

Limitations In The Design And Development Of The Apparel Needs Of The Physically Challenged: A Case Study Of Wheel Chair Users From Selected Institutions In Zimbabwe.

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Abstract: Physically challenged people do not show as much interest in clothing as able-bodied people do. One of the reasons for this lackadaisical attitude could be the unavailability of clothing that meets their physical and psychological needs. This study aims to design and develop apparel for the wheelchair users. A survey was carried out at Danhiko in Harare and Jairos Jiri centres in Bulawayo and Rusape. A total of 116 respondents were purposively sampled among wheel chair, crutch, and calliper users. A mixed method approach was employed in which questionnaires and interview guides were used as data collection instruments. Findings revealed that the physically challenged preferred clothing made to fit their physical challenges however; these are not readily available on the Zimbabwean clothing market. The study therefore recommends that clothing manufacturing industries design and develop clothes suitable for the physically challenged.

Keywords: physically challenged, Apparel needs, designing, psychological needs.

I. Introduction and Background

Physically challenged people are those people who have a physical disability or impairment especially one that limits mobility. Physical challenges include physical deformities that affect the upper and lower limbs, manual dexterity problems, inability to coordinate body organs and others. According to World Health Organisation estimates, there is about 1, 3 million people living with physical challenges in Zimbabwe, which accounts about 10% of the population. Physically challenged people may require the use of aids such as wheelchair, crutches, a walker, callipers or other supporting devices. In common with the fate of people living with physical challenges the world over, people with disability in Zimbabwe suffer widespread violation of their fundamental freedoms and rights which include choice of apparel.

Duan (2017) postulates that clothing made for people with disabilities is termed “adaptive wear” therefore in order for the styles to be functional there should be collaboration between the fashion designer and occupational therapist and the clients themselves. Designs for adaptive clothing may change often due to diminishing motor skills and dementia or other conditions. The aim of adaptive clothing designs is to promote independence in dressing and personal care for the wearer for as long as possible and also provide ease in the

dressing process for the caregiver. Many people struggle with clothing and fashion because of their disability. A study into clothing needs for people with spinal cord injury discovered that finding suitable clothing is a big issue for people sitting in wheelchairs. In Zimbabwe people are finding it very hard to find clothing that is easy to put on and off, that sit correctly on the seated figure but that is also stylish and fashionable. There is a perception that people get stared at more sitting in the chair. Therefore it is important for people to wear clothing that not only fit in with the perceived social norm, but that also function appropriately for the wheelchair user at the same time. (buckandbuck.com/adaptive-clothing-guide/clothing-for-wheelchair-users.html).

II. Problem Statement

Zimbabwean fashion designers and clothing manufacturers generally are not embracing inclusivity in clothes to cater for the dressing needs of people with disabilities including wheelchair users. In Europe and the US, designers have come up with fashion lines that are exclusively for people with disabilities for example, Tommy Hilfiger's 2017 fashion line whose adaptive clothes included styles for men and women with pants, shirts, jackets, sweaters and dresses. The purpose of this research is to conscientise fashion designers and clothes manufacturers on the need to promote independence as much as possible in dressing among wheel chair users and to assist care givers by developing adaptive clothing designs as they assist the wheel chair users in dressing. Physical challenges necessitate use of special apparel. Currently Zimbabwe's clothing manufacturing industries and fashion designers are not taking cognisance of apparel needs for people with disabilities and yet their physical challenges necessitate use of special apparel. The designers and clothing manufacturer's focus on producing clothes for the physically able leaving people with disabilities such as wheel chair users, little or no choice but to buy clothes that are restrictive and uncomfortable. There is need to satisfy the diverse tastes of apparel for wheelchair users. Good choice of clothes can promote independent living for people with physical challenges. The research seeks to address the situation so that different items of clothes are made that accommodate different disabilities to improve the quality of life of people with disabilities.

Aim

To develop understanding of the clothing needs of wheelchair users.

Design brief

Design garments that cater for the physically challenged persons who are wheelchair users.

Objectives

The study seeks to:

1. Identify challenges faced by wheelchair users in buying clothes.
2. Explore suitable fabrics and clothing designs for the wheelchair bound persons.
3. Design, develop and construct apparel for the wheelchair bound persons.

III. Methodology

A survey was carried out to identify limitations in terms of clothing among wheel chair users in Zimbabwe. The population under study is comprised of Danhiko Rehabilitation Centre, Jairos Jiri Rusape and Bulawayo Centres. Purposive sampling was used as these three were centres housing people who are differently abled. These centres rehabilitate and teach the physically challenged. A sample of 34 wheelchair users was randomly selected from Danhiko and Jairos Jiri Centres. A pilot study was first carried out at with 12 volunteer subjects from Cheshire Home for the Disabled using a questionnaire. According to Bets and Kann (1989), a questionnaire is appropriate for use where factual administration is required. Leedy (1997) also states that a questionnaire is commonly used observing the data beyond the physical reach of the observer. The questionnaires were administered by the researchers and collected upon completion by respondents i.e. questionnaires were filled in while researchers waited for collection. Permission was obtained from each of the three centres. Respondents were assured of confidentiality and anonymity.

IV. Literature Review

According to Lubitz (2016), finding the right clothing for wheelchair users is a challenge that people who don't use wheelchairs might not consider, but it is among the very real everyday problems that people who use wheelchairs face. Fenell (2015) observed that people with disabilities are highly sensitive on terms used to refer to them e.g. saying handicap vehicle instead of 'wheel chair accessible vehicle' can be irritating to some people using the wheel chair. Using the term wheel chair bound can be irritating to the wheel chair user. Fenell (2015) observed that different people prefer different terminology, presenting the use of disability, handicap or differently-able as accepted differently by different people and asserts that to overcome these different preferences requires an open mind and advised that we maintain a person first narrative. This is important as it shows that we aim to showcase the person e.g. introducing someone would go like; this is John Nzara a student at CUT who uses callipers. The emphasis is on the person's identity not his physical appearance. Generally one's ability doesn't define who they are.

According to Disability SA (2008), some standard clothes are not practical or comfortable to wear for long periods of time. Most clothes are made to look or feel best when you are standing up. So for wheelchair users, look for trousers with a longer leg length and looser fit around the bottom and tops of thighs, tops with a looser fit across the shoulders and upper arms will be more comfortable for those who self-propel. Clothes with slippery linings will generally be easier to put on and take off and soft, flat seams will be more comfortable and are less likely to contribute to pressure ulcers. Disability SA (2008) advocates for stretch fabrics as these are generally more comfortable to sit in and often make it easier to dress. Natural fibres are often most comfortable, are breathable and are best at maintaining body temperature. Tops that open at the back are often easier to put on in a seated position, if you are assisted by a carer for dressing. Designs also take into account the kind of chair the wearer could be using; either manual or power, depending on their disability. If the wheelchair user is self-propelling, muscles will have built up around the neck, arms and more room required around arm holes, so the collar often isn't the same size we see in standard shirting.

According to Buck and Buck (2018), many people struggle with clothing and fashion because of their disability. A study into clothing needs for people with spinal cord injury carried out in United States of America revealed that finding suitable clothing is a big issue for people sitting in wheelchairs. In Zimbabwe people are finding it very hard to find clothing that is easy to put on and off, that sit correctly on the seated figure but that is also stylish and fashionable. There is a perception that people get stared at more sitting in the chair. Therefore it is important for people to wear clothing that not only fit in with the perceived social norm, but that also function appropriately for the wheelchair user at the same time (Lubitz (2016) observed that if one liked clothes before an injury, they are going to like clothes afterwards too. Just because one is seated doesn't mean that they stopped caring about what they wear, and they still want to look good. Wheelchair clothing is designed to address the unique challenges faced by disabled people when dressing. Clothing for wheelchair users needs to be comfortable, easy to put on, non-restrictive and attractive. The clothes should facilitate easy toileting and other procedures for personal care should not be burdensome to carry out. It takes a good designer to come up with the right clothes for wheel chair users as it is demanding to find stylish clothes that make life easier for those with mobility challenges. Dressing can be a nightmare to deal with when motion is restricted. According to Disability SA (2008), standard clothes are not practical or comfortable to wear for long periods of time for wheelchair users. Most clothes are made to appear or feel best when standing. In Zimbabwe not many people can afford to have helpers in their households, making it prudent to have easy wear garments since most wheelchair users will have to dress themselves.

Disability SA (2008) suggests the use of trousers with a longer leg length and looser fit around the bottom and tops of thighs, to allow for free movement of limbs, tops with a looser fit across the shoulders and upper arms as being more comfortable for wheelchair users because they allow the client to self propel with ease. Clothes with slippery linings will generally be easier to put on and take off, therefore suitable for inclusion in the wardrobe of wheelchair users.

According to Meinander and Varheenmaa (2002), clothing and other textiles which are in close contact with the body must not cause any kind of uneasiness. Designers need to know the advantages and disadvantages of different types of fabric so as to make an informed choice of ideal fabrics to use in designing garments for wheelchair users e.g. stretch fabrics generally dry quickly, are more comfortable to sit in and often make it easier to dress. Natural fibres are often most comfortable next to the skin, hydrophilic, breathable and are best at maintaining a constant body temperature, Gordon and Abidi (2017). Zimbabwe is a cotton growing country

making is cheaper to construct clothes from cotton. Easy-care fabrics retain a good appearance and need little ironing hence cotton can be blended with synthetics to reduce creasing. When choosing clothes, Zimbabwean designers can consider the following styles, as suggested by (Meinander & Varheenmaa, 2002); longer neck-to-waist and waist to crotch lengths, to allow easy putting on and off, loose fit around the buttocks and tops of thighs, so as to allow free movement of the lower limbs, longer length trousers, loose fit across the shoulders and upper arms when self-propelling.

Groce and Mcgeown (2013) observed that there is an unsettling trend in many rural and urban areas where traditional beliefs linking disability with witchcraft are being reinterpreted. Due to rapid social and economic development, urban ‘witch doctors’ promote beliefs that individuals and families can prosper if they perform rituals or sacrifice involving abuse, mutilation or killing of children and adults with disabilities. Pentecostal churches and social media have also escalated the gospel where disability is linked to evil spirits. The differently abled persons often suffer from social isolation, discrimination and, in the most extreme cases, violence and death because of these cultural beliefs (UNICEF 2005; Batterbe et al. 2010; Human Rights Watch, 2012). Stigma and prejudice continue to be visible in all sections of the differently abled people. This has led to people, including fashion designer not paying attention to the needs of people who are differently abled. The influence of culture is an issue of concern that must be acknowledged and addressed in this research as we seek to improve the quality of dressing of the differently abled population in Zimbabwe. UN Department of Economic and Social Development (2006) explains the human rights of people with disabilities that have been ratified by over 150 countries, including over 30 sub-Saharan African countries, which give people with disabilities the same human rights and freedoms as all non-disabled persons. This therefore includes rights to comfortable and fashionable dressing for the differently abled as accessed by any other person.

Muderedzi and Instad (2011) also highlighted the negativity of traditional beliefs, attitudes and behaviour of Zimbabweans towards differently able people. Eide et al. (2003) observed that differently able people are often marginalised in society and this is evident in the exclusion of fashionable, appropriate fashion designs for the different disabilities among the differently abled. Muderedzi and Instad (2011:177) say “The majority of people with disabilities find that their situation affects their chances of going to school, working for a living, enjoying family life and participating as equals in social life”. This is supported by what we (researchers) observed in day to day life where school uniforms are not designed to meet the needs of the differently abled, jobs and their environments do not meet inclusive standards and the generality of homes as well as clothes are not designed for inclusiveness. This results in social suffering for the differently abled people in Zimbabwe. Benatar (1997) defines social suffering as associated with life conditions that is shaped by powerful social forces. The differently abled suffer psychological and physically when they fail to get well fitting, stylish, comfortable and fashionable clothes on the market while the able bodied find these in abundance. Social suffering is a result of what political, economic and institutional powers do to people (Muderedzi & Instad, 2011: 178). It is these circumstances faced by the differently abled that triggered this research in order to come up with recommendations that may improve the quality of life of the differently abled in as far as clothing is concerned.

V. Findings

An analysis of variance at 5% level of significance was used to determine whether the fit between custom designed and non- custom designed apparel for wheel chair users were significantly related to the demographic characteristics of the respondents.

Table 1 presents the demographic characteristics of the respondents in terms of gender, age, and marital status and education levels.

N= 34

Age	Frequency	%	Gender	
			Females	Males
16-20	8	23.5%	3	5

21-30	12	35.3%	5	7
31-40	14	41.2%	8	6
Totals 34		100%	16	18

The age range 31-40 years formed the bulk of the respondents (41.2%) and there were 18 (52.9%) males in the sample compared to 16 (47%) females. From this group of respondents, 52% prefer to dress differently from people who are not physically challenged while 40% prefer to dress like people who are not physically challenged. The remaining 8% were neutral. This shows that the majority of the respondents prefer to dress differently from people who are not physically challenged which is an indication that there is need for clothing manufacturers to design apparel for wheelchair users.

In response to the choices between custom designed and non custom designed apparel, responses showed that 47.9% prefer apparel made to fit their figure, 35% prefer clothes ready to wear but altered to fit. The remaining 17.1% prefer ready to wear (as bought in shops). This significantly shows that respondents prefer apparel made to suit their physical challenges. This is in line with Lubitz (2016)'s observations that the differently abled like fashionable clothes that fit them. Responses with regard to the availability of apparel for the physically challenged people in Zimbabwe shops show that 14.5% always get the right apparel for their physical challenges (wheelchair users), 76.9% were of the opinion that they sometimes get the right apparel while 8.5% never get the right apparel to suit wheelchair users. This indicates that the right apparel for the wheelchair users is not readily available in Zimbabwe retail apparel shops. Disability SA (2008) explained that standard clothes are not practical or comfortable to wear for long periods of time for wheelchair users. Therefore, there is need to fill the gap so that the differently abled can always find a variety of appropriate clothes on the market from which to choose. Most of these respondents indicated that the Zimbabwean culture has always looked down upon the differently abled, associating them with curses, witchcraft and evil spirits as observed by UNICEF (2005) and Batterbe et al. (2010). Respondents explained that they were discriminated when it came to availability of fashionable and appropriately designed garments. The respondents went further to say that most people viewed them negatively and that they were stigmatised thereby undermining their self-esteem. These views are very much agreeable to Groce and Mcgeown (2013)'s views regarding cultural beliefs in Southern Africa, Eide et al. (2003) as well as Muderedzi and Instad (2011)'s findings in a research on disability and social suffering in Zimbabwe.

In response to problems or difficulties faced when wearing clothes designed for the able bodied people, 82.1% of the respondents have their garments affected by the wheelchair device when wearing apparel designed for the able bodied people. In relation to comfort, easy wear and tenacity 90% of respondents stated that readymade garments were not user friendly. This is in line with Disability SA (2008)'s assertions that some standard clothes are not practical or comfortable to wear for long periods of time. Responses on whether industry caters for the fashion needs of wheelchair users revealed that their fashion needs were not catered for by the apparel industry.

Challenges in apparel as identified by the respondents were; failing to get clothes that fit the figure (size, shape), discomfort in wear, difficulty in wear (putting on and off the clothes), undesirable designs, non-stretch fabrics being used and non-absorbent fabrics in use (hydrophobic fibres used). The respondents also mentioned that it was an uphill task to go shopping for clothes as most clothing shops were not user friendly, especially for wheel chair users. The shops entrances and exit points did not have ramps for ease of wheeling oneself into the shop and out of the shop. Because of stigma and discrimination some shop assistants were not helpful and patient to make shopping enjoyable for the differently abled especially when they wanted to fit the garments. Marginalisation of differently abled people in our society is stated by Muderedzi and Instad (2011) while Groce and Mcgeown (2013) highlighted the challenge of stigmatisation of differently abled people in society. These identified challenges result in social suffering of the differently abled people in our different communities (Benatar, 1997).

VI. Recommendations

The research highly recommends for a serious drive to raise awareness among fashion designers (during and after training) and the clothing manufacturing companies to make a conscious effort to produce inclusive designs and clothes. This would be in line with Bach (2017)'s highlights of Tommy Hilfiger's designs that have Velcro closures on pants, magnetic flies and zips along with adjusted leg openings and hems to accommodate leg braces and orthotics. Magnetic buttons and cuffs could be used to facilitate one hand manipulations for differently abled people.

It is also recommended that the government makes effort to promote the establishment of inclusive or easily accessible clothing shops that stock fashionable clothes for differently abled people with subsidised prices for such clothes and tax reduction incentives for such clothing shops or manufacturing companies.

Growing of cotton should be promoted in Zimbabwe to facilitate the ease of accessing comfortable fabrics for the production of clothes for the differently abled e.g. wheel chair users.

Further research is required to ascertain the influence of culture, upbringing and attitudes on designing for the differently abled.

References

- [1]. Batterbee, L., Foxcroft, G. & Secker, E. (2010) Witchcraft stigmatisation and Children's Rights in Nigeria. Stepping Stones Nigeria report at 54th session of the UN committee on the Rights of the Child in Geneva, May 2010
- [2]. Benatar, S.R. (1997) 'Social suffering: relevance for doctors', British Medical Journal, Vol. 315, pp. 1634-5
- [3]. Buck and Buck (2018) Adaptive Clothing. Accessed from <https://www.buckandbuck.com/adaptive-clothing-guide/clothing-for-wheelchair-user.html> retrieved 28/06/2018
- [4]. Disability SA (2008) Disability training pathways to meet the needs of Aboriginal people with disabilities: final report 2008/Russell Ellis-- (et al.) Adelaide, SA: Flinders University & Disability Sa.
- [5]. Eide, A.H., Nhiwatiwa, S., Muderredzi, J. and Loeb, M.E. (2003) Living conditions among people with activity limitations in Zimbabwe: A representative regional survey,
- [6]. SINTEF Report STF 78 – AO34512, Oslo: SINTEF, Norway
- [7]. Fenell, Z. (2015) An Overlooked Resource—People with Disabilities. Accessed from <http://www.thinkinclusive.us/an-overlooked-resource-people-with-disabilities/> retrieved 8/6/18
- [8]. Gordon, S. & Abidi, N. (2017) Cotton Textiles: Characteristics, Uses and Performance. Nova Science Publishers, Google Books https://books.google.co.zw/books/about/Cotton_Fibres.html?id=Yvr3nAAACAAJ&redir_esc=y Accessed 2 August 2018
- [9]. Groce, N. and Mcgown, J. (2013) Witchcraft, Wealth and Disability: Reinterpretation of a folk belief in contemporary urban Africa. Available from: https://www.researchgate.net/publication/320757168_Witchcraft_Wealth_and_Disability_Reinterpretation_of_a_folk_belief_in_contemporary_urban_Africa Accessed Aug 02 2018
- [10]. Human Rights Watch (2012) "Like a Death Sentence": Abuses against Persons with Mental Disabilities in Ghana
- [11]. Koester, A.W. (1983) Clothing for people with physical handicaps. Oregon State University
- [12]. Lubitz, R. (2016) These are designers working hard to make stylish clothes for wheelchair users. <https://mic.com/articles/132453/these-are-the-designers-working-hard-to-make-stylish-clothes-for-wheelchair-users#.CTuUnaxbL> Retrieved 21 March 2018
- [13]. Meinander, H. & Varheanmaa, N. (2002) Clothing and Textiles for Disabled and Elderly people. Espoo 2002 VIT tiedotteita-Research notes 2142-57p+app.4p
- [14]. Muderredzi, J. & Instad, B. (2011) Disability and Social suffering in Zimbabwe. In Disability and Poverty: A Global Challenge. Pp.177-188
- [15]. Wheelchair Clothing for Women and Men <http://www.silverts.com/wheelchair-clothing/>
- [16]. Clothing for wheelchair users [http://www.livingmadeeasy.org.uk/scenario.php?csid=395.\(www.assistireland.ie/eng/information/information_sheets/clothing_ideas_for_wheelchair_users.html\)](http://www.livingmadeeasy.org.uk/scenario.php?csid=395.(www.assistireland.ie/eng/information/information_sheets/clothing_ideas_for_wheelchair_users.html)) Accessed 28 June 2018

- [17]. UN Department of Social and economic affairs (DESA)
www.un.org/en/development/desa/index. Accessed 2 August 2018
- [18]. United Nations Human Rights website, (2013) Office of the High Commissioner for Human Rights.
www.ohchr.org/EN/Pages/WelcomePage.aspx Accessed 2 August 2018