An ergonomic garment design for elderly Turkish men

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Abstract

This paper presents an ergonomic garment design for elderly Turkish men. The purpose of this study was to determine elderly men's demands, needs and problems in regard to clothing and to design an ergonomic garment in the light of this knowledge. The sample consisted of 120 elderly men living in Ankara, the capital city of Turkey, and its province. A questionnaire was prepared and given to these people in order to determine their clothing demands and needs. It was established that most of our subjects need functional garments. An ergonomic garment has been designed using the obtained data. It was found that the design of clothing for the elderly requires attention to bodily changes from aging in order to facilitate and raise the quality of life. Specific suggestions are made to elderly people and to the ready-to-wear sector.
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1. Introduction

The aging of the world population, that is, the increase in the ratio of the elderly in the population, has led to an increase of interest in old age generally. The number of people above the age of 60 was 370,000,000 in 1980, but it is estimated that it will be 1,100,000,000 and 1 in 7 people will be older than 60 by 2025 (Meeks, 1994). At the World Old Age Summit in Madrid in the year 2002, it was suggested that there will be more people in the world over 60 than under 15 by the year 2050 (Anonymous, 2002).

Turkey, as a developing country, has experienced a considerable increase in the number of elderly people. The number of people over the age of 60 was 1.8 million in the year 1960, and reached 4 million in the year 1990. It exceeded 5 million in 1995 (Anonymous, 1993, 1995). According to 1995 data, average life expectancy has reached 68 years in general: 70 years for women, 66 years for men.

Aging, a natural phenomenon in human life, is a normal process causing changes in a person's physiology, mental ability and social relations (Thoren, 1996).

We should emphasize that this process causes problems resulting from changes in body systems, as well as socio-cultural and economic problems.

Clothing, an important issue throughout human life, plays an even more important role in the life of members of particular consumer groups. The elderly population is one of these groups, due to physical and social changes. Clothing, one of the basic physiologic needs, provides social status as well as providing comfort and protecting the body from external unwanted influences. Clothes give a richness to a person's appearance from both the physical and emotional point of view (Chowdhary, 1991). Clothing is even more important in old age because elderly people want to set up new social connections, create an image and, especially, hide the imperfections that result from the physical changes caused by old age. Some factors—physical changes in the body and the available styles to meet their needs, affect their preferences and behaviours in the area of clothing consumption (Dinkins, 1993).

In the light of this knowledge, and taking into consideration the prolonging of human life, it is certain that the clothing issue will affect more and more elderly people and it is equally certain that elderly people will gradually create a bigger and wider market.

Degenerative changes take place during old age. Changes happen at differing rates. One of these changes is the diminishing of cartilage elasticity. Muscle atrophy

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is the most recognised symptom of old age. While the water ratio of a baby's body is 80%, it diminishes to 50–60% during old age. After 65 years of age, motor functions diminish noticeably, and sensitivity to external stimulations decreases. Corruptions occur at the tips of the bones, and some changes occur at the joints. This kind of alteration causes traumatic effects and mobility difficulties. Moreover, the balance and timing of the movement and the body posture worsens. In particular some movements, such as body flexion and rotation, become difficult (Hogge et al., 1988). Weakening of the reflexes and slackness of the neck muscles decrease productivity. Elderly people are affected not only by the weakening of nerve–muscle coordination, but also by changes in general body appearance.

In the light of the above, it can be said that anatomic, physiologic, pathologic, psychologic and social dimensions of changing due to old age affect clothing requirements (Park, 1989).

1.1. Anatomical changes

Anthropometric investigations aimed at determining anatomical changes in the body and their results determine the measurements of garments to be used in old age and are effective in matching a garment to the body (Rosenblad-Wallin and Karlsson, 1986).

Degeneration occurs in the vertebral column and the discs, body posture becomes bent forward, body height decreases because of changes in the discs and the water loss which occurs in the cartilage tissue of the vertebra during old age. Body height begins to decrease after 50 years, and continues to decrease by 2.5 cm every 5 years. After 75 years of age, the decrease reaches 5 cm every 5 years. Furthermore, shoulders become more narrow and the pelvis clearly widens. With aging, some changes occur in the shape of the chest. The ratio between chest width and depth diminishes and shoulders drop from the neck-line, so the sleevehole widens more than normal. A difference between front and back length occurs because of this body flexion. Comparative analyses with other populations indicate significant differences in the body dimensions (Kathiyal and Tettey, 2000).

1.2. Physiologic and pathologic changes

Physiologic and pathologic changes in old age also affect clothing requirements. Physical movements become more sluggish, muscle movements slow down, motor ability decreases and the number of movements needed to do a job increase (Kalinkara, 2001). Since balance disorders and dizziness are common problems in old age, it is necessary to design a garment which can be put on easily in a sitting position and where the back part, sleeves and sleevehole are wide.

1.3. Psychologic changes

The psychological aspects of the changes in old age are also very important. Psychologic health is a comprehensive term including psychologic comfort and discomfort, self-confidence and mental health. Appearance is very important from the point of view of the self-esteem and confidence of elderly people (Kaiser, 1983; Huck and Bunhotal, 1997). Psychologic disorders may occur if they experience shyness, timidity, discomfort or unease due to finding their clothes different from other people's.

1.4. Social changes

Experiencing the loss of social roles due to aging is inevitable. The individual can receive messages from his or her surrounding that he/she is old, and those messages can negatively affect his communication with his social environment. Clothing has a very important role to play in enabling an individual to live in peace both with him/herself and with other people, and, moreover, in solving the social adaptation problem. As part of their outer appearance, people can utilise clothing as a way of presenting a socially acceptable image.

Therefore, it is apparent that ergonomic garments are necessary for elderly individuals. The aim of this investigation is to develop an ergonomic garment design through determining the clothing problems of men older than 65 years. A questionnaire has been prepared and given to elderly men in order to determine their demands, needs and problems in the area. An ergonomic garment design has been prepared in the light of the information obtained.

2. Methodology

2.1. Determining the population of the study

This study is based on a randomly chosen sample of 120 men older than 65 years, living alone in retirement homes in the Ankara municipal area. Individuals who were living in a nursing home or hospital were not included. This sample was chosen because these men have to carry out daily activities by themselves without any help.

Data collection started in January 2000. The sample was determined through the municipality information system. Volunteer individuals were chosen and contacted by June 2001.

2.2. Interview programme

The purpose of this study was to determine the demands, needs and problems in regard to the clothing