

Preparing an evaluation scale to be used by the healthcare providers for evaluating the acceptability of patients' garments used in wards in multi specialty Indian hospitals

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ABSTRACT

The current study aims to develop an evaluation scale for use by healthcare providers to evaluate the acceptability of patient's garments used in wards in multi specialty Indian hospitals. Since no prior instrument is available to evaluate the same, the investigator developed a new scale based on the function, aesthetic and expressive model by Lamb and Kallal (1992). The scale will help in identifying the problem and needs of the end users which will further help in finding out the features and design changes that require modification while developing new patient garments. The scale was tested on 40 doctors and 40 nurses. The internal consistency reliability of the scale was analyzed and found above the acceptable value.

Key Words : Patient's garments, Acceptability of patient's garments, Patient's garments evaluation scale

INTRODUCTION

A review of literature reveals that traditional patient's garments do not find good acceptability among healthcare providers in hospitals. Studies by JHA (2009), Topo and Tahkavuori (2010), Park *et al.* (2012) and McDonald *et al.* (2014) have discussed about the problems related to the currently used patient's garments and have concluded that the design and functional features need to be improved. Also, there have been no major widely accepted innovations in design. Researchers have been working on finding out the problems related to the traditional gown and in collaboration with the designers, have come up with some solutions for the same Park *et al.* (2012), Park and Ryou (2008), Sperling and Karlsson (1989). However, review of literature did not reveal any study related to patient's garments in Indian hospitals. Many international designers have come up with new improved design ideas and also some of the designs have been patented. In spite of multiple patents filed for new patient gowns Cho and Paek (2006), Trouillot (2010), Leger and Jenner (2003), Benstock (1993), Janzen and Janzen (1990) Turner (2006), survey of popular literature available online and visit to the Indian hospitals did not provide any clear evidence of large scale adoption of new gown by the hospitals in India. To design and develop new garments, it is important to understand the needs of the patients and healthcare providers and to evaluate the acceptability

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of the currently used patient's garments in India. However no instrument is available that could help in achieving the above mentioned objectives. Few instruments prepared for patients are either for a specific ailment or focusing on adaptive garments used by patients in daily lives Smith (2013), Agbo, Igbo (2017). Hence there was a need to prepare a new instrument that can be implied on patients with any ailment. For this purpose a scale has been prepared to evaluate the acceptability of patient's garments.

Objectives:

1. To prepare an evaluation scale for use by healthcare providers for evaluating the acceptability of patient's garments used in wards in multi specialty Indian hospitals.
2. To test the scale on a sample population to find out the effectiveness of the scale
3. To find out that reliability of the scale

METHODOLOGY

Method of development of instrument:

The questionnaire was designed keeping in mind the busy time schedules of the healthcare providers and the state of mind of the patients due to ill health. Efforts were made by the investigator to keep the language simple. Functional, expressive and aesthetic model by Lamb and Kallal (1992) became the basis for development of the tool. Lamb and Kallal (1992) developed a model for accessing consumer needs and wants that incorporates functional, expressive, and aesthetic considerations. Functional needs include protection, mobility, comfort (physiological), ease of dressing/undressing, as well as fit. Expressive needs include values, roles, status and self-esteem. Aesthetics needs addressed design principles of line, form, colour, texture, and pattern to create a visually pleasing design. The model facilitates resolving design problems to meet the needs of the intended user which is the core of this model. In the current study the indented users are multiple

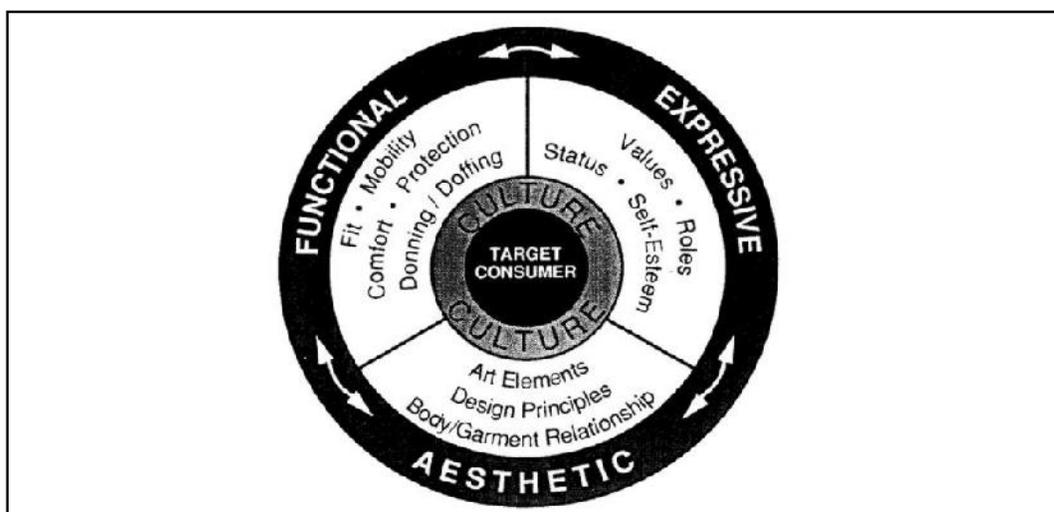


Fig. 1 : Lamb and Kallal's FEA Model: The target consumer is the center of the model, surrounded by culture. Needs are categorized as functional, expressive, and aesthetic; need categories may overlap. Adapted from Lamb and Kallal, (1992). A conceptual framework for apparel design. *Clothing and Textiles Research Journal*, 10(2), 42-47.

i.e. healthcare providers, patients and laundry staff. Lamb and Kallal (1992) suggested that apparel designers need to consider these three elements in the design stage, the stage at which the consumer's wants and needs can be addressed through innovative and novel designs. The inclusion of the three elements gives the designer a better understanding of the target consumer's wants, needs, and preferences. The purpose of developing the model was to develop a general framework that could be applied to design of any type of apparel, including garments intended for people whose needs are not routinely met in the marketplace and therefore have been considered special. Thus the model facilitates resolving design problems to meet the needs of the intended user or the target consumer which is the core of the model. The target consumer could be an individual or a group of individuals.

Various other design development models have been recommended by researchers which are based on need assessment as well Park (2014). However, because of the appropriateness of the model for the current study and its effective use in similar studies, the FEA consumer needs model has been used as a basis for framework of the current study. Lamb and Kallal's paper has been cited by more than 100 different first authors; some with multiple publications citing the author Koo and Min (2014), Agbo and Igbo (2017), Smith (2013). This demonstrates its relevance and impact over time (Orzada and Kallal, 2016).

Since the needs and function of the patient's garments for the doctors and nurses is similar and both are the second users after patients, a common questionnaire was prepared for both the healthcare providers. A five point rating scale was used by the investigator ranging from completely unacceptable to completely acceptable. Reference has been taken from scales used in previous related studies to frame the items in the new instrument. The instrument/scale was divided into three sections consisting of a total of 30 items. Section A included 19 items related to functional needs of doctors and patients that is ease of dressing/undressing, size, fit of the garments, mobility and physiological comfort. Section B included 6 items related to expressive needs of doctors and patients that is social and psychological comfort and privacy. 5 items related to aesthetic needs of doctors and patients were included in Section C. The respondents were asked to rate the currently used patient's garments on the acceptability scale to identify if the functional, expressive and aesthetic need were fulfilled. The contents of the scale are mentioned in the Table 1.

This scale includes all the aspects of the garments that fulfill the functional, expressive and aesthetic needs. Functional needs include ease of dressing/undressing, size and fit, mobility, and physiological comfort. Expressive needs include social and physiological comfort. Aesthetic needs include the elements which affect the appearance of the garment *i.e.* color, prints, texture, shape and other design features. For patients fulfilling the functional needs is of utmost importance. Hence more items related to functional needs are included in the scale

Scoring of responses on items:

After administering the scale, the next task was to score the scale according to the predetermined scoring key. The key for scoring the scale the scale is as under:

- 01= Completely unacceptable
- 02= Largely unacceptable
- 03=Neutral
- 04=Largely acceptable
- 05=Completely acceptable

Table 1 : Retained items in the scale

Sr. No.	Items
Section-A Functional needs (ease of dressing undressing/size and fit /mobility/physiological comfort)	
1.	Access to patient's body
2.	Ease of putting on/taking off the patient's garments
3.	Ease of opening/closing fasteners (buttons, ties, etc.)
4.	Appropriateness of the garments for the patients of different sizes
5.	Availability of different sizes
6.	Appropriateness of pockets
7.	Ease of walking
8.	Ease of using toilets for the patients
9.	Ease of using wheelchair for the patients
10.	Ease of getting on and off the bed for the patients
11.	Ease of movement when medical devices, catheters or other pipes are attached
12.	Comfort of fasteners for the patients
13.	Non-allergenic property of the fabric
14.	Wrinkle resistance properties of fabrics
15.	Thickness of the fabric
16.	Warmth or coolness of the garment
17.	Appropriateness for summers
18.	Appropriateness for winters
19.	Easy visibility of blood stains on the fabric for early detection of bleeding
Section-B Expressive needs (social and psychological comfort/privacy)	
20.	Appropriateness for male patients
21.	Appropriateness for female patients
22.	Suitability for all age groups
23.	Ability to cover patient's body appropriately
24.	Ability to keep rest of the body covered while one body part is examined
25.	Perceived hygiene by patients
Section-C Aesthetic needs (appearance)	
26.	Overall appearance of the garments
27.	Color of the garments
28.	Prints or look of the fabric
29.	Appears clean and stain free
30.	Odour of the garments

Content validity:

Content validity of the scale was established by giving the tool to experts in various fields like professors in the department of Fashion Design, few experts from design industries, doctors and nurses. The experts finalized the items of the scale, checked the language and the items included were helpful achieving the objectives.

Testing of the scale:

After finalizing the content, the first draft of both the questionnaires was prepared and administered on 15 doctors and nurses each. The questionnaires were then checked for missing responses and opinion was taken for the difficulties faced in answering. The items which the respondents found difficult to answer, confusing and irrelevant were removed or modified. Thus, on the basis of the feedback received, a second revised draft was prepared. The second draft was tested again on a larger sample of 40 doctors and 40 nurses in both government and private multi specialty hospitals. Those departments were included in the study where large number of patients gets admitted and where there is more need of patient's garments. The garments used in operation

theatres were not included in the study. Feedback was again taken from the respondents. Based on their response, few more items were modified and reframed. Hence, the third and final draft was prepared. For the pre-testing, convenience sampling method was used. The results of the pre-test indicated that firstly it was effective as far as answerability of the questions were concerned. Secondly, the respondents were co-operative and answered and discussed their problems.

Reliability:

Internal consistency concerns the extent to which items on the test or instrument are measuring the same thing. The appeal of an internal consistency index of reliability is that it is estimated after only one test administration and therefore avoids the problems associated with testing over multiple time periods. The value of Chronbach alpha was found > 0.7 for all the sections of the sections of the scale for both doctors and nurses. This shows that the scale has good internal consistency and hence there is no need to eliminate any item from the scale.

Table 2 : Showing the values of Chronbach Alpha

Section	Internal consistency reliability of scale			
	Value of Chronbach Alpha for doctors	No. of items	Value of Chronbach Alpha for nurses	No. of items
Section A (Functional needs)	0.823	19	0.883	19
Section B (Expressive needs)	0.714	6	0.73	6
Section C (Aesthetic needs)	0.710	5	0.74	5

RESULTS AND DISCUSSION

The analysis of the results of pre-test was completed so as to find out if this scale was effectively and accurately capturing needs of the end users. The results revealed that the opinions of doctors and nurses are similar for majority of items. However, for some items a difference in opinion of doctors and nurses was also observed. The primary reason for the same is that nurses have more frequent interaction with the patients than doctors and are involved with the changing and upkeep of patient's garments. The items for which majority of healthcare providers rated as moderately acceptable or slightly acceptable need to be replaced or modified. The items with higher acceptability shows the features which can be retained. This scale will help in designing new improved garments and also in evaluating if the new garments are fulfilling the functional, expressive and aesthetic needs of the patients. Thus it can be concluded that the questionnaire was effective in fulfilling the purpose of the study. Also it a good internal consistency reliability and hence the scale can be used for collecting date from a larger sample. This scale can be used for a universal patient's garment or even for a garment that is meant for a specific ailment, surgery or injury.

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