



## DEPENDENT SENIORS CLOTHING FROM THE CAREGIVER'S PERSPECTIVE

ARTEMÍSIA LIMA CALDAS<sup>1</sup>, MIGUEL ANGELO FERNANDES CARVALHO<sup>2</sup>, MONIQUE CALDAS SOUZA<sup>3</sup>, GEORGYA BRITO<sup>4</sup>, HUMBERTO PINHEIRO LOPES<sup>5</sup>,

<sup>1</sup> University of Minho (Uminho), [artecaldas2@gmail.com](mailto:artecaldas2@gmail.com)

<sup>2</sup> University of Minho (Uminho), [migcar@det.uminho.pt](mailto:migcar@det.uminho.pt)

<sup>3</sup> Federal University of Piauí (UFPI), [moniquecaldas@hotmail.com.br](mailto:moniquecaldas@hotmail.com.br)

<sup>4</sup> Federal University of Piauí (UFPI), [georgyakaniak@gmail.com](mailto:georgyakaniak@gmail.com)

<sup>5</sup> University of Coimbra (UC), [umpiro@gmail.com](mailto:umpiro@gmail.com)

**Abstract:** *Seniors are in a time of relevant evidence, due to their extended life, result of different adopted procedures in the last years. In addition to the natural aging process other adversities affect them leading to dependence of some activities such as their dressing skills. We aim to offer, according to the caregivers' perspective, suggestions of more adapted clothing, considering the dependent seniors real limitations in order to provide them more comfort and ease the handling by the caregiver.*

**Keywords:** *Adapted clothing, dependent senior and caregiver.*

### 1. Introduction

Actually, seniors are in a moment of relevant evidence in the society. One of the main reasons is their extended life expectancy, result of better quality of life, like more health attention. Therefore, they seek a more healthy diet, frequently practice more physical exercise like gymnastics, walking, recreation, dance, travelling, among other things, which provide their welfare. Despite all activities, even with the changes in habits and care, accidents and degenerative diseases can happen making them dependent of a relative, nurse or a caregiver.

The motivation for this study came from an experience with the complains of a relative caregiver with difficulties to find adapted clothing for a hemiplegic senior. According to his warnings, the desired clothing, which would be appropriate for this dependent senior, needed to have some characteristics. We emphasize the two most relevant to the hemiplegic condition: comfort and handling. Comfort is a feature resulting from all the particularities of the manufactured material. Ease handling is related to the dressing/undressing skills. Although, nowadays clothing present greater ease handling than in the past (if we consider the clothing techniques evolution over the centuries), there are still many garments in the market that do not meet this ergonomic principle (Martins, 2008).

Clothing can be considered as our second skin (Barros, 2010 and Cidreira, 2005). This citation emphasizes the importance and the function of the clothing we wear as part of human life. The design of clothing requires relevant technical care, especially when it is developed for an audience like the dependent senior. It requires close attention to the properties coming from the sensorial and ergonomic comfort. Iida (2005) admits that ergonomics aims health, security, satisfaction, and welfare.

Comfort, when thought related to the hemiplegic senior clothing manufacture, arises as one of the preponderant ergonomic principles used for product development. When it is applied, it benefits users life and allows welfare because it supplies needs, considered before as "noise" – a lack of technical, physical, and subjective aspects harmonizes the user with the object. Gomes Filho (2003) assigns comfort like a

convenience, and welfare condition, whereas Pires (2004) defines comfort as a state of physical and mental harmony, with three main aspects which can be integrated in all fashion items: physical comfort, related to the fit of clothing to the body and its movements; physiological comfort, related to temperature and thermal sensations; and psychological comfort, when we think about aesthetics, appeal, cultural and social ambience.

In this study, were applied questionnaires for professionals who help seniors with Cerebral Vascular Accident (CVA) and Alzheimer's, dependents from caregivers to perform daily tasks like dressing skills.

## **2. Theoretical background**

### **2.1 The seniors of today**

The world population is getting older, Brazil is experiencing it similarly to developed countries. This is an irreversible, dynamic, and progressive process, which happens to everyone, if accidents don't arise in the life of the individuals. In the Brazilian census (PNAD) held in 2007, Brazilian population was 189,8 millions with 10,6% representing the seniors population (IBGE, 2008).

According to Chaimowicz (2005 cited in Moraes and Figueiredo, 2010), the changes in the demographic profile of the Brazilian population are visible and caused by the reduction in the mortality rates, simultaneously with the reduction in the fertility rates, raising other age groups, being reflected in life expectancy.

With the population modifications, the profile of the Brazilian senior changes, result of the health technological progresses, better socioeconomics conditions, possibility to have partial control of predictable diseases by immunization and generate more awareness about changing food habits and need for physical activity. More people got older and it is possible to see a considerable senior citizenship growth.

Discussing the ageing of society contributes to understand judgments about a natural process in the cycle of life of the individual. Reaching old age has its own problems and difficulties, as well as there are benefits and compensations based in the knowledge and experiences acquired. However, some different ideas exist, so it still "maintains a strong belief that old age is related to diseases, deterioration and death, even if some researches show a different possibility" (Duarte, 2009, p. 63). Despite the whole care and change of habits, seniors are more susceptible and vulnerable to diseases that need assistance. With ageing, physiological changes are progressive and most often accompanied by the advance of the prevalence of acute and incurable illnesses.

### **2.2 Diseases related to the dependent senior**

Incurable diseases, which usually affect seniors, are growing. "Chronic conditions" (which arise as health problems and need some permanent care) are responsible for 60% of every onus as a result of problems around the World, according to the World Health Organization (WHO) report about incurable diseases. Projections for 2020 indicate that 80% of the disease burden in developed countries should occur from incurable morbidities (WHO, 2003).

For psychological aspects, Karusa (1997) recognizes getting older successfully is trying to reduce disease risks, preventing or reverting functional losses. Psychosocial factors should have physiological effects, in addition they could prevent influences about health and function, with the changes in the access to the health treatment resources.

Just like incurable diseases, falls cause serious fractures, which could be a sign of physical debility and vulnerability (Studenski, 1997).

*“Hip fractures happen to approximately 1% of the whole fractures, other fractures represent 5% of falls and serious injury to soft tissue of about 5%. Risks of fractures are probably a result of a combination of vulnerability and exposition” (Studenski, 1997, p. 227).*

A functional approach can identify types of movements, which could cause discomfort to someone who has suffered some kind of fracture, as well as it is good for planning rehabilitation and ambient changes for the majority of the seniors under an irreversible fracture.

### **2.3 The dependent senior caregiver**

Demands for special care for senior dependents has grown all over the world, since this may be a consequence of the aging of the world population and specialization of some professions which mix different expertise in the same professional, namely educational activities, monitoring and treatment,. In general, special care for the aged population can imply an overload for the family. This age group could have multiple diseases, mostly in "chronic conditions", whose consequences can lead to difficulty or inability to perform daily activities.

In Brazil, several dependent seniors are victims of abandonment. The challenge is focus in the adequacy of public policies related to this demand, while these policies are not yet enough to help all population, the assistance to the Brazilian aged population, especially the most poor, is perceived by a large part of the population as a target of some negligence. In view of the demand for care for dependent seniors in the families that doesn't have someone for protection, a need for a professional arises for the emergence of assisting the dependent senior, the qualified caregiver.

Duarte (2009, p. 18) states caregivers are *“people who take after dependent seniors, developing actions which provide better quality life to them, their family and the society”*. He adds that caregivers' actions must be related to health, education, social assistance, regulated by solidarity, compassion, patience, and emotional balance. When the caregiver is not from the family, it is better to develop an emotional link to maintain an affection relationship, full of respect and liberty, i.e., assist them, seeking their autonomy and helping them to maintain their quality of life.

This relationship should assist the senior to meet and overcome the situation of dependency, creating resources to harmonize the relationship between the two of them manifested in different ways. It is important to observe and recognize the limit capacity of each senior in relation to an understanding of care, helping him to discover or rediscover his own potential or abilities: to find a more satisfying personal functioning, increasing his self-esteem, sense of safety and reducing his anxiety. When the caregiver develops a relationship of adequate assistance with the senior and his family, helps in overcoming the problems he is experiencing, strengthening them for future situations.

Among the various changes that happen during the aging process, the figure of the caregiver participates as an observer of these changes, such as the loss of muscle strength, primarily responsible for the deterioration of mobility and functional capacity of the seniors.

*“With the aging happens: a loss of 10-20% of muscle strength; reduction of the ability to maintain the static force; greater muscle fatigue; less capacity of hypertrophy; reduction in the size and number of muscle fibers; (...) reduction of the conduction velocity; increase of the threshold of the excitability membrane and reduction of the capacity of regeneration” (Duarte, 2010, p. 123).*

These are changes that will interfere with the performance of motor skills efficiently which make the senior dependent, limiting his ability to perform everyday tasks such as dressing. There are certain things that can be done to facilitate the development of daily living activities for dependent seniors. Dressing skill is a personal habit modified with increasing age by the presence of anatomical, motor and cognitive dysfunctions. Thus, clothing of aged people emerges as an implication of an observation made possible by the work of the caregiver. Clothing needs of dependent seniors may arise from the warnings resulting from

that assistance and from an ergonomic analysis in order to ascertain (quantitatively and qualitatively) the conditions for use with the observance of the various aspects related to them.

## 2.4 Ergonomics contribution

Ergonomics and its application has been increasing in order to transform the material and any situation where the relation between the human and the environment interaction happens. For *lida* (2005), this involves both physical and organizational aspects, covering planning and project activities. To justify this study, the author states:

*“Today, ergonomic studies are very large and may contribute to improve houses, the movement of pedestrians in public places, help the seniors, school children, those children with physical disabilities and more”* (lida, 2005, p . 22).

There are fundamentally two ways to do experiments in ergonomics, one in the laboratory, in artificially constructed and controlled conditions; and the other, from the observation of the phenomenon under actual conditions in the search field.

With the knowledge of the ergonomically correct posture, one should previously know the environment of the performed activities, i.e. positions assumed during task performance. For Moraes and Mont'Alvão (2009), it is recorded the frequency, duration and sequence on which a task is developed. The analysis of the posture during the behaviour registration allows assigning various functions:

*“The posture can be considered as the maintenance of body segments in space [...] can be considered as an important component of human activity [...] It is also a means of expression and communication [...] It is a significant element for working activity [...] And it depends, on one hand, on the "external" constraints, the task to be performed and the conditions under which it should be performed”* (Moraes and Mont'Alvão, 2009 p. 172).

This analysis is based also in ergonomic concepts related to posture because the dependence of the senior is related to the support provided by the caregiver. The relationship between the senior and this professional presupposes a process of empathy between them. From an ergonomic point of view, this changes the product characteristics in relation to handling and comfort. To understand the working environment and this relationship, we propose suggestions based on the professional experience with the adversities found during his daily work.

## 3. Methodology

The research was developed with caregivers in their professional working environment. It was used as an instrument of data collection a questionnaire with six open questions and two closed. Four caregivers have participated in the study (22/04/2013) – one responsible for a senior with Alzheimer's and another for a senior with CVA (wheelchair user) – at Lar das Flores de Maria (entity located in the east of Teresina, capital of the Brazilian State of Piauí - the institution is known for its help to the senior women and homeless). In addition, it was also obtained an online data collection from a relative caregiver that has requested privacy for her appearance.

It is worth highlighting that two caregivers answered two questionnaires about the two seniors, one of them with Alzheimer's and the other one with CVA, resulting in six questionnaires for the analysis. The caregivers had professional training, all women, with ages between 26 and 36 and just one relative caregiver with 54 years old. It is common to find female caregivers, and about it Moraes and Figueiredo (2010) highlights that female is more common in family care, verifying the presence of wives and daughters who are mostly in the middle age range.

## 4. Results and discussions

The closed questions results are presented in graphs containing a representation of the percentages of these responses; in the open questions, an analysis is made to the voice recorded interview of the caregivers.

Analysing the first answers, it is observed that 50% of the caregivers consider easy finding clothes that meet the seniors needs; 16.67% refer that sometimes is easy; 16.67% report it is not easy; and 16.67% could not tell.

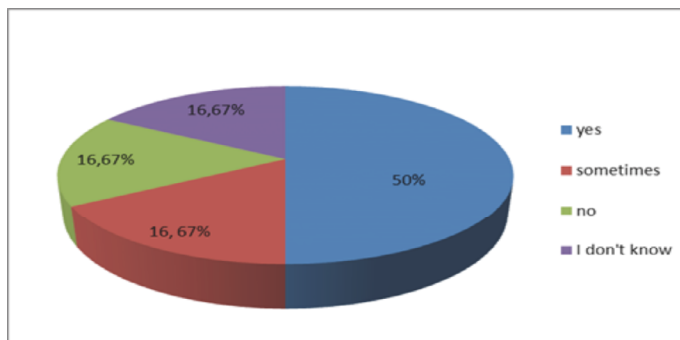


Figure 1: "Do you think it is easy to find clothes that meet the seniors needs?"

When asked about the most important choice for the seniors outfit, the following considerations were exposed: 50% selected easy dressing as their main choice; 33.33% chose comfort and 16.67% reported that both comfort and easy dressing are also important criteria in the selection of seniors clothing. It is worth emphasizing that none of them chose aesthetics, presented as colour and printing patterns, despite some of them had mention garment colour as an important criteria them during the open questions.

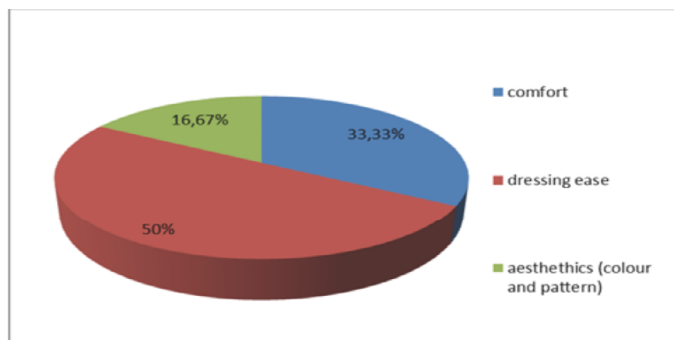


Figure 2: "What is the most important criteria when choosing seniors clothing?"

Regarding the easiest way to dress, all caregivers chose the frontal opening and closure.

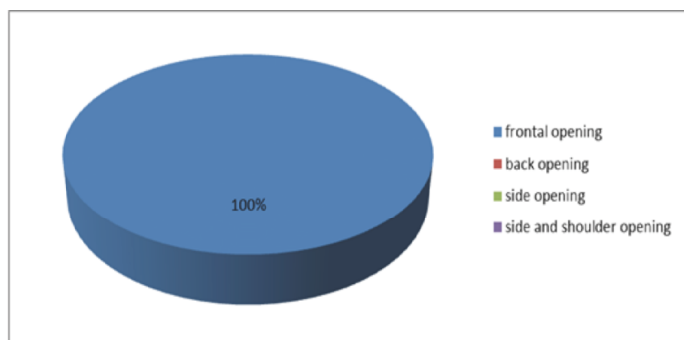


Figure 3: "What is the easiest way to dress aged people?"

Another aspect that could be found is that 66.67% of caregivers prefer buttons to close clothes; and 33.33% report that the clothes must have both buttons and velcro.

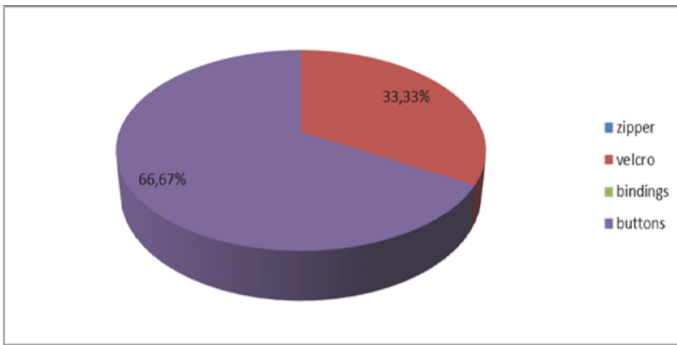


Figure 4: "What is the easiest: single breasted or double breasted?"

When asked about the clothing item, which they think it is harder to find in the market, the results were divergent: 33.33% said that pants, skirts, and dress are hard to find; 16.67% answered skirt and/or dress; 16.67% only the pants; and 33.33% have no opinion. Underwear is the hardest to find, since 66.67% of the caregivers indicated this option.

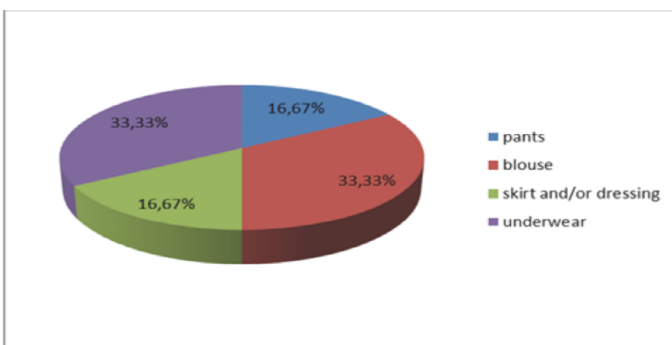


Figure 5: "What is the hardest clothing item to find?"

The last opened questions pointed out the biggest problem in dressing a dependent senior. Those who take care of people with *Alzheimer's*, commented that they want to remain with the same clothes for several days; that the colours and patterns can facilitate the identification of clothing by the senior (normally with the colours that they are able to memorize) and another one has commented that it is hard to lift the senior at the time of dressing for lack of support.

It is worth highlighting two answers about the wheelchair user: *"Difficulty in fitting clothes in width. They are always in the chair, and because of this we must pull their clothes."* Other commented: *"There are clothes with small openings, which become harder for the movements of the wheelchair user"*. One of them said she had no problem because the senior knows they cannot dress standing, but sitting or laying in a bed with support.

Those who take care of seniors with Alzheimer suggested the need for practical clothes, easy to use with frontal openings, simplified, lightweight fabric with various colours and models. For wheelchair users, they advised to design specific items for each case and highlighted the importance of each particular need, suggesting soft fabrics and closing with large buttons.

Regarding adult diapers available in the market, they mentioned that for seniors with Alzheimer's, it is difficult to find one that meets all requirements, the quality depends on the brand and only one said they are good. For the need of the senior in the wheelchair, one caregiver mentioned she would like to have one that would meet the needs of wheelchair users in terms of comfort, durability, not leaking on the sides with improvement of the adhesive closure."

## 5. Suggestions

It is recommended to use techniques and methods to find the most suitable form of the clothing item to facilitate the use and handling when dressing. Based on the data collected there are some relevant proposals for the dependent seniors situation:

a) Garments must be adjustable and expandable, easy to dress and undress, reinforced for the use of orthopaedic devices and crutches, if they need to use them. The suggestion is to elaborate pieces designed

with larger apertures and safe zippers that meet the specific needs of each one. In some situations knitting materials should be used with at least 3% of elasthane, allowing greater mobility of clothing in accordance with the new shape of the body.

b) Caregivers prefer frontal openings and closure with large buttons. However, as it is being discussed here from the perspective of the caregiver, attention must be paid to the sensory comfort of the user, avoiding using materials that cause discomfort in contact with the skin, which with the advancing of age becomes more sensitive. Furthermore, it is recommended that it is not just restricted to closures with contact adhesives, but using other options like invisible or highlight zippers, made with more flexible materials, such as polyamide fibers.

c) Ergonomic comfort must be taken in consideration regarding to the to the adjustable anthropometric measurements. Considering these measurements, the designed garments should be easy to close, with appropriate openings allowing freedom of movements, eliminating the need to lift the upper and lower limbs. The functional ease regarding handling must start from the realization of a satisfactory acceptance of the use and an investigation about the mobility movements.

d) Sensorial comfort should be based on properties that improve the physical appearance of the fabric as the softness and pleasantness to the touch, which contribute to the well-being of seniors. The touch emphasizes the relationship of the proposed clothing as a second skin, which increases the responsiveness of the garments if the tactile identification of the epidermis with the textile surface remains in harmony; and checking the seams and cut outs for being in constant contact with the skin

e) Garments can be developed using draping techniques on a mannequin or 3D pattern design, process that allows understanding the curves and the anatomy that seniors get during the aging process. With this technique, when designing a new model, it is essential to know the effects caused by the main lines of the body, i.e., to interpret the fundamental divisions of the human anatomy in order to allow to transfer the ideas knowing how to modify the silhouette, being able to follow the contours or changing them.

f) It is important to contribute to the self-esteem, proposing attractive items with varied colours and easy to memorize. The suggestion is for prints with sizes 32x32cm and 64x64cm composed by motifs that attract attention, such as those of thematic origin: animals (birds, cats, dogs, etc.), sea (fish and boats) geometric (circles, triangles, squares and rectangles), and numerals; always applied on a base, containing a maximum of three harmonic tones that enable visual comfort.

g) Regarding adult diapers, it is possible to propose some suggestions: pay attention to the quality of the product, offering diapers that do not allow leaks; and consider the quality improvement of closures, manufacturing the product with stronger fixation. Dependent seniors may be restless, agitated and in some situations this behaviour contributes to the fact that side locks of diapers can come loose and open.

## 6. Final considerations

With this pre-study, even with a small number of caregivers, it was possible to obtain data for improvements for dependent seniors clothing. It realizes the need for a study with a larger number of caregivers, as well as listening to users suggestions too, those who are still able to comment about important questions, including welfare implications.

This research contributes to warn the need for a study with greater depth about the current context. The results confirm the possibility of designing specific garments that can provide greater user comfort and better handling by the caregiver.

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