Functional Clothing for Individuals with Special Needs

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Abstract

Clothing has always been a kind of status symbol and expression of the individual personality. People wear clothing for functional as well as for social reasons. People of all ages and in all circumstances of life are aware of the importance of appearance in perception of self and in their relations with other people. However, for those whose surrounding environment is limited by age, condition of health, or physical and mental handicaps, dressing properly is a very difficult and impossible task. Therefore there is an urgent need to design clothing according to their special requirements. The aim of this study was to design and develop functional clothing for cerebral palsy (spastic) respondents. A questionnaire was developed for personal interview to assess clothing practices & problems of the disabled. The identified clothing requirements were incorporated in garment designs and finally constructed. After wear trial the designed and constructed garments were found to be highly acceptable.

Keywords

Cerebral Palsy (Spastic), Functional Clothing, Quadriplegic, Diplegic, Monoplegic, Triplegic

1. Introduction

Clothing is a complex but fascinating part of an individual's life[8]. Clothing is an eminent aspect of life as it plays a vital role in the coordination of human traits with their immediate environment. It is a silent language, a non-verbal system of communication; do more than just to indicate a person's sex, age, nationality, occupation and position in a social hierarchy [6]. They fulfill important psychological needs of conformity and self-confidence [4]. Clothing plays an important role not only for a normal individual but in the life of a disabled individual too. Disabled people belong to a special category, which require both genuine care and social sensitivity [9].

Disabled people have some basic needs that are universal to all human beings. Beyond the physiological needs they also need safety, recognition, self-esteem and self-activation. Provision of well designed, attractive and functional clothing can greatly increase their self-esteem, comfort and convenience [3]. Clothing is important for these people for two reasons; one being that functional clothing designed and constructed according to the physical handicaps reduces dependence on others for dressing and undressing. The other being that socially accepted clothing reduces perceptional deviance and promotes positive interaction to aid the social and personal adjustment of the individual [5]. Classification of disabled in India shows that nearly half total disabled are having seeing disabilities (48.5 per cent) followed by movement disabilities (27.5 per cent). Ten per cent of total disabled are mentally disabled [1].

Availability of functional clothing with self-help features that is designed and constructed in accordance with physical limitations reduces dependence on others for dressing and undressing [7]. Self help garments not only promote self dressing but also camouflages the deformity of the handicaps, improve their ability to perform physical activities and allow them to be self sufficient [2]. Keeping in view the fact, the present study was undertaken to design suitable functional garments with self help features for persons with physical limitations which caters to their specific clothing needs.

2. Methodology

Descriptive cum experimental research design was used to identify different physical deformities, clothing practices, problems and needs followed by designing, construction and assessment of self help garments. The study was conducted on a sample size of 60 respondents including both male and female of age group 10-20 years, selected through purposive sampling technique taking care to include the ones having divergent handicaps and also those who could not dress themselves.

Spastic (Cerebral Palsy) respondents with Monoplegia, Diplegia, Hemiplegia, Quadriplegia and Triplegia physical deformity were selected.

Out of the total sample of 60 respondents, five respondents were retained as experimental group to give representation to almost all types of disabilities. The case study method was used to get in- depth knowledge of the selected respondents regarding the problems faced by respondents while donning, doffing and performing various other activities.

The data was analyzed by frequency, percentage, weighted score, mean and rank methods. A total of 20 garment designs were made for five selected Cerebral Palsy (Spastic) respondents keeping in mind the suggestions given by their care takers, observations and physical deformity of the respondents comprising of both upper and lower garment for male and female respondents. Care was also taken not to deviate too much from the accepted garments and their designs being used by each respondent.

Sketched designs were shown to a panel of 30 Judges. Five most preferred designs by the judges were selected for construction. Constructed functional clothing was subjected to wear trial and views of the respondents and their care takers were taken regarding acceptance of the designed garments. Suitability of each feature of a garment was taken on a three point rating of unsatisfactory, satisfactory and highly satisfactory [4]. Depending on the number of features in a garment these ratings were assigned scores and the total score obtained by each garment is converted into acceptability ratings.

3. Results

From the present investigation it was found that maximum 30 per cent of the respondents were in the age group of 10 – 12 years and 19 – 20 years respectively with 66.7 per cent (40) males and 33.3 per cent (20) females.

3.1. Type of Physical Deformity

From the present investigation it was found that 22 respondents (36.6 per cent) were Quadriplegic, 21 respondents (35 per cent) of the respondents were diplegic followed by 12 respondents (20 per cent) were Hemiplegic whilst only 3 (5 per cent) and 2 (3.3 per cent) were triplegic and monoplegic respectively (Figure 1).

3.2. Type of Associated Disability

Maximum number of respondents i.e. 52 (86.6 per cent) had associated disability whereas only 8 respondents (13.3 per cent) had no associated disability (Table 1). The table clearly reveals that 25.9 per cent of the respondents (20) could not speak clearly followed by 19.4 per cent mental retardation along with cerebral palsy. 18.1 per cent

respondents (14) had perceptual disorder with behavioural disorder in 16.8 per cent respondents. Other 12.9 per cent had visual problems, whereas 6.5 per cent respondent had hearing impairment.
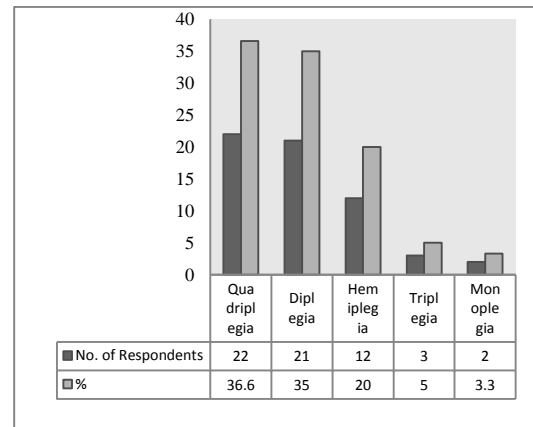

Figure 1. Distribution of respondents on the basis of Type of Physical Deformity (N=60)

3.3. Assistance in Dressing

According to the investigation, maximum 32 respondents (53.33 per cent) needs help in dressing, 18 respondents (30 per cent) were completely dependent on others.

Table 1. Distribution of respondents on the basis of Associated Disability

S.No.	Variables	f	%
1.	**Associated disability**		
a.	Yes	52	86.6
b.	No	8	13.3
2.	**Type of Associated Disability***		
a.	Visually Impaired	10	12.9
b.	Hearing Impaired	5	6.5
c.	Perceptual Disorder	14	18.1
d.	Speech handicapped	20	25.9
e.	Mental Retardation	15	19.4
f.	Behavioural Disorder	13	16.8

*Multiple Responses

3.4. Satisfaction with the existing clothing

The study revealed that majority of the respondents, 44 (73.3 per cent) was not satisfied with the existing clothing while only 16 (26.6 per cent) respondents were satisfied with existing clothing (Table 2).

The various reasons for dissatisfaction from the existing clothing were that maximum, 44.1 per cent of the respondents have difficulty to put on and take off the garments, 34.3 per cent of the respondents were dissatisfied due to difficulty in manipulating fasteners, 11.7 per cent of the respondents think that design of the garments are not according to the requirement whereas very few, 9.8 per cent were dissatisfied with the improper placket opening.

Table 2. Distribution of respondents on the basis of satisfaction with the existing clothing

S.No.	Variables	f	%
1.	**Respondents**		
a.	Yes	16	26.6
b.	No	44	73.3
2.	**Reasons for Dissatisfaction***		
a.	Designs are not according to the requirements	12	11.7
b.	Difficulty to put on and take off	45	44.1
c.	Designs are too complicated	-	-
d.	Improper placket opening	10	9.8
e.	Difficulty in manipulating fasteners	35	34.3
f.	Due to high price	-	-

Multiple Responses

3.5. Willingness of specially designed clothes with self help features

An opinion was sought about the willingness for specially designed garments for cerebral palsy children. The data revealed that 83.3 per cent of respondents expressed their willingness to adopt specially designed garments whereas 16.6 per cent of the respondents did not show their willingness for modified garments.

The data for willingness of specially designed clothes revealed that to solve their dressing problem scored the maximum score of 2.31 followed by factors like to make the child self dependent with self help features and to provide more comfort with a score of 0.92 and 0.61 respectively. Few caretakers were of the opinion that specially designed clothing would enhance their personality (0.05) and make their children socially acceptable (0.04).

Reasons for unwillingness were lack of knowledge about specially designed garments (Rank I), followed by factors like and garments will be costly, they think that the child may be socially unacceptable (Rank III), development of inferiority complex in the child was another reason and child may not accept Rank IV and Rank V respectively. (Table 3)

S.N.	Variables	WS	$\overline{X}$	Rank
1.	**Reasons for Willingness of specially designed clothes***			
a.	To solve dressing problem	225	2.31	I
b.	To provide more comfort	60	0.61	III
c.	To make the child self dependent with self help features	90	0.92	II
d.	To make child socially acceptable	4	0.04	V
e.	To enhance the personality	5	0.05	IV
2.	**Reasons for Unwillingness of specially designed clothes**		N=10	
a.	Garments will be costly	50	1.38	II
b.	Lack of knowledge about specially designed garments	60	1.66	I
c.	It may make the child socially unacceptable	12	0.33	III
d.	It may lead to the development of inferiority complex in the child	8	0.22	IV
e.	Child may not accept	3	0.08	V

Multiple Responses

3.6. Evaluation and Construction of Functional garments

The weighted score of the 20 functional garments sketched for the cerebral palsy respondents is shown in the figure 2. Among the five respondents, R1, R2, R3, R4 and R5, the sketches which got the maximum marks were G2, G3, G3, G3 and G1 respectively (Plate 1). Thus, a total of 5 designs for cerebral palsy respondents which scored the maximum were constructed.
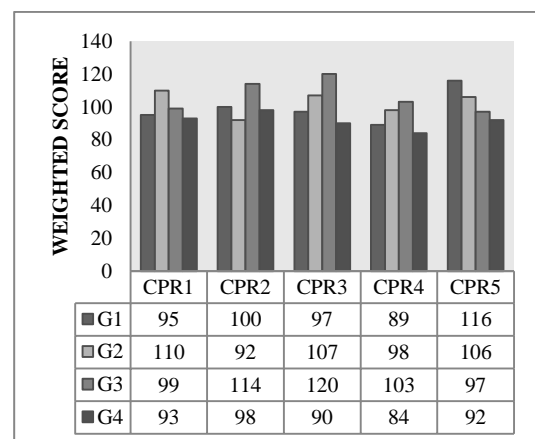
WEIGHTED SCORE	CPR1	CPR2	CPR3	CPR4	CPR5
■G1	95	100	97	89	116
■G2	110	92	107	98	106
■G3	99	114	120	103	97
■G4	93	98	90	84	92

Figure 2. Evaluation of Sketched Designs for Respondents

Table 3. Distribution of respondents on the basis of reasons for willingness & unwillingness of specially designed clothes with self help features

International Journal of Research

Available at https://edupediapublications.org/journals

p-ISSN: 2348-6848
e-ISSN: 2348-795X
Volume 04 Issue 07
June 2017

CPR₁G₂

CPR₂G₃

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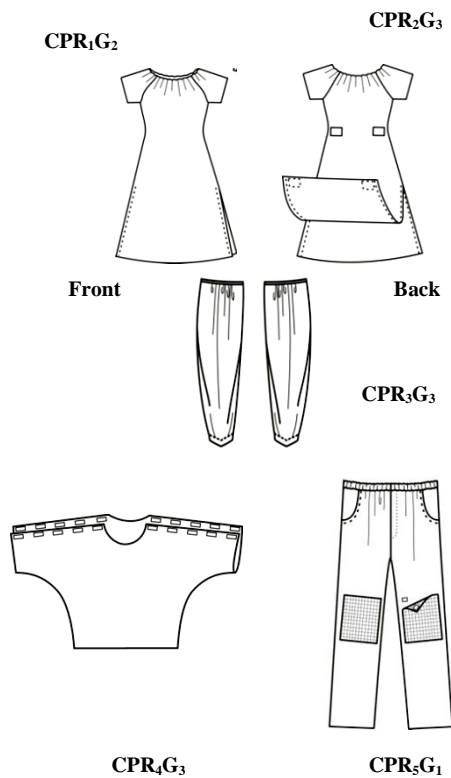
CPR₃G₃

CPR₄G₃   CPR₅G₁

**Plate 1. Selected Sketched Designs for
Cerebral Palsy Respondents**

3.7. Acceptability Assessment of Constructed Functional Garments

The respondents were given garments to wear for 10 days. A panel of 10 judges assessed the stitched functional garments. A suitability index was formed to assess the acceptability of the garments by the investigator. Each feature in the garment was scored and the total score was obtained through which the acceptability of the garments was assessed.

The functional garments constructed for majority of the cerebral palsy respondents were found to be highly acceptable.

Garment CPR₁G₂, which was a wrap around skirt with velcro at the centre for fastening and CPR₅G₁, a pair of trousers with elasticised waist, flase fly front and detachable quilted patch at the knee level scored the highest score of 90 each.

Garments CPR₃G₃ (80 scores) and CPR₄G₃ (75 scores) were considered highly acceptable. Garment CPR₃G₃ was a set of salwar kameez, with raglan sleeves and the back portion of the kameez could be rolled and fastened with velcro at the waist. Salwar is in the form of elasticized tubular pieces extending from thighs. Garment CPR₄G₃, a dolman sleeved t-shirt with shoulder to sleeve openings on both the sides. Garments CPR₂G₃ was a shirt with 2" stitch at the centre front down the

hem and velcro as fastener at the centre front was considered acceptable (60 score).

Table 4 Assessment of Acceptability of Constructed Functional Garments for Cerebral Palsy Respondents

Garment Code	Functional Features	Score for each feature	Total Score	Acceptability
CPR₁G₂	• Velcro at the centre for fastening	90	**90**	Highly Acceptable
CPR₂G₃	• Velcro at the centre front opening • Centre front stitched 2" down the hem	30 30	**60**	Acceptable
CPR₃G₃	• Kameez : the back portion could be rolled and fastened with velcro at the waist • Kameez : Raglan sleeve • Salwar: elasticized tubular pieces extending from thighs	30 20 30	**80**	Highly Acceptable
CPR₄G₃	• Shoulders to sleeve opening on both the sides • Dolman sleeves	45 30	**75**	Highly Acceptable
CPR₅G₁	• Elasticized waist band • False fly front • Detachable quilted patch at the knees	30 30 30	**90**	Highly Acceptable

Plate 2. Constructed Functional Garments for Cerebral Palsy Respondents

CPR_1G_2

CPR_2G_3

CPR_3G_3

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CPR_4G_3

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