

Packaging Design Strategy of Female Medical Injector Under Emotional Demand

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ABSTRACT

The first visual perception of pharmaceutical packaging can directly affect the psychological emotion of the people who use medicine. From the user's needs, through the investigation of the cognition, will and emotion of gynecological patients in the use of disposable drug pushers, analyze the importance of pharmaceutical packaging design to pharmaceutical users, discuss the role and significance of emotional needs in the use of their packaging design process, and explore the development of the emotional design of female medical disposable drug pushers packaging; take the design practice of Kangfute gynecological pushers as an example, and integrate the emotional needs with In the case of Kangfute gynecological push dispenser design practice, the emotional needs are integrated into the packaging design to complete the push dispenser packaging design to meet the needs of the psychological level.

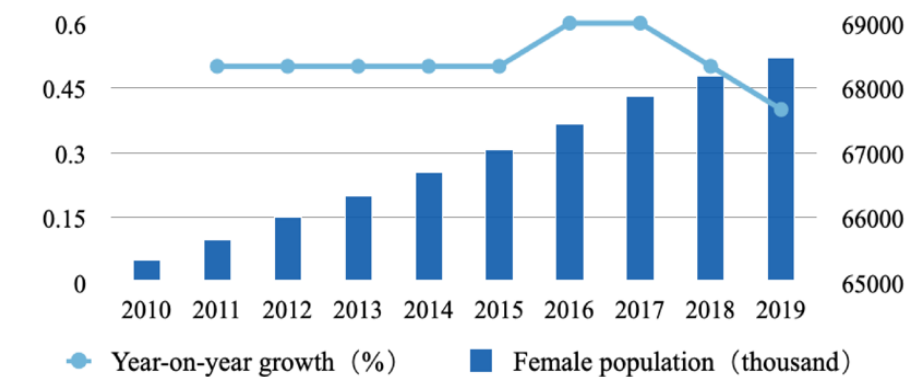
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INTRODUCTION

Women's health has been discussed for a long time, and to this day, gynecological diseases are still the most prevalent and most affected diseases. According to the World Health Organization, more than 90% of women suffer from gynecological diseases to varying degrees, with vulvodynia and vaginitis taking the lead, and more than 40% of women suffer from recurrent attacks, as shown in Table 1. In other words, two out of three women suffer from gynecological diseases and one out of two women suffers from reproductive tract infections. As a result, the market for medical products related to women's health is gaining attention year by year.

The disposable liquid pusher is a special medical product used for the prevention, treatment or relief of diseases as well as health care and wellness of the female private parts. This product can be applied to a wide range of symptoms in the external treatment of conditions in women with gynecological conditions, and the population of users has a huge scale. Therefore, disposable drug dispensers play an important role in the field of gynecological health. At the same time, the packaging design of disposable drug dispensers should be optimized and improved in a timely manner, considering their social responsibility and significance. Therefore, pharmaceutical manufacturers in the development and design process, pay attention to the medical function and economic principles based on respect for the emotional response of patients, emphasizing emotional packaging design, and strive to give comfort to patients before use, eliminate psychological anxiety, in exchange for the patient's sense of trust and closeness to the pusher, the psychological tolerance of the patient group to play a positive role, indirectly with the purpose of active treatment.

Table 1: Changes in the rate of detection of women's diseases, 2010-2019



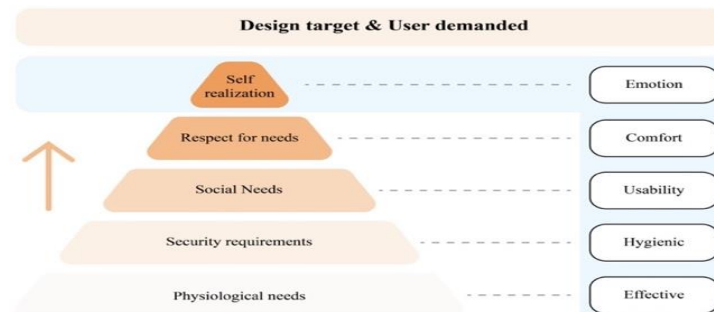
EMOTIONAL PACKAGING DESIGN

Packaging is the first language of communication between people and products and has a direct impact on the user's mental activity. Most of the time, the visual and packaging appearance overrides everything and is often an important factor in our product selection. Liu Wenliang et al (Liu W-L, et al. 2021) described the interaction design of pharmaceutical packaging in detail in a paper on the study of principles and methods of interactive packaging design of pharmaceuticals for the elderly. Zhong Chun et al (Zhong C et al. 2021) conducted a study on empathic design strategies in the design of pharmaceutical packaging for children. In the field of medical pharmaceutical packaging design for women, relatively little research has been conducted on emotional care.

For gynecological patients, limited mental capacity and low mood are the main emotional characteristics of the female population, and the problem of adverse reactions to stimuli during the patient's suffering from the disease cannot be ignored (Huang D, 2018). However, the need for self-administration of medical products is an inevitable step in the treatment process. Patients are more likely to have anxiety, nervousness, helplessness, loneliness and other psychological activities during the period when they are alone from the medical environment to complete the medication. Therefore, the packaging design of medical products should try to increase the design with emotional care to relieve patients' psychological pressure to the greatest extent (Li Y et al. 2021). as shown in Table 2.

In terms of the existing packaging logic, it only stays in the consideration of its function of protecting the medicine and the development of the characteristics of convenient transportation, but when the patient is involved in the interaction with the medicine, the visual appearance of the packaging has a positive effect on the psychological level of the patient's comfort (Li J-L, 2013). This requires designers to make use of the right functional design. This requires designers to use a reasonable functional structure to ensure the function while giving the package an emotional design (Yang C, 2017).

Table 2: Design Strategy Summary



PACKAGING DESIGN AND RULES FOR FEMALE MEDICAL PUSHERS

In order to ensure the drug function of the pusher, when doing the improvement of the packaging design, it should be combined with the structure design logic of the drug (Li Y, 2021). The packaging design of the pusher mainly involves two aspects: the use of the packaging behavior and the visual appearance, a pusher packaging that meets the emotional design should take these two aspects as the entry point to give the first impression of the pusher product a human touch in terms of behavior experience and appearance shape, as shown in Figure 1.

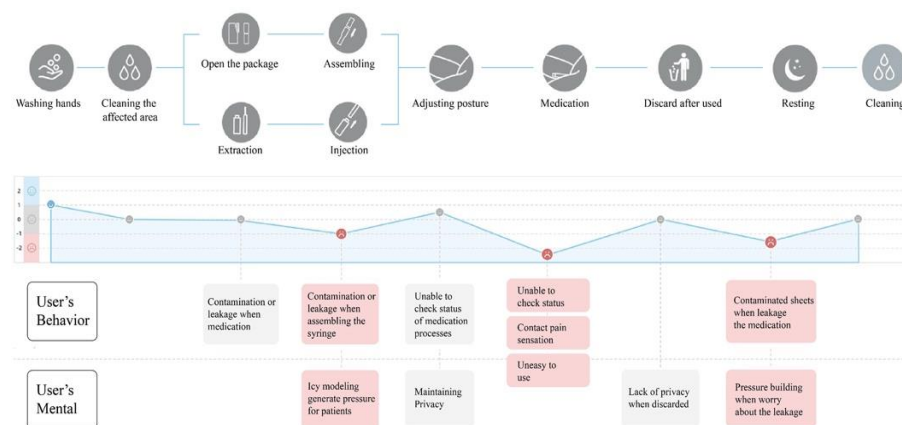


Figure 1. Analysis on the use process of gynecological drugs

Appearance design of medical pushers packaging.

Pusher packaging plays the role of description, protection and impression in the behavioral relationship between participating patients and the pusher, so the following norms should be done in the appearance design of the packaging: the outer packaging conforms to the relevant legal norms for medical products and highlights the medical functions; the inner packaging should be less impactful in terms of view and feel and explain the use of medical products (Wang P, 2018). Based on these normative, combined with caring attributes attached, specifically to the packaging design of disposable pushers should meet:

- The first visual packaging retains the concise, intuitive and clear functional introduction of medical products, taking into account the special situation of protecting patients' private conditions, outputting text-based descriptions, strengthening the function of invisible illustrations, reducing the obvious graphic indications, and reducing the psychological pressure of avoiding the gaze of patients when carrying (Chen J-R, 2020).

- The second visual packaging is based on plastic sealing, controlling the reflective properties of the material, controlling the visual balance, reducing the density of information, and reducing the pressure of the patient's mind in opening the final packaging layer.
- The packaging as a whole conforms to the coordination of medical products, rigor, and maintains a consistent unity in form and function.

The design behavior of push injector packaging.

The push injector must be hygienic and easy to use in terms of usage behavior, and should have the following design specifications: the outer packaging is recognizable, highlighting the product function pointing, single push injector should have independent sealing, and the function can be expanded. Based on these specifications, combined with the additional attributes of care, the packaging design of disposable pushers should meet the following:

- The first visual packaging from the simplified structure, the full package opaque box form, in order to fully protect the inner packaging from the impact of exposure.
- Secondary packaging carries the key stage of the patient's experience and feelings during the medication process, as the final coat of the pusher, the patient's psychological reflection at this moment reaches its highest point, the material is mainly thicker seal, which is conducive to detecting the seal of the unopened package and protecting the airtight environment of the single pusher, and a small amount of inflation should be carried out inside the package to offset the impact of the collision between the inner packaging products.
- The opening is of the tear-open adhesive type, and the arrangement of the opening must suggest the orientation of the built-in products.

As the exploration deepens, various packaging designs are analyzed and synthesized to figure out the packaging characteristics that affect the emotional reflection of patients (Zhuang Y, 2020). The design starts from various aspects such as shape, color and process to maximize the drug information to be conveyed to patients with temperature (Li Y et al. 2020).

PACKAGING DESIGN PRACTICE OF FEMALE MEDICAL PUSHERS

The females are the most vulnerable and need more special care in medication (Wang K, 2013). Based on the previous discussion on the packaging of pushers combined

with the application of caring, we then made a packaging design practice with the example of Kangfute pushers to verify the significance of emotional needs in the packaging of pushers.

Primary packaging.

Based on the principle of human-centered design, the primary packaging of the pusher mainly carries the functions of identification, brand recognition, functional characteristics and product protection of gynecological products. Through the analysis of caring demand theory, the primary outer packaging design of the pusher uses the element of flower base pattern, which symbolizes the exclusive intention of women and also reflects the caring nature of women's health; the color is extracted from the base color of medical products, and the light color area is ivory, which has the image of representing comfort, meekness and softness, leaving behind the cold tone of pure white and giving patients a peaceful and tranquil feeling; the contrast color area is Baby pink (flesh color), this color has a feminine temperament, in line with the proprietary positioning of the Kangfute Women's special pusher crowd, the color feels like a reflection of a quiet, restful and peaceful, and can be used as the main color of the product.

The design is designed by cleverly combining the series of corporate brand image and flower symbolic graphic elements to shape the pharmacological effect of the drug, image to convey the function of the drug, high recognition and sensual temperature at the same time, to help patients to complete the positive use of drugs, as shown in Figure 2.

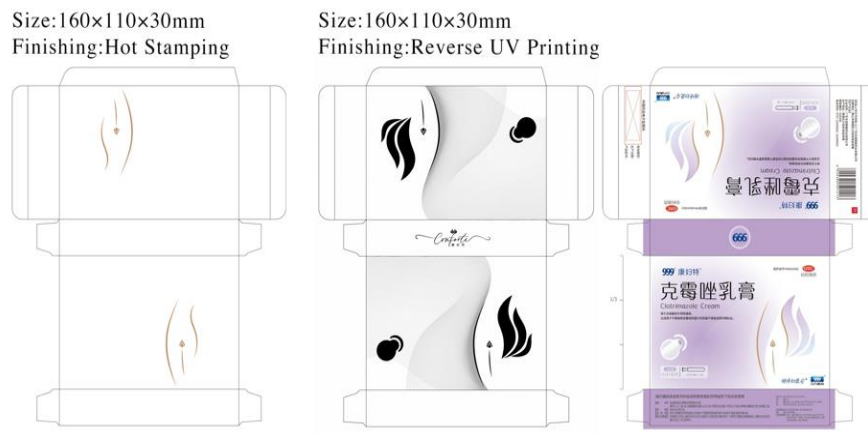


Figure 2. Presentation of package design scheme of Kangfute injector

Secondary packaging

Continuing the harmony of the overall medical product, the secondary packaging of the pushers carries the functions of hygienic preservation and ease of use of the pushers. Combined with the consideration of caring needs, the secondary packaging of Kangfute's medical pushers continues the color palette and auxiliary visual graphics of the primary packaging, with a blossoming flower background and contrasting lotus leaf overlay easily reminding patients of a quiet and peaceful scene, effectively relieving the tension and anxiety of the upcoming contact with the push injector; the packaging is airtight and sealed; the push injector has a contrasting color area on the side of the push head with a tear mark to guide patients to open the push injector. The package is sealed with a contrasting color area on the side of the pusher head with a tear mark to guide the patient in the direction of opening the device; the adhesive is left at the packaging at the tear point for recycling and sealing after the device has been used, so that the patient can experience the uncompromising psychological care brought by the package at every step of the use of the Kangfute's medical pushers.

The design well presents the relationship between the packaging and the product. The shape of the pusher and the secondary packaging form a good integration, and the harmonious look and feel comfort the patient to calm; the static packaging meets the patient's affinity needs with silent words, as shown in Figure 3-4.

Satisfaction Assessment.

In this paper, the Likert scale research method is used as the evaluation method of design satisfaction (Likert R, 1932). The Likert scale is a commonly used and widely used psychological response scale, which has exerted great influence on the social science field since its birth (Likert R et al. 2006). The title of Likert scale is often declarative sentences, and the options are several numbers, which represent some psychologically equidistant words. The most commonly used 5 points isometric scale is: 1, 2, 3, 4 and 5 correspond to a negative or positive meaning in turn, "5" often indicates the strongest positive situation, and "1" indicates the strongest negative situation. By calculating the total score of each question in the scale, we can know the respondents' comprehensive attitude and perception of the survey topic. The Likert scale method has the advantages of simple design, wide application range and high reliability, which is very suitable for evaluation of design satisfaction.

In the survey of design satisfaction in this paper, 10 typical elderly users with different ages and medication experience were selected to evaluate the packaging optimization design of clotrimazole cream dispenser in Comfort from five important dimensions, such as shape, color, cognizable medication information, accessibility, hygiene and portability. See appendix c for the evaluation table, and each dimension is divided

into five grades: very dissatisfied (1), dissatisfied (2), generally satisfied (3), satisfied (4) and very satisfied (5). In order to understand the influence of the scale characteristics on the order effect of options, the average number of words in the topics measured by the scale was selected as a variable, and its relationship with the order effect of options was discussed.

In this paper, by choosing the average number of subjects measured by the Likert scale as a variable, users' satisfaction with drugs in five dimensions is tested, and the statistical results are shown in Table 3. The test results show that the average value of the three dimensions of packaging, information and hygiene is above 4, indicating that the user group is satisfied with the design of the medicine box. Based on the above research strategies and principles, we select the packaging of gynecological medical dispensing drugs from the visual cognitive characteristics of patients, and support the effectiveness of drug packaging design based on visual semantic cognition through the satisfaction survey of design practice. The results show that the patients are more satisfied with the optimized design of "clotrimazole cream" drug pusher package, which proves the effectiveness of the design strategy.

	Tester 1	Tester 2	Tester 3	Tester 4	Tester 5	...	Tester 9	Tester 10	Average
Packaging	4	4	5	5	5	...	5	5	4.4
Color	4	4	3	4	5	...	1	3	3.5
Information	4	5	5	5	4	...	4	5	4.7
Sanitary	5	5	5	5	5	...	5	5	4.9
Portable	4	4	4	3	3	...	2	3	3.3

Table 2: Satisfaction Rating Statistics Table

CONCLUSIONS

Emotional design is the design of humanized design that explores the psychological level of human beings. The rapid development of medical level should not be at the expense of human spiritual needs, scientific and technological inventions should always serve people, to promote the overall development of human health and services. China's female medical products field in the past are behind the developed countries due to the factors of national culture shame psychology, humanitarianism as the highest level of care for human emotions, the group of gynecological patients should not be left behind, this paper on the basis of previous research on the care needs of the pusher, combined with China's modern social conditions, a brief analysis of the emotional packaging design of the pusher, and participate in a representative This paper provides a brief analysis of the emotional packaging design of push injectors based on previous research on the care needs of push injectors and the national conditions of our modern society.

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