

Towards an emotional design of apparel for medical professionals

Abstract

The rapid development of society has made people have an emotional requirements for apparel. Emotional apparel, generally, has been studied for many years. However, there is few work regarding the emotional design for medical professionals. Emotional design contains visceral, behavioral and reflective levels. Most of the existing medical apparel design still remains in the visceral and behavioral level of an emotional design. In order to enhance the medical apparel design to the reflective level, this paper aims to develop a conceptual design of medical apparel in terms of the emotional design theory. This study first works on the medical apparel design requirements in the aspect of emotion, then the development of principles and elements casting to the emotional apparel for medical professionals. This study can provide a reference for the practicality, aesthetics and identification of emotional design of medical apparel, so as to achieve a better development of medical apparel in the future.

Keywords: emotional design, medical apparel, medical professionals

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Background

Medical apparel is a type of professional apparel worn by professionals working in the medical institutions. The current medical apparel focuses on its function and aesthetics. For example, Isabel Abreu et al, studied the behavior of thermal properties of surgical scrub and clean air suits by using Alambeta equipment.¹ In N Oğlakcioğlu et al.'s study, tubular medical bandages were manufactured by using core spun yarns, and their pressure and comfort characteristics were investigated.² In Underwood S's study, examined the design of orthotic devices for people with rheumatoid arthritis.³ With the development of society, people's sense of beauty has been improved rapidly and medical apparel has been serialized and innovated to a certain extent due. For example, the various color of medical apparel and different silhouette of scrubs. With the satisfaction of current medical apparel in the aforementioned aspects, medical professionals' emotional needs have been raised.

Emotional needs lead to the emotional design. Emotional design is people-oriented. After the realization of product functionality and ease of use, by injecting more humanistic care into the design of the emotion to achieve a higher level of goal. This concept was proposed in 2002 by Donald Norman. He proposed that design was divided into visceral, behavioral and reflective three levels. He divides product features into function, comfort, aesthetics and emotion. In these four dimensions, the emotional design is located at the top.⁴ It is noted that the emotional design has been somehow studied and applied in apparel domain, for example, Wang W et al, analysed the methods and means of blending IoT smart information-sensing technology with emotional design.⁵ In Poluchovich I et al.'s study, analysed the smart clothing technologies in dance costume designing.⁶ However, there is very few study involving emotional design of medical apparel.

The current emotional design of medical apparel does not pay attention to users themselves. Starting from the needs of emotional design of medical apparel, this paper carries out a conceptual design by applying apparel design and emotional design principles, elements and methods. This study not only provides reference to the emotional design of medical apparel in practicality, aesthetics, and

recognition, but also satisfies people's emotional needs. In addition, it can indirectly enhance the emotional connection between doctors and patients through the emotional transmission of apparel, so as to promote the follow-up treatment.

Conceptual design of medical apparel

Design requirements

In the emotional design of medical apparel, positioning wearer's usage demand is the first considering. In order to better guide the design of medical apparel, this study summarizes the needs of medical apparel in the emotional design from the three levels of instinct, behavior and reflection, respectively.

In the visceral level, color and style are most important. The style only serves medical professionals, so the style only needs to meet the emotional needs of medical professionals. For example, the physical activity space for H-shaped apparel left to medical professionals is greater than other shapes, so it is suitable for design in medical apparel. Meanwhile, the information transferred by the color not only delivers emotional reactions for medical professionals, but also gives the patients corresponding feelings. In Kam S et al.'s study, the viewpoint that the color of patients' clothing will bring psychological influence to patients was put forward.⁷ This view is also suitable for use in medical clothing. For example, medical professionals are more suitable for wearing white, light blue, light green and other light-colored clothing, because these colors can keep medical professionals to stay calm, but also makes patients feel calm, comfortable and healthy.

In the behavioral level, design focused more on functionality, which is the practicality of apparel. As the medical apparel is worn by the medical professionals, it is essential to consider the efficiency and feelings of medical professionals. Therefore, the emotional design of medical apparel should consider many factors such as color, style, and function. For example, pockets could be designed to hold small goods such as notebooks and gloves to reduce the time wasted by medical professionals when working. It will bring physiological and psychological pleasure for the wearer.

In the reflective level, design should fully consider the image of the occupation and emotional resonance. Occupation image should satisfy the image needs of medical apparel from the external aspects of style, fabric, color and so on. Emotional resonance requires medical professionals to convey their enthusiasm and professional confidence through apparel to patients when wearing medical apparel. This may cause emotional contact and resonance between medical professionals and patients, thus making apparel more “humanistic care”. Color is a medium that realizes emotional resonance, so the color of medical clothing is very important. The color of the medical clothing should use as white, light blue, light green and so on. These colors can make medical professionals and patients feel comfortable. It is worth noting that the color of the medical clothing should be avoided with a deeper color. For example, deep red will let the patients think about blood and other images, which is not conducive to relieving patient psychological pressure. Dark blue will make patients think of deep sea and feel mentally suppressed.⁸

Design principles

The emotional design of medical apparel generally includes two principles on the basis of the aesthetic unity of traditional medical apparel design. These two principles are user-friendly principle and suitability principle. User-friendly principle means that the design should meet the different emotional needs of different departments. For example, patients in cancer departments need to be concerned most, so the warm colors can be used when designing medical apparel; Suitability principle refers to the design of different styles in accordance with the physical activities of different medical departments during the design. For example, the old-age cancer professionals have a large range of movements, so there should be enough physical activity space in the apparel.

Design elements

In an emotional design, color, fabric and style are the main elements, while accessories and cost are the secondary elements. Among the main factors, light colors such as white, light blue, light green, can bring positive impressions to people; Comfortable skin-friendly fabrics can bring comfort to medical professionals; Among the secondary factors, the accessories refer to the emotional design of the hat, mask, gloves to enhance users' sense of pleasure. For example, the hat is designed in different sizes according to the differences in men and women's hair length.⁹ The cost refers to determining the corresponding apparel cost according to the different requirements of different departments for apparel materials.

Conclusion

The emotional design of apparel has been studied for a while, but mostly, it is in the field of fashion domain. This paper developed a concept of medical apparel by considering the emotional design. By

analyzing the current issue of medical apparel, this study proposes an emotional design scheme of medical apparel through emotional processing from the aspects of design requirements, design principles and design elements. The results can not only make the medical professionals feel physiological and psychological satisfaction, but also greatly enhance their enthusiasm and professional confidence of the professionals. It can also transfer the positive attitude of medical professionals to the patient through apparel and arouses emotional resonance between patients and medical professionals, thus adds “humanistic care” to the apparel.

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Conflicts of interest

Authors declare that there is no conflict of interest.

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