothes that provide them a good fit with style (McBee-Black & Ha-Brookshire, 2018). People with mobility impairment in Ghana are largely noted of wearing garments generally available in the market, which of course do not meet their special needs. This perceived clothing need has necessitated the study to be conducted, to look into the challenges that people with mobility impairment in Ghana have with wearing of non-challenged clothes, and to find out if there are design details that they are looking for in their garments.

Background to the Study

There are about 600 million people worldwide who have mobility issues (World Health Organization, (2018). This equates to roughly 10% of the world's population. Only about 20% of them are found in wealthy countries,

whereas more than 80% are found in underdeveloped countries (Asante & Sasu, 2015).

According to the Asuman, Ackah and Agyire-Tettey (2021), Ghana's disability population is estimated to be between 7 and 10%, and it is growing. Persons with mobility impairments are a poor and marginalized community in Ghana. The vast majority of people are unable to obtain public health, education, or other social services (Asante & Sasu, 2015). They are socially excluded, deprived, and have a low social position. They are marginalized, socially excluded, and deprived, with inadequate literacy abilities (Ganle, Otupiri, Obeng, Edusie, Ankomah, & Adanu, 2016).

Persons with mobility impairment are among the lowest of the poor in Ghana, both economically and socially (Opoku, Swabey, Pullen, & Dowden, 2019). They are frequently viewed as unproductive and incapable of making a meaningful contribution to society. Furthermore, research shows that people with mobility impairments are largely excluded from development processes, with very few possibilities to participate in public dialogues and decision making in society (Soldatic, van Toorn, Dowse, & Muir, 2014). Isolation and confinement based on traditional and cultural beliefs, superstitions, prejudices, and other negative ideas continue to harm people with mobility impairment, particularly at the grassroots level (Asante & Alexander, 2015).

A person's physical challenge may be congenital or the result of an injury, muscular dystrophy, cerebral palsy, amputation, multiple sclerosis, lung disease, heart disease, or other conditions that impair mobility (Wu & Ahn, 2019). Others may have invisible limitations such as respiratory diseases, epilepsy, or other ailments that cause mobility issues (Prince, 2017). People's

levels of mobility and reliance on others may vary depending on their sickness (Schwarzer, Lippke, & Luszczynska, 2011). In Ghana, people with mobility issues are frequently observed walking on their knees, hands, or buttocks, while others are bedridden. Some people are also lucky enough to be able to move around with the help of assistive equipment or mobility aids including crutches, canes, wheelchairs, and artificial limbs (Simpson, 2018).

According to Gavu, Tudzi and Shani (2015), Ghana as a country, has made a significant move to improve the lives of persons with disabilities in the past few decades. However, there are still a lot to be done as the attempt is at a standstill. Although, there are indicators of many laws and rights protecting persons with disabilities, little has been done in terms of enforcing them (Agyire-Tettey, Naami, Wissenbach, & Schädler, 2019). In theory, people with disabilities are considered equal, but in practice they are not. In reality, people with disabilities' needs have been ignored. They have difficulties building a social network and gaining positive social attention, resulting in the creation of a social stigma (Tang & Wu, 2012).

Clothing which serves not only the purpose of covering the body but also beautifying the body has been one of the major things of physically impaired people that have also been ignored. The clothing production's focus has always been on regular garment for people without disability (Burchardt, 2004), with which the actual process of putting on and taking off clothes, button through the button hole is as automatic as breathing. One can imagine, how a person with only one arm may easily button his/her shirt? What if he/she receives food through a feeding tube implanted in his stomach? Meaning, wearing that cute dress means he/she cannot eat in public.

One also needs to think about how the tight waistband of a skirt might be like if the person wearing is autistic and has magnified sensitivity to touch (Aaker, 2012). Clothing is such a basic and intimate need. It has an impact on how we are perceived by others as well as how we think about ourselves (Leary, 2019). Therefore, it is important to restore the independence and dignity of dressing to people with disabilities in Ghana, by helping them have garment that fit their needs, including their personal lifestyle in order to be better integrated into the society.

Research indicates that, there has not been any publication regarding clothing for people with physical disabilities in Ghana. Dressing in suitable clothing is a way for people of this population to find more acceptance in the society (Kabel, McBee-Black, & Dimka, 2016). Clothing plays an important role in the lives of persons with mobility impairment. Suitable clothing and being well groomed help facilitate positive perceptions from others. On the other hand, if the person with disability is wearing ill-fitting clothing and is badly groomed, others are likely to have negative perceptions of the person (Baumgartner, 2012). The way the person dresses and looks can help him/her avoid being stigmatized in the society. This and more contribute to the topic in order to see how best people with mobility could be helped in their lives, as far as their clothing needs are concerned.

Statement of the Problem

Best fitted garments can help boost self-confidence of people with mobility impairment (McBee-Black & Ha-Brookshire, 2018). It may also help children become more self-sufficient and increase their self-image as well as

quality of life (Lazear, Govero, Smith, Platt, Fernandez, Miner, & Diamond, 2016).

It is important to have garments that could meet physical, habitual and psychological requirements of people with mobility impairment. In Ghana, especially KEEA Municipality, persons with mobility impairment, who walk on their knees and hands or buttocks or sometimes use assistive devices such as crutches, canes, wheelchairs and artificial limbs are believed to have greater challenges in their garment selection (Simpson, 2018).

Due to the nature of their physical impairment, it is difficult finding suitable garment in the Ghanaian market that can provide a comfortable fit with style (Omari, (2018). These people have no choice in garment options thus, they wear what is meant for non-challenged or people without disability which in many cases does not fit well and not customized to their body type (Hall & Lobo, 2018). As such having the possibility of not only worsening their mobility but also reducing their dignity in society. Evidence shows that, past research works in Ghana have not dealt with garments for people with mobility impairment.

This growing disabled population in Ghana needs specialized garment solutions in the sense that, some of them depend on medical devices to maintain their health (Magnusson, Finye, & Enstedt, 2020). For instance, if a person uses a urinary reservoir that collects urine, it would need to be concealed within the garment. Some also have parts of their body being projected or much smaller than normal, of which special clothing attention is needed (Stokes, 2017). It may happen that, others become uncomfortable as well as, others not able to move or act the way they would when they wear

non challenged garment. However, such issues can be addressed through garment designs and specialized fabrics.

Again, the garments in the Ghanaian market are constructed according to the traditional size system. As noted by Hamraie (2016), majority of people with disabilities do not fall in the traditional size category, which could mean that their body dimensions contrast the traditional body dimensions in the size system. Most especially, this long hour of sitting, lying or keeping static, can easily curve or shift part of their body or spine forward or can swell abnormally (Sau-Fun, Chi-Leung, & Lai-Fan, 2011), resulting in decreased trunk length (Simpson, 2018). This makes the traditional proportions of the body that form the basis of clothing design not applicable to these individuals. These also explain why current ready-made garments in Ghana especially the KEEA Municipality may not fit individuals with disabilities.

One fundamental question is, does the traditional garment that are available in Ghana, provide appropriate ease for mobility and flexibility of quicker and easy dressing for these individuals? It is obvious that, since garments available in Ghana are not customized to the body types of these individuals, they do not provide appropriate ease in their movement as well as flexibility in donning and doffing. In view of this, some of these individuals sometimes purchase the traditional garment, desiring appropriate ease in their movement, make alterations with the view that their special needs will be met (Gawain, 2016). According to Crickmay, Hlengwa, Olivier and Rusk (2004), research shows that, “people with disability do not wish to have functional garments that do not fit well on their body or are unappealing. They want

garment that are helpful in daily living and also make them socially attractive" (Hall & Lobo, 2018, pg. 256).

Government, with Disabilities Act 2006 has provided legislation to support people with disabilities to gain improved access to employment, public facilities, and reasonable accommodations (Asante & Alexander, 2015). This has resulted in higher admission in schools, increased opportunities in the workforce, and greater participation in various public activities. However, people with disabilities now have a greater need for appropriate garment for these situations or events so they can experience greater inclusion in the society (Kabel, Dimka, & McBee-Black, 2017). This and more have led the researcher to investigate, as to whether the people with mobility impairment in KEEA Municipality are satisfied socially, physically and psychologically with clothing on the market.

Hoffman (2007) discussed the importance of making functional clothing more important for people with disability to highlight desirable features and minimize limitations. Well-designed garment can contribute in retaining the dignity and self-image of this marginalized individuals in KEEA Municipality. It can again, boost the confidence of these physically impaired, by having the flexibility of quicker and easy dressing as well as reducing strain on their caregivers (Bobila, 2016). This and many others bring up the platform for the researcher to investigate the clothing challenges of people with mobility impairment in the KEEA Municipality and to learn the design details that these people are looking for in their garments.

Purpose of the Study

The purpose of the study is to find out the challenges that PWMIs in KEEA municipality are having with the use of general garments available in the Ghanaian market. Specifically, the study sought to:

1. assess the satisfaction levels of ready-made garment to PWMIs.
2. evaluate the satisfaction levels of altered ready-made garment to PWMIs.
3. measure the satisfaction levels of customized garments to PWMIs.
4. examine the design details that PWMIs are looking for in their garment.
5. Find out any relationship between perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing.

Research Questions

The following research questions were formulated to guide the study;

1. What are the satisfaction levels of ready-made garment to PWMIs?
2. What are the satisfaction levels of self-made alteration of ready-made garment to PWMIs?
3. What are the satisfaction levels of customized garments to PWMIs?
4. What are the design details that PWMIs are looking for in their garment?
5. What is the relationship between perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing?

Significance of the Study

The findings of the study are to create awareness in the PWMIs who are marginalized in the Ghanaian society, that, some of their mobility challenges can be resolved through clothing designs. The study again is to gather information that would be needed by designers and manufacturers in Ghana to have a clothing line that would concentrate on mobility lifestyle to produce to meet the needs and interest of PWMIs in the country. Moreover, the study would be filling up the gap in the existing literature that fails to address the clothing needs of this marginalized group in Ghana.

Delimitations

The survey could have been conducted across the whole nation. However, it was restricted to only KEEA municipality in the Central Region due to time bound and financial constraints. Although, people with physical disabilities suffer varying degrees of mobility challenges, the study was limited to only those who walk on their knees and hands, buttocks as well as those who use wheelchairs and crutches. Again, the clothing needs of these individuals were many, but the study focused only on their garment. But any accessory that came up in the course of the study which was crucial to their mobility was studied as well.

Limitations of the Study

The inability of most respondents to read and fill the questionnaire posed some difficulties, since the items were read and interpreted to them before answering the questions. But effort was made by the research team to do careful interpretations to overcome the challenge. Again, some handful of the respondents felt reluctant to participate, others did not open up in giving

clear pictures of their conditions, but greater number of the respondents participated fully to make the exercise very successful and that, the result could be used to ascertain the fact.

Definition of Terms

Aesthetics: These are elements such as line, form, color, texture and pattern that create a pleasing design in garments (Lamb & Kallal, 1992)

Clothing: (also known as clothes, apparel and garment) is a collective term for items worn on the body. For the purpose of this study, the term clothing, clothes and garment will be used interchangeably.

Disability: It is a physical condition or defect that substantially limits a person's motor abilities thereby reducing one or more of the major life activities of such individual.

Donning and Doffing: The process of Putting on and taking off clothes.

Expressive: Is the communicative and symbolic aspects of garments (Lamb & Kallal, 1992).

Functionality of a garment: The garment's ability to execute a task required by the customer (the utility of the garment).

Mobility impairment: is defined as a category of disability that includes people who walk on hands and knees, buttocks, those who use wheel chairs and crutches.

Quality of Life: "Individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns" (WHOQOL group, 1995).

Organization of the Study

The study was organized into five chapters, with each chapter dealing with an aspect of the study. The first chapter covered areas such as; the background to the study, statement of the problem, purpose of the study, research questions, significance of the study, delimitation, limitations and definition of terms. Review of related literature and theoretical framework were dealt with in the second chapter while the third chapter dealt with the methodology which focused on the research design, population, sample and sampling procedure, instruments, data collection procedure, and data analysis. The fourth chapter was devoted for the discussion of the results that were obtained. The chapter five presented the summary, conclusion and recommendations of the study.

CHAPTER TWO

LITERATURE REVIEW

Introduction

This review of literature provided a foundation for the study of clothing challenges of people with mobility impairment. In this chapter, Theoretical Framework, Conceptual Review and Empirical Literature are reviewed to bring out the need to investigate clothing challenges of people with mobility impairment in KEEA municipality in the central region, Ghana, and to bring out the clothing elements PWMIs are looking for in their garments, as far as their quality of life is concerned. The literature is done on the following subheadings;

Theoretical Framework

a. The Functional, Expressive and Aesthetic (FEA) Consumer needs model.

b. Quality of Life (QOL) Model.

Conceptual Review

a. physical disability

b. Concept of clothing

c. Individuals with Mobility Impairment.

Empirical Review

a. Effect in the use of general clothing by PWMIs

b. Attributes of general clothing:

   i. *Design features of general clothing*

   ii. *Patterns employed for general clothing*

   iii. *Openings and fasteners*

   iv. *Fit of general clothing to PWMIs*

v. Type and placement of seam in general clothing;

vi. Fabrics for general clothing;

vii. Wear and tear of general clothing;

c. Accommodation of medical devices and related mobility accessories in the use of general clothing.

Theoretical Review

This study incorporated the Functional, Expressive and Aesthetic (FEA) Consumer Needs Model (Lamb & Kallal, 1992) and World Health Organization Quality of Life Theoretical Model (WHOQOL group, 1995) to address the research questions.

The FEA Consumer Needs Model

The FEA Consumer needs model is a conceptual framework for apparel design and a powerful tool to investigate the clothing needs for non-traditional body types (Lamb & Kallal, 1992). The FEA model makes use of "Functional, Expressive and Aesthetic elements to recognize consumer needs and wants. The model is considered as a problem-solving approach that does not distinguish between functional and fashion apparel design. The FEA Consumer Needs

Model was introduced as a simple teaching tool to facilitate preparing student designers to understand the needs of the consumer of their products. Its usage has gone beyond its fundamental purpose of preparing student designers to include the use as a theoretical framework, by practicing designers and design scholars" (Orzada & Kallal, 2016, pg. 391-392).

Instances where the model has been applied by design scholars include the following;

Figure 1: The FEA Consumer Needs Model
Source: Lamb and Kallal (1992)

The FEA model Bye and Hakala (2005). Holland was used to investigate the needs of competitive female sailors by (2007) also used the FEA Consumers Needs Model proposed by Lamb and Kallal (1992) to recognize whether functional factors play a role in determining satisfaction of soccer uniforms. In this study, FEA Consumer Needs Model is used to investigate the clothing used by mobility impaired people in Ghana.

The Functional, Expressive, Aesthetic Consumer Needs Model (FEA Model), developed by Lamb and Kallal (1992) is made up of three separate circular layers as shown in Figure 1. The first layer is positioned in the innermost and the centre of the model which is the target customer. This component is placed in the centre because the customer is the main focus while designing. In this section, elements such as "demographics, psychographics, physical characteristics, activities, and preferences" (Lamb &

Kallal 1992) are incorporated to have a better understanding of the target consumer. Lamb and Kallal (1992) emphasized that the customer's needs must be explored, analysed and identified at the beginning of the design process.

This idea of customer's needs was supported by Bye and Hakala (2005) that, it is more productive when a designer first understands a customer's needs, and then decodes those needs step by step in producing a final design. However, this may not apply in the ready to wear market of clothing where clothing production has been geared towards standardization and mass production in favour of people without disability. Forgetting that, people with disability, who are also clothing consumers, need to be considered and taken care of, during clothing production.

The second circular layer of the model represents the culture of the target consumer. This layer of the model is explained as: "culture acts as a mediator or filter between the intended users of apparel and their requirements or desires in their apparel items" (Lamb & Kallal, 1992 pg. 44). It has been identified earlier in the literature that, there has been no studies about the clothing needs of people with disability and their clothing desires as far as our Ghanaian culture is concerned. This, indeed shows that, clothing trends in Ghana do not recognize the total needs of people with disability in our Ghanaian culture.

The third circular layer state the name and provides sub-attributes of each of the FEA elements. The arrows within the circle demonstrate the interrelationship between the functional, expressive and aesthetic elements. Although, each element is defined individually, they are not, mutually

exclusive (Lamb & Kallal 1992). These three elements work together to provide an integrated framework for apparel design.

Sub Elements of FEA Consumer Needs Model

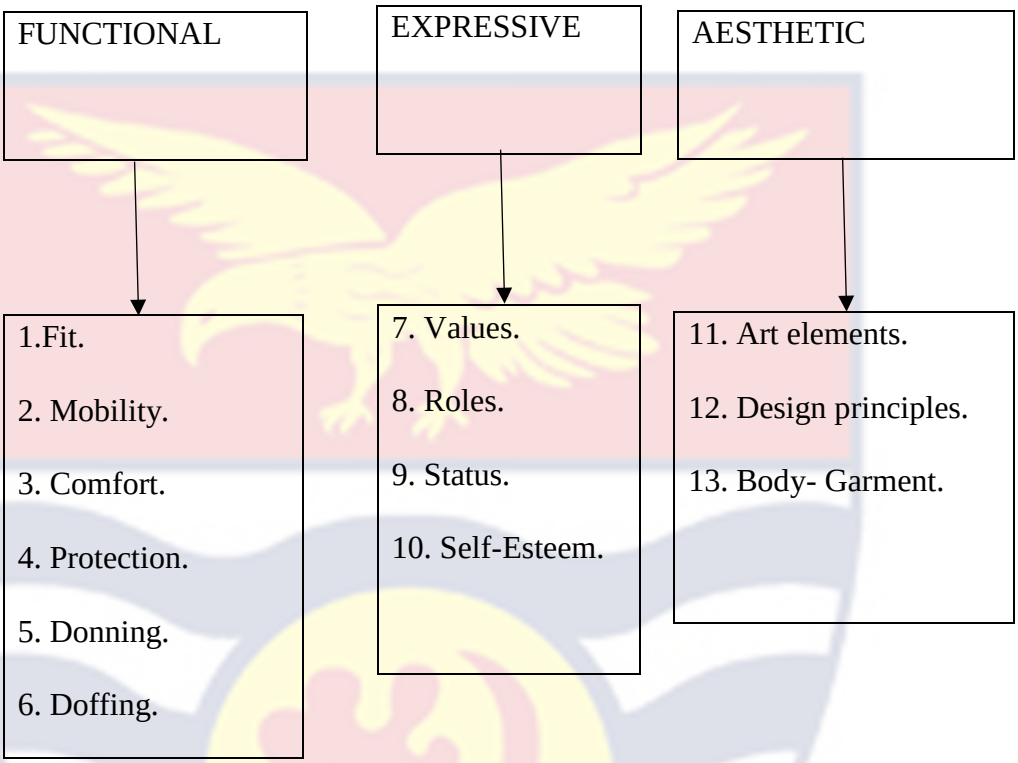

Figure 2: Sub Elements of FEA Consumer Needs Model
Source: Lamb and Kallal (1992)

Functional Considerations

Lamb and Kallal (1992, pg. 48) defined functional considerations as "the utility of the garment". Thus, the garment's ability to execute a task, such as performing comfortably in the sitting position for non-traditional body types. The functional considerations include*; Fit, mobility, comfort, protection, donning and doffing* as shown in Figure 2.

Fit

It is a determinant of the garment's size in relationship to the wearer (Lage & Ancutiene, 2017). As identified in the FEA model, it is a crucial part of clothing comfort. Despite the fact that the issue of fit is critical to the proper functioning of clothing (Carroll, 2014), persons with and without disabilities

have reported numerous concerns about the fit of ready-to-wear clothing. Clothing that fits well is not only more appealing, but also more comfortable to wear (Kamalha *et al.*, 2013). Despite the fact that there is usually an optimal fit for clothing, the perception of garment fit by the wearer is an important issue that every designer must consider (Shin, 2013). A correctly fitted garment should have enough ease for movement, the body should not be bound or limited, the garment should be comfortable to wear, and there should be no wrinkling difficulties (Kamalha, *et al.*, 2013).

The most common cause of dissatisfaction with clothing fit, according to Shin (2013), is when the garment does not adhere to the body shape. The social ideal and the apparel industry's ideal of fit are two factors that influence fit satisfaction. A symmetrical, proportional, and balanced human figure is emphasized in the social ideal. The display of items on idealized bodies, as well as the pattern Sloppers that are used to construct ready-to-wear garments, are all based on symmetrical bodies with pleasant proportions in an upright position (Shin, 2013). People with disabilities may blame themselves for their clothing not fitting properly because of these idealistic ideals. They may have varying amounts of satisfaction in different parts of their bodies. However, because most ready-to-wear garments do not take into account the body dimensions of the mobility challenged, fit may be an issue for them.

Mobility

According to Watkins (1985), clothing movement is critical to its function. He went on to say that there are two fundamental techniques to boosting clothing mobility. The first step is to choose a fabric that moves well with the body, and the second is to create a garment that encourages mobility.

In order to maximize garment mobility, both approaches should be applied. Because physical movement is already difficult for someone with a mobility impairment in Ghana, clothing that allows for mobility will be quite beneficial.

Comfort

Negative reactions to the way a garment feels and appears, according to Watkins (1984), might cause sensations of discomfort. Physical, psychological, and social comfort are the three dimensions of comfort described by Kamalha *et al*. (2013). The contentment with physical features such as garment bulk, weight, and texture is referred to as physical comfort. The psychological contentment with desirable affective states such as femininity or elegance is referred to as psychological comfort (Kamalha *et al*., 2013). This might have a feeling on the wearer's self-esteem and perception of enhancement. The third component, social comfort, expresses how acceptable one's clothing is for a particular time or event. It can also refer to a feeling of contentment with the level of desired conformity to peers' attire. One dimension may have an impact on one or both of the other dimensions, or it may exist independently and this supports the notion that people with mobility impairments are looking for clothing that is not only functional but also stylish in order to satisfy all three dimensions of comfort (Hampshire, Dehghani-Sani & O'Connor, 2022).

Donning and Doffing

Garment donning and doffing, according to Stokes (2012), are crucial aspects of independence and convenience in everyday life. To put on and take off clothing, you'll need a lot of coordination, dexterity, balance, range of

motion, and muscular strength. Moreover, if a garment is made without considering all these factors about individuals with mobility impairment, then automatically, donning and doffing might be a greatest challenge for such individuals especially in Ghana, where there is no clothing line to meet their physical needs. It is also important to look beyond ready to wear garment to custom made garment for any provisions for ease of donning and doffing garments.

Protection

One of the most basic functions of clothing is to provide protection (Karim, *et al.,* 2020). People would be left physically and emotionally vulnerable without clothing, according to them, as they would be exposed to a variety of elements that could hurt their bodies. Clothing, on the other hand, shields the human body from the unpredictable external environment and maintains a comfortable internal environment (Piantadosi, 2003). Clearly, one of the most important function of clothing is to give protection, and therefore the choice is very individual and will depend on the wear situation. Evidence shows that, PWMIs usually have low physical activity, and therefore have low heat production, such individuals would need more insulation than highly active ones which can be achieved through well selected clothing in temperate countries (Price & Trbovich, 2018).

According to Keil (2012), PWMIs might need supportive braces and pads that will give support and protection for their weak backs and also to reduce the unwanted movements in the areas such as hand, wrist, neck, knees and ankles. However, in a country like Ghana where clothing production is mainly geared towards only the people without disability, there is the

likelihood that, such individuals (PWMIs) would not fully achieve the protection that clothing offers to humankind. Therefore, it is important to look into the subject to find out if PWMIs fully have the protection that clothing gives as far as their quality of life is concerned.

Expressive Considerations

Lamb and Kallal (1992, pp. 46), described expressive considerations as "the symbolic and communicative aspects of dress" Garment with expressive considerations should reflect the customer's status and self-esteem in order to increase patronage of the garment. Element of these considerations include values, roles, status, and self-esteem. A lot of information is passed and received (nonverbal communication) through the use of clothing (Leary, 2019). There are indications that, Clothing helps to communicate personal identity and express relationship with others as well as the type of situation in which the wearer is involved. Since people with mobility impairment in Ghana do not have clothing production line that meets their physical needs, their expressive considerations may not be recognized in the production of the general garment.

Aesthetic Considerations

Lamb and Kallal (1992, pg. 48) defined aesthetic considerations as "component of a garment that use a line, form, colour, texture and pattern to create a pleasing design". They comprise of style and design that should align with the user's personality. The model incorporates art elements, design principles, and body-garment relationship. Functional clothes that follow fashion trends are important for people with disabilities (Kabel *et al.*, 2017) However, garments that are available in the market for this consumer segment

do not look trendy and therefore do not achieve aesthetic needs of these individuals. Since their body dimensions are not considered in the production phase of the garment.

In summary, the FEA model is user centred, aiming at recognizing the clothing needs of the final customer (Lamb & Kallal, 1992). In this study, the sub-elements of FEA considerations will be used to determine the satisfaction level of people with mobility impairment and the use of general clothing in Ghana. It will again be used to determine the clothing attribute that people with mobility impairment are looking for in their garment. Watkins (1984) functional design framework was improved by Lamb and Kallal (1992), who took it a step further. They tested not only the wearer's functional needs, but also his or her expressive and aesthetic needs. Watkins emphasized certain considerations such as fit and mobility in relation to functional aspects of clothing, which are kin to the functional design process.

The FEA model's expressive considerations include the messages that a garment transmits that indicate social standing and individual self-esteem. This FEA model can be used to investigate or design both functional and fashionable clothing. Since the FEA Model considers both function and fashion when developing clothing for individuals with disabilities, the final users are at the center of the design process to satisfy their clothing needs. A lot of studies have demonstrated that functional considerations are the most focused need of the consumer, consumers at the same time, look for expressive and aesthetic features (Mugge, Brunel, & Schoormans, 2012; Orzada & Kallal, 2012; Stokes & Black, 2012). Once all the three needs are

balanced, garments are more likely to satisfy the consumer both functionally and aesthetically.

Quality of Life (QOL) Model

World Health Organization defines Quality of Life (QOL) as "*individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns*" (WHOQOL group, 1995, pg. 57). The model addresses six domains: physical health, psychological state, the level of independence, social relationships, environment, and spiritual or religion or personal beliefs. The facets of each domain can be improved by well thought designed clothing, which will result in improved quality of life of people with mobility impairment in Ghana. This is presented in figure 3.

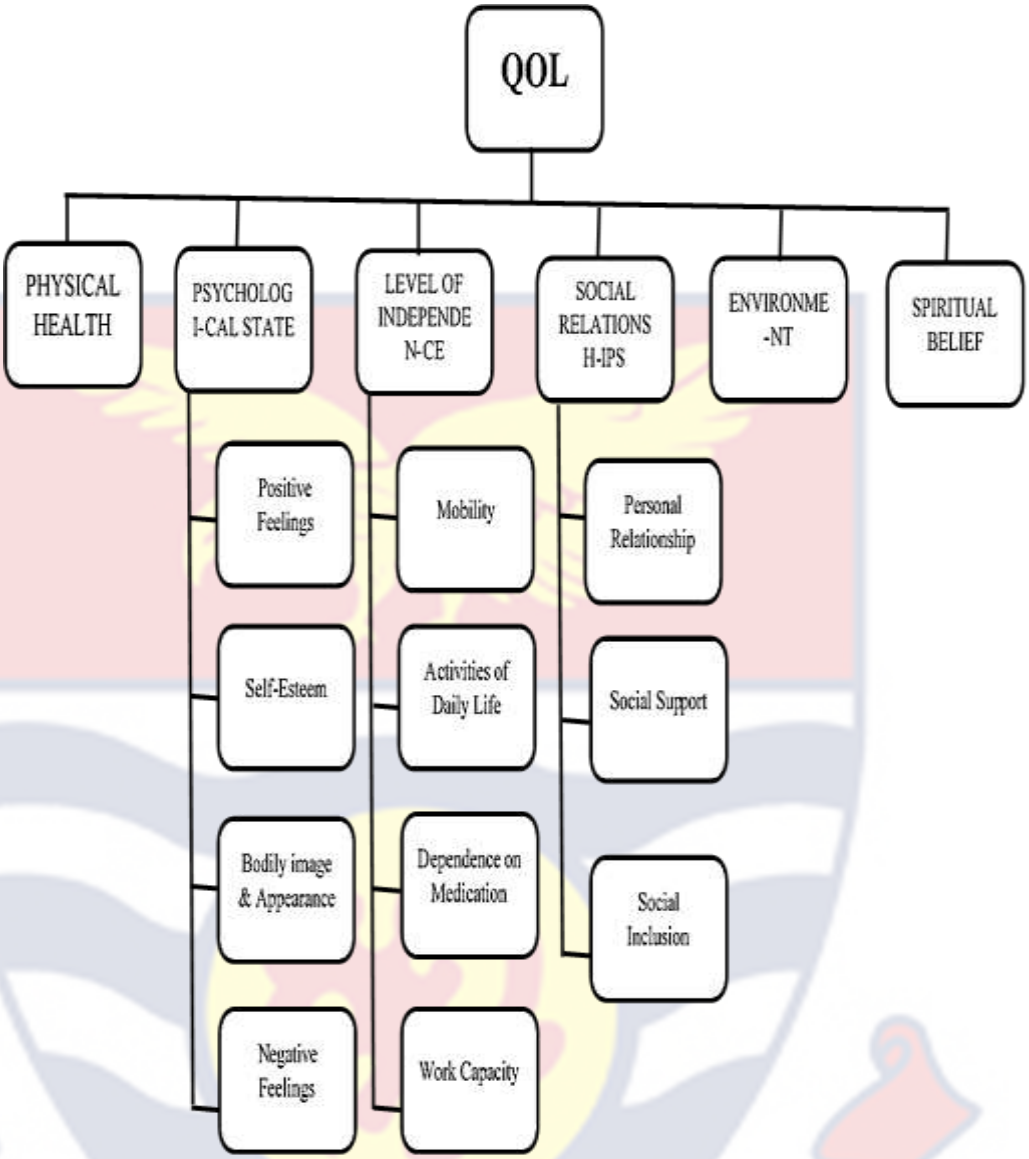

Figure 3: Quality of Life model
Source: (WHOQOL group, 1995)

In this study, three of the domains that are related to the quality of life will be adopted; psychological state, level of independence, and social relationships. These domains in conjunction with the FEA consumer needs model will be used as a means to determine levels of QOL of people with mobility impairment in Ghana. The basis of the three selected domains depends on their relevance in relation to the understanding of clothing needs and satisfaction of people with mobility impairment as far as their quality of life is of concern. However, the model will help in determining the quality of

life of people with mobility impairment in relation to the FEA model, thus answering research question five.

Table 1: WHOQOL Domains and Facets

Domains	*Facets*
Psychological	Positive feelings.
	Thinking, learning, memory and concentration.
	Self-esteem.
	Bodily image and appearance.
	Negative feelings.
Level of Independence	Activities of daily living.
Mobility	Dependence on medication/treatment.
	Work capacity.
Social Relationships	Personal relationship.
	Social support.
	Social Inclusion.

Source: WHOQOL group (1995)

Clothing plays a significant role in peoples' physical, psychological, and social well-being (Nelis *et al.*, 2011). Vansteenkiste and Ryan (2013) discussed how clothing contributes towards enhancing a person's body and lessens the threat of psychological insecurity. Nelis *et al.* have stated that quality of life for people with disability can be substantially improved by better-designed clothing with regards to functional and aesthetic considerations. General clothing might be unsuitable for people with physical impairment as garments would not fit well since their body dimensions are not considered during production. General clothing might also lack aesthetic as well as expressive considerations which compromise their sense of self-respect (McBee-Black & Ha-Brookshire, 2018). In order to maintain a high quality of life for people with mobility impairment in Ghana, there should be

well thought out garments that seek to address their functional, expressive and aesthetic needs. This will help these individuals build positive attitude, and social relationships towards life (Leary, 2019).

Conceptual Review

The following concept are reviewed under the conceptual review;

a. Physical disability
b. Concept of clothing
c. Individuals with mobility impairment

Physical Disability

Physical disability is a broad phrase that refers to a "variety of disabilities and health problems, including both inherent and acquired disabilities Persons with physical disabilities, often known as disabled people or physically disabled people, have a physical impairment that affects their ability to carry out daily tasks in a significant and long-term way" (MartinGinis, Ma, Latimer-Cheung, & Rimmer, 2016, pg. 345-346) A person with a moderate physical handicap would have mobility issues, such as being unable to climb stairs, and would require walking aids or help (Martin-Ginis *et al.*, 2016). A person with a significant physical handicap would be unable to walk and would require assistance to get around.

Many causes and illnesses might impede mobility and movement. Due to paralysis, stiffness, pain, or other impairments, it is normal to be unable to use one's legs, arms, or body trunk properly (Huskin, Reiser-Robbins, & Kwon, 2018). It could be due to birth abnormalities, disease, old age, or an accident. These impairments may fluctuate from day to day. They may also have a role in other issues like stuttering, memory loss, short stature, and

hearing loss. People with mobility and movement limitations may find it difficult to participate when presented with social and physical barriers. They are frequently courageous and self-reliant individuals who want to contribute to the best of their abilities. Some people are completely self-sufficient, while others may require some assistance (Johnstone, 2001).

Concept of Clothing

Clothing is a basic human necessity that serves multiple purposes. These functions include protection, covering, status identification among others. The choice of clothing is based on many factors such as personal desires and the particular application, which all depend on the user (Kamalha, Zeng, Mwasiagi, & Kyatuheire, 2013). Clothing has been a habit from which few people have departed as one of man's basic needs. Moreover, careful selection of clothing has been used for enhancing body shape and size.

Although, clothing awareness among people with disability has not been much researched in Ghana, countries that have done research on the subject, have only dwelt on the need for adequate and comfortable clothing for such individuals. However, motivation of people with disability is a requirement for successful rehabilitation. Lobo *et al*. (2019) stated that, the use of clothing has been identified as one of the rehabilitating tools for people with disability. According to Kamalha *et al.* (2013), these people's psychological needs can be satisfied by the use of appealing colours, functional and fashionable design, and interesting materials.

McBee-Black *et al.* (2018) on the other hand, stated that, Clothing helps to disguise disability, thus it even more important for the physically impaired to dress appropriately in order to appear neat and well-groomed. For

people with disabilities, clothing has evolved into more than just a means of protection and ornament; it now satisfies deep psychological needs by giving pleasurable experiences (Kamalha *et al.,* 2013). According to Kabel, McBee-Black and Dimka (2016), Clothing for persons with disabilities should not isolate them from society; rather, efforts should be made to assist them in as many ways as possible in conforming to society.

Hall (2018, pg. 256) also stated that, "appropriate clothing can also make dressing an easier task. It has been tempting for physically disabled people to become dependent on someone to assist them in dressing. Clothing that fits well and presents few problems when dressing adds to the development of independence". How, much a person can dress himself/herself is determined by the severity of the disability. Therefore, there is the need to find out if the functionality of clothing as well as fashion are obtained in the general clothing by PWMIs in Ghana.

Individuals with Mobility Impairment

According to Bobila (2016), mobility impairment is defined as a category of disability that includes people with varying types of physical disorders. Richards and Malouin (2013) on the other hand, explain mobility impairment as inability of a person to use one or more of his or her extremities, lack of strength to walk, grasp, or lift objects. Spinal cord damage, paralysis, muscular dystrophy, and cerebral palsy are all examples (Brault, 2012). This mobility could also be acquired with age problem (Diament, 2016). Mobility impairment ranges in severity from limitations of stamina to paralysis. In Ghana, Persons with mobility impairment, are found in the conditions such as walking on their knees and hands or buttocks or

sometimes use assistive devices such as crutches, canes, wheelchairs and artificial limbs while others are bed ridden.

Disability, on the other hand, is defined by the World Health Organization (WHO) as a term that encompasses impairments, activity limitations, and participation restrictions. According to the United States Census Bureau (2011), the world's total population is seven billion people. An estimated 15% of the population suffers from some form of disability. People with physical disabilities are disadvantaged, socially excluded, and deprived around the world, with low literacy skills and a low social position. The 2006 United Nations Convention on the Rights of Persons with Disability is an example of emerging global policy for human rights on the part of disabled, of which Ghana as a developing country, was not an exemption of the movement.

According to Gavu *et al.* (2015), the aim of the Act was to fulfil a constitutional obligation of enacting laws to protect and promote the rights of people with disability.

The Act again proposed that by 2016, PWDs would have the same access to various services as a non-disabled person would (Reynolds, 2010). The Act, specifically outlined rights of PWDs to proper housing, equal employment and educational opportunities, access to public spaces and transportation, adequate medical care, and protections against abuse (Dassah *et al.*, 2018; Dogbe *et al.*, 2016; Ganle *et al.*, 2016; Gavu *et al.*, 2015 Reynolds, 2010). Generally, the passing of the Act was a meaningful step in the removal of barriers to social inclusion of PWDs in Ghana. In optimizing social inclusion and participation of people with disability, society need to

play a role. For example, changing attitudes, eliminating barriers, and enhancing acceptance. It is a fact that, clothing is important in everyone's life, as it can promote or hinder the achievement of an individual's everyday activities and the fulfilment of social roles. Undeniably, the influential role clothing can have, is significant in the lives of people with disability in Ghana.

This marginalized group is believed to have greater challenges in their garment selection (Simpson, 2018). Evidence shows that, it is difficult finding suitable garment in the Ghanaian market that can provide the people with functional, expressive and aesthetic qualities that every consumer is looking for in clothing, due to the nature of their physical impairment (Carpenter, 2016). They rather buy and use what is available in the market (general garment) which is meant for people without disability.

Empirical Review

Issues that are reviewed empirically in this section include;

a. Effect in the use of general clothing by PWMIs
b. Attributes of general clothing:
   i. Design features of general clothing ii. Patterns employed for general clothing iii. Openings and fasteners iv. Fit of general clothing to PWMIs v. Type and placement of seam in general clothing; vi. Fabrics for general clothing; vii. *Wear and tear of general clothing*;
c. Accommodation of medical devices and related mobility accessories in the use of general clothing.

Effect in the use of General Clothing by PWMIs

General clothing; is a clothing made in standard sizes so that they fit most people, rather than being made specially for a particular person. They are

constructed according to the traditional size system, of which majority of people with disability do not fall in that size category (Hamraie, 2013). According to Sau-Fun *et al*. (2011), the body dimensions of these people contrast the traditional body dimensions in the size system. This physical impairment, could lead to frustration for people with mobility impairment in finding clothes that will meet their needs as well as their lifestyles in a society where clothing production has been geared towards mass production and standardization.

Persons with disabilities confront difficulties in the workplace, according to previous study; nevertheless, another hindrance to workplace participation for people with disabilities is a lack of appropriate clothes, according to other results (McBee-Black & Ha-Brookshire, 2018). This barrier raises the stigma associated with mobility and lowers people's confidence. Since the convention has been that, people with physical needs differ from the norm, creating the impression that, they have been side-lined in favour of the mainstream body when it comes to clothing production. Currently, there is no clothing production line in the country that is producing to meet the physical needs and the lifestyle of people with disability. This usually require the individuals to make extensive alteration on the ready-made-garment in the Ghanaian market to improve their fit (Brown, 2003). The clothing related problems of this marginalized group are left in their own hands, which are not easy to be solved (McBee-Black & Ha-Brookshire, 2018).

Literature still shows that, good number of works have been done in the developed countries in the area of clothing for people with disability, by a number of researchers, designers, occupational therapists, home economists

and fashion industries for this marginalized group in various ways (Goldsmith, 2012). However, the researcher could not find any study in Ghana on this subject and this has been the motivation for a call to investigate situations of people with mobility impairment. Several institutions are working for rehabilitation of people with disability.

All for the purpose of removing feelings of inadequacy and inferiority, as well as restoring confidence and an independent spirit (Gutenbrunner & Nugraha, 2018). Clothing has been identified as one of the group's rehabilitative tools since it permits and encourages independent dressing and undressing, as well as boosting their self-esteem, which requires special attention. Disabled people's clothing issues are extremely personalized because they are dependent on the sort of disability they have (Lindsay & Yantzi, 2014).

Design Features of General Clothing

When it comes to developing consumer goods, most designers consider just the abilities of the majority (Morris, 2016). As a result, people with impairments may have difficulties with everyday clothes, which sometimes necessitates considerable alterations to enhance fit (McBee-Black & HaBrookshire, 2018; Chadda, 2014). Research has again indicated that, selection of clothing by people with disability and care givers have always been a problem (Tefera, Schippers, van Engen, & van der Klink, 2018). While people without disabilities consider appropriateness, style, fit, colour, and price when choosing clothing, people with disabilities consider whether the garment will fit over any figure distortions, any prosthetic device, whether there is enough ease of movement, and whether alterations can be made to

accommodate these issues (Lobo, Hall, Greenspan, Rohloff, Prosser, & Smith, 2019). It is the feeling of many people that, people with disability should be as well dressed as people without disability.

According to Jones and Girouard (2021), the design of functional textiles and clothing extends beyond well-known traditional boundaries, entwining with other domains such as medicine, biotechnology, nanotechnology, physics, and computing in order to meet the complex and multifaceted needs of users, particularly disabled people. Clothing for special needs is a category of functional clothing designed to improve the quality of life of disabled people (and others) whose body form, size, mobility, and dexterity differ dramatically from that of "normal" people.

According to surveys, people with disability are extremely conscious of the clothing they wear and their general personal appearance (Thomas, WarrenFindlow, Webb, Quinlan, Laditka, & Reeve, 2019). These people have distinct needs, necessitating the creation of clothing that is specifically made to meet their needs. As a result, changes in body forms, movement constraints, psychological, and social needs must all be taken into account during the design process. Many researches have been undertaken over the years that have led in the development of personalised clothing pieces to address the features, manifestations, and impact of various sorts of disabilities on the lives of those who are afflicted.

Many disabled people are constantly stressed since they have no other option but to buy garments from conventional stores. Typically, such retail establishments do not offer services or products that are accessible to disabled customers. This is why, in accordance with universal design principles,

clothing designers and manufacturers are considering the creation of appropriate goods from an ergonomic and aesthetic standpoint that would meet this specific type of customers (Spirina, 2021). Universal design (or inclusive design) refers to a broad range of people aimed at creating buildings, goods, and surroundings that are intrinsically accessible to all people with disabilities (Quintero, 2022). It has been proposed that the creation of items that are in compliance with the requirements are part of the so-called "universal fashion" and, at the same time, may be worn by everyone (including people with loco-motor disabilities) to give psycho-emotional comfort for disabled people.

The design and functioning of clothing can improve the quality of life for impaired people. Unlike the rest of the population, disabled people's specific needs fluctuate depending on specific requirements produced by a specific necessity. Clothing must therefore provide additional comfort on a functional, sensory, and psychological level (Antonela, Viorica, Laura, & Marian, 2014). Because their proportions and designs do not correspond to those of normal products developed for people who do not suffer from disabilities, textile products designed for disabled people wind up being significantly more expensive than their ordinary counterparts.

Design features of general garment include; sleeves necklines, collars, fullness, cuffs, belts to mention a few (Cumming, Cunnington, & Cunnington, 2017). The dressing of the disabled can be more complex when fatigue or agitation is a factor added to it (Mahoney, LaRose, & Mahoney, 2015). Garments for people with disability should be designed in such a way that, they can don and doff their garments as independently as possible. However,

since general garments are made, not taking disability figure into consideration, there is the belief that, donning and doffing process might pose greater challenges for these marginalized, generally denying them the independence in dressing that can enhance their quality of life.

Patterns Employed for General Clothing

Pattern making is regarded as a function that connects design and production. A pattern that interprets the design in the form of garment components can turn a sketch into a garment (Niinimäki & Hassi, 2011). A garment, on the other hand, is created through a series of processes. According to Kasambala (2013), the most essential aspect in determining whether a garment is accepted or rejected is its fit. To accept body bulges in a flattering manner, fit must be integrated into the original pattern through subtleties in the pattern that supply fullness unobtrusively at appropriate areas (Pandey & Chawla, 2018).

Evidence shows that, the art of garment pattern and pattern grading, which incorporates diverse shapes and dimensions of the specific consumer, is essential for a properly personalized fit (Jhanji, 2018). Uncertainty about the predicted garment-to-body fit makes assessing fit quality challenging. Most sizing systems use incremental or proportional grading to provide a range of sizes (Cupar *et al.*, 2019). This strategy fails to handle a population with an unlimited diversity of body shapes and dimensions, such as disabled persons.

Previous studies, moreover, have compared the anthropometric characteristics of people with and without disability and have found several differences between these groups (Blomqvist, Olsson, Wallin, Wester, & Rehn, 2013; Hall & Lobo, 2018; Rudolf, Cupar, & Stjepanovic, 2019). It is

essential to understand differences in measurement when a body is standing compared to sitting, such as: Hip bones spread out. When a body is seated for long, stomach muscles do not work in the same way. So, waistline becomes thicker (Rangaswamy, 2013). Fat and muscle spreads at butt and thigh region when seated (Harry, Marshall & Fray, 2020). Thus, all those changes should be considered while drafting a pattern for a seated position.

Openings and Fasteners

Fasteners are frequently a vital component that affects whether or not a garment functions well, and they should be one of the designers' primary concerns (Watkins, 1985). Fasteners may be the most difficult clothing issue for people with disabilities to deal with (Reich & Shannon, 1980; Watkins, 1985). When your hand dexterity is reduced, small buttons, hooks and eyes, and zippers can be difficult to use. According to the research, there are some easy solutions that can make it easier to open and close a garment. When designing for individuals with disabilities, having fasteners that are large enough to grip and at a location where the wearer can reach them are important factors to consider, and minimising the number of fasteners may also be useful (Frescura, 1963; Kernaleguen, 1978).

To allow the wearer to dress themselves, Watkins (1985) recommends openings in the front of the garment from the midchest to the lap. Sperling and Karlsson (1989) tested fasteners for long-term hospital patients with disabilities by having the subjects wear an adjustable vest with various fasteners in various places, and the researchers watched the study respondents' use of the fasteners. Openings and Closures are functional in nature and may be a concern for people with disability. The type, location and number of these

features on garment might be very necessary to people with limited mobility as they provide easy access for donning and doffing, providing independence and self-confidence to such individuals.

Fit of general clothing to people with mobility impairment

Proper fit of a garment is determined by the relationship of the size of the garment compared to the size of the wearer (Lage & Ancutiene, 2017). Clothing fit can also be_defined as garments that have the proper size and shape. Having said this, the meaning for clothing fit involves two elements which are the size and shape (Aklamati, Twum, & Deikumah, 2016). For a person to fit comfortably into a garment, that garment has to be made having the correct size and shape of the client in mind. Sizes are based on the body measurements of a person. While as, body shapes are made from depth, width, and length of a body. Moreover, there is another element that affect the fit of a garment which is the proportion of the body (Sidberry, 2011).

Proportionate body means that, the key body measurements (for example: chest and waist, waist and hip) have the same relationship or ratio proportionally. However, the body shape of the mobility impaired is contrary to this phenomenon which is not considered in the making of the general garments. Therefore, the belief that appropriate fit will not be obtained by such individuals in the general garments is greater. As reported by Aklamati *et al.* (2016), the problem with clothing fit stems from many variations. Her research showed that aesthetic and functional factors play vital roles in determining clothing fit as well as the ease of the garment.

Accommodation of medical devices and related mobility accessories in the use of general clothing

The two major issues with accommodation of assistive devices and the use of general clothing are safety and concealment (Hall & Lobo, 2018). General garments are made according to the traditional size system that do not take the needs of mobility impaired as well as their assistive devices into consideration. Medical devices like leg braces, colostomy bags and catheter which are called internal assistive devices can be covered by clothing (Kabel, McBee-Black, & Dimka, 2016). However, since the general clothing are not made to consider such individuals in Ghana, the garment cannot play that functional role of concealing these devices. Again, Kabel *et al*. (2017) noted that, some mobility accessories like wheelchairs, crutches and walkers, also referred to as external assistive devices that cannot be concealed by clothing, safety must be a concern to prevent injury to the body and embarrassment. Not achieving this might be a problem since limited mobility individuals are not considered in the production of general garment in Ghana.

Type and Placement of Seam in General Clothing

Making of general clothing follow certain principles such as specific seam for a particular garment design, position of dart lines, princess lines, side seams, to mention a few. These types of seams and their placement in the general garment, coupled with the fabric used can create bulk at specific points in the garment (Stokes, 2012). However, as noted by Sau-Fun *et al*. (2011), people with limited mobility are characterized by being static for a longer period of time. Therefore, such bulk seams and their placement in the general garment may pose challenges such as; skin irritation or damage

sensitive skins or cause pressure sores which might add to their problems rather than helping them (Sau-Fun *et al*., 2011).

Fabrics for General Clothing

Clothing is vital in our lives because it satisfies one of our most basic physiological needs (Frith & Gleeson, 2004). It does not only reflect our social position, it also provides comfort and protection from undesired environmental factors. The constant modifications that the human body goes through, as well as several other factors, tend to impact our clothing preferences and behaviour. When dealing with disabled individuals (disability can be inherited or acquired), clothing becomes even more crucial since these people desire to conceal their physical flaws and project a certain image in order to form relationships within the society (Hall, 2018).

However, past studies consistently indicate, that people with disabilities wish to have clothing made of fabrics with unique textile properties due to long sitting hours and less body movement, in their daily routine care and dressing habit (Burchardt, 2004; Kamalha, Zeng, Mwasiagi, & Kyatuheire, 2013). They further stated that, people with disabilities do not wish to have fabric that would add bulk to their frame and hinder their already limited range of mobility (Baumgartner, 2012).

In order to have long-lasting clothes, durable fabrics must be able to bear the tension of stiff joints as well as the abrasion of crutches and braces. In addition, the fabric should be soft against the skin, wrinkle-resistant, and easy to maintain (Frescura, 1963). Knits appear to be a potentially comfy fabric, but they easily catch on crutches and braces, resulting in ugly fabric runs. In her study of clothing for boys with disabilities, Reeves (1967) looked into the

advantages of woven stretch fabric. Woven stretch fabrics, according to Reeves, are more durable and wrinkle resistant than non-stretch choices. Woven stretch fabrics have also been discovered to have benefits such as comfort, ease of care, and dimensional stability. Drooling and other soiling stains can be camouflaged using printed fabrics, according to studies.

Wide range of fabrics with various properties are used in the production of general garment in order to have aesthetic quality for the garments for the general populace, without considering the fabric needs of the mobility impaired people. Therefore, there is the belief that, people with mobility impairment, especially in Ghana will not find fabric satisfaction in the general clothing (Nketsiah, 2020).

Wear and Tear of General Clothing

People with mobility impairment, more often than not use assistive devices such as wheelchair, crutches, walkers, braces and special lift as well as those who crawl on the floor (Simpson, 2018). Since garments used by these individuals are mostly not customized to meet their needs, as far as the fabric choice is concerned, there is likelihood that they might suffer wear and tear due to abrasion of these devices and contact surfaces (Leary, 2019).

Economic Considerations of General Clothing

Evidence still shows that, People with mobility impairment wish to have garment that could improve their quality of life by encouraging health recovery, enhancing lifestyle and realizing personal expectations (Bobila, 2016). Due to their special clothing needs, they may perceive different risks in relation to clothing purchases than able-bodied ones (Annett-Hitchcock & Xu, 2015). Annett-Hitchcock and Xu (2015) further discussed various perceived

risks which include economic risk. Indication shows that, most of these individuals do not have much purchasing power as they rely on security funds or similar source of funding. Thus, their resources are limited within which they have to support themselves by buying specialized medical devices, other additional support services and to maintain living lifestyle standards (Opoku *et al*., 2019). Due to these stressful financial circumstances, the clothing purchase decisions become more complex for these marginalized groups (AnnettHitchcock & Xu, 2015). These garments that people with impairment struggle financially to purchase, might not give them good fits, and may require further alteration which also require extra cost. Research again indicated that, people with mobility impairment do not only look for garment fit, but aesthetically pleasing and cost effective, in order to help maintain the quality of life they are looking for (Hall & Lobo, 2018; Leary, 2019).

Chapter Summary

The social model of disability describes disability as a result of environmental factors, and clothing is one of these factors that can contribute to the development of disability. Currently, ready-to-wear manufacturers are failing to meet the clothing needs of people with disabilities of all ages, and researching their needs will raise new awareness about a demographic known for its obsession with appearance.

CHAPTER THREE

RESEARCH METHODS

Introduction

The study was aimed at finding out the satisfaction level of clothing attributes of people with mobility impairment in the KEEA municipality with regards to ready-made garments, and also looked out for the kind of design details that these people with mobility impairment are looking for in their garments, as well as the relationship between perception of quality of life of people with mobility impairment and Functional, Expressive and Aesthetic (FEA) elements of clothing. The chapter however, dealt with the designs that may be adopted by the researcher to guide the study as well as the methods of gathering the data. The areas include; The research design, Study area, Study population, Sample and sampling procedure, Data collection instruments, Data collection procedure, Data processing and analysis.

Research Design

Descriptive survey was adopted as the study design. Descriptive survey is a process of collecting data in order to answer research questions concerning the status of the study (Amedahe, 2010). According to Johnson and Christensen (2008), descriptive survey predominantly aims at describing, observing and documenting aspects of a situation as it naturally occurs rather than explaining it. The researcher was of the view that, the design has an advantage of producing a good number of responses from a wide range of people. Such as people with mobility impairment widely spread in KEEA municipality. The descriptive survey was recommended by Polit and Beck (2010) for the purposes of generalizing from a sample to a population so that

inferences can be made about some characteristics, attributes or behaviours of the population. It again, provides a more accurate picture of conditions and seeks to explain people's perception and behaviour based on data gathered at a point in time (Polit & Beck). In the same way, this study used a sample group generalized to the larger population, which is the people with mobility impairment in KEEA municipality, to help gather data needed to explain the clothing needs of people with mobility impairment in the municipality more clearly.

Descriptive survey again, involves asking some set of questions to a large number of people either by mail, telephone or in person. This study, however employed one-on-one contact in collecting data from prospective respondents. The design was therefore, appropriate for this study, since the study aimed at investigating into a condition of a group of people in KEEA municipality to find out the challenges they have with the use of general clothing and also to find out their clothing needs and attributes that they are looking for in their garment as far as quality of life is concerned.

Study Area

Komenda-Edina-Eguafo-Abrem (KEEA) municipal assembly is made up of four Traditional Areas which have been put together to constitute a Municipality (KEEA). It was one of the forty-six (46) new districts created in 1988 as part of the Decentralization Programmes in Ghana (Bukari, Kemausuor, Quansah & Adaramola, 2021). It was elevated to a Municipal status in 2008, in pursuance to LI 1857 with Elmina as municipal capital (Elvis, 2021). Elmina, being the capital of the municipality, is one of Ghana's most famous historic towns and its strategic location and history makes it the

beacon for investment and the heart of splendid tourists' destination not only in the Central Region of Ghana but in the West African sub region. The Municipality is bounded on the South by the Atlantic Ocean (Gulf of Guinea), the East by the Cape Coast Metropolis, the North-East by the Twifo Lower Denkyira District, the NorthWest by the Wassa East District and the West by the Shama District. The municipality covers an area of 372.45 kilometers square (Boasinke, 2021).

There are four paramouncies in the Municipality, these are: Komenda with the paramount seat at Komenda, Edina with the Paramount seat at Elmina, Eguafo with the paramount seat at Eguafo and Abrem with the paramount seat at Abrem Berase. Again, Komenda-Edina-Eguafo-Abrem Municipal Assembly is a fifty-four (54) member Assembly comprising thirty-seven (37) elected and seventeen (17) appointed members, a Chief Executive and one Member of Parliament. The Assembly has a sub structure of six (6) Zonal Councils namely; Komenda Zonal Council, Elmina Zonal Council, Ntranoa Zonal Council, Eguafo Zonal Council, Ayensudo Zonal Council and Kissi Zonal Council.

According to Population and Housing Census, (2020) the municipality has a population of 144,705 representing 6.6 percent of the Central Region' total population. About 6.3 percent of the total population of the Municipality has one form of disability or the other. The proportion of the female population with disability is slightly higher (6.5%) than males (6.3%). The types of disability in the Municipality include sight, hearing, speech, physical, intellect, and emotion.

Persons with sight disability recorded the highest of 51.6 percent followed by physical disability (29.2%).

According to Arthur (2017), about 5.0 percent of the urban population of the Municipality has disability compared to 7.0 percent of rural people. There are higher proportions of females with sight, physical and emotional disabilities than males in rural localities. The situation is almost similar in urban localities except that a slightly higher proportion of males (13.5%) than females (13.0%) suffer emotional disability in urban localities, contrary to what is observed in rural localities.

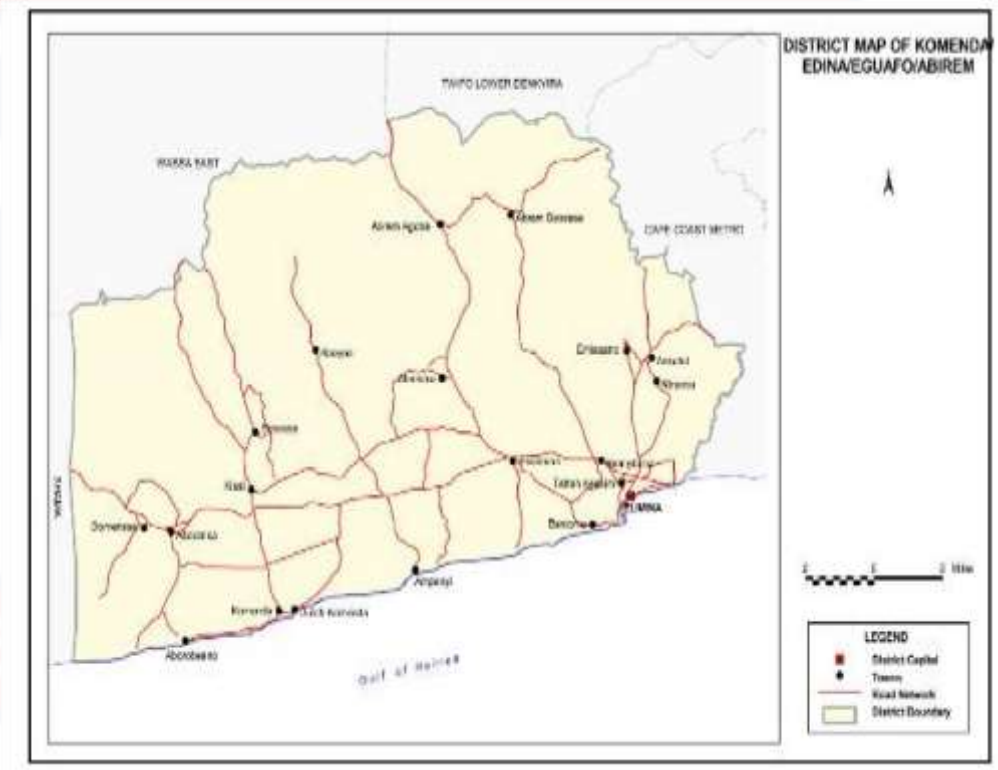

Figure 4: Map of Komenda-Edina-Eguafo-Abrem Municipality
Source: Ghana Statistical Service (GIS, 2021)

Study Population

According to Sydor (2013), population in research is defined as the group of interest to the researcher; the group to which generalization can be made. Amedahe (2010) also said that, population is a group, usually of

individuals from which a sample can be selected to generate results of a study. Therefore, population is the larger group to which a researcher hopes to apply the results.

The target population for this study consist of PWMIs in KEEA municipality. They are the target population because, they are the people the study focuses on. However, the study is actually based on the Association of Physically Challenged Persons in KEEA Municipality as accessible population where a sample was_drawn. The association is made up of physically challenged people from almost all the towns in the municipality.

Sample and Sampling Procedure

According to Amedahe (2010), a sample consists of carefully selected subset of the units that comprise the entire population. Polit and Beck (2010) are also of the view that, a sample is a sub group of the target population that the researcher plans to study for the purpose of making generalization about the target population. However, sampling procedures refer to the methods used to select sample from the target population. Martínez-Mesa, González-Chica, Duquia, Bonamigo and Bastos (2016) also indicate that, sampling is the process of selecting a portion of the population to represent the entire population.

In this study, a multi stage sampling procedure was adopted to select the research respondents. Enquiries were made from key people to identify the association of physically challenged in KEEA municipality, and also to get the details of the group including the breakdown of the number of members in every community within the municipality. Stage one, purposive sampling technique was deemed appropriate for the selection of the towns. Five towns

were purposively selected from the municipality, because they have the higher numbers of PWMIs among the communities according to the details given about the group. The population of PWMIs in the five selected communities within the municipality is 413.

According to Krejcei and Morgan (1970), a population of 413 required a sample size of 201. Since there were differences in numbers among the five communities, it was important to ensure that each group was well represented in the sampling process. To ensure that, stratified sampling technique was used with the help of the table developed by Krejcei and Morgan (1970) to come out with appropriate number to be selected from each community to form the sample size, stage two. Stage three, a simple random sampling (lottery method) was used at their community-based meetings to select the specific individuals to serve as respondents in each of the communities.

Table 2: Breakdown of Sample Population

S/N	Selected settlement	Population of mobility impaired	Sample six
1	Enyindakrom	92	45
2	Kissi	88	43
3	Elmina	80	39
4	Besease	80	39
5	Komenda	73	35
6	Total	413	201

Source: KEEA Municipality (2020)

Data Collection Instruments

Instrumentation refers to the development of tools or instruments for gathering data from the field. Examples of these include questionnaires,

interview schedule, observation guide etc. In this study, questionnaire and interview guide were employed for data collection on the field.

Questionnaires

According to Cooper and Schindler (2014), questionnaire consists of a list of questions or statements relating to the aims of the study, the hypotheses and research questions to be verified and answered, to which the respondent is required to answer by writing or selecting from given options. Therefore, a questionnaire would mean a device through which researchers gather information by asking respondents series of questions on a topic they are researching into. It is widely used in educational research to obtain information about certain conditions and practices, and to probe into opinions and attitudes of an individual, or a group (Polit & Beck, 2010).

Questionnaires are widely used for their enormous advantages, which include being easy to administer, friendly to complete and fast to score, and therefore take relatively less time from researchers and respondents (Phellas, Bloch & Seale, 2011). Despite the numerous advantages, they also have some weaknesses which include, dishonesty on the part of the respondents. Thus, respondents may not be entirely truthful with their answers. This can occur for various reasons, including social desirability, bias and attempting to promote confidentiality. This issue of dishonesty was minimized in this study by providing assurance to the respondents in the consent form that their privacy values much in the process and that they would be protected.

The questionnaire was deemed as an appropriate tool for this study, since it is a self-reporting and confidential instrument where the respondents were required to confidentially fill out information about themselves as to whether

or not they are satisfied with the attributes of general garments in the market. They were also required to report by the questionnaire, the design elements that they are seeking for in their garments. They again, used the questionnaire to report the relationship between their quality of life and the FEA consumer needs.

With the help of my supervisors, 5-point Likert Scale Type questionnaire was designed and used in this study. The questionnaire was made up of five sections, A, B, C, D and E. Section A elicited demographic information on PWMIs as well as the kind of disability they have. Section B sought information on respondent's satisfaction level with the use of readymade garments, altered and customised garments in the context of functionality and aesthetics elements of garment design under FEA model, proposed by Lamb and Kallal (1992). Section C assessed the importance of functionality, expressive and aesthetics of garments being used by PWMIs. Section D elicited information to be used to determine the elements that PWMIs are looking for in their garments according to their individual impairment based on the FEA model. Section E comprised of questions that determined the quality of life of PWMIs based on WHOQOL model.

Interview Guide

According to Phellas, Bloch and Seale (2011), interview is considered as a means of gathering information or data in a survey. It involves posing questions to respondents for answers in a face-to-face situation or by phone. Again, it represents direct attempt by the researcher to obtain reliable and valid measures of characteristics, behaviours and attitudes in the form of verbal responses from respondents (Amedahe, 2010). In this study, interview

guide was designed, based on the research questions to source for in-depth information from the respondents to help answer the research questions. Roulston (2010) explained interview guide as a flexible not completely predetermined but more controlled device for collecting data when the interviewer (researcher) meets the research respondents.

Interview guide was seen as an appropriate tool to be used in conjunction with questionnaire in this study to obtain wider range of information that was needed to address the research questions. The interview guide was also used to seek clarification and to gain additional information that questionnaire items might not be able to bring out. It was indeed, used as a supporting tool to ensure that, the researcher gets a complete data.

Data Collection Procedure

A letter of introduction was obtained from the Head of Department of Vocational and Technical Education at the University of Cape Coast. This letter was used to seek permission from the executives of the association as well as the respondents before interacting with them. Again, consent forms were given to prospective respondents to be completed, in order to seek their consent before collecting the data. The data was collected by administering the questionnaires face to face with PWMIs in their respective communities during their meetings, after seeking their consent to be respondents of the study.

Those who were not able to complete the items by themselves, were helped to complete it by the research team. Five (5) people were selected randomly from the questionnaire respondents after they had done with the questionnaire to answer the interview questions in each of the five (5) selected

towns. The interview was also conducted on one-to-one basis using interview guide. Four research assistants were employed to assist in the data collection. The research assistants were given the needed orientation to be able to assist with the administration and collection of the data while the researcher took the key role in the process.

Data Processing and Analysis

The data was analysed using Microsoft Excel and SPSS. Descriptive statistics was used to show means, frequencies, and percentages of Likert scale and multiple-choice responses. Open-ended responses were sorted and classified according to the considerations of the FEA Model and the WHOQOL model for analysis, while interview responses were analysed qualitatively and incorporated into the findings. One person was employed and given training to help code the responses separately and then discuss the findings to ensure interrater reliability in the results. However, means, percentages and frequencies were used to analyse research questions 1, 2, 3 and 4. Correlation was used to find the relationship between perception of quality of life of PWMIs and FEA elements of clothing (research question 5).

Chapter Summary

This chapter includes detailed information on how the study's primary data was gathered, analyzed, and presented. Specific issues considered included research design, study area, study population, sample and sampling procedure, and data collection instrumentation. Other issues considered are data collection procedure as well as data processing and analysis. The next chapter deals with results and discussion.

CHAPTER FOUR

RESULTS AND DISCUSSION

Introduction

This chapter provided the results from the analysis of the data collected from the field to investigate the clothing challenges of people with mobility impairment in the Komenda-Edina-Eguafo-Abem Municipality. The data was collected using a questionnaire which was measured on a five-point Likert scale. Thus, the analysis is divided into two sections. The first section contains analysis of the demographic characteristics of the respondents whereas the second section is made up of analysis of the research questions.

Demographic Characteristics of Respondents

This section provided the results of the analysis of the demographic data collected from the respondents which indicate the nature of the sample group. These include sex, age, marital status, main occupation, educational background, kind of disability, means of movement, length of disability, and cause of disability. The results are presented in the following charts and graphs.

Sex

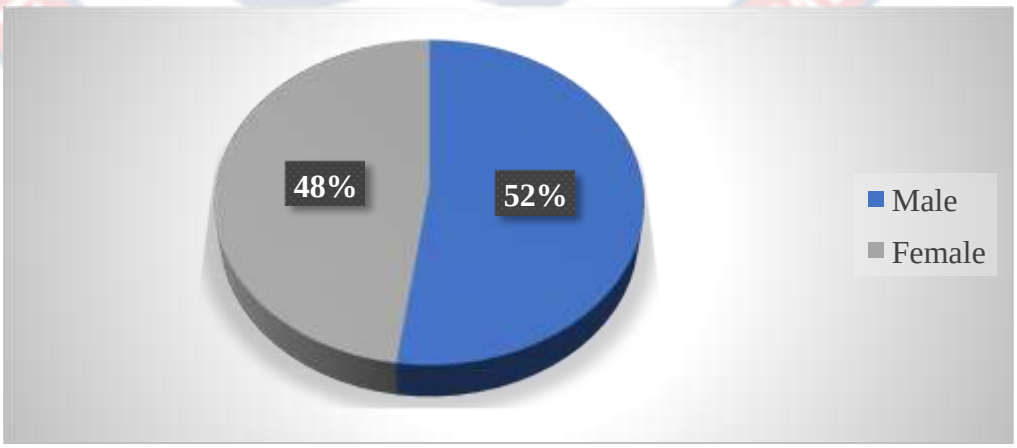

Figure 5: Sex of Respondents (Source: Fieldwork, 2021)

From Figure 5, 105(52.0%) of the respondents are males whereas 96(48.0%) of them are females. This implies that there are more males than females who took part in the study.

Age

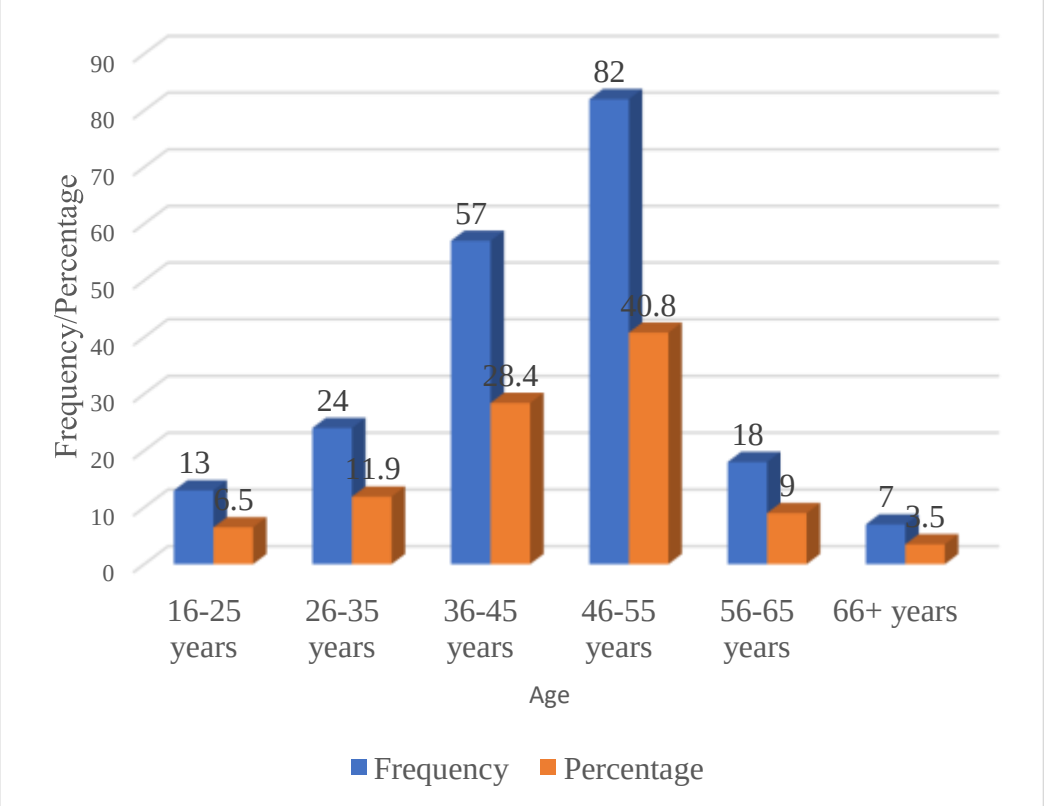

Figure 6: Age of Respondents (Source: Fieldwork, 2021)

Figure 6 showed that 82(40.8%) of the respondents aged 46-55 years followed by 57(28.4%) respondents who aged 36-45 years. The next highest age range is 26-35 years which is made up of 24(11.9%) respondents. Furthermore, 18(9.0%) respondents aged 56-65 years, 13(6.5%) fall within the age category of 16-25 years and lastly, the least age range which consisted 7(3.5%) respondents is 66+ years.

Educational Background

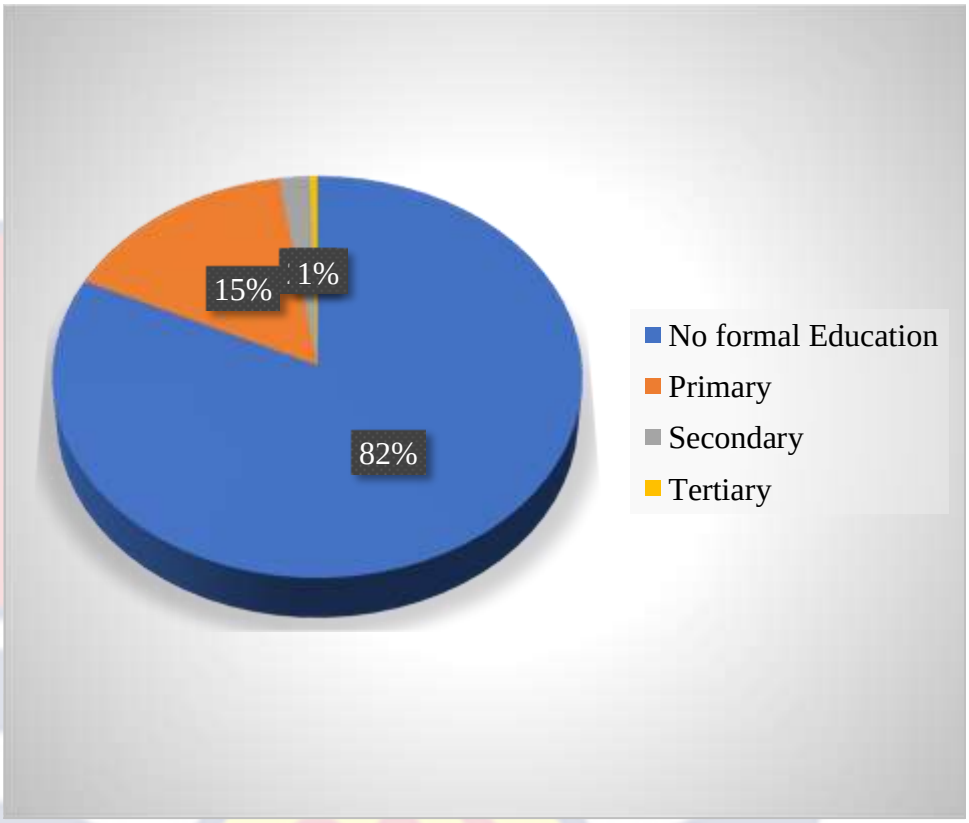

Figure 7: Educational Background of Respondents (Source: Fieldwork, 2021)

The educational background of the respondents of the study as shown in Figure 7 revealed that 165(82.0%) of them had no formal education whereas 31(15.0%) had attained primary education. About 2% of the respondents had secondary education whereas 1 of the respondents had tertiary education.

Kind of Disability and Cause of Disability

Table 3: Kind of Disability and Cause of Disability of Respondents

Kind of Disability	Causes				Total
	From birth	Sickness	Motor accident	Old age	
Amputation-lower limb	27 (42.86)	23 (36.50)	8 (12.70)	5 (7.94)	63
Paralysis	28 (47.56)	18 (30.51)	10 (16.95)	3 (5.08)	59
Cripple	23 (51.11%)	15 (33.33%)	6 (13.34%)	1 (2.22%)	45
Small/shrunk limb	14 (41.18)	11 (32.35)	6 (17.65)	3 (8.82)	34
Total	92	67	30	12	201

Source: Fieldwork, 2021

Table 3 shows the cross tabulation of the kind of disability and what caused the disability among the respondents. In total, 63 of the respondents are suffering from amputation at the lower limb. Among these 63, 8(12.70%) of them sustained the condition through motor accidents, 27(42.86%) sustained the condition at birth, 5(7.94%) sustained the condition as a result of old age, and (36.50%) sustained the condition due to sickness. The table also revealed that 34 of the respondents who took part in the study had the disability of small/shrunk limb. Among these 34, 14(41.18%) of them sustained the condition through birth, 11(32.35%) of them through sickness, 6(17.65) of them by motor accident, and the rest 3(8.82%) due to old age.

Furthermore, 59 of the respondents are suffering from paralysis of which 28(47.56%) of them sustained the condition from birth followed by 18(30.51%) of them who sustained the condition through sickness. These are

followed by (16.95%) of the respondents who are paralyzed due to motor accidents with 3(5.08%) of them stating that they are paralyzed as a result of old age. Finally, 45 of the respondents are crippled. Out of this 45, 23(51.11%) of them were crippled from birth, 15(33.33%) due to sickness, 6(13.34%) due to motor accidents and the just 1(2.22%) person stated that the condition was as a result of old age.

From the table, it can be seen that majority (63) of the respondents are amputated at the lower limb followed by paralysis (59), cripple (45), and small/shrunk limb (34). Again, it can be seen that the major cause of the conditions among the respondents is through birth, which 92 of the respondents have reported, followed by sickness, reported by 67 of the respondents. Motor accident led to the condition in 30 respondents whereas old age is the least cause of the conditions sustained by the respondents which led to their mobility impairment issues.

Kind of Disability and Duration of Disability

Table 4: Kind of Disability and Duration of Disability

Kind of disability	Duration (years)				**Total**
	1-10	11-20	21-30	41-50	
Amputation-lower limb	2 (3.17%)	41(65.10%)	13(20.63%)	7(11.10%)	**63**
Paralysis	4 (6.78%)	28(47.46%)	18(30.51%)	9(15.25%)	**59**
Cripple	2 (4.44%)	16(35.56%)	7(15.56%)	20(44.44%)	**45**
Small/shrunk limb	1(2.94%)	18 (52.94%)	10(29.4%)	5(14.71%)	**34**
Total	**9**	**103**	**48**	**41**	**201**

Source: Fieldwork, 2021

The cross tabulation of the kind of disability that the respondents are suffering from and the duration at which they have suffered the condition as the time the data was collected is shown in Table 4. From the table, out of the 63 respondents who are suffering from amputation at the lower limb, 41(65.10%) of them have been suffering from the condition for 11-20 years, 13(20.63%) of them have been suffering from the condition for 21-30 years, followed by 7(11.10%) who have been suffering from the condition for 41-50 years. Lastly, only 2(3.17%) respondents have been battling with amputation at the lower limb for 1-10 years. Also, among the 59 respondents who reported being paralyzed, 28(47.46%) of them have been paralyzed for 11-20 years, 18(30.51%) of them have been paralyzed for 21-30 years, 9(15.25%) of them have been paralyzed for 41-50 years and 4(6.78%) of them have been paralyzed for 1-10 years.

Furthermore, among the 45 respondents who are crippled, 20(44.44%) of them were crippled for 41-50 years, 16(35.56%) of them for 11-20 years, 7(15.56%) of them for 21-30 years and just 2(4.44%) of them have been crippled for 1-10 years. Lastly, among the 34 respondents who are dealing with small/shrunk limb, 18(52.94%) of them have been dealing with the condition for 11-20 years, 10(29.41%) of them for 21-30 years, 5(14.71%) of them for 41-50 years, and only one person has been battling with small/shrunk limb for 1-10 years. It can therefore be concluded that majority 103(51.24%) of the respondents have been battling with the conditions for 11-20 years. 48(23.88%) and 41(20.40%) respondents have been battling with the conditions for 21-30 years and 41-50 years respectively. Just 9(4.48%) of the respondents reported that they have been battling with the conditions for 1-10

years. Thus, a critical look at the figures suggested that, the respondents are experienced and have gone through the condition hence are expected to have greater knowledge on their garment related issues.

Kinds of Disability and Means of Movement

Table 5: Kinds of Disability and Means of Movement

Means of Movement	Kinds of disability				Total
	Amputation lower limb f (%)	Paralysis F (%)	Cripple F (%)	Small/shrunk limb f(%)	
Wheel chair user	20 (31.75)	25 (42.37)	20 (44.44)	13 (38.24)	**77**
Crutch user	33 (52.38)	23 (38.98)	0 (0.00)	10 (29.41)	**66**
Walks on buttocks	4 (6.35)	11 (11.64)	8 (17.78)	9 (26.47)	**32**
Walks on both hands and knees	6 (9.52)	0 (0.00)	17 (37.78)	2 (5.88)	**25**
Total	63	59	45	34	**201**

Source: Fieldwork, 2021

Table 5 presents the kind of disability and means of movement of the respondents. It is revealed that, out of the 63 respondents who are amputated at the lower limb, 33(52.38%) of them use crutches, 20(31.75%) of them use wheelchairs, 4(6.35%) of them walk on buttocks whereas 6(9.52%) of them walk on both hand and knees. Furthermore, out of the 59 who are paralyzed, 11(11.64%) of them walk on buttocks, 23(38.98%) of them use crutches, 25(42.37%) of them use wheelchairs, and none of them walks on both hands and knees. Again, 17(37.78%) out of the 45 who are cripples walk on both hands and knees, 20(44.44%) of them use wheelchair as well as 8(17.78%) walk on buttocks and none use crutches as means of movement.

Finally, among the 34 respondents who are dealing with the condition of small/shrunk limb, 9(26.47%) of them walk on buttocks, 13(38.24%) use wheelchairs, 10(29.41%) use crutches whereas 2(5.88%) of them walk on both hands and knees. Thus, it can be concluded that majority of the respondents who reported various conditions in this study use wheelchairs 77(38.31) followed by 66(32.84%) who use crutches as means of movement.

Difficulties Encountered by Respondents while Purchasing Clothing

The researcher went on to find out the difficulties they encounter while purchasing clothing. This is presented in Figure 8.

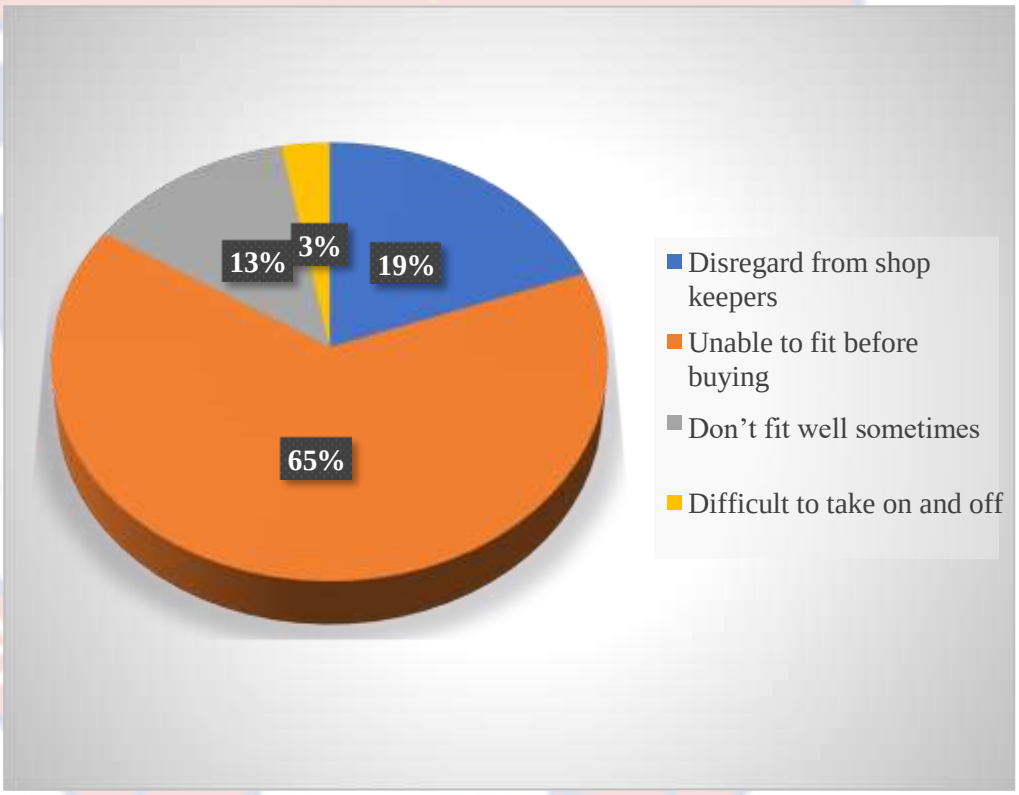

Figure 8: Difficulties PWMIs Encounter while Purchasing Clothing for themselves
Source: Fieldwork, 2021

From Figure 7, 130(65.0%) of the respondents reported that they are unable to fit clothing before buying them. This is followed by 39(19.0%) who stated that they face the challenge of disregard from the shopkeepers they buy

clothing from. Also, 26(13.0%) and 6(3.0%) of the respondents respectively reported that the clothing does not fit well sometimes and the clothing are difficult to take on and off when they want to buy for themselves. Thus, the major problem faced by the PWMIs when buying clothing for themselves is that they are unable to fit clothing before they buy.

Research Question One: What are the Satisfaction Levels of Ready-Made Garment to PWMIs?

To provide responses to this research question, the respondents were provided with items measuring their satisfaction level on general clothing attributes measured on a five-point Likert scale. For the purposes of analysis and easier interpretation, 'very dissatisfied' and 'dissatisfied' are merged and taken as 'dissatisfied' whereas 'satisfied' and 'very satisfied' are merged and regarded as 'satisfied'. Frequency counts and percentages have been derived to measure the satisfaction level. As well, the decision on the satisfaction level was made using the grand mean.

Since the items were measured on a five-point Likert scale, a base mean of 3.0 was considered and a grand mean greater than 3.0 ($m>3.0$) depicts that the respondents are satisfied on their general clothing attributes. A grand mean less than 3.0 ($m<3.0$) depicts that the respondents are not satisfied with their general clothing attributes whereas a grand mean equal to 3.0 ($m=3.0$) is considered as the respondents are neither satisfied nor dissatisfied with their general clothing attributes. The results are presented in Table 6.

Table 6: Satisfaction Levels of Ready-Made Garment to PWMIs

General Clothing Attribute	Dissatisfied		Undecided		Satisfied	
	F	%	f	%	f	%
Durability	189	94.0	11	5.5	1	0.5
Attractiveness	182	90.5	10	5.0	9	4.5
Managing fasteners and zippers	179	89.1	11	5.5	11	5.5
Movement	177	88.0	12	6.0	12	6.0
Easy to put on and take off	159	79.1	20	10.0	22	10.9
Comfort	145	72.1	56	27.9		
Style	117	88.1	24	11.9		
Fit	107	53.2	85	42.3	9	4.5
Colour	100	49.8	100	49.8	1	0.5
Fabric Quality	76	37.8	124	61.7	1	0.5
Size	59	29.4	142	70.6		
Usability	39	19.4	162	80.6		
Protection	23	11.4	123	61.2	55	27.4
Construction Quality	12	6.0	189	94.0		
Grand mean						2.30

Source: Fieldwork, 2021

From Table 6, it can be seen that 189(94.0%) of the respondents stated that they are dissatisfied with the durability of their ready-made garment followed by 182(90.5%) who said they are dissatisfied with the attractiveness of their ready-made garment. As well, 179(89.1%) of the respondents stated that they are dissatisfied with managing fasteners and zippers of their ready-made garment and 117(88.1%) of them agreed that they are dissatisfied with the style of their ready-made garment. This was followed keenly by 177(88.0%) who reported that they are dissatisfied with the way they move in their ready-made garment.

Furthermore, 159(79.1%) stated that they are dissatisfied with the manner in which they find it difficult to put on and take off their ready-made

garment and 145(72.1%) of the respondents revealing that they do not feel comfortable in their ready-made garment with just 107(53.2%) of them stating that they are dissatisfied with the fit of their ready-made garment. However, the table also revealed that 189(94.0%) of the respondents indicated that they are neither satisfied nor dissatisfied with the construction quality of their readymade garment. Following this, 162(80.6%) reported that they are neither satisfied nor dissatisfied with the usability nature of their ready-made garment.

Again, on the attributes of size, fabric quality, and protection in relation to the respondents' ready-made garment, 142(70.6%), 124(61.7%) and 123(61.2%) respectively felt neither satisfied nor dissatisfied. Only 1(0.5%) each were satisfied with the colour, fabric quality, and durability of their readymade garment. The grand mean of 2.30<3.0 depicts that in general, the respondents are not satisfied with their ready-made garment.

In response to the interview question on research question one, the respondents said, "we do not get ready-made garment that give us a good fit because of our physical conditions". They indicated that, "wearing and removal of garment most at times become very difficult as some of the features of the garments as well as fasteners do not allow for easy wearing and removal". They further indicated that,

> *"sometimes, some of the features would have to be altered before the garment can be used which sometimes destroys the attractiveness of the garment. Especially when it happens to do the alterations ourselves by cutting to reduce the length of trousers, long sleeves and dresses, however, we find it difficult to neaten the edges of the garment, making it unattractive".*

Research Question Two: What are the Satisfaction Levels of Altered Ready-Made Garments to PWMIs?

To answer this research question, respondents were asked whether or not they have any clothes that are specifically altered for their use. Those who responded YES were provided with a list of clothing attributes to determine their level of satisfaction on the attributes. The responses of whether or not they have any clothes that are specifically altered for their use are presented in Figure 9.

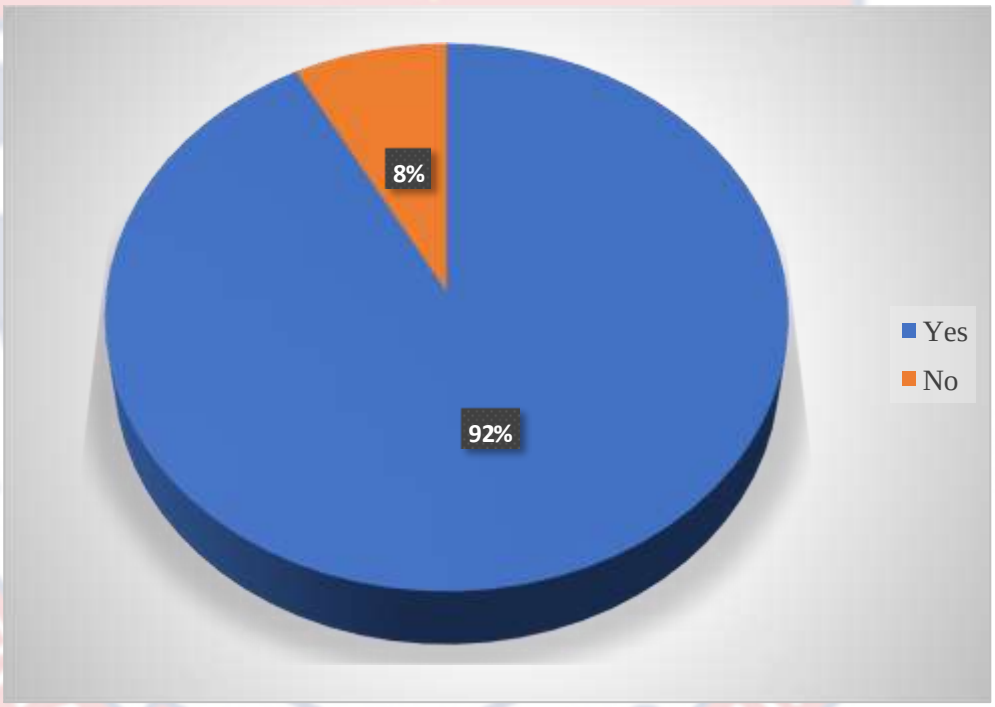

Figure 9: Do you have any clothes that are specifically altered for your use?
Source: Fieldwork, 2021

From Figure 9, 185(92%) of the respondents stated that they have clothes that are specifically altered for their use however only 16(8%) revealed that they do not have clothes that are specifically altered for their use. This showed that after the respondents have purchased their clothing, they had to send them to be altered for them before they can wear. This confirms the

results from Table 6 that only 9(4.5%) of the respondents are satisfied with the fit of their ready-made garment.

Thus, the satisfaction level of the 185 respondents who, after purchasing clothing for their use, send them for alterations before they can use them are presented in Table 7. For the purposes of analysis and easier interpretation, 'very dissatisfied' and 'dissatisfied' are merged and taken as 'dissatisfied' whereas 'satisfied' and 'very satisfied' are merged and regarded as 'satisfied'. Frequency counts and percentages have been derived to measure the satisfaction levels of the respondents. As well, the decision on the satisfaction levels was made using the grand mean.

Since the items were measured on a five-point Likert scale, a base mean of 3.0 was considered and a grand mean greater than 3.0 ($m>3.0$) means that the respondents are satisfied on their general clothing attributes. A grand mean less than 3.0 ($m<3.0$) depicts that the respondents are not satisfied with their general clothing attributes whereas a grand mean equal to 3.0 ($m=3.0$) is considered as the respondents are neither satisfied nor dissatisfied with their general clothing attributes. The results are presented in Table 7.

Table 7: Satisfaction Levels of Altered Ready-Made Garment to PWMIs

Attributes	Dissatisfied		Undecided		Satisfied	
	F	%	F	%	f	%
Size			26	14.1	159	85.9
Comfort	32	17.3	13	7.0	140	75.7
Protection	26	14.0	19	10.3	140	75.7
Placement of pockets	6	3.2	53	28.6	126	68.1
Movement	6	3.2	78	42.2	101	54.6
Fit	13	7.0	82	44.3	90	48.7
Usability	13	7.0	86	46.5	86	46.5
Accommodation for concealing medical devices	30	16.2	75	40.5	80	43.2
Colour	6	3.2	115	62.2	64	34.6
Attractiveness	126	68.1	20	10.8	39	21.1
Style	32	17.3	123	66.5	30	16.2
Placement of seams	13	7.0	146	78.9	26	14.1
Fabric Quality			159	85.9	26	14.1
Easy to put on and take off	13	7.0	152	82.2	20	10.8
Managing fasteners and zippers	13	7.0	153	82.7	19	10.3
Durability	127	68.6	45	24.3	13	7.0
Construction Quality			185	100.0		
Grand mean						3.23

Source: Fieldwork, 2021

Table 7 shows that 140(75.7%) of the respondents each stated that they are satisfied with the comfort that the altered ready-made garment gives them and as well the protection it gives them. Likewise, 159(85.9%) stated that they are satisfied with the size of the altered ready-made garment. Also, 126(68.1%) stated that they are satisfied with the placement of pockets on the altered readymade garment.

However, all the respondents 185(100.0%) who stated that they have the altered ready-made garment feel neither satisfied nor dissatisfied with the

construction quality of the altered ready-made garment. This is followed by 159(85.9%) of the respondents who reported that they are neither satisfied nor dissatisfied with the fabric quality of the altered ready-made garment. Again, 153(82.7%) and 152(82.2%) of the respondents respectively stated that they are neither satisfied nor dissatisfied with managing of fasteners and zippers and the ease of putting on and taking off the altered ready-made garment. Furthermore, on the attributes of placement of seams, style, and colour, 146(78.9%), 123(66.5%), and 115(62.2%) of the respondents respectively stated that they are neither satisfied nor dissatisfied with the altered ready-made garment.

Furthermore, 126(68.1%) of the respondents were dissatisfied about the attractiveness after the garments were altered. In the same vein, the durability was also affected. In this sense, the majority 127(68.6%) reported their dissatisfaction. Thus, the grand mean of 3.23 which is a little bit above 3.0 showed that the respondents in general, are satisfied with the construction quality of the altered ready-made garment. The respondents were further asked to rate how much they need special alterations to their general clothing to accommodate medical aids. Their responses are presented in Figure 10.

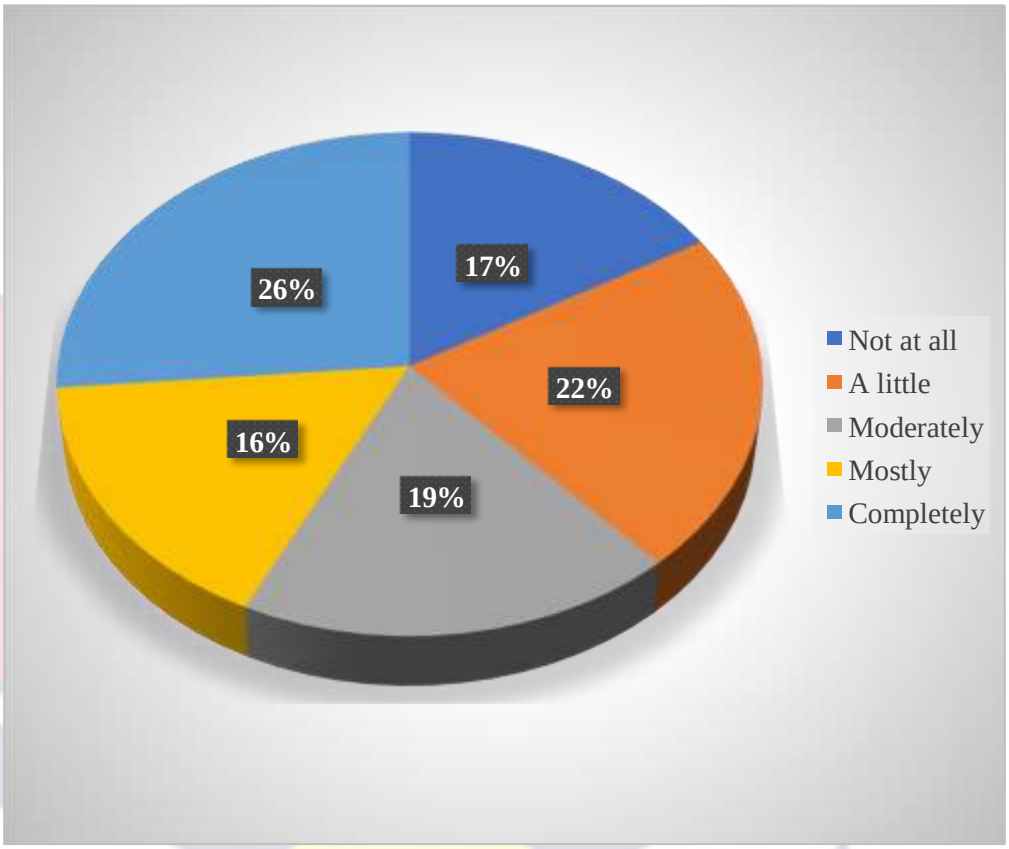

Figure 10: Special Alterations to PWMIs' general clothing
Source: Fieldwork, 2021

Figure 10 reveals that 26% of the respondents stated that they completely need special alterations to their general clothing to accommodate medical aids, 22% agreed that they need special alterations just a little to their general clothing to accommodate medical aids, 19% reported that they moderately need special alterations to their general clothing to accommodate medical aids. Finally, 17% of the respondents stated that they do not need special alterations to their general clothing to accommodate medical aids whereas 16% stated that they mostly need special alterations to their general clothing to accommodate medical aids. Hence, it can be concluded that a good number of the respondents completely need special alterations to their general clothing to accommodate medical aids.

In an interview to further probe into research question two, most of the respondents stated that "we have been altering our garment either by ourselves or by giving them to seamstresses or tailors". The respondents said, "We do this either to reduce or increase sizes, shorten length of sleeves, trousers and dresses. When such alterations are done, they aid in the donning and doffing of the garment as well as movement. But this tends to affect the beauty of the style as sometimes make it unattractive".

Research Question Three: What are the satisfaction levels of customized garments to PWMIs?

To find out the satisfaction levels of customized garments to PWMIs, respondents to the study were asked whether or not they have any clothes that are specifically designed for their use. Those who responded YES were provided with a list of clothing attributes to determine their level of satisfaction on the attributes. The responses of whether or not they have any clothes that are specifically designed for their use are presented in Figure 11. Hence, for the purposes of analysis and easier interpretation of research question three, 'very dissatisfied' and 'dissatisfied' are merged and taken as 'dissatisfied' whereas 'satisfied' and 'very satisfied' are merged and regarded as 'satisfied'.

Frequency counts and percentages have been derived to measure the satisfaction levels. As well, the decision on the satisfaction level was made using the grand mean. Since the items were measured on a five-point Likert scale, a base mean of 3.0 was considered and a grand mean greater than 3.0 ($m>3.0$) means that the respondents are satisfied on their customized clothing attributes. A grand mean less than 3.0 ($m<3.0$) depicts that the respondents are

not satisfied with their customized clothing attributes whereas a grand mean equal to 3.0 (m=3.0) is considered as the respondents are neither satisfied nor dissatisfied with their customized clothing attributes. The results are presented in Figure 11.

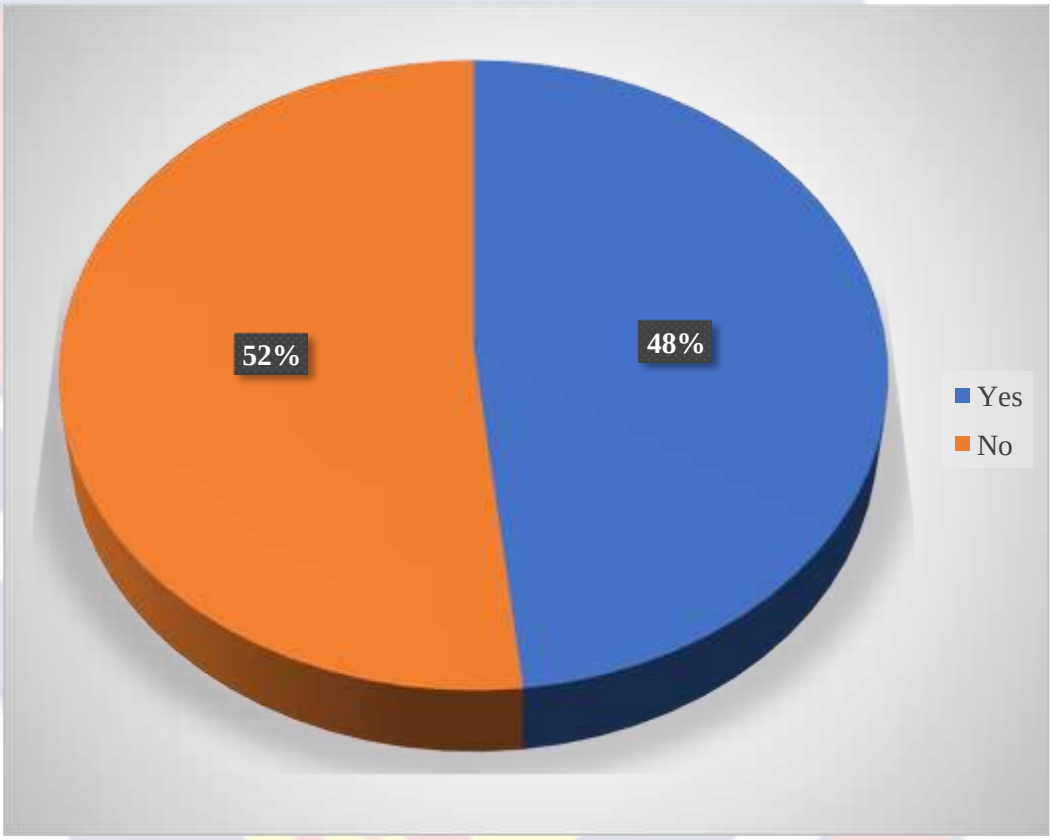

Figure 11: Do you have any clothes that are specifically designed for your use?
Source: Fieldwork, 2021

Figure 11 showed that 104(52.0%) of the respondents disagreed that they have clothes that are specifically designed for their use whereas 97(48.0%) of them agreed that they have clothes that are specifically designed for their use. Of the 97 of the respondents who agreed that they have clothes that are specifically designed for their use, their responses on satisfaction levels of customized garments are presented in Table 8.

Table 8: Satisfaction Levels of Customized Garment to PWMIs

Attribute	Dissatisfied		Undecided		Satisfied	
	f	%	f	%	f	%
Body Coverage					97	100.0
Comfort			8	8.3	89	91.7
Movement			8	8.3	89	91.7
Colour	11	11.3			86	88.7
Managing fasteners	11	11.3	2	2.1	84	86.6
Usability			16	16.5	81	83.5
Style	8	8.3	11	11.3	78	80.4
Size			19	19.6	78	80.4
Protection			21	21.6	76	78.4
Easy to put on and take off			22	22.7	75	77.3
Fit			35	36.1	62	63.9
Flexibility and ease of movement	12	12.4	36	37.1	49	50.5
Construction Quality			54	55.7	43	44.3
Fabric Quality			56	57.7	41	42.3
Attractiveness			70	72.2	27	27.8
Durability	34	35.1	36	37.1	27	27.8
Grand Mean						**3.66**

Source: Fieldwork, 2021

From Table 8, it is showed that 97(100.0%) of the respondents are satisfied with how the customized garments for their use covers their body. This is followed by 89(91.7%) each who stated that they are satisfied with the comfort and the way they move freely in the customized garment for their use. Furthermore, on the attribute of colour, managing fasteners, usability, style, and size, 86(88.7%), 84(86.6%), 81(83.5%), 78(80.4%) of the respondents each stated that they feel satisfied with the customized garment for their use. Again, for protection and easy to put on and take off, 76(78.4%) and

75(77.3%) of the p respectively reported that they feel satisfied with the use of their customized garments.

Also, 49(50.5%) of the respondents agreed that they feel satisfied with the flexibility as well as the ease of movement in the customized garment for their use. Thus, it can be concluded that the respondents in general are very satisfied with the customized garment. This is revealed by the grand mean of 3.66.

The interview results revealed that some of them do not have customized garment due to financial constraints. Others do not have because of their first experience with the seamstresses and tailors – because they could not sew to their satisfaction, indicating that, they prefer buying the ready-made so they can make alterations rather than buying fabric for it to be wasted. Few of them also said that, their first customized garments were not well made to fit them. So, they had to return them to the seamstress and tailor for further adjustment. Later on, such seamstresses and tailors became used to their figures and what they want, and that subsequent garment were better made to give them a fit than the ready-made ones but they were unable to add their own expertise to make them special, rather sticking to what has been prescribed by them (PWMI).

For results of the interview on research question three, the respondents said,

> *"some of us do not have customized garment due to financial constraints. Others do not have because of our first experience with the seamstresses and tailors because they could not sew to our satisfaction, so we prefer buying the ready-made making alterations rather than buying fabric for it to be wasted".*

Few of them also said that,

> *"our first customized garments were not well made to fit. So, had to return them to the seamstresses and tailors for further adjustment. Later on, such seamstresses and tailors became used to our figure types and what we want, and the subsequent garments were better made to give us a fit than the ready-made ones. But those seamstresses and tailors were unable to add their own expertise to make those garments special, rather sticking to what we prescribed to them".*

Research Question Four: What design details are PWMIs looking for in their garment?

To determine the design details that PWMIs are looking for in their garment, respondents are provided with a list of items to state how important they are concerned with the attributes in customized garments, how important the attributes are to them in selecting garment, and how important design features are in customized garment for themselves. For the purposes of analysis and easier interpretation 'a little important', 'moderately important', 'very important' and 'extremely important' are merged and regarded as 'important'. Frequency counts and percentages have been derived to measure the level of importance.

As well, the decision on the level of importance was made using the grand mean. Since the items were measured on a five-point Likert scale, a base mean of 3.0 was considered and a grand mean greater than 3.0 ($m>3.0$) means that the clothing attributes are important to the respondents whereas

grand mean less than 3.0 (m<3.0) depicts that the clothing attributes are not important to the respondents. The results are presented in Tables 9, 10, and 11.

Table 9: PWMIs Concern with Attributes in Customized Garments for their Use

Attribute	Not Concerned		Concerned	
	f	%	f	%
Comfort level due to moisture and heat trap while sitting for long period of time			201	100.0
Malodor generated from long sitting hours			201	100.0
Potential bacterial growth on fabric due to moisture and heat trap	10	5.0	191	95.0
Grand Mean	**4.54**			

Source: Fieldwork, 2021

From Table 9, all the respondents 201(100.0%) each stated that they are concerned about comfort level due to moisture and heat trap while sitting for long period of time as well as malodor generated from long sitting hours in the customized garments for their use. However, 191(95.0%) of them reported that they are concerned about the potential bacterial growth on fabric due to moisture and heat trap in the customized garments for their use. Hence, with the grand mean of 4.54>3.0, it can be concluded that the respondents are concerned about the attributes in the customized garments made for their use.

Table 10: Importance of Attributes to PWMIs in Selecting Garments

Garment attributes	Not Important		Important	
	f	%	f	%
Option to Customize			201	100.0
Fits and looks aesthetically pleasing	1	0.5	200	99.5
Short sleeves	10	5.0	191	95.0
Don and doff Easily	12	6.0	189	94.0
Made with moisture wicking fabric	18	9.0	183	91.0
Front openings	29	14.4	172	85.6
Inserted antibacterial panel in certain regions	48	23.9	153	76.1
Conceal medical devices	75	37.3	126	62.7
Long sleeves	170	84.6	31	15.4
Grand Mean				**3.87**

Source: Fieldwork, 2021

Table 10 revealed that in selecting garment for use, all the respondents, 201(100%), stated that the option to customize is important to them. Also, 200(99.5%), 191(95.0%), 189(94.0%), and 183(91.0%) stated that fits and looks aesthetically pleasing, short sleeves, don and doff easily, and garment made with moisture wicking fabric respectively are important to them. Furthermore, 172(85.6%) stated that in selecting garment for their use, front openings are very important to them. Likewise, 153(76.1%) reported that inserted antibacterial panel in certain regions of the garment they select to purchase are important to them. Lastly, 126(62.7%) of the respondents for the study stated that garments that are made to conceal medical devices are important to them when they are selecting garment for their use. However, 170(84.6%) of the respondents stated that the option to long sleeves is not important to them.

It can therefore be concluded from the grand mean (3.87>3.0) that, the attributes when selecting garment for use are very important to PWMIs. To confirm these findings, PWMIs in their interviews prefer short sleeves to long sleeves because the long sleeves usually interrupt their activities especially when it comes to the ridding of the wheel chair. It usually pulls up when using crutches. They feel better in the short sleeves except when the weather is too cold for them. According to those who walk on both hands and knees, they prefer the shorts to trousers as the trousers' knees tend to wear because of frequent movement. Furthermore, the respondents were requested to specify the type of fastener they would love to be on their garment. The results are presented in Figure 12.

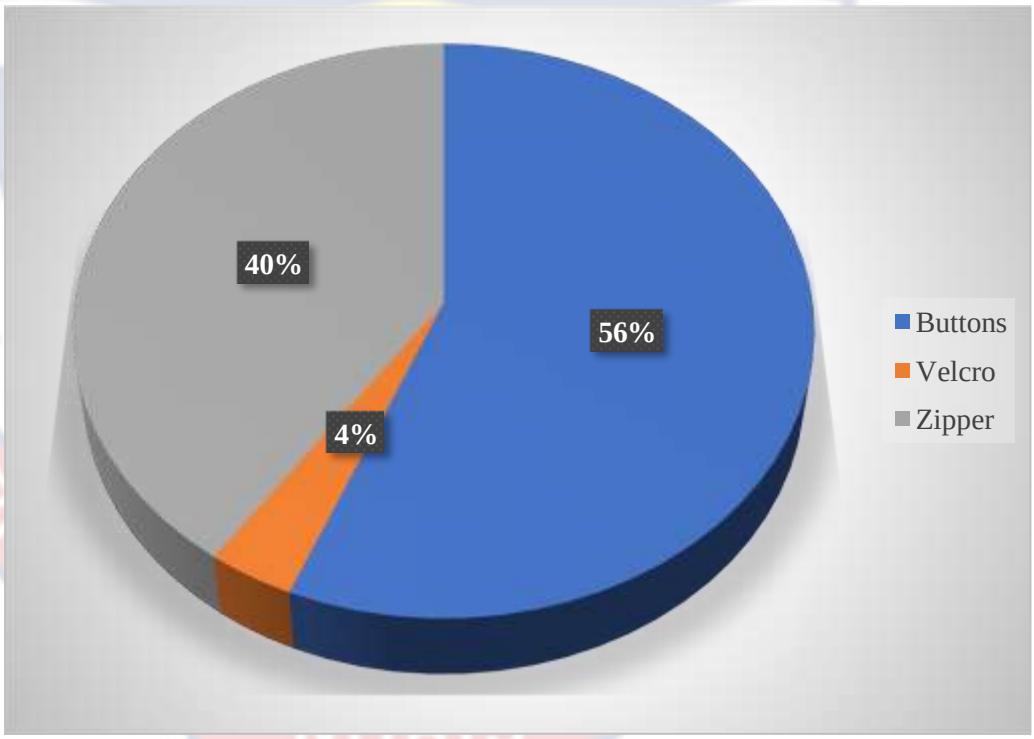

Figure 12: Perferred Type of Fastener on Garment of PWMIs
Source: Fieldwork, 2021

Figure 12 revealed that the 113(56.0%) of the respondents prefer buttons on their garment, 81(40.0%) prefer zippers on their garments whereas

only 7(4.0%) prefer Velcro on their garment for use. Thus, it can be concluded that the majority 113(56.0%) of the respondents for the study preferred buttons on their garment for use. Thus, from the interview responses, most of the men prefer medium size buttons and zippers, the reason being that those who have problems with the hands usually find it difficult using small buttons as usually used in ready-made garments. Most of the females also prefer front openings with zippers for easy donning and doffing. They also wish to have paddings either in their garments or their devices to cushion some parts of their bodies to support their movement and sitting especially at the armpit, buttocks, knees, and palms.

Table 11: Importance of Design Features in Customized Garments to PWMIs

Design Features	Not Important		Important	
	F	%	F	%
Fit			201	100.0
Pocket location			201	100.0
Garment length			201	100.0
Garment outline			201	100.0
Specialized fabrics with moisture wicking and antimicrobial properties			201	100.0
Fasteners for easy don and doff			201	100.0
Colour			201	100.0
Medical devices concealment	160	79.6	41	20.4
Grand Mean				**3.86**

Source: Fieldwork, 2021

Results presented in Table 11 reveal that all 201(100.0%) each of the respondents stated that fit, pocket location, garment length, garment outline, specialized fabrics with moisture wicking and antimicrobial properties,

fasteners for easy don and doff, and colour are important design features in customized garments for their use. However, 160(79.6%) of them stated that medical devices concealment is not an important feature they consider in customized garment for their use. Hence, it can be concluded that the design features in customized garments for use by the respondents are important to them. This is explained by the grand mean of 3.86>3.0.

The respondents were further asked whether or not they are aware of any designer producing specialized clothing for people with mobility impairment in Ghana. The responses showed that all 201(100.0%) of them declined to have any idea about any designer producing specialized clothing for people with mobility impairment in Ghana.

About the interview on research question four, the respondents indicated,

> *"we prefer short sleeves to long sleeves because the long sleeves usually interrupt our activities especially when it comes to the ridding of the wheel chair. It usually pulls up when using crutches. We feel better in the short sleeves except when the weather is too cold for us".*

According to those who walk on both hands and knees, "we prefer the shorts to trousers as the trousers' knees tend to wear out because of frequent movement''. According to the respondents, most of the men prefer medium size buttons and zippers, the reason being that those of them who have problems with the hands usually find it difficult using small buttons as usually used in ready-made garments. Most of the females also prefer front openings with zippers for easy donning and doffing. They also wish to have paddings

either in their garments or their devices to cushion some parts of their bodies to support their movement and sitting especially at the armpit, buttocks, knees, and palms.

Research Question Five: What is the relationship between perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing?

The relationship between the PWMIs perception of quality of life and Functional, Expressive, and Aesthetic (FEA) elements of clothing was determined using the Pearson correlation coefficient (r) at a 5% level of significance presented in Table 13. If r = ±0.1 - ±0.3, the relationship is considered as 'weak', if r = ±0.4 - ±0.6, the relationship is considered as 'moderate' and if r = ±0.7 - ±0.9, then there is a 'strong' relationship between PWMIs quality of life and FEA elements of clothing. If the level of significance (Sig.) is less than 0.05, there is a significant relationship between the variables however, when the level of significance is greater than 0.05, there is no significant relationship between the variables.

Before the correlation analysis was done, frequency counts and percentages were used to analyze a list of items measuring the respondents' psychological level of quality of life, their level of independence, and their social relationship. These are shown in Tables 12, 13, 14 respectively.

Table 12: Psychological Experience of PWMIs during their Conditions

Questions	Not at all	A moderate extent	An extreme extent
Is there any part of your appearance which makes you feel uncomfortable?		12(6.0%)	189(94.0%)
Do you experience positive feelings in your life?		145(72.2%)	56(27.9%)
To what extent do you have difficulty in performing your routine activities?	33(16.4%)	24(11.9%)	144(71.8%)
How much confidence do you have in yourself?		59(29.4%)	142(70.6)
How much are you bothered by any limitations in performing everyday living activities?	51(25.4%)	111(55.2%)	39(19.4%)
To what extent does your quality of life depend on the use of medical substances or medical aids?		201(100.0%)	

Source: Fieldwork, 2021

Analysis of the respondents' psychological experiences during their disability over the years as presented in Table 12 showed that 189(94.0%) of them experience to an extreme extent that there is a part of their body that makes them feel very uncomfortable whereas 145(72.2%) experience positive feelings in their lives to a moderate extent. Furthermore, all the respondent agreed that their quality of life depend on the use of medical substances or medical aids to a moderate extent.

Thus, the results from the interviews suggest that PWMIs dressing influences their ability to socialize. They went further by saying that, people see them as not trendy or fashionable so they disregard them when they see them in non-fitting styles. This sometimes makes them withdrawn from the crowd and peers.

Table 13: Level of independence of PWMIs

Questions	Not at all	Moderately	Mostly
Are you able to accept your bodily appearance?		201(100.0%)	
To what extent are you able to carry out your daily activities?		194(96.5%)	7(3.5%)
Do you get the kind of support from others that you need?		180(89.5%)	21(10.4%)
To what extent do you feel accepted by the people you know?	101(50.2%)	61(30.4%)	39(19.4%)
How much do you feel alienated from those around you?	95(47.3%)	66(32.8%)	40(19.9%)
Do you have enough money to meet your needs?	135(67.2%)	66(32.9%)	

Source: Fieldwork, 2021

From Table 13, it is revealed that all the respondents to a moderate degree are able to accept their bodily appearance with 96.5% also feeling that they moderately carry out their daily activities. Furthermore, the majority (67.2%) of the PWMIs reported that they do not have enough money to meet their needs. Thus, the results suggest that the PWMIs do not feel totally independent of themselves but rather, they have to depend on other people for their needs to be met. Further analysis to determine degree of independence/dependence when PWMIs are dressing on a daily basis is presented in Figure 13.

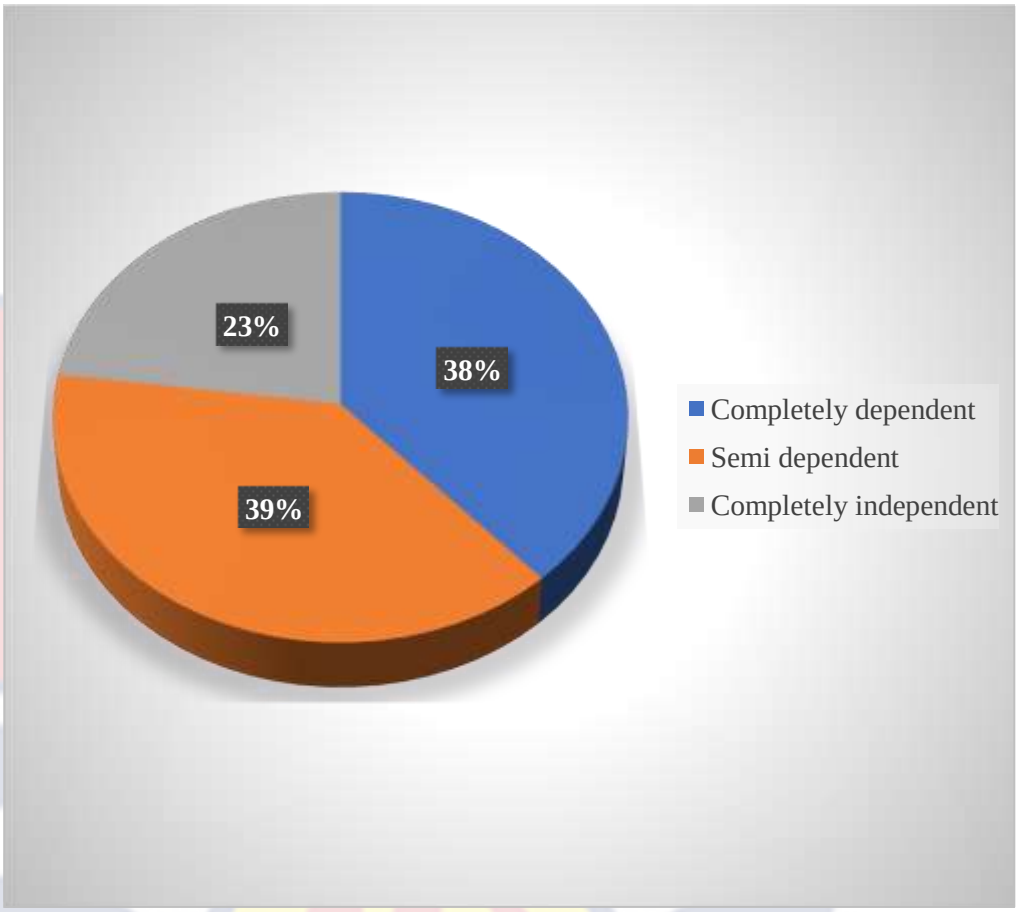

Figure 13: Degree of independence/dependence when PWMIs are dressing
Source: Fieldwork, 2021

From Figure 13, it can be seen that 78(39.0%) of the respondents are semi-independent when they are dressing on daily basis. This means that they can wear some of their clothing themselves and need the help of others to be able to wear other clothing. The results also showed that 77(38.0%) of the respondents are completely dependent while wearing clothing on a daily basis whereas 46(23.0%) of them reported that they are completely independent when wearing clothing on a daily basis.

Table 14: PWMIs Satisfaction Levels about Social Relationships

Questions	Low		Moderate		High	
	f	%	F	%	f	%
How satisfied are you with the quality of your life??	201	100.0				
How satisfied are you with your ability to perform your daily living activities?	201	100.0				
How satisfied are you with your financial situation?	201	100.0				
How satisfied are you with the way your body looks?	191	95.0	10	5.0		
How satisfied are you with the rate of your quality of life?	72	35.9	102	50.7	27	13.4

Source: Fieldwork, 2021

To determine how satisfied the PWMIs are with their social relationships, Table 14 revealed that all the respondents 201(100.0%) have low level of satisfaction with their quality of life, their ability to perform daily living activities, and their financial situation. Furthermore, it was shown that 191(95.0%) of the respondents stated that they have low level of satisfaction with the way their body looks with just 10(5.0%) stating that they have moderate level of satisfaction with how their body looks. As well, 102(50.7%) reported that they have low level of satisfaction with their quality of life, 72(35.9%) stated that they are dissatisfied with their quality of life. However, 27(13.4%) stated that they are satisfied with their quality of life.

Again, from the interview, the PWMIs sometimes feel that the sort of dressing that they wear do not fit well. So, when they meet people without deformities who are wearing well-fitting dresses, they pity themselves and this

makes them not look cheerful when they encounter such situations. Thus, in conclusion, the study showed that generally, the respondents are not satisfied with the level of their social relationships. Further analysis about the PWMIs perception about their level of quality of life is presented in the following charts.

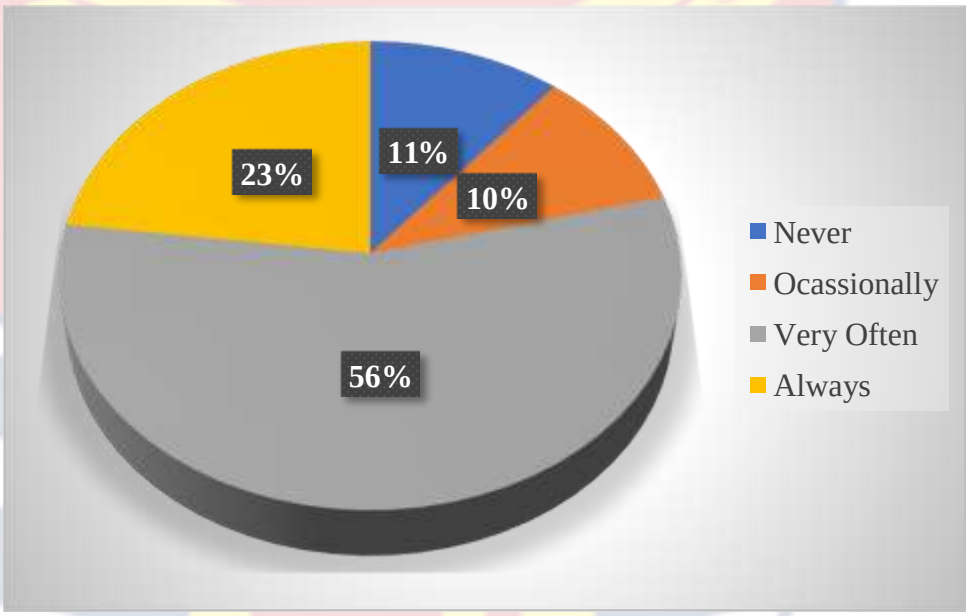

Figure 14: Discrimination on Health Condition
Source: Fieldwork, 2021

Results from the analysis on how often the respondents have been discriminated on their health conditions as represented in Figure 14 showed that 113(56.0%) of them face discriminations very often on their health condition, followed by 46(23.0%) of them who stated that they are always discriminated and 20(10.0%) stated that they are occasionally discriminated based on their health conditions. However, 22(11.0%) of the respondents stated that they were never discriminated on their health conditions. Thus, it can be concluded that the respondents are very often discriminated due to their health conditions. This is because majority (56.0%) stated that they are very often discriminated against based on their health conditions.

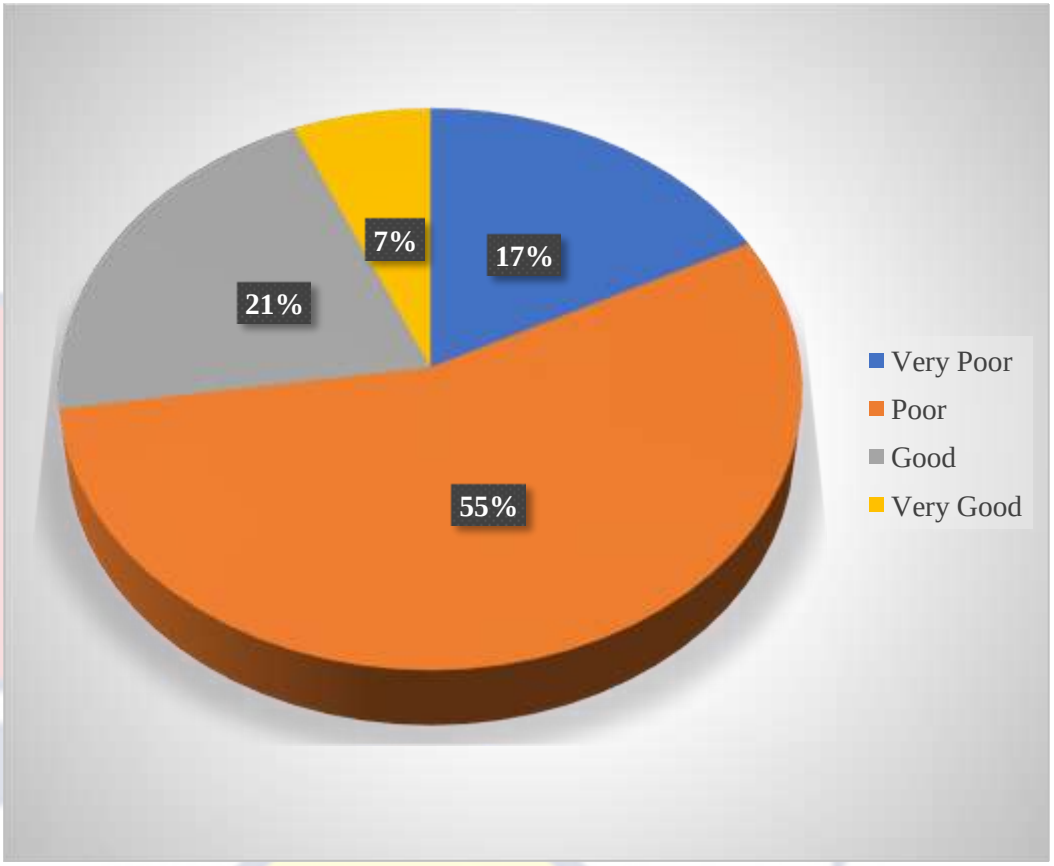

Figure 15: Ease of Getting Around
Source: Fieldwork, 2021

To find out how able the respondents are able to get around, the results in Figure 15 reveal that 111(55.0%) of the respondents are poor in getting around, 42(21.0%) are good to get around, 35(17.0%) are very poor to get around. However, only 13(7.0%) of them are very good in getting around. Hence, it can be concluded that the respondents are not able to get around as depicted by the majority 111(55.0%) of them who find it poor to get around.

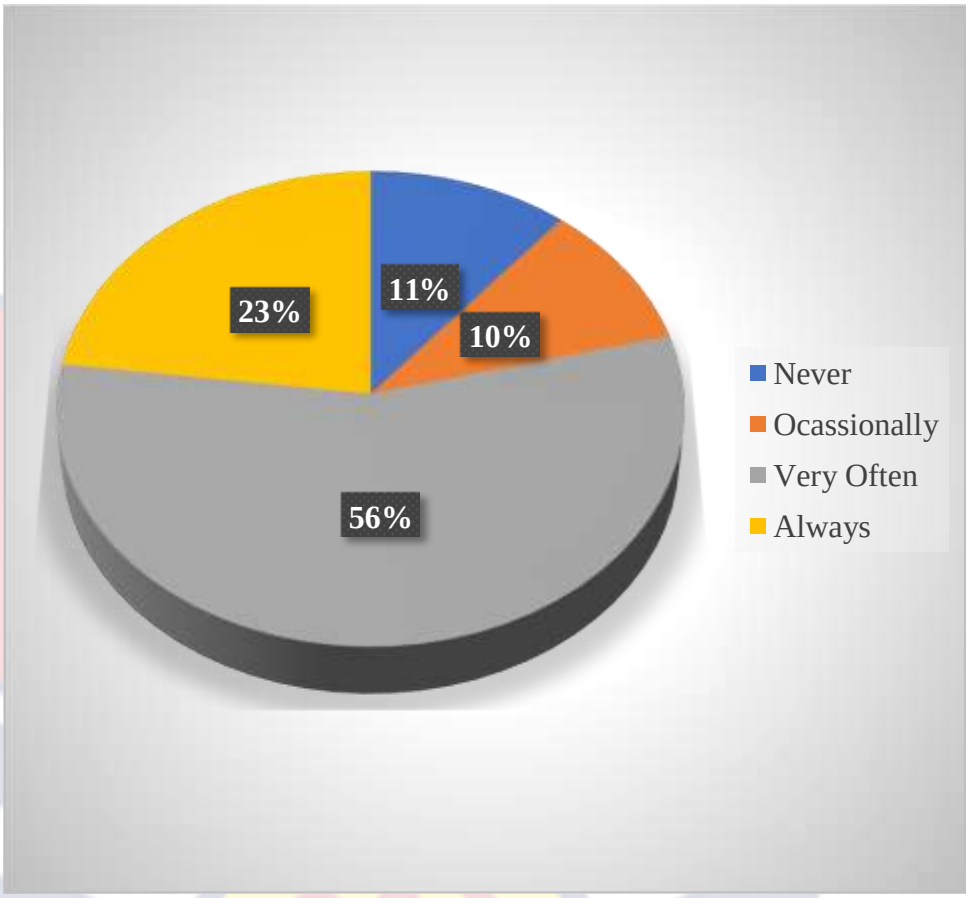

Figure 16: PWMIs Concern about Difficulty in Mobility
Source: Fieldwork, 2021

From Figure, 16, it can be seen that 113(56.0%) of the respondents stated that they are very often bothered by their difficulties in mobility, 46(23.0%) indicated that they are always bothered by their difficulties in mobility, and 20(10.0%) reported that they are occasionally bothered by their difficulty in mobility. However, 22(11.0%) of the respondents stated that they are never bothered by their difficulty in mobility. Thus, it can be concluded from the results that majority 113(56.0%) of the respondents are always bothered by their difficulties in mobility hence, the respondents are always bothered by the difficulties in mobility. Finally, the relationships between the perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing are presented in Table 15. The Pearson

Correlation Coefficient (r) considered at a level of significance of 0.05 is used to determine the relationship.

Tests for Multicollinearity, Autocorrelation, Sampling Adequacy and Normality

Multicollinearity test was used to test whether the regression model found a correlation among independent variables. A good regression model is a model that did not have a correlation among independent variables. This research used tolerance values and variance inflation factor (VIF) values to detect multicollinearity. If the tolerance value was more than 0.10 and the VIF value was more than 10, there were high symptoms of multicollinearity.

Table 15: Coefficients[a]

	Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
Model	B	Std. Error	Beta	T	Sig.	Tolerance	VIF
1 (Constant)	1.348	.824		1.636	.004		
FEA	.082	.058	.091	1.399	.164	.349	2.861

a. Dependent Variable: POQ
Source: Field Survey (2021)

From the results, Table 9 shows a test of multicollinearity can be assessed using the Tolerance and the VIF from the collinearity diagnostics section. The VIF (Variance Inflation Factor) indicates that there is no multicollinearity in the independent variable since the VIF value is less than 10.

In conclusion the independent variable is not highly correlated among itself.

Table 16: Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	DurbinWatson
1	.905[a]	.820	.814	1.10565	2.009

a. Predictors: (Constant), FEA
b. Dependent Variable: POQ
Source: Field Survey (2021)

From the model summary results, from Table 10, R value of 0.905 indicates the relationship that exists between the dependent variable (POQ) and the independent variable (FEA). Thus, there is a strong positive relationship of (0.905) between the variables (all put together). The R-Square also explains the amount the amount of variation that exists in the dependent variable caused by the independent variable. Therefore, the results indicate that there is 82.0% variation in Functional, Expressive and Aesthetic elements of Clothing Design as explained by the Perception of Quality. The remaining 18.0% of the variation in Functional, Expressive and Aesthetic elements of Clothing Design is explained by the residual. Furthermore, the Adjusted R-Square of 81.4% explains the variation in the dependent variable that is being explained by an adjustment in the independent variable in the regression model or equation. The results of the Durbin Watson of 2.009 indicates that there is no autocorrelation among the residual in the regression model. This is because the Durbin Watson statistics is greater than 1.5 and less than 2.5.

Table 17: KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.883
Bartlett's Test of Sphericity	Approx. Chi-Square	478.962
	Df	86
	Sig.	.000

Source: Field Survey (2021)

KMO and Bartlett's test of sphericity produces the Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test. The value of KMO should be greater than 0.5 and should be significant if the sample is adequate (KMO values less than 0.5 require remedial action). Where KMO values greater than 0.8 can be considered very good (see table below), i.e. an indication that component or factor analysis will be useful for these variables. The result from KMO and

Bartlett's Test table shows that the value KMO value equal 0.883, which is considered a very good fit. Thus, the data of POQ is highly fit. Also, the reading of Bartlett's Test of Sphericity shows it is significant (ρ=0.000), which is $\leq$0.05. i.e. it is concluded that the significance level is small enough to reject the null hypothesis. Therefore, the correlation matrix is not an identity matrix.

Table 18: Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	Df	Sig.	Statistic	Df	Sig.
POQ	.076	86	.166	.954	128	.000
FEA	.105	86	.141	.956	128	.010

*. This is a lower bound of the true significance.
a. Lilliefors Significance Correction
Source: Field Survey (2021)

Normality test Normality test aims to examine whether in the regression model, the residual confounding variable has a normal distribution. The statistical test will be invalid for small sample quantities if the assumption that residual values that follow a normal distribution is violated (Ghozali, 2013). This research used the Kolmogorov-Smirnov (K-S) non-parametric statistical test to test residual normality. The hypothesis for the K-S test is as follows: H0: Normally distributed residual data HA: Not-Normally distributed residual data Regression models are considered to fulfill the assumption of normality if the significance is > 0.05. This means that H0 is accepted where data is normally distributed.

Table 19: Relationship between perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing

Attribute	Analysis	Quality of life	Functionality	Expressive	Aesthetic
Quality of life	Pearson Correlation	1	0.186	0.201	0.091
	Sig. (2-tailed)		0.008*	0.004*	0.200
	N	201	201	201	201
Functionality	Pearson Correlation	0.186	1	0.582	0.464
	Sig. (2-tailed)	0.008*		0.000*	0.000**
	N	201	201	201	201
Expressive	Pearson Correlation	0.201	0.582	1	0.411
	Sig. (2-tailed)	0.004*	0.000*		0.000*
	N	201	201	201	201
Aesthetic	Pearson Correlation	0.091	0.464	0.411	1
	Sig. (2-tailed)	0.200	0.000*	0.000*	
	N	201	201	201	201

**. Correlation is significant at the 0.05 level (2-tailed).
Source: Fieldwork, 2021

From Table 15, there is a positive weak significant relationship (r = 0.186, α = 0.008) between the functionality element of clothing and the quality of life of PWMIs meaning that the higher the respondents' functionality element of clothing, the higher their quality of life, and the lower their functionality element of clothing, the lower their quality of life. Also, there exists a positive weak relationship (r = 0.201, α = 0.004) between the respondents' expressive element of clothing and their quality of life. What this means is that the higher the respondents' expressive element of clothing, the higher their quality of life, and the lower their expressive element of clothing, the lower their quality of life.

Finally, the table revealed that there is a very weak insignificant positive relationship (r = 0.091, α = 0.200) between the respondents' aesthetic element of clothing and their quality of life. This depicts that the higher the respondents' aesthetic element of clothing, the higher their quality of life, and the lower their aesthetic element of clothing, the lower their quality of life.

With regard to the interview on research question five about influence of dressing on the ability to socialize, the respondents affirmed that their dressing affected negatively their ability to socialize. They went further by saying that, "people see us as not trendy or fashionable so they disregard us when they see us in non-fitting styles. This sometimes makes us withdrawn from the crowd and peers". In relation to influence of dressing on their ability to work, they said, "sometimes, when people come into contact with us for services, they look at our appearances and conclude that, we cannot provide the services to their satisfaction, because they do not see us as fashionable". This comment was given by a respondent who is a seamstress. "This sometimes prevent people from giving us work for the first time until they try out for one or more times".

In relation to the influence of dressing on thinking and feeling, the respondents said,

> *"we feel that, the sort of dress that we wear do not fit well. So, when we meet people without deformities who are wearing well-fitting dresses, we pity ourselves and this makes us not look cheerful when we encounter such situations".*

Discussions of Results

Results from this study showed that majority (52.0%) of the PWMIs are males. Also, their educational backgrounds revealed that majority (52.0%) of them had no formal education prior to the study. With the kind of disability, they have sustained and what brought about the disability, 63 of them reported amputation at the lower limb of which majority 27 (42.86%) suffered the condition from birth and majority 41(65.08%) have been living with the condition for 11-20 years prior to this study. The results further showed that majority 77(38.31%) of the PWMIs generally move in wheel chairs followed by crutches 66(32.84%). Most 130(65%) of the respondents further reported that the clothes they purchase are unable to fit. PWMIs satisfaction levels of ready-made garment 94.0% of them are dissatisfied with the garments' durability. This means that durability is a major concern to the PWMIs when they are buying garments.

Thus, this study confirms the assertion of McBee-Black and HaBrookshire (2018) who stated that another hindrance to workplace participation for people with disabilities is lack of appropriate clothing. However, on the satisfaction levels of altered ready-made garment, 92% of the PWMIs they have clothes that are specifically altered for their use and 85.9% of them are satisfied with the size of the garment. These results conform to the work of Brown (2003) when he found out that there is no clothing production line in the country that is producing to meet the physical needs and the lifestyle of people with disability. This usually requires the individuals to make extensive alteration on the ready-made-garment in the Ghanaian market to improve their fit (Brown, 2003).

The study's findings again conforms with that of Parey (2020) whose results indicated that working-age persons with disabilities were deprived in many areas, including work, healthcare, transportation, and acceptance. Persons with disabilities in the sample were also reliant on the disability grant for survival. Also, the findings are in conformity with the findings of Sau-Fun *et al.* (2011) who stated that the body dimensions of these people contrast the traditional body dimensions in the size system due to their physical impairment.

The PWMIs further stated that they completely needed special alterations to their general clothing to accommodate medical aids. On the satisfaction level of customized garments to the PWMIs, 52% of the PWMIs have clothes that are specifically designed for their use. Among these, all of the PWMIs are satisfied with how the customized garment covered their body whereas only 11.3% each expressed satisfaction in the colour and the management of fasteners and zippers. This had shown that when garments are customized for PWMIs, they feel satisfied with them rather than when they are not customized or altered. The findings from this study confirm the findings of Lobo *et al.* (2019) when they stated that whiles people without disability usually consider appropriateness, style, fit, colour, and price among other factors in the selection of garments, people with disability rather consider whether or not the garment will fit over any distortions of the figure, any prosthetic device, whether there is enough ease for movement, and whether alterations can be made to accommodate these problems.

In finding out the design details that PWMIs are looking for in their garment, all of them showed concern in the comfort level due to moisture and

heat trap while sitting for long period of time, Malodor generated from long sitting hours, and Potential bacterial growth on fabric due to moisture and heat trap. Furthermore, PWMIs in general reported that attributes in selecting garments are important to them. These attributes include option to customize, fits and looks aesthetic pleasing, short sleeves, among others. The results affirm the findings of Cumming *et al.* (2017) who averred that design features of general garment include; sleeves necklines, collars, fullness, cuffs, belts, etc. which are of great concern and important to PWMIs in this study. Furthermore, the majority (56%) of the PWMIs preferred buttons as fasteners on their garments than zippers and Velcro.

Design features like fit, pocket location, garment length and among others are deemed very important features in customized garments for use by PWMIs. According to Kasambala (2013), fit is the most important factor leading to the final acceptance or rejection of a garment. Therefore, fit must be designed into the original pattern through subtleties in the pattern that provides fullness unobtrusively at appropriate locations to accommodate body bulges in a flattering manner (Pandey & Chawla, 2018).

Lastly, the study found that PWMIs expressed great dissatisfaction about their social relationships in terms of their quality of life, the way their body looks, ability to perform daily living activities, among others. Also, it is found that PWMIs are very often discriminated on their health conditions making it very difficult for them to get around normal day to day activities which further makes them feel very often bothered by their difficulties in mobility. Thus, there is a positive weak significant relationship between the quality of life of PWMIs and the functionality element of clothing meaning

that the higher the respondents' functionality element of clothing, the higher their quality of life, and the lower their functionality element of clothing, the lower their quality of life. Also, there exists a positive weak relationship between the respondents' quality of life and their expressive element of clothing.

What this means is that, the higher the respondents' expressive element of clothing, the higher their quality of life, and lower their expressive element of clothing, the lower their quality of life. Finally, the table revealed that there is a very weak insignificant positive relationship between the respondents' quality of life and their aesthetic element of clothing. This depicts that, the higher the respondents' aesthetic element of clothing, the higher their quality of life, and the lower their aesthetic element of clothing, the lower their quality of life.

Chapter Summary

This chapter presented the results and the discussion from the analysis of the data collected for the study. The analysis was apportioned into two: the first section contains analysis of the demographic data of the respondents and the second section contains the analysis of the research questions guiding this study. The results were analyzed using frequency counts and percentages, means, and the Pearson Correlation Coefficient (r) measured at a significant level of 5%. The results were represented by charts, graphs and tables.

CHAPTER FIVE

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Introduction

This chapter presented the summary of the entire research, the conclusions made from the findings, the recommendations and suggestions for further research.

Summary

The study sought to examine the design details of general garments in order to assess how PWMIs in KEEA municipality are satisfied with these garments in the Ghanaian market. In doing so, five research questions were formulated to guide the study which are:

1. What are the satisfaction levels of ready-made garment to PWMIs?
2. What are the satisfaction levels of altered garment to PWMIs?
3. What are the satisfaction levels of customized garments to PWMIs?
4. What are the design details that PWMIs are looking for in their garment?
5. What is the relationship between perception of quality of life of PWMIs and Functional, Expressive and Aesthetic (FEA) elements of clothing?

To provide answers to these research questions, the study adopted the descriptive survey design and collected data from 201 respondents scattered across Enyindakrom, Kissi, Elmina, Besease, and Komenda located in the Komenda-Edina-Eguafo-Abrem (KEEA) municipality with the questionnaire and interview guide being the main instruments for the data collection. The instruments were self-administered together with research assistants and collected the same day at the time of the data collection from each of the communities. Using then Statistical Package for Service Solution (SPSS

version 26.0), data was analyzed quantitatively using mean, frequency counts and percentages, and correlation analysis at 5% level of significance. The results from the analysis were presented in charts, graphs and tables.

Key Findings

1. The respondents were dissatisfied with attractiveness, managing fasteners, the style of garments, mobility in garments, ease of donning and doffing, comfortability and fit with durability being the element they were most dissatisfied with. Respondents were however, indifferent to usability, construction quality, size, fabric quality and protection. A grand mean of 2.3 shows general dissatisfaction with ready to wear garments.
2. Greater number of the respondents were satisfied with size (80.4%), comfortability (91.7%), and placement of pockets (77.3%) whereas, a chunk of them also said they are neither satisfied nor dissatisfied with construction details (44.3%), fabric quality (42.3%), managing fasteners (9%), easy to put on and take off, placement of seam, style and colour. On the contrary, the majority (68.1%) of them were dissatisfied with the attractiveness. A grand mean of 3.23 shows that, generally the people are satisfied with altered ready-made garment.
3. The respondents were satisfied with body coverage, comfortability, colour, managing fasteners, usability, size, protection, donning and doffing, flexibility and movement in their customized garments. The grand mean of 3.66 however, indicates the general satisfaction of customized garment with PWMIs.

4. In selecting garments, option to customized, fits, aesthetically pleasing, short sleeves, donn and doff easily, garment made with moisture wicking fabric, front openings, inserted antibacterial panel in certain regions and conceal medical devices are very much concerned with the respondents with grand mean of 4.54. Likewise, fits, pocket location, garment length, garment outline, specialized fabrics with moisture wicking and antimicrobial properties, fasteners for easy donn and doff and colour were considered important in the customized garment of the respondents, with grand mean of 3.86. However, only 15.4% of the respondents said, they would consider long sleeves as a feature they would want in their garment. Hence it is concluded that all the designed features in customized garments are important to the respondents. The study again revealed that, none of the respondents knows any designer who produces specialized clothes for mobility impaired.
5. There is a positive weak significant relationship ($r = 0.186$, $\alpha = 0.008$) between the quality of life of the respondents and the functionality element of clothing, there exists a positive weak relationship ($r = 0.201$, $\alpha = 0.004$) between the respondents' quality of life and their expressive element of clothing and there is a very weak insignificant positive relationship ($r = 0.091$, $\alpha = 0.200$) between the respondents' quality of life and their aesthetic element of clothing.

Conclusions

From the findings of the study, it is concluded that:

1. PWMIs are not satisfied with the ready-made garment. The attributes that make them dissatisfied include durability, attractiveness, managing

fasteners and zippers, style, movement, easy to put on and take off, comfortability and fit of the garment. These are the more reasons why they opt for alterations in their garments

2. Altering of ready-made clothing for PWMIs provides them with satisfaction in terms of most of the garments' attribute such as comfortability and placement of pockets, but they are dissatisfied with attractiveness since the alterations are mostly done by themselves and they are not able to give them a good finish.
3. PWMIs in general, are very satisfied with the customized garment. Generally, PWMIs who have their clothing customized have the chance to express their views on features they wanted therefore, get very high levels of satisfaction of the garments. Unfortunately, not all of them are able to afford the customized garments.
4. The majority of the sampled PWMIs are very much concerned about all the attributes such as; option to customize, fits, aesthetically pleasing, garments made with moisture wicking fabric and front openings when selecting garments. In selecting garments, they consider all the design features such as pocket location, garment length, garment outline, fasteners for easy don and doff, and colour as very important as they would want to have them in their garments.
5. A positive weak significant relationship between the perception of quality of life of PWMIs and the functionality, expressive and aesthetic element of clothing indicates that a well thought clothing design that blend functionality, expressive and aesthetic elements of clothing, will have the power to improve to a certain degree the level of independence

and mobility, psychological and social relationships of PWMIs, thereby increasing their quality of life and vice versa.

Recommendations

From the findings of the study and the conclusions made, the following recommendations were made:

1. The association of physically challenged should encourage the members to inform their designers in the KEEA municipality to specialize in their clothing production in order to produce to meet the needs and interest of PWMIs within the municipality.
2. PWMIs should be educated on the attributes of ready-made garments which include durability, attractiveness, managing fasteners, style, easy to put on and take off, comfortability and fit of the garment in order to select fabrics and garments that have special qualities to meet their conditions, needs and interest.
3. When PWMIs take their garments to seamstresses and tailors, they should be able to tell them the problems that they have and to point out the design features that they want in their customized garments. Since they are satisfied with certain attributes and design features in their garments.
4. Educational programmes should be provided for PWMIs to increase their perception of quality of life of and the functionality, expressive and aesthetic element of clothing.

Suggestions for Further Research

This study focused on adults. Another study can however concentrate on children of school going age. A study could also focus on tailors and

seamstresses who make custom garments for PWMIs to see the challenges they have and how to deal with the challenges to come out with the best to satisfy their clients. Another study may however, deal with the other aspects of clothing of PWMIs instead of their garments.

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APPENDICES

APPENDIX A

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QUESTIONNAIRES

Section A: Examines the demographic status of the respondents.

Please tick in the boxes an appropriate response.

1. **Sex:** □ Male □ Female

2. **Age:** □ 16 - 25.
   □ 26-35.
   □ 36- 45.
   □ 46- 55.
   □ 56- 65.
   □ 66 and above.

3. **Marital status;**
   □ married
   □ not married
   □ widow
   □ widower
   □ separated
   □ Others, please specify……...

4. **Main occupation:**
   □ Government employee.
   □ Self-employed.
   □ unemployed.
   □ Trading
   □ Others, please specify……...

5. **Educational Background:**
   □ No formal Education.
   □ Primary.
   □ Secondary.
   □ Tertiary.
   □ Others, please specify ……

6. Pease state the kind of disability you have……...

7. Means of Movement.
   □ Wheel chair user.
   □ Walks on both hands and knees.
   □ Walks on buttocks.
   □ Crutch user

7. How long have you been actively physically challenged?.....

8. What brought about your condition?
   - □ motor accident.
   - □ By birth.
   - □ Old age.
   - □ Sickness.
   - □ others, specify……

9. For those who use wheel chairs and crutches, how long have you been actively using
   The above assistive devices?
   - □ 0-3 months.
   - □ 3-6 months.
   - □ 6-12 months.
   - □ 1-3 years.
   - □ 3-6 years.
   - □ 6-9 years.
   - □ 9+ years.

Section B: Examines the satisfaction levels with the use of ready-made garments, altered and customized garments – Functionality, aesthetic and expressive.

How satisfied are you with the use of ready-made garments that you have?

Garments attributes	Very dissatisfied.	Dissatisfied.	neither dissatisfied nor satisfied.	Satisfied.	Very satisfied.
10.Style.	[ ]	[ ]	[ ]	[ ]	[ ]
11.Color.	[ ]	[ ]	[ ]	[ ]	[ ]
13.Comfort.	[ ]	[ ]	[ ]	[ ]	[ ]
14.Attractiveness.	[ ]	[ ]	[ ]	[ ]	[ ]
15.Usability.	[ ]	[ ]	[ ]	[ ]	[ ]
16.Fit.	[ ]	[ ]	[ ]	[ ]	[ ]
17.Movement.	[ ]	[ ]	[ ]	[ ]	[ ]

18.Construction Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
19.Fabric Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
20.Size.	[ ]	[ ]	[ ]	[ ]	[ ]
21.Protection.	[ ]	[ ]	[ ]	[ ]	[ ]
22.Durability.	[ ]	[ ]	[ ]	[ ]	[ ]
23.Managing fasteners and zippers.	[ ]	[ ]	[ ]	[ ]	[ ]
24.Easy to put on and take off.	[ ]	[ ]	[ ]	[ ]	[ ]

25. Do you have any clothes that are specifically altered for your use?

- □ Yes
- □ No

If No, then please Skip to garment specifically designed for your use.

How satisfied are you with clothes that are specifically altered for your use?

Garments attributes	Very dissatisfied.	Dissatisfied.	neither dissatisfied nor satisfied.	Satisfied.	Very satisfied.
26.Style.	[ ]	[ ]	[ ]	[ ]	[ ]
27.Colour.	[ ]	[ ]	[ ]	[ ]	[ ]
28.Comfort.	[ ]	[ ]	[ ]	[ ]	[ ]
29.Attractiveness.	[ ]	[ ]	[ ]	[ ]	[ ]
30.Usability.	[ ]	[ ]	[ ]	[ ]	[ ]
31.Fit.	[ ]	[ ]	[ ]	[ ]	[ ]
32.Movement.	[ ]	[ ]	[ ]	[ ]	[ ]
33.Construction Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
34.Fabric Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
35.Size.	[ ]	[ ]	[ ]	[ ]	[ ]
36.Protection.	[ ]	[ ]	[ ]	[ ]	[ ]
37.Durability.	[ ]	[ ]	[ ]	[ ]	[ ]
38.Easy to put on and take off.	[ ]	[ ]	[ ]	[ ]	[ ]
39.Managing fasteners and zippers.	[ ]	[ ]	[ ]	[ ]	[ ]
40.Placement of Pockets.	[ ]	[ ]	[ ]	[ ]	[ ]
41.Placement of Seams.	[ ]	[ ]	[ ]	[ ]	[ ]
42Accommodation for concealing medicaldevices.	[ ]	[ ]	[ ]	[ ]	[ ]

43. Do you have any clothes that are specifically designed for your use?

- □ Yes.
- □ No.

If No, then please skip to section C.

How satisfied are you with clothes that are specifically designed for your use?

Garments attributes	Very dissatisfied.	Dissatisfied.	neither dissatisfied nor satisfied.	Satisfied.	Very Satisfied.
44.Style.	[ ]	[ ]	[ ]	[ ]	[ ]
45.Color.	[ ]	[ ]	[ ]	[ ]	[ ]
46.Comfort.	[ ]	[ ]	[ ]	[ ]	[ ]
47.Attractiveness.	[ ]	[ ]	[ ]	[ ]	[ ]
48.Usability.	[ ]	[ ]	[ ]	[ ]	[ ]
49.Fit.	[ ]	[ ]	[ ]	[ ]	[ ]
50.Movement.	[ ]	[ ]	[ ]	[ ]	[ ]
51.Construction Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
52.Fabric Quality.	[ ]	[ ]	[ ]	[ ]	[ ]
53.Size.	[ ]	[ ]	[ ]	[ ]	[ ]
54.Protection.	[ ]	[ ]	[ ]	[ ]	[ ]
55.Durability.	[ ]	[ ]	[ ]	[ ]	[ ]
56.Easy to put on and take off.	[ ]	[ ]	[ ]	[ ]	[ ]
57.Managing fasteners and zippers.	[ ]	[ ]	[ ]	[ ]	[ ]

58.Body Coverage.	[ ]	[ ]	[ ]	[ ]	[ ]
59.Flexibility and ease in movement.	[ ]	[ ]	[ ]	[ ]	[ ]

Section C: Assesses the importance of functionality, expressive and aesthetics of garments being used.

From the clothing in your wardrobe, how important are the following attributes?

Garments attributes	Not important.	A little important.	moderately important.	Very important.	Extremely important.
60.Functionality					
Fit	[ ]	[ ]	[ ]	[ ]	[ ]
Mobility,	[ ]	[ ]	[ ]	[ ]	[ ]
Comfort,	[ ]	[ ]	[ ]	[ ]	[ ]
Protection,	[ ]	[ ]	[ ]	[ ]	[ ]
Don and off.	[ ]	[ ]	[ ]	[ ]	[ ]
61.Expressive					
Value	[ ]	[ ]	[ ]	[ ]	[ ]
Status	[ ]	[ ]	[ ]	[ ]	[ ]
Identity	[ ]	[ ]	[ ]	[ ]	[ ]
Self-esteem	[ ]	[ ]	[ ]	[ ]	[ ]
62.Aesthetics					
Pleasing					
Fashionable	[ ]	[ ]	[ ]	[ ]	[ ]
Design	[ ]	[ ]	[ ]	[ ]	[ ]
elements	[ ]	[ ]	[ ]	[ ]	[ ]

How would you rate your limitation in relation to performing daily activities such as dressing.

	Incapable.	Fairly capable.	Neutral.	Semi capable.	Fully capable.
63.Don (Dressing).	[ ]	[ ]	[ ]	[ ]	[ ]
64.Doff (Undressing).	[ ]	[ ]	[ ]	[ ]	[ ]
65.Going to toilet.	[ ]	[ ]	[ ]	[ ]	[ ]
66.Getting on and off from wheelchair or crutch.	[ ]	[ ]	[ ]	[ ]	[ ]
67.Moving around	[ ]	[ ]	[ ]	[ ]	[ ]

68. What difficulties do you encounter while purchasing clothing for yourself? (May select more than one option)

- □ disregard from shop keepers.
- □ unable to fit before buying
- □ Do not fit well sometimes.
- □ Difficult to take on and off
- □ Others. Please specify …….

69. Please rate how much you need special alterations to your general clothing to accommodate medical aids

- □ Not at all.
- □ A little.
- □ Moderately.
- □ Mostly.
- □ Completely.

70. On a daily basis, how would you rate your degree of independence/dependence when you are dressing?

- □ Completely dependent.
- □ Semi dependent.
- □ Completely independent.

71. Are you able to work?

- □ Yes.
- □ No.

72. How would you rate your ability to work?

- □ Incapable
- □ Fairly capable
- □ Neutral

- □ Semi capable
- □ Fully capable

73. Have you ever felt the need for specialized clothing?

- □ Yes.
- □ No.

Section D: Examines garment attributes and design details that respondents are looking for in their garment.

How much are you concerned with the following attributes?

Garments attributes	Not at all.	Little.	A moderate amount.	Very much.	An extreme amount.
74.Comfort level due to moisture and heat trap while sitting for long period of time.	[ ]	[ ]	[ ]	[ ]	[ ]
75. Potential bacterial growth on fabric due to moisture and heat trap.	[ ]	[ ]	[ ]	[ ]	[ ]
76. Malodor generated from long sitting hours	[ ]	[ ]	[ ]	[ ]	[ ]

How important are the following features/attributes to you in selecting garment?

	Not at all important.	A little important.	Moderately important.	Very important.	Extremely important.
77.Option to Customize.	[ ]	[ ]	[ ]	[ ]	[ ]
78. Made with moisture Wicking fabric.	[ ]	[ ]	[ ]	[ ]	[ ]
79.Inserted antibacterial panel in certain regions.	[ ]	[ ]	[ ]	[ ]	[ ]
80. Conceal medical devices.	[ ]	[ ]	[ ]	[ ]	[ ]
81. Front openings.	[ ]	[ ]	[ ]	[ ]	[ ]
82. Long sleeves.	[ ]	[ ]	[ ]	[ ]	[ ]
83. Short sleeves.	[ ]	[ ]	[ ]	[ ]	[ ]
84.Don and doff Easily.	[ ]	[ ]	[ ]	[ ]	[ ]
85.Fits and looks aesthetically pleasing.	[ ]	[ ]	[ ]	[ ]	[ ]

86.Specify the type of fastener…….

Others, please specify…….

How important are the following design features in customized garment for yourself?

	Not at all important.	A little important.	Moderately important.	Very important.	Extremely important.
87.Fit.	[ ]	[ ]	[ ]	[ ]	[ ]
88.Pocket location.	[ ]	[ ]	[ ]	[ ]	[ ]
89.Garment length.	[ ]	[ ]	[ ]	[ ]	[ ]
90.Garment outline.	[ ]	[ ]	[ ]	[ ]	[ ]
91.Specialized fabrics with moisture wicking and antimicrobial properties.	[ ]	[ ]	[ ]	[ ]	[ ]
92.Medical Devices concealment.	[ ]	[ ]	[ ]	[ ]	[ ]
93.Fasteners for easy don and doff.	[ ]	[ ]	[ ]	[ ]	[ ]
94.Color.	[ ]	[ ]	[ ]	[ ]	[ ]

Others, please specify……

95. Are you aware of any designer producing specialized clothing for people with mobility impairment in Ghana?

□ Yes.
□ No.

If yes, then please state the name of the designer and the place.

…… ……..

Section E: Examines the level of quality of life in terms of psychological, level of independence and social relationship.

The following questions ask about your experiences during this condition.

	Not at all.	A little.	A moderate amount.	Very much.	An extreme amount.
96.How much do you experience positive feelings in your life?	[ ]	[ ]	[ ]	[ ]	[ ]
97.How much confidence do you have in yourself?	[ ]	[ ]	[ ]	[ ]	[ ]
98.Is there any part of your appearance which makes you feel uncomfortable?	[ ]	[ ]	[ ]	[ ]	[ ]
99.To what extent do you have difficulty in Performing your routine activities?	[ ]	[ ]	[ ]	[ ]	[ ]
100.How much are you bothered by any limitations in performing everyday living activities?	[ ]	[ ]	[ ]	[ ]	[ ]
101.To what extent does your quality of life depends on the use of medical	[ ]	[ ]	[ ]	[ ]	[ ]

substances or medical aids?	

The following questions relates to your experiences during this condition.

	Not at all.	A little.	Moderate.	Mostly.	Completely.
102.Are you able to accept your bodily appearance?	[ ]	[ ]	[ ]	[ ]	[ ]
103.To what extent are you able to carry out your daily activities?	[ ]	[ ]	[ ]	[ ]	[ ]
104.Do you get the kind of support from others that you need?	[ ]	[ ]	[ ]	[ ]	[ ]
105.To what extent do you feel accepted by the people you know?	[ ]	[ ]	[ ]	[ ]	[ ]
106.How much do you feel alienated from those around you?	[ ]	[ ]	[ ]	[ ]	[ ]
107.Do you have enough money to meet your needs?	[ ]	[ ]	[ ]	[ ]	[ ]

The following questions ask your satisfaction during this condition

	Very dissatisfied.	Dissatisfied.	Neutral.	Satisfied.	Very Satisfied
108.How satisfied are you with the quality of your life?	[ ]	[ ]	[ ]	[ ]	[ ]
109.How satisfied are you with the way your body looks?	[ ]	[ ]	[ ]	[ ]	[ ]
110.How satisfied are you with your ability to perform your daily living activities?	[ ]	[ ]	[ ]	[ ]	[ ]
111.How satisfied are you with your financial situation?	[ ]	[ ]	[ ]	[ ]	[ ]
112.How satisfied are rated your quality of life?	[ ]	[ ]	[ ]	[ ]	[ ]

The following questions refer to how often you have felt or experienced certain things during this condition.

	Never.	Seldom.	Quite often.	Very often	Always.
113.How often do you feel you are discriminated against because of your health conditions?	[ ]	[ ]	[ ]	[ ]	[ ]

The following questions ask about how well you were able to move around.

	Very poor.	Poor.	Neither poor nor good.	Good.	Very Good.
114.How well are you able to get around?	[ ]	[ ]	[ ]	[ ]	[ ]
115.How much is Your difficulties in mobility bothers you?	[ ]	[ ]	[ ]	[ ]	[ ]

The following questions ask about how important the various aspects of your life are to you in general. Think about how much these affect your quality of life.

	Not important.	A little important.	moderately important.	very important.	extremely important.
116.How important your overall quality of life is to you?	[ ]	[ ]	[ ]	[ ]	[ ]
117.How important	[ ]	[ ]	[ ]	[ ]	[ ]

feeling positive about yourself is to you?					
118.How important your body image and appearance is to you?	[ ]	[ ]	[ ]	[ ]	[ ]
119.How important being able to take care of your daily living activities (e.g. washing, eating, dressing) is to you?	[ ]	[ ]	[ ]	[ ]	[ ]
120. How important feeling included socially is to you?	[ ]	[ ]	[ ]	[ ]	[ ]

120. Any additional comments on any improvement of size, fit, style and design of garment for your condition?

APPENDIX B

UNIVERSITY OF CAPE COAST

INTERVIEW GUIDE TO SOLICIT INFORMATION ABOUT PWMIS

1. How do you perceive the use of ready-made garments?
2. How do you find the use of altered ready-made garments?
3. What do you feel when using customized garments?
4. What kind of features do you expect to have in your customized garments?
5. Do you think your way of dressing has influence on your ability to socialize, work, as well as your thinking and feeling?

APPENDIX C

INFORMED CONSENT FORM

INFORMED CONSENT FORM FOR ADULT (QUESTIONNAIRE RESPONDENTS)

PART I: INFORMATION SHEET

Title: "Clothing challenges of people with mobility impairment in Komenda, Edina, Eguafo, Abrem municipality-central region, Ghana."

Principal Investigator: Elizabeth Arthur

Address: Eguafo Abrem Senior High School. P. O. Box 240, Elmina, Central Region

General Information about Research

The study seeks to examine the design details of general garments made up of ready-made garments, self-made alterated and customized garments in the Ghanaian market, and also assess how People with Mobility Impairments (movement difficulties) in Komenda, Edina, Eguafo, Abrem (KEEA) municipality are satisfied with these garments.

To find answers to some of these questions, I invite you to take part in this research project. If you accept, you will be required to fill out a survey which will be provided by Elizabeth Arthur, (the researcher). The information would be collected by the same person after completion. I humbly invite you to take part in this study, since the study directly involves you and believe you have the right information needed to undertake the study. Almost all the question items are closed-ended where respondents are required to provide responses out of numerous options given. There is only one question item that is open-ended which will require individual responses

If you do not wish to answer any of the questions included in the survey, you may skip them and move on to the next question. The questionnaire will be distributed during one of the meeting days of the association of the physically challenged at the meeting centre in your community to be filled. The information that would be recorded is considered confidential, and will not be disclosed to any outsider. The expected duration of filling the questionnaire will be 40 minutes.

Possible Risks and Discomforts

The instrument (Questionnaire) could elicit little boredom and discomfort as well as psychological stress on the respondents due to the nature and the length of the questionnaire. However, the researcher will make provision of twenty (20) minutes break, after the section C of the questionnaire, where Snacks (biscuit and yoghurt) will be provided to the respondents as a form of refreshment, in order to break boredom, relief them from

psychological stress and discomfort that respondents might have gone through. After which the rest of the sections will be completed.

Possible Benefits

The findings of the study will create awareness in People with Mobility Impairments (PWMIs) who are marginalized in the Ghanaian society that, some of their mobility challenges can be resolved through well clothing designs. The study will again gather information that would be needed by designers and manufacturers in Ghana to have a clothing line that will concentrate on mobility lifestyle to produce to meet the needs and interest of PWMIs in the country. However, the study is going to fill up the gap in the existing literature, that fails to address the clothing needs of this marginalized group in Ghana.

Confidentiality

Each participant would be made to understand the details of the study whilst an informed consent will be sort from each participant before involving them in the study. This is to assure the respondents that their anonymity and confidentiality are protected throughout the study. However, the respondents will have the right to or not to respond to the items or withdraw from the study at any point in time without any penalty.

Voluntary Participation and Right to Leave the Research

The respondents will have the right and autonomy to decline in participating or Withdrawing from the study at any time without any penalty.

Contacts for Additional Information

Name: Elizabeth Arthur (0243786426)

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB). If you have any questions about your rights as a research participant you can contact the Administrator at the IRB Office between the hours of 8:00 am and 4:30 p.m. through the phones lines 0558093143/0508878309/0244207814 or email address: irb@ucc.edu.gh.

PART II: VOLUNTEER'S AGREEMENT

The above document describing the benefits, risks and procedures for the research title "Clothing challenges of people with mobility impairment in Komenda, Edina, Eguafo, Abrem municipality-central region, Ghana." has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Volunteer's Name……...

Volunteer's Mark/Thumbprint……

Date: **……**

If volunteer cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Witness's Name: ……
Witness's Mark/Thumbprint: ……
Date: **……**

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Researcher's Name: Elizabeth Arthur Researcher's Signature: …….
Date: **……**

APPENDIX D

INFORMED CONSENT FORM FOR ADULT (INTERVIEW RESPONDENTS)

PART I: INFORMATION SHEET

Title: "Clothing challenges of people with mobility impairment in Komenda Edina, Eguafo, Abrem municipality-central region, Ghana."

Principal Investigator: Elizabeth Arthur

Address: Eguafo Abrem Senior High School, P. O. Box 240, Elmina, Central Region

General Information about Research

The aim of the study is to examine the design details of general garments, that is, ready-made garments, self-made alterated once and customized types in the Ghanaian market, and also assess how People with Mobility Impairments (movement difficulties) in Komenda, Edina, Eguafo, Abrem (KEEA) municipality are satisfied with these garments.

To find answers to some of these questions, I invite you to take part in this research project. If you accept, you will be required to participate in an interview with Elizabeth Arthur. I humbly invite you to take part in this study, since the study directly involves you and you have the right information needed to undertake the study. The question items are open-ended which require responses from the respondents.

If you do not wish to answer any of the questions posed during the interview, you may say so and the interviewer will move on to the next question. The interview will take place in one of the meeting days of the association of the physically challenged at the meeting centre in your community and no one else but the interviewer will be present. The information recorded is considered confidential, and will not be disclosed to any outsider. The expected duration of the interview will be 7-10 minutes.

Possible Benefits

The findings of the study will create awareness in People with Mobility Impairments (PWMIs) who are marginalized in the Ghanaian society that, some of their mobility challenges can be resolved through well clothing designs. The study will again gather information that would be needed by designers and manufacturers in Ghana to have a clothing line that will concentrate on mobility lifestyle to produce to meet the needs and interest of PWMIs in the country. However, the study is going to fill up the gap in the existing literature, that fails to address the clothing needs of this marginalized groups in Ghana.

Confidentiality

Each participant would be made to understand the details of the study whilst an informed consent will be sort from each participant before involving them in the study. This is to assure the respondents that their anonymity and confidentiality are protected throughout the study. However, the respondents will have the right to or not to respond to the items or withdraw from the study at any point in time without any penalty.

Voluntary Participation and Right to Leave the Research

The respondents will have the right and autonomy to decline in participating or Withdrawing from the study at any time without any penalty.

Contacts for Additional Information

Name: Elizabeth Arthur (0243786426)

Your rights as a Participant

This research has been reviewed and approved by the Institutional Review Board of University of Cape Coast (UCCIRB). If you have any questions about your rights as a research participant you can contact the Administrator at the IRB Office between the hours of 8:00 am and 4:30 p.m. through the phones lines 0558093143/0508878309/0244207814 or email address: irb@ucc.edu.gh.

PART II: VOLUNTEER'S AGREEMENT

The above document describing the benefits, risks and procedures for the research title "Clothing challenges of people with mobility impairment in Komenda, Edina, Eguafo, Abrem municipality-central region, Ghana." has been read and explained to me. I have been given an opportunity to have any questions about the research answered to my satisfaction. I agree to participate as a volunteer.

Volunteer's Name……... Volunteer's Mark/Thumbprint……

Date: **……**

If volunteer cannot read the form themselves, a witness must sign here:

I was present while the benefits, risks and procedures were read to the volunteer. All questions were answered and the volunteer has agreed to take part in the research.

Witness's Name: …… Witness's Mark/Thumbprint: ……

Date: **……**

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this research have been explained to the above individual.

Researcher's Name: Elizabeth Arthur Researcher's Signature: …….

Date: **……**

APPENDIX E

ETHICAL CLEARANCE

UNIVERSITY OF CAPE COAST

INSTITUTIONAL REVIEW BOARD SECRETARIAT

TEL: 0558093143/0508837309
E-MAIL: irb@ucc.edu.gh
OUR REF: UCC/IRB/A/2016/1073
YOUR REF:
OMB NO: 0990-0279
IORG #: IORG0009096

2ND SEPTEMBER 2021

Ms. Elizabeth Arthur
Department of Vocational and Technical Education
University of Cape Coast

Dear Ms. Arthur,

ETHICAL CLEARANCE – ID (UCCIRB/CES/2021/34)

The University of Cape Coast Institutional Review Board (UCCIRB) has granted Provisional Approval for the implementation of your research titled **Clothing Challenges of People with Mobility Impairment in Komenda, Edina, Eguafo, Abrem Municipality-Central Region, Ghana.** This approval is valid from 2nd September 2021 to 1st September 2022. You may apply for a renewal subject to submission of all the required documents that will be prescribed by the UCCIRB.

Please note that any modification to the project must be submitted to the UCCIRB for review and approval before its implementation. You are required to submit periodic review of the protocol to the Board and a final full review to the UCCIRB on completion of the research. The UCCIRB may observe or cause to be observed procedures and records of the research during and after implementation.

You are also required to report all serious adverse events related to this study to the UCCIRB within seven days verbally and fourteen days in writing.

Always quote the protocol identification number in all future correspondence with us in relation to this protocol.

Yours faithfully,

Samuel Asiedu Owusu, PhD
UCCIRB Administrator

ADMINISTRATOR
INSTITUTIONAL REVIEW BOARD
UNIVERSITY OF CAPE COAST