ABSTRACT

The main objectives of this study were to know the clothing problems and preferences of the mothers of physically challenged girls and to assess the comfort of the specially designed functional garments. A total of 120 girls of age group (6-12 years) with divergent state of physical impairment and their mothers formed the sample for the survey. Total 60 children were affected with cerebral palsy and 30 children were affected with polio and 30 with musculoskeletal conditions were taken for the present study. A pre-tested self-structured questionnaire was used to elicit the information. A total of 30 designs were prepared and subjected to visual evaluation for the selection of 10 best designs. The evaluation was done by the panel of 30 judges including 10 staff members and 10 students of Ethelind School of Home-Science and 10 mothers of physically challenged girls. The constructed garments were given to the respondents for wear trials. The results of the wear trials revealed that all the constructed garments were liked and preferred by the respondents.

Key words: - Physically challenged, functional clothing, clothing comfort

INTRODUCTION

The value of clothing is meeting certain human needs, viz., social, psychological, economic, political, racial, regional, functional, and self enchantment have been long recognized. More recently greater awareness on clothing awareness is focused that satisfies several other human needs too. Well dressing many times is much more than having enough or right type of clothing for warmth and protection. Therefore, clothing frequently is more important as a means of acceptance in the society than mere physical protection (Horn, 1975).

Role of clothing in a child’s life assumes added importance because of its relation to his/her growth and development. The growth of a child is rhythmic and not regular. A child does not gain a set number of kilograms annually or grow a set number of inches. Growth on the contrary comes in cycles-“periods” or “phases”. The normal, physical, emotional, and social development of a child to some extent depends upon clothing which is comfortable, adjustable and does not hinder his or her movement. Therefore, apart from appearance of the garment it is important to consider certain factors viz., comfort, ease,
porosity, absorbency and allowances for growth and physical activities while planning clothing for a child. Further, garments for children should emphasize their youthfulness and grace.

Clothing provides an opportunity to the child to develop a sense of autonomy and competence. It communicates impressions of the self to others, in the social environment. The task of dressing and undressing is very important for them. Despite the fact that they are disabled some children are able to dress themselves independently. This gives them social and emotional satisfaction and a feeling of pride in themselves. But if severely disabled, they are helped by the carer making the process time consuming and tedious, this makes them frustrated. To help the children, numerous researches have been done in various fields such as furniture, wheel chair and toilet facilities but little work has been done in the field of clothing, especially in India. Hence, a need was felt by the researcher to design and develop garments to provide ease of wearing, movement and comfort to the children. These garments would also incorporate various self-help features such as deep and wide necklines, deep armhole, kimono sleeves, plackets with velcro or zipper. This would help to make the process of clothing less tedious for both the disabled children and their carers.

Most of the time a person with disability wears ordinary clothes that may hinder their movements, produce discomfort and even build inferiority complex. Keeping in view this the present study was an attempt to solve some of the clothing related problems of such children.

Materials and methods:

Selection of the locale of the study
Allahabad district of Uttar Pradesh was selected to conduct the present study. The area was selected purposively due to the easy approachability and familiarity of the area. The study was carried out in two institutes-
1. Samvedna Trust Center (near Vatsalya hospital civil lines road, Allahabad)
2. Vikalang Kendra (in front of Sagar Ratna resturant, balson chauraha, Allahabad)

Selection of the sample
Purposive sampling technique was used for the selection of respondents. A total of 120 girl child with their mothers were selected in the age group of 6-12 years for the present study. Among the 120 children, 40 children were suffering from lower limb deformity, 20 children were suffering from upper limb deformity and 60 children were suffering from both upper and lower limb deformity.

Technique of data collection
The present study was a need based study; therefore initially a baseline study was conducted to check the need to develop garments for Physically challenged children. This was done by observing the affected children and personally talking to the children, care takers and occupational therapists in various institutions. Once a need for such a study was established, a field study was planned to understand the problems faced by the physically challenged children and their care takers during the process of dressing and undressing.

An interview schedule was prepared and the respondents were interviewed personally to collect the data pertaining to clothing needs and preferences from children’s mothers. The interview schedule was categorized into the following two parts:
The first part of the interview schedule pertained to the collection of the background information of the respondents and their family like age, sex, caste, size of family, family income etc.

This part dealt with the specific information regarding existing clothing practices of physically challenged children. This included problems and preference regarding clothing practices such as problems in dressing and undressing, reason due to which clothes get damaged, type of garment worn by respondents, preferences in fabric, texture, color, print, type of placket opening, fasteners used in garments and type of decorative features etc.

**Design development and construction of garments**

The designs of garments were developed for the age group of 6-12 years girl, keeping in view the different types of physical limitations of the children and the information supplied by the children and their mothers regarding the clothing requirements. A total of 15 designs of garments were sketched. Out. Under the 15 designs- 5 designs were prepared for upper limb deformity, 5 designs were prepared for lower limb deformity and 5 designs for both upper and lower limb deformity. Prepared designs were subjected to visual evaluation for the selection of 5 best designs from total 15 designs. The evaluation was done by a panel of 30 judges including 10 staff members and 10 students of Ethelind School of Home-Science and 10 mothers physically challenged children from Allahabad. All designs were ranked according to their preferences obtained. Five point scale was used for evaluation of the developed designs and marks 1,2,3,4 and 5 was assigned for poor, fair, good, very good and excellent respectively. On the basis of evaluation, 5 sketches of designs were selected and were finally constructed into the garments.(Plate 1-5)

**Stitching of garments**

The stitching lines from the adapted basic blocks were transferred to fabric. Finally, the fabric was cut and stitches into garments according to the need and preferences of children mothers.

**Data analysis**

The data obtained from the interview schedule was coded, tabulated and presented through bar diagram. From the tabulated data simple percentages were worked out to know the background information. For existing clothing practices, problems and preference of respondents for their neurologically impaired children, weighted score were calculated for each attribute and then ranked out.

**Cost calculation**

Cost calculation for each garment was done by adding the cost of fabric, fasteners and trimmings cost and stitching charges.

**Evaluation of constructed garments**

Finally the garments were given to the children for wear-trial to evaluate acceptability and appropriateness of the designs. The evaluation was done by using an evaluation proforma. The designs were evaluated on the basis of 5-point scale method. The attributes used for evaluation of the constructed garments were comfort, functionality, durability and overall appearance.

**Results and discussion:**

**Results of the survey**
The background information of the respondents included in this study was their age, sex, size of family, type of family and annual family income. Approximately half of the respondents (54.17 per cent) belonged to age group of 6 to 8 years and maximum number of the respondents (58.33 per cent) was females. They lived in a joint family and their annual income was in between ₹20,000 - 30,000. Almost half of the children (53.33 per cent) suffered with the cerebral palsy from birth and 25 per cent suffered from poliomyelitis and 25 percent suffered from musculoskeletal conditions. The information was collected and the results showed that 85 per cent of the respondents found difficulty in dressing and undressing their children while only 15 per cent of them didn’t find difficulty in dressing and undressing their children. Cent per cent of the mothers were not aware of the special clothes but showed inclination to know much about the functional clothing. Majority of the mothers always preferred ready-made garments followed by tailor-made. Ones, least preference was given for home-made garments. All the mothers highly preferred woven fabric followed by knitted materials. Greater per cent of the mothers gave preference for cotton fabric with soft and smooth texture for the children garments followed by silk and polyester. The mothers highly preferred frock in a single piece garment, shirt-pant in a two-piece garments compared to sun suit and t-shirt capri. Zippers, snap buttons and velcro tape were the most preferred fasteners by majority of the mothers and none have you used strings in your garment. All the mothers always preferred round and v-shaped necklines with moderate depth and majority of the mothers preferred plain and puffed sleeves with regular length sleeves. Cent per cent of the mothers highly preferred centre front opening for upper garments without pocket. Greater per cent of the mothers preferred moderately loose fitted garments followed by comfortably fitted ones. Comfort and durability were the important features considered while purchasing garments, whereas, fashionable and trendy garments were given least preference.

**Developed Garment designs for neurological impaired children**

The designs of garments were developed keeping in view the different types of mental disorders of the children with neurological impairments and the information supplied by the children’s and their mothers regarding the clothing requirement.

**All the developed designs were visually evaluated by thirty judges.**

**Table 1: Evaluation of the developed designs of garments**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Designs for girls garments</th>
<th>Average Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Frock with flap shoulders</td>
<td>32.33</td>
<td>II</td>
</tr>
<tr>
<td>2</td>
<td>Girls top</td>
<td>31.46</td>
<td>V</td>
</tr>
<tr>
<td>3</td>
<td>Short kurti with full sleeve</td>
<td>29.93</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Skirt with elastic at waist</td>
<td>31.6</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Girls top</td>
<td>30.13</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Girls top with one side flap shoulder</td>
<td>32.2</td>
<td>III</td>
</tr>
<tr>
<td>7</td>
<td>Divider with strings</td>
<td>29.6</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Kurti with yoke</td>
<td>31.8</td>
<td>IV</td>
</tr>
<tr>
<td>9</td>
<td>Flap skirt</td>
<td>30.8</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Afghani payjama</td>
<td>30.4</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Girls top</td>
<td>28.93</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>Girls top with cowl neck</td>
<td>29.6</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>Maxi with haultier neck</td>
<td>30.73</td>
<td></td>
</tr>
<tr>
<td>14</td>
<td>Maxi with elastic strap</td>
<td>32.86</td>
<td>I</td>
</tr>
<tr>
<td>15</td>
<td>Trouser</td>
<td>29.06</td>
<td></td>
</tr>
</tbody>
</table>
Constructed garments
Total 5 garments were constructed incorporating the functional features desired by the respondents for their children and then tried by the children. Keeping in view the factors like ease in putting on and taking off, ease in manipulating fasteners, fit of the garment, comfortability, and appropriateness of the designs.

Table 2. Evaluation of the constructed garments

<table>
<thead>
<tr>
<th>S.No</th>
<th>Garments</th>
<th>Average Score</th>
<th>Rank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gar.1</td>
<td>Frock with flap shoulders</td>
<td>16.96</td>
<td>IV</td>
</tr>
<tr>
<td>Gar.2</td>
<td>Girls top</td>
<td>16.8</td>
<td>V</td>
</tr>
<tr>
<td>Gar.3</td>
<td>Girls top with one side flap shoulder</td>
<td>17.86</td>
<td>II</td>
</tr>
<tr>
<td>Gar.4</td>
<td>Kurti with yoke</td>
<td>17.46</td>
<td>III</td>
</tr>
<tr>
<td>Gar.5</td>
<td>Maxi with elastic strap</td>
<td>18</td>
<td>I</td>
</tr>
</tbody>
</table>

All garments were ranked according to their preferences obtained. Five point scale was used for evaluation of the developed garments and marks 1, 2, 3, 4 and 5 was assigned for poor, fair, good, very good and excellent respectively.

Cost calculation
The cost of garments were calculated on the basis of money spent for raw materials required for construction of the garments such as fabric, fasteners and stitching charges and other essential items. All the Garments were cost effective and ranged between ₹ 129-224.

CONCLUSION
From the study it is concluded that physically challenged girls were facing problems in dressing and undressing with regards to their existing garments. The results of the wear trials revealed that maxi with elastic straps and girls top with one side flap shoulder were liked and preferred the most in the girls garments. The redesigned and constructed garments helped to make the process of dressing and undressing less tedious for both the physically challenged girls and their carers. The developed designs for the functional garments made them more attractive and trendy.

REFERENCES
Constructed garments:

Frock with velcro flap shoulder
(Plate 1)

Top with one side velcro flap shoulder
(Plate 2)

Top with zipper opening (front)
(Plate 3a)

Top with zipper opening (back)
(Plate 3b)

Kurti with front opening
(Plate 4)

Maxi with elastic straps
(Plate 5)

Wear trial of the constructed garments: