

# ERGONOMICS OF CLOTHING FOR ELDERLY WOMEN OF 60 TO 75-YEAR-OLD

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*Elderly woman, Clothing, Body, Fashion design, Ergonomics in fashion*

## 1. Context

According to the Brazilian Institute of Geography and Statistics (IBGE), in 2000 the elderly population over 60 years old was 14.5 million people, which meant an increase of 35.5% compared to 10.7 million in 1991. Revisions made by the IBGE in 2013 show that Brazil will become an elderly country in 2029, and by 2018 the number of young people has already fallen concerning the number of elderlies – 63 elderly for every 100 young people. Despite all these statistics and programs for the inclusion of the elderly, not all the characteristic aspects of ageing are considered in the development of fashion products, for example. When it comes to the elderly woman and her relationship with clothing, there is still a large gap in the offer of more suitable clothing for this public.

With the increase in the percentage of elderly Brazilians, the appearance of a new elderly woman can be highlighted. With the advances in medicine and technology, and with the achievement of a more stable purchasing power, these elderly women are more active and demonstrate a greater participation within the social and professional sphere. In view of this, the style of these elderly women is also important in the context of trends and the fashion market.

For Menezes and Lopes (2009), the elderly women value not only the comfort, but also the aesthetic value of the clothes. Although there is an active social life in this age group, and there is demand for clothing consumption, the real needs of these women, the new elders, in terms of clothing consumption are not yet known.

Regarding the elderly, Menegucci and Santo Filho (2010) suggest considering the physical, mental and psychological conditions that involve the handling of this clothing, while including new technologies in the textile sector, to add "comfort and protection", with the purpose of improving the "user-wear-task" interface.

Fashion is linked to design as well as design to fashion. For Moura (2005), some segments of fashion are focused on market and business management issues, which are not considered design. Design studies the functions, aesthetics and symbolic function of products in the lives of their users and, according to Moura (2008, p. 69), "the word design is associated with product conception, design and planning [...] development of a project that has as purpose the creation of a product". The author also states that drawing is part of the creation process, but does not include the whole concept of the design process. Design is related to planning, experimentation, new technologies, the market and especially the user.

Ergonomics emphasizes several sciences, whose objective is to understand and analyze the relationship of the human being with work, technology, environment and products, in order to develop solutions that provide comfort, satisfaction and safety in these interactions. Therefore, clothing can be included both in the body protection category and to designate the status of an individual in society.

According to Saltzman (2008) and Strada (2008), clothes should be created respecting skin contact and body movement. For the author, clothes are not only aesthetics: it is necessary to feel pleasure when wearing them,

"setting up a 'basic' and coordinated wardrobe" (STRADA, 2008, p. 123).

In the relationship between ergonomics and clothing, one must consider the anthropometry, which, according to Dul and Weerdmeester (2004), deals with the study of the dimensions and proportions of the human body. The correct pattern allows the mobility of the body and the good fit of the clothing, while the usability, comfort and safety, combined with the materials used, allow the satisfaction and well-being of users in relation to clothing.

The human dimensions are of great importance, so extreme variations must be considered, "even as the age-related decrease in both sexes after the maturity of the human body" (BITTENCOURT, 2011, p. 106). According to the author, changes in the bodies are perceived as the advancement of age, such as the curvature of the spine - which causes a bad posture - the increase of the abdomen and the decrease in height, bust and buttocks.

For Moraes (2005), the concept of usability is when the product is suitable for the performance of the task for which it is intended, facilitating its use in any environment. Martins (2005) proposes a methodology for evaluating the usability of clothing products, considering comfort indicators as one of the main variables for the project. According to the author, not all clothing products bring comfort when in contact with the body and, to evaluate the usability of clothing, the author uses criteria such as: ease of handling, maintenance and assimilation (clarity in handling); safety; and comfort.

The usability applied to clothing encompasses several aspects. The ease of dressing and undressing depends on the accessories and trimmings used. These actions should be easy to perform and understand, so as not to constrain the user, and should be easy to handle in the manner of opening, closing and tying. In the matter of clothes maintenance, the action should be easy to understand, with fabrics that are easy to wash and dry. Clothing products should also be safe to handle and not cause thermal discomfort and inadequate humidity, or have trims that can irritate the skin, which can affect the health and comfort of the user.

The user's relationship to the clothing should not only be technical. Gonçalves and Lopes (2007) state that comfort and aesthetics are aspects inherent to the quality of the product, being increasingly required by market demand. The concept of comfort is, in general, associated with the thermal environment. Due to the fact that the elderly has more dry skin, the sensation of the fabric in contact with the skin is fundamental for its usability, being able to avoid skin irritations. Regarding the psycho-aesthetic comfort, the elderly will notice the type of textile material, the shape of the clothes to the body, the choice of colors and also the odor of the clothes used. Ergonomic comfort includes all of the above sensations which, together with the adequate shaping and making of the clothes and the new configuration of the elderly body, provide well-being and freedom of movement.

The satisfaction of the users with the fashion products is related to the usability, comfort and aesthetics of the clothes. The aesthetic characteristics, the trim and the way the clothes fit on the body are related to the materials used, the textile composition, the comfort, the durability and the maintenance of the clothes. If the product fulfills its function, such as protection and heating, movements in the tasks performed are made possible, adding usability, comfort and aesthetics, consequently providing the feeling of satisfaction to the users.

## **2. Method**

The method adopted in this research was of a qualitative nature, which, according to Dias (2000), is basically characterized by a research that deals with more subjective information about a given phenomenon, and does not present numerical measures and statistical analyses. So, the techniques used were: the bibliographic review, focus groups with elderly women from 60 to 75-years-old.

To conduct the focus group with older women, some images of clothing products were selected that could promote discussion among them about their opinions, needs and desires. The choices of the images exposed

to the group of participants were based on the research of several authors who showed that some aesthetic elements are not more favorable to the transformations that occurred to the body of the new elderly women.

Four focus group sessions were held. Each group was made up of four women aged between 60 and 75, living in the South Zone of the city of Rio de Janeiro, who were active and inserted in the professional and social context.

The images were presented in two tablets, by means of eight slides each containing a series of numbered images - to facilitate the identification and registration of the clothing - of different segments of the clothing, such as: blouses, jackets/blazer, skirts, dresses, pants, shorts, beachwear and prints.

The analysis of the clothes presented to the participants of the focus groups was important to realize how much the patterning interferes in the final result of the clothes: when this patterning does not consider the transformations that occur in the woman's body with the passing of the years, they can harm the usability, comfort, satisfaction and safety of the users with the clothes.

### **3. Results and Conclusion**

As fashion and the clothing construction process are in constant transformation, this evolution must adapt to social, cultural, industrial and market changes, democratizing the act of dressing. With the diversity of materials and techniques, added to an increasingly fast and efficient production, it becomes possible to please and satisfy the largest number of users. However, the patterns of the clothes, many times without parameters of numbering or proportion, existing in Brazil, do not contemplate the body of the elderly, and, especially for the purpose of this research, the body of the new elderly woman.

Ergonomic principles should be employed at all stages of the clothing construction project. In the ergonomics and clothing relationship, anthropometry, which deals with the study of human body dimensions and proportions, must be taken into consideration.

Through focus groups with women between 60 and 75 years of age, it was possible to see the influence of body transformations on clothing choices. The difficulty of the new elderly woman in relation to the clothes available in the market was observed, as well as the questions of usability, comfort, satisfaction and safety of the clothes.

Finally, it was verified that the market does not offer fashion options according to the desire and expectations of the elderly women users. One of the great results of this research was to verify that within this group of elderly women between 60 and 75 years of age, very distinct subgroups appear, with different demands, both in the usability, comfort, safety and well-being of these women; and also, in the desired aesthetics.

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## **Acknowledgments**

To PUC-Rio and CAPES for the scholarship support.