



# Clothing Problems and Practices of Elderly People: Designing Functional Clothes

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**Abstract:** Comfortable and self-help garments are the basic need of every individual. The study was conducted with the aim and objectives to study the comfort, ease and problems of the existing garments with disabilities for elderly people. Questionnaire cum interview method was used to find the requirements, to design and construct different patterns with functional features. The overall study revealed that ease of dressing and undressing, comfort and appropriate functional garments are the basic needs of the elderly people. Based on the data, 24 different clothing designs were developed to address the disabilities. 8 designs were actually constructed and were given for trial to the elderly people. A key highlight is that they liked these because the garment included functional features. Even though the garments were designed and developed to overcome the problems of the elderly people, the overall appearance of those garments was same as that worn by normal people.

**IndexTerms - Functional Clothing, Self Help Features, Donning And Doffing, Adaptive Clothing, Comfortable Garments**

## INTRODUCTION

Clothing plays an important role in an individual's life at all stages. Clothing make a contribution to the physical comfort, psychological well-being and social interaction of individuals. Clothing is an important aspect of human beings from childhood to old age. The first impression of a person is said to be by the clothes that he/she wears. Clothing provides means of self-expression and aesthetic enjoyment, a way to conform and not to conform, a way to suggest wealth and prestige, and an outlet for creative energies. Elderly people with physical disabilities caused by old age face difficulties in using standard-designed clothing and need specially-designed functional clothing. In this paper, we discuss the clothing problems faced by elderly people and provide functional clothing solutions to address these problems.

Before discussing functional clothing for elderly people, we briefly discuss previous work in related topics of old age and body changes, related studies on clothing requirements and preferences, and diseases in old age. According to Anderson (1962) speed and motor skills often decrease with age and this plays a major role in adopting to the environment and adjustments. Suzane (1960) studied the "older women's clothing preference." According to the study, 3/4<sup>th</sup> of the women were interested in style changes and would like a wider selection of style. Paul S et al (2001) conducted a study on "Clothing practices and problems of orthopedically handicapped children and designing according to their disability". The study was helpful in developing functional dresses for physically handicapped children which were easy to wear and were appropriate according to their disability.

The study of clothing for elderly people is a relatively new area of research. The clothing requirements keep changing according to age. There are various factors that change the clothing preferences like physical condition, social, psychological and economic conditions. Increasing age of human being may sometimes result in disabilities or changes in the body form. Their movements are restricted which interfere in the normal functioning of body. Due to physical disability, increased complexities of human figures occur and in many cases result in extreme asymmetry. Due to the disabilities, elderly people frequently find the task of dressing themselves as one of the major challenges. The standard-designed garments are not suitable for the elderly due to their disabilities. Construction of clothes according to the disabilities of elderly people is important for ease of movements, dressing and undressing in minimum time, and independent and dependent dressing with

minimum aid. Addition of self-help features in functional clothes will make the elderly person be a part of the mainstream instead of being set aside from others. The functional clothing also helps to ease their pain, especially while dressing and undressing. With this in mind, we present the clothing problems faced by elderly people followed by functional clothing solutions for these problems.

The remainder of this paper is arranged in the following manner. In Section 2, we give details of the research approach and methodology. The research methodology consists of interviewing/surveying 100 elderly people, classifying their clothing needs to identify trends and patterns. In Section 3, we present key disability patterns and clothing needs arising from the data collected in Section 2. In Section 4, we present functional clothing solutions including 8 different designs. We also show constructed garments for these 8 designs. Finally in Section 5, we discuss the key outcomes of this work along with the conclusions and directions for future work.

## RESEARCH APPROACH AND METHODOLOGY.

The main objective of this work is to design functional clothing to address the requirements of elderly people. Our approach included interviewing/surveying elderly people to identify the physical disabilities of elderly people and to understand their clothing requirements. In this section, we briefly discuss our interview/survey methods.

The research methodology used in this work includes research procedures and techniques based on the literature reviewed earlier. It was divided in parts like sample selection and data collection procedure. We selected elderly people (defined as 60 years and above for this particular work) living in Pune, Maharashtra, India as the respondents of the study. We selected the sample from two institutes, (a) Anand Ashram, Bor, and (b) Shatayu Bhavan, an institute run by Pune Vidhyarthi Griha. We also interviewed some respondents from the local areas around these institutions. Overall, we interviewed a total of 100 respondents consisting of 20 respondents from Anand Ashram, 25 respondents from Shatayu Bhavan and the remaining 55 from local elderly people residing in their own homes. Among the 100 respondents, 52% were male and 48% were female.

To investigate clothing preferences and problems of elderly people, we developed an interview questionnaire according to the selected variables and the objectives set forth for the study. We conducted the interviews with the elderly people at their respective residence or old age homes. We created two categories of information: general information and specific information. The general information included questions regarding age, sex, family status, socio-economic status and the education of the respondent. The specific information included questions regarding the type of disability due to old age, assistive device used, the present wardrobe of the elderly people, assistance and ease for dressing and undressing, care and comfort of clothes, preferences of fabrics, hinder activities, preferences for fasteners, procurements of clothes i.e. home-made, tailor-made, ready-made clothes, and features or criteria that the elderly people like in their clothing.

We analyzed the data obtained with the help of the above questionnaire. A tabular arrangement of the acquired data allowed for comparisons and trend formulation. We discuss the trends and fashions that emerged from the analysis in the next section.

## CLOTHING NEEDS FOR THE ELDERLY PEOPLE: RESULTS OF THE SURVEY

In this section, we will present the results of the interview/survey described in the previous section. Based on the data, we classified the disabilities in elderly people into two types, (a) upper body disability, and (b) lower body disability. We developed 24 different clothing designs to address these disabilities. Out of these 24 designs, we down-selected 8 designs for actual construction. This process is described here.

The survey revealed that most of the elderly people do not go out of their houses frequently except on a few occasions or to the bank for their pension withdrawal. With this in mind, we designed all the garments for usage inside the house. We incorporated functional features in the garments such that they become easy to put on and take off for the elderly person or for the caretaker. We sub-divided the disabilities of the elderly people into two categories. The upper body disability included neck pain, back pain, shoulder pain, frozen shoulder, and hand pain, while the lower body disability included waist pain, lumber pain, leg pain, and knee pain.

On the basis of clothing problems and preferences of the elderly people, we developed 24 designs for the following categories

### Category One: Upper Garments for the elderly people with upper body disability.

- Shoulder disorder for men and women.

- Women with paralyzed right side
- A man with back pain

#### Category Two: Lower garments design for elderly people with lower body disability.

- A woman with fracture and pain at pelvic bone
- A man with lumber pain
- A woman with thigh and knee pain
- A man with both knee pain.

The 24 prepared designs were evaluated by a panel of 20 judges. The judges included teachers in the field of textile and clothing, post-graduate students of textiles and clothing department, caretakers and respondents (selected from 100 elderly people been interviewed). The evaluation was based on following factors: ease of wearing, comfort, durability, and inconspicuousness of the adaptation. We used a scoring method for evaluation of prepared designs and a total of 8 designs were finalized for construction of garments. The design details of the selected design are explained in the next section.

### **FUNCTIONAL CLOTHING FOR ELDERLY PEOPLE**

We developed the selected 8 designs taking into consideration the following aspects.

#### Upper Garments for the elderly people with upper body disability

##### Design features for a man with shoulder problem

This design is shown in Figure 1. The special features incorporated in the shirt for a man with shoulder problem were side seams opening, extended shoulders, which will allow the person to wear the garment with easy movements of the shoulders and hand. The design consists of shoulder opening were the garment could be worn from down or from top. The design where the opening of the garment is at the back. The garment can be worn from the front and fastened at the back.

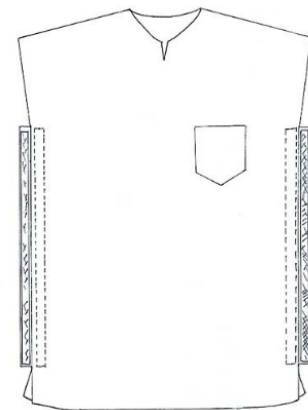


Figure.1 design features for a man with shoulder problem

##### Design for a man with back problem

This design is shown in Figure 2. The design consists of a shirt with attached back supporting belt on the wrong side at back. The belt when fastened will give support to the back and also not dislocate form the required position. The design had an opening on left side seam which will help to wear clothes with less movement of hands and back.

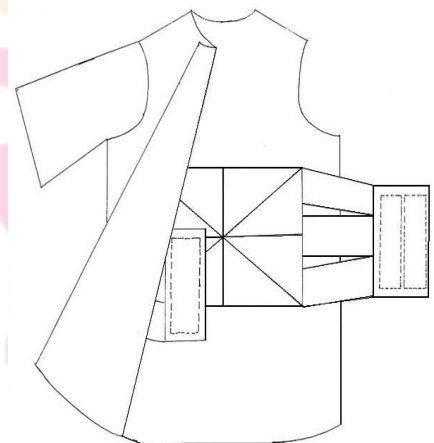


Figure 2 design features for a man with back problem.



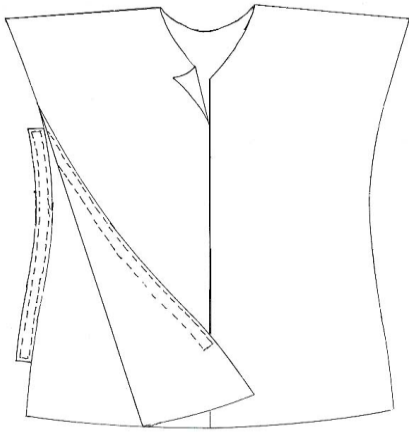


Figure 3 design for a woman with shoulder problem.

#### Design for a woman with shoulder problem

This design is shown in Figure 3. Design has a zipper for the front opening, extended shoulder and side opening which will help the woman to wear garment without moving her affected hand. Design has extra fullness at the required side, with both sides open to cover the hand in sling. Design has a front opening and extra fullness on the required side with extended shoulder.

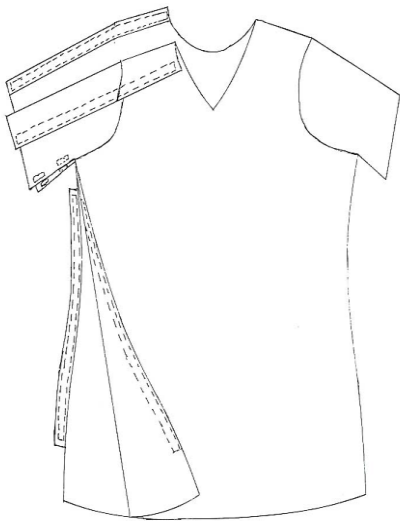


Figure 4 is designed for a woman with a paralyzed right side.

#### Design for a woman with paralyzed right side.

This design is shown in Figure 4. Design was made with both shoulder opening and fastening with velcro. Design with right side shoulder and side seam opening and fastening with velcro tape for ease in wearing the garment from left side and close the velcro opening on right side. Design with back opening with extended sleeve to make it easy to wear the garment from front side was also designed.

### Lower garments design for elderly people with lower body disability.

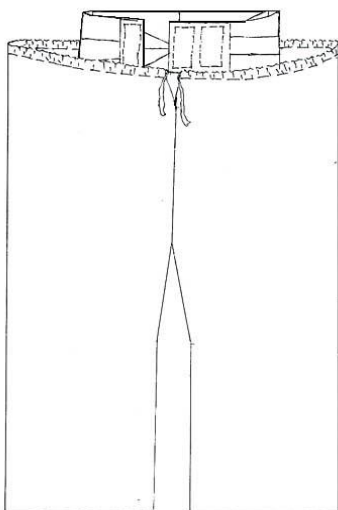


Figure 5: Design for a man with waist pain

#### Design for a man with waist pain.

This design is shown in Figure 5. Designing a pyjama with an elasticated padding belt which can support the person at the waist. The belt is switched into the garment. Design with elasticated pyjamas with padding at the back. The padding is given at the back of the garment for waist support. The design was a pyjama with zippers on both sides and seams till knee level.

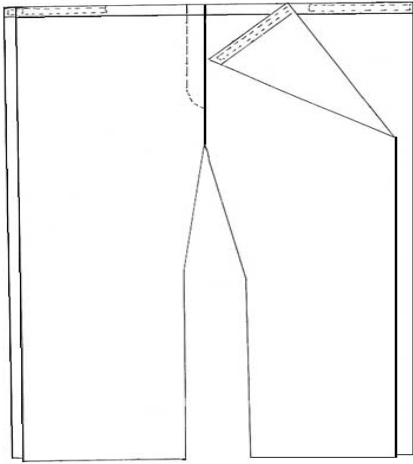


Figure 6: design for a man with leg problems side

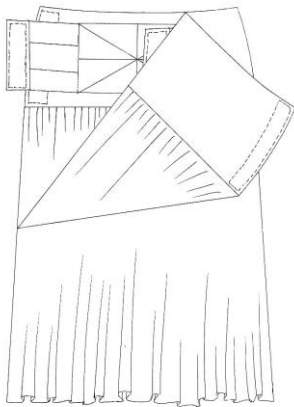


Figure 7: design for a woman with waist problem.

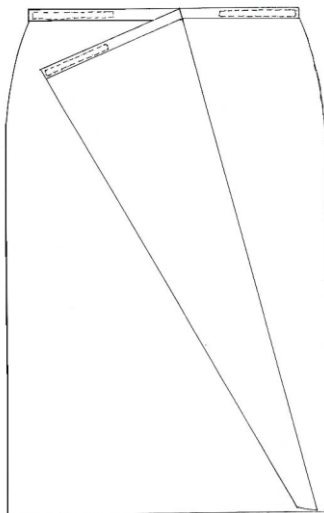


Figure 8: design for a woman with leg problem side

#### Design for a man with leg problems.

This design is shown in Figure 6. Design of a pyjama with the both the side seams open and fastening with velcro at the waist. The sides are extended for over lapping purpose. Design with 3/4<sup>th</sup> length pyjama with zippers on both the side seams and the velcro attachment on at the waist for fitting. Design with a wrap-a-round lower garment (like lungi ) for ease in wearing.

#### Design for a woman with waist problem.

This design is shown in Figure 7. An elasticated skirt with padding at the back of the skirt to support the waist. Design of a skirt with yoke and elasticated padding belt attached at the back to support the belt. The belt is stitched in to the garment on the wrong side at back. The skirt had side opening till knee level and fastening of velcro for fitting. Design of a gown with overlapping in front and elasticated belt attached at back to give support to waist

#### Design for a woman with leg problem.

This design is shown in Figure 8. A design of a skirt with side opening fastened with a zipper till knee level. Design of a wrap-a round skirt with velcro fastening at the waist for fitting. It is a three piece wrap-a-round skirt to prevent un-preferred opening in the front. Design of a Gown with front opening about 7 inches and a zipper on the side from waist level to bottom which will help to wear the garment in even sitting position.

Following the design principles described above, we constructed the above garments for four men and four women with different disabilities that were selected randomly. The construction of the garment was completed

using in-house sewing machines. Following the construction, we gave the garments to elderly people and requested trials by either wearing themselves or with help of their caretaker. Following the trials, we also conducted a short interview session with the respondents. We used the following criteria for evaluation of the constructed garments: ease of wearing, ease in manipulating of fasteners, fit of the garment, appropriateness of the pattern to the disability, appearance of the elderly person when the garment is put on, and comfort and ease of removing. Based on the short interviews of the respondents, we ranked the garments as below.



Figure 9: Design No.3

First Design No.3 (shown in Figure 9), a top with the front opening and right side seam opening which facilitate the wearing of top over hand supporting belt. The elderly woman suffering from frozen right shoulder, has restricted right hand movements, thus the right side seam opening made it very easy to wear and fasten the garment with minimal time.



Figure 10: Design No.4

Design No.4 (shown in Figure 10), a top with right side shoulder and side seam opening made it easy to wear and fasten the garment by the caretaker for the right side paralyzed woman. The fastening of the garment is with a velcro tape



Figure 11: Design No.2

Design No.2 (shown in Figure11), a shirt which is padded with elasticated belt at back helps to support the elderly man suffering from back pain. The elasticated padding belt is stitched in to the garment on the wrong side at the back



Figure 12: Design No.5

Design No.5 (shown in Figure 12), a pyjama with elasticated padding belt helps the elderly man to support his waist. The belt is stitched at the back to avoid dislocation of the belt for preferred area.



Design No.1 (shown in Figure13), a shirt with both sides open and extended shoulders make it easy for elderly man to put on and take off the garment with shoulder problem. The fastening at the side seams is with a velcro tape.



Figure 13: Design No.1



Design No.7 (shown in Figure 14), a skirt with a yoke and an elasticated padding belt on the wrong side at the back helps the elderly woman to support the waist. The skirt has side opening till the knee level and fastened with a velcro tape at the waist for fitting.



Figure 14: Design No.7

Design No.5 (shown in Figure15), a skirt with velcro fastening at the waist. It is wrap-a-round three-piece skirt to prevent unpreferred opening in the front. This will help the elderly woman to wear it in minimal period of time and aid.



Figure 15: Design No.8

Design No.6 (shown in Figure 16), a pyjama with both side seams open with the velcro fastening at the waist help the elderly man to wear the garment with minimal aid and time. The pyjama has extension on the side seams for overlapping and preventing unpreferred opening.



Figure 16: Design No.6

## SUMMARY AND CONCLUSION

Due to old age in elderly people, the disabilities increase the complexities of the human figures and, in many cases, result in extreme asymmetry. Because of this reason, elderly people are vulnerable to “the dress stress”. Elderly people with limitations or disabilities frequently find the task of dressing and undressing a major problem. In this work, we collected data by interview/survey method and used these data to design garments for elderly disable people. The adaptations were incorporated in the daily used garments as it was seen that most of the respondents did not go out of their houses or old age homes except on a few occasions or to the bank for pension. We developed various patterns of upper garments and lower garments to overcome the problems during dressing and undressing. We developed 24 designs and down-selected eight designs out of the total 24 designs based on a scoring method. We constructed the adaptations by incorporating functional features in the garments for the elderly people. These functional clothing included various features like openings at the required places according to the disabilities, fastening with velcro tapes, and additional supporting belts at required placing.

Even though the garments were designed and developed to overcome the problems of the elderly people, the overall appearance of those garments was same as that worn by normal people. The elderly patients very well received the garments constructed in this work. Elderly people were very happy because the appearance of the garments was not different from the others and the clothes were meeting their special needs. A group of the doctors from I.M.A Pune Branch, Anand Ashram, Ranza, as well as elderly people appreciated that the garments designed and developed were attractive, comfortable in wearing and functional. The present study helped in developing of some useful functional dresses for elderly disable people that were easy to wear and appropriate for the disability.

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