

Adequacy of elderly dependent clothing: User's comfort and caregiver's handling facilities

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OBJECTIVE

The elder population is increasing as a result of today's quality of life. In particular the elderly dependent suffer with the available standard clothing, lacking in providing solutions to their specific needs. Simultaneously, caregivers handling is also challenged everyday when looking after them. This research is part of a PhD project which aims to analyze the anatomical shape of the elderly dependent of care, quantifying their measurements, shape and posture, compensating asymmetries, considering their limitations, including clothing requirements of comfort and associated factors, like functionality and handling.

INTRODUCTION

The demographic transition is a matter of concern and discussed at world conferences. It has become a social and economic problem and causes circumstance changes, from a young population to a position of low birth and death rates, providing increase age and the ability to reach the elder condition [1, 2]. Between 2000 and 2050 the number in absolute terms of persons over 60 years is expected to grow from 40 to 96 millions. This increase will reach a higher growth speed between 2025 and 2050, being expected an increase of over 85 million people in this age group. Regarding the elderly, accounting for 7.9% of the total population in 2000, will represent 14% in 2025 and 22.6% in 2050 [3, 4, 5].

In this context, the elderly are a targeted research group in different areas of knowledge, arousing the interest of the consumer market and theme in political and social interests. The major reason is the reflection of their life extension, result of various procedures adopted, including those related to the health care. Looking for a healthier diet, engaging in frequent physical exercises, traveling and enjoying leisure time, which together provide their well-being. Despite all activities, changes in habits and the care taken with the aging, body wear occurs, accidents happen and there are several factors that make them dependent on others and will need to be helped.

The motivation to focus in this research topic came from an accident with a family member who suffered a stroke (cerebrovascular accident). Realizing the difficulties to find and use clothes that consider the needs of her everyday life. Because of her dependency status, it was observed that her anatomical situation and the loss of muscle strength, interfered in aspects that emerged as inherent in handling the dressing/undressing of those who assisted her, as well as with her welfare as user.

To obtain user's satisfaction regarding what they wear, clothing engineering project must consider their ergonomic functions, designed according to the specific human

distinctions. It starts with the understanding of their anthropometric data [6, 7]. It is necessary that the body and textile material enter into agreement with the motor actions allowing for interaction, according to the height, width and depth features (verticality, horizontality and laterality) [8], i.e. in a three-dimensional way, satisfying the actual physical specificities of the body, and therefore contributing to the state of adequacy of comfort.

Comfort with clothing is related with user's welfare. Considering clothes as a second skin [9, 10], in direct contact with body, when they are not provided with comfort properties, it affects user's quality and way of life and interferes with their feelings and perceptions. Aspects that allow us to think comfort in an integrated way: visual; thermo-physiological; sensorial, mechanical and psychological, covered with more or less emphasis [11]. The new technologies developed in the textile sector are able to add comfort, protection and function to clothing.

METHODOLOGY

Being the subject of the study a small part of the population that is in a vulnerable state, this research was developed through direct contact with the observed phenomenon to obtain information about the reality in its own context. The procedure is a sequence of comprising steps of knowledge, structuring, creation, development, and creative validation. In addition to the necessary research for the theoretical features and the state-of-the-art, the methodology used in this investigation was ordered in phases: 1) Survey of the subjects to participate in the study, considering a group with dependence and different physical impairment, and application of a questionnaire to the professionals that treat them; 2) Evaluation of the physical conditions of dependent elderly in the group; 3) Development of the pattern design bases for the prototypes; 4) Development of the prototypes for testing, considering the desired objective; and 5) Testing the prototypes with users and application of a questionnaire. To accomplish the field research, data collection occurred as follows: 1) Definition of the sample and application of the questionnaire to nurses, caregivers and technicians dealing with the elderly dependent; 2) Registration of each participant, including their personal data, special needs, current status and incurable morbidities; 3) Evaluation of their physical conditions; and 4) Anthropometric study, obtaining the 8 measurements of the body in the sitting position, with a flexible measure tape, in order to create a size table to be used in the pattern design of the bases for the elderly body. The process was assisted with a photographic registry to support the analysis and the anatomical observation.

RESULTS AND DISCUSSION

The study is in compliance with the initial plan and so far has been collected 78 elderly dependent measurements in the sitting position (46 from two nursing homes in the city of Guimaraes, in Portugal; and 32 from two nursing homes in the city of Teresina, in Brazil). The 8 defined measurements were obtained for each participant. Experiments were made to build an average size table, appropriate for the construction of the bases of prototypes. The bases were assembled in a nonwoven material and dressed in users, as shown in the Figure 1, using the measurements from the built size table, corresponding to their size number, requiring minor adjustments and corrections during the development of the prototypes.



Figure 1 – Elderly dependent testing first prototypes.

66 questionnaires have already been applied to the professionals dealing with them, in order to understand their concerns and limitations regarding the handling process of dressing and undressing, seeking information for a better design of clothes to ease the caregiver's tasks related with the clothing handling but also comfortable in all its variables to the user.

CONCLUSIONS AND FUTURE WORK

The work developed so far and the obtained information with all involved with the elderly dependents, including their families, allows us to foresee that it is possible to ease the task of caregivers and increase user's comfort and protection, with an adequate design, respecting a size table that accounts for their specific needs. This methodology can then be used by designers and brands interested in creating products for this growing niche of market, providing this people a better quality of life and a sense of inclusion that we haven't seen so far.

This research will continue in a daily basis assessing the physical condition of the elderly dependent, identifying the main anatomical modifications; analyzing the social implications of somatic issues regarding the standardization of measurements and insertion of people subject to incurable morbidities; ascertain the technical viability of the elderly dependent clothing, in order to better understand the most appropriate way of dressing and undressing, considering the basic principles of comfort; identify the key changes in clothing design for this particular audience; and

create, develop and validate prototypes for testing with a theoretical explanation of the results of the users satisfaction and the handling of caregivers.

KEYWORDS

Seniors clothing, Clothing design, Clothing Comfort, Caregiver.

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