

DESIGNING OF PORTABLE CLOTHING FOR MUSCLE'S RELIEF AMONG SENIOR CITIZENS

Apoorva Gupta*
Dr. Meenu Srivastava**

ABSTRACT

The concept of portable clothing for senior citizens is one of the potential areas of research where the need-based clothing may be developed and customized as per the requirement of different body parts to support and provide relief from frequently occurring muscle's stress and pain due to lack of physical activity among elderlies with growing age. Present study highlights the findings of the investigation conducted by the researcher on designing of portable clothing for senior citizens above 70 years of age to provide relief from muscle's pain. Findings of the pilot study conducted by researcher revealed that senior citizens were aware about the portable clothing available in the market but were not satisfied with it for many reasons. Based on their needs to create a comfortable portable dressing for them, the current study was conducted on developing health-friendly portable clothing designs for Muscle Relief of three body parts, namely Elbow, Wrist, and Knee, for senior citizens. Each of the five variations of the three distinct muscle-relief designs that the researcher created highlights portable features. These designs were evaluated by a 10 panel of experts on a developed rating scale based on a set of predetermined parameters. The results of the study were found very promising in terms of their acceptability on parameters of aesthetic, functional, constructional, and comfort aspects. The mean scores obtained by all the design codes were found in the higher range, i.e., above 3.20 to 4.45.

Keywords: Health-Friendly Portable, Clothing, Design, Muscles Relief, Senior Citizen.

Introduction

One of everyone's basic needs is clothing, which is also a topic of great curiosity. Everyone has the right to dress as they choose to express themselves. For the majority of individuals, finding attractive, fashionable clothing in normal sizes that meets their personal and social demands is not an issue at all, but for elderly citizens, it may be quite difficult or even impossible [1]. Growing older makes it harder to move, stretch, bend, and twist, which can occasionally make getting dressed a problem. For older adults, losing their independence in activities like getting dressed each day can be particularly challenging. The senior person's requirement for clothing that they appreciate should guide the choice of clothing.

Nowadays, with the growing awareness about health and fitness along with easy access to medical facilities average life span of elderlies have increased. As long as people lives, the need of clothing never ends and demands adaptive clothing designs for elderlies with special needs. It must be comfortable, functional and attractive to meet their specific need. The ability of the senior citizens to dress alone or with assistance must be taken into consideration while designing clothing for them. Elderly persons who have limited movement or functional loss need customized dressing. Many elderly people's age-related health issues necessitate the usage of portable health-friendly apparel. Age-appropriate pain relief clothing options improve daily functioning, boost independence, enable everyday activities, and offer comfort, safety, and convenience. Muscle stiffness affects people in so many ways and to such different degrees. Knowledge about the cause of physical characteristics, and problems in a daily life can

* Ph.D. Research Scholar, Department of Textile and Apparel Designing, College of Community and Applied Sciences, Maharana Pratap University of Agriculture and Technology, Udaipur, Rajasthan, India.

** Dean and Professor, Department of Textile and Apparel Designing, College of Community and Applied Sciences, Maharana Pratap University of Agriculture and Technology, Udaipur (Rajasthan) India.

help us to approach clothing designs for the elderly. It can also provide some ideas for portable clothing which meet all the needs of these individuals. The range of problems to consider when designing and making clothes for the elder is quite consider pain relief. It must cover shape, size, and proportion, restricted movement, and loss of manipulative skills. Having looked at various problems and the many clothing problems, we must now find solutions to these problems [2].

Research Methods

The present study is based on experimental research design and involved developing portable clothing designs for muscle relief for senior citizens. Based on the objectives of the study, the researcher created 15 unisex designs suitable for both male and female senior citizens and after developing them, the developed portable clothing designs were evaluated through 10 panel of experts, Department of Textile and Apparel Designing, College of Community and Applied Sciences, Udaipur was evaluated on a Rating proforma using five-point rating scale.

Findings

The findings of the current investigation, together with pertinent commentary, have been compiled under the following headings:

- **Health-Friendly Portable Clothing Designs for Muscles Relief (Elbow, Wrist, Knee)**

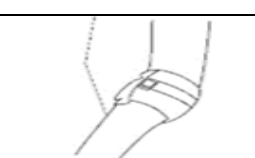


The researcher tried to sketch several muscle reliefs patterns for three distinct body areas under senior-friendly portable apparel. The researcher personally created 3 designs with 5 variations each for muscle alleviation for the elbow, wrist, and knee. Each of the generated designs possessed a few distinctive elements that improved its suitability and appropriateness in terms of the aesthetic, comfort, functional, and constructional aspects. Senior citizens clothing preference were initially evaluated by the researcher. Based on the research, designs for muscles relief with portable features were created by incorporating the desired qualities in terms of padded support, padding in the elbow, wrist, and knee for comfort, circular finish fabric, elastic, quilted finish, padded support for providing more ease in movement of joints for better comfort and movement of arms, wrist, knee, and leg, etc. to make dressing and undressing for a senior population of the community easier. Further, the researcher recommended the use of medium weight, compactly woven organic cotton (woven/knitted) I, a slightly thick, absorbent, and stretchable material for all the developed designs for muscle relief as this will provide more warmth, softness, smooth, and comfort needed during old age.

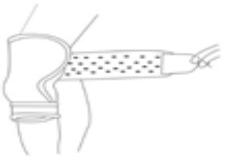

- **Details of Developed Portable Clothing Designs**

Designs features of each of the developed fifteen designs for Muscles Relief (Elbow, Wrist, Ankle), having design code number *i.e.*, M.R.E.1 to M.R.E.-5, M.R.W.1 to M.R.W.-5, M.R.K.-1 to M.R.K.-5 with health-friendly portable clothing features have been presented in *i.e.*, Plate 1,2,3.

Where, MRE-Muscle relief elbow area, MRW- Muscle relief wrist area and MRK- Muscle relief knee area.

Portable Clothing Designs for Muscle Relief in Elbow Area


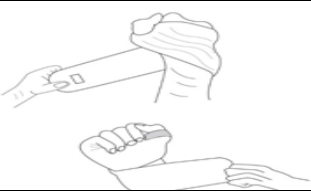
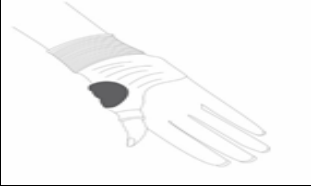

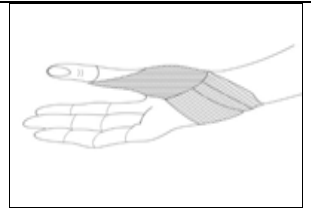
Design Code no.	Picture		Features
M.R.E.-1			Knitted Elbow support sling strap Cotton ribbon belt
M.R.E.-2			Four-way elastic Quilted Elbow Support
M.R.E.-3			Circular padded Elastic Elbow band Elastic finish

M.R.E.-4				Knitted Elbow Support with Velcro Both sides support
M.R.E.-5				Elastic Elbow Overlap Sling Support Velcro detachment Cotton fabric

*M.R.E.- Muscles Relief for Elbow (Unisex)


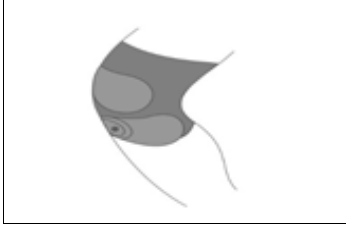
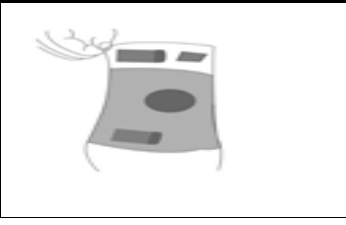


Plate 1: Design features of portable clothing for Muscles Relief (Elbow)

Portable Clothing Designs for Muscle Relief in Wrist Area

Design Code no.	Code Details	Picture	Features
1.	M.R.W.-1		Elastic double-layer quilted Wrist Band Direct wear Knitted fabric
2.	M.R.W.-2		Elastic overlap wrist band with velcro Knitted Fabric Thumb round support
3.	M.R.W.-3		Four-way elastic wrist support Half thumb support Padded
4.	M.R.W.-4		Overlap wrist strap Cotton ribbon belt Cotton fabric
5.	M.R.W.-5		Single layer elastic wrist Band Single piece Cotton fabric

*M.R.W.- Muscles Relief for Wrist (Unisex)

Plate 2: Design and features of health-friendly portable clothing for Muscles Relief (Wrist)**Portable Clothing Designs for Muscle Relief in Wrist Area**

Design Code no.	Code Details	Picture	Features
1.	M.R.K.-1		Four-way elastic knee support calf length Rib finish
2.	M.R.K.-2		Elastic kneecap with Velcro Support Belt strap
3.	M.R.K.-3		Elastic kneecap with double-layer fabric and velcro support Overlap strap
4.	M.R.K.-4		Circular Elastic kneecap Knee pad support Knitted fabric
5.	M.R.K.-5		Elastic kneecap layer with double layer quilted fabric Knitted fabric

*M.R.K.- Muscles Relief for Knees (Unisex)

Plate 3: Design and Features of Health-Friendly Portable Clothing for Muscles Relief (Knees)**Evaluation of Developed Portable Clothing Designs**

Designed sketches for muscle relief under created portable clothing were organized in a systematic way for older adults to evaluate and rank them. A Rating Performa was created with chosen criteria for evaluating developed designs based on a five-point ranking and distributed to the 10 panel of experts in addition to assessing how well received the apparel design concepts were.

According to the established criteria, the generated designs for muscular relief were assessed. Each design's mean scores were computed, and rankings were given. The mean scores and rankings for several designs of health-friendly portable clothes under muscles alleviation for the elbow, wrist, and knee are shown in Tables 1 and Fig. 1,2,3.

Figure 1,2 and 3 Clearly Depicts the Mean Scores of Developed Designs

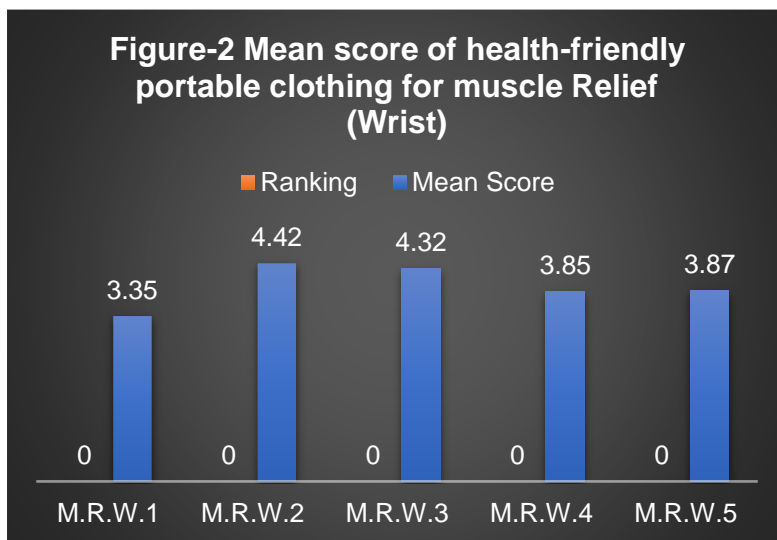
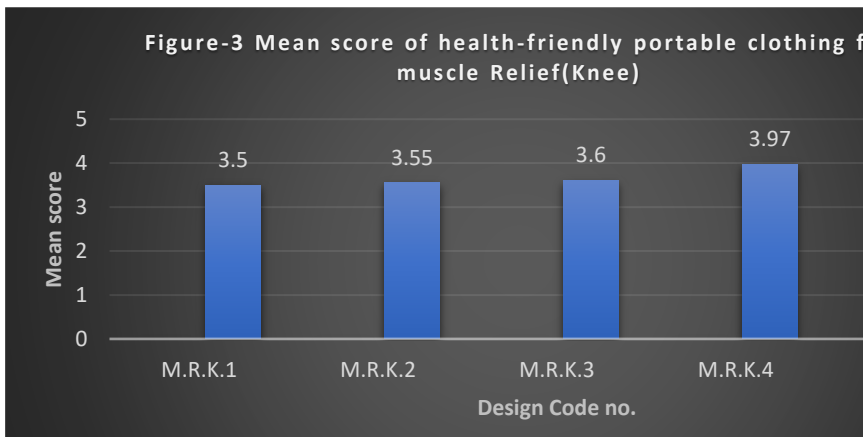
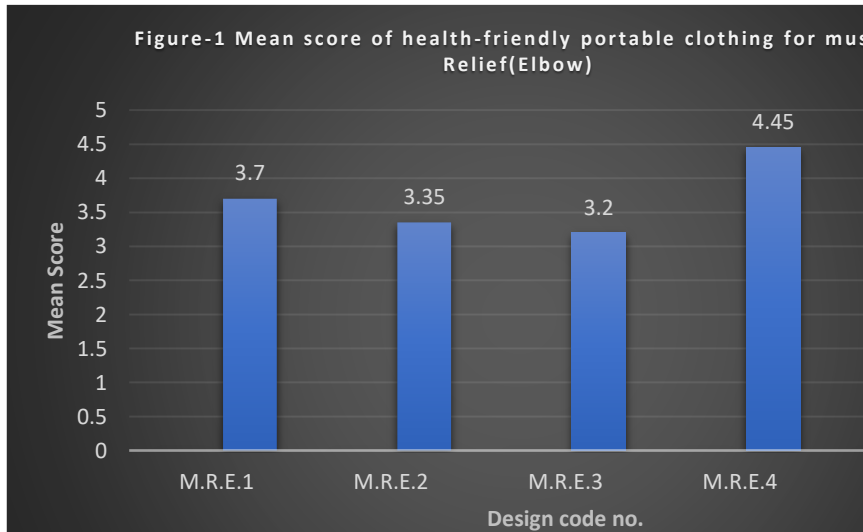


Table:1 Ranking and Mean Score of Developed Portable Clothing Design for Muscles Relief
(Elbow, Wrist, and Knee)

Design Category	Design Code	Mean Score	Ranking
Designs for muscle relief in elbow area	M.R.E.1	3.7	III
	M.R.E.2	3.35	IV
	M.R.E.3	3.2	V
	M.R.E.4	4.45	I
	M.R.E.5	3.75	II
Designs for muscle relief in wrist area	M.R.W.1	3.35	V
	M.R.W.2	4.42	I
	M.R.W.3	4.32	II
	M.R.W.4	3.85	IV
	M.R.W.5	3.87	III
Designs for muscle relief in knee area	M.R.K.1	3.5	V
	M.R.K.2	3.55	IV
	M.R.K.3	3.6	III
	M.R.K.4	3.97	I
	M.R.K.5	3.95	II

The Mean scores obtained by all the design codes were found in the range of 3.2 to 4.45 for muscle relief in elbow area, 3.35 to 4.42 for muscle relief in wrist area and 3.5 to 3.97 in muscle relief in knee area. Which clearly shows that all the developed designs for muscle relief for senior citizens were found highly acceptable in terms of aesthetic, functional, constructional, and comfort attributes by the respondents. Design code no. M.R.E.-4, M.R.W.-2, and M.R.K.-4 obtained the first rank followed by design code no. M.R.E.-5, M.R.W.-3, and M.R.K.-3 who got the second rank, respectively as shown in the Table-1. Major physiological changes at this specific stage, the clothing preferences of the elderly women have transformed from beautiful and designer to classic and functional. Elderly is the specific stage of life where functional clothing can be of countless help. Functional clothing makes life simpler for elderly women and for their care takers. Similar work related the present investigation was also conducted by Gupta. et al., (2013)³ Imran, A. et al., (2017)⁴, Singh, V. et al., (2019)⁵ and Wang X, Xu D, (2010)⁶.

Conclusion

Hence, it can be concluded that with age comes the physical changes and related muscle stiffness and health ailments that pertain to the elderly and therefore have implications for clothing selection, need, and exceptional care. Findings revealed that all the developed fifteen designs for muscle relief for elbow, wrist, and ankle that has portable features for better comfort, movement of, wrist, arms, and leg besides making dressing and undressing easier for senior citizens in the society were found highly acceptable.

References

- Hoffinan, A. M. (1979). Clothing/or handicapped, the aged, and other people with special needs. *Springfield*: Charles C. Thomas.
- Nat, H.S. (2007). Adaptive Clothing Designs for the Individuals with Special Needs *Journal of the Korean Society of Clothing and Textiles* Vol. 31, No. 6 p.933-941.
- Gupta. et al., (2013). Design of Ergonomic Garment for Elderly Indian Women, *Research Journal of Textile and Apparel* 17(3):118-127.
- Imran, A. et al., (2017). Dominique Adolphe. Adaptive bra designs for the individuals with special needs, *Materials Science and Engineering*, 254 (7), pp.07.
- Singh, V. et al., (2019). Clothing Preferences of Elderly Women, *International Journal of Current Microbiology and Applied Sciences* ISSN: 2319-7706 Volume 8 Number 03.
- Wang X, Xu D, (2010). Study on the Clothing for the Elderly, *International Conference on Information Technology and Scientific Management. Scientific Research*. 56- 60.
- Thorton, N. (1990). *Fashion for disabled people*. London: B.T. Batsford Ltd.

