

Research on Graphic Elements of Chinese Herbal Medicine Packaging from the Perspective of Consumer Perception: An Empirical Study from China

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Abstract

With inheritance and innovation as the central theme, under the semantics of semiotics, taking Beijing Tongrentang spleen and stomach pills as an example, this paper explores the effective ways of the innovative design of traditional graphic elements and forms a creative construction of packaging design patterns based on deep thinking of traditional Chinese medicine culture. Based on the semantic characteristics of modern semiotics, from the two aspects of "application and analysis of common packaging patterns under the semantics of semiotics" and "summary of innovative ideas of pattern symbols," combined with existing research results and design cases, explore and analyze the innovative ways of integration of traditional Chinese medicine culture and modern design. The results show that traditional Chinese medicine culture is an essential part of China's excellent traditional culture, and the dissemination of traditional Chinese medicine culture is urgent and imperative. Under the thinking of innovative tracing, exploring various ways of designing Chinese herbal medicine packaging patterns can not only allow traditional Chinese medicine culture to subtly enter people's daily lives with the help of packaging as a carrier but also help the traditional Chinese medicine culture with a long history and rich connotations to return to people's sight with a new image and radiate new charm.

Keywords: Chinese Herbal Medicine Packaging Design, Beijing Tong Ren Tang, Pattern Innovation

Introduction

Traditional Chinese medicine (TCM) is an integral component of China's cultural heritage, embodying centuries of medical wisdom and cultural values. In recent years, the efficacy of TCM has garnered increasing attention globally, especially during and after the COVID-19 pandemic, where its role in health preservation was widely recognized (Qi, 2020). However, the quality of TCM packaging design remains inconsistent, with many products failing to effectively represent their cultural and medicinal significance. Packaging, as a visual medium, holds the potential to bridge the gap between TCM's cultural richness and modern consumer expectations, promoting its integration into contemporary lifestyles (Chen et al., 2023; Guo, 2024).

As one of the most intuitive visual communication media for displaying TCM culture, modern packaging design should highlight the concept of "health care" and embody the craftsman spirit of "honesty, helping the world, and saving lives." It should extract the most symbolic visual symbols in TCM culture, convey the most sincere humanistic care to patients, and guide TCM culture to truly integrate into people's lives (Guo, 2024). However, the quality of Chinese herbal medicine packaging design in the market is uneven. Taking pills as an example, some long-standing brands have successfully won the recognition of domestic and foreign consumers with their accurate colors, auspicious graphics, and more traditional packaging forms. They have established a good brand image and are well-known among women and children. For example, Figure 1 shows Ruifuxi Qushi Pills in Hong Kong. The packaging adopts a unified visual design, placing the unique symbolic brand image of the medicine in a designated position, which plays a more influential role in establishing the corporate image (Lin, 2022).



Figure 1 Ruifuxi Qushi Pills in Hong Kong

However, some packaging designs are of poor quality and highly homogenized, and their visual elements can neither effectively explain the origin of the medicine nor reflect the brand spirit, let alone establish the belief in the culture of traditional Chinese medicine. For example, as shown in Figure 2, the Buzhong Yiqi Pills on the left are mainly used to regulate the spleen and stomach, and the Qiju Dihuang Pills on the right are used to nourish the kidney and liver. Although they belong to the same brand, the two medicines are different in efficacy and target different diseases. However, they use highly similar packaging designs. The color patterns, fonts, and other elements of these two designs may greatly mislead consumers' understanding and choice of medicines; as shown in Figure 3, Qiju Dihuang Pills is a traditional Chinese medicine pill for nourishing the liver and kidneys. This medicine contains wolfberry,

chrysanthemum, Rehmannia, etc.; the packaging uses dragon patterns. Dragon patterns are absolutely traditional Chinese patterns that symbolize nobility and auspiciousness and are often associated with Buddhist and Taoist mythological stories, which gives them a more advanced and mysterious color. But they have nothing to do with the medicine itself.

These are medicines that consumers are familiar with and trust. Still, such packaging design has a poor visual experience, quickly leading to monotony and aesthetic boredom, and consumers will inevitably regret it. For products launched by pharmaceutical companies with less prominent names, due to the lack of visual expression in the packaging design, the individual characteristics and functional performance of the medicines are not well-known, and the visual recognition ability is poor. They look more like counterfeit goods, and even if they have magical effects, it is difficult to gain the favor and trust of consumers, making it difficult to open up the market.



Buzhong Yiqi Pills, Qiju Dihuang Pills



Figure 3 Qiju Dihuang Pills

Figure
2

Despite the growing recognition of the role of TCM packaging, there is limited research addressing the integration of traditional cultural elements with modern design innovations. Existing studies often focus on technical aspects or general aesthetics, leaving a gap in understanding how graphical elements specifically influence consumer perception and brand loyalty (Zhao, 2016; Tang & Hu, 2019). To address this gap, this study employs a semiotic perspective to explore how innovative graphical design can enhance the cultural and market value of TCM packaging.

Therefore, this study aims to solve the following problems.

1. What role do graphics play in the design of Chinese herbal medicine packaging?
2. How much do consumers value the visual elements of Chinese herbal medicine packaging?
3. How much do consumers recognize the elements that enhance the value of Chinese herbal medicine packaging patterns?
4. What practical implications does this study have?

By bridging the gap between traditional cultural representation and contemporary design innovation, this study endeavors to provide both theoretical insights and practical guidance for improving TCM packaging. It aims to enable TCM enterprises to effectively communicate their cultural narratives, enhance brand recognition, and cater to the evolving preferences of modern consumers.

The Role of Graphics in the Packaging Design of Traditional Chinese Medicine

Packaging design includes many elements, among which graphics are the most direct and effective visual communication elements and are often used in the packaging appearance to convey corporate brands and product information to consumers (Wang, 2016). In addition to the typical text information on packaging that can intuitively present the company name, brand name, trademark, and product description, graphics have become the clearest and most attractive element on product packaging to convey product information.

In the design of Chinese herbal medicine packaging, graphic symbols are intuitive and easy to understand, demonstrating the profound cultural heritage of Chinese medicine and helping consumers quickly understand the medicine, reducing the cognitive burden and improving the efficiency of consumers' purchasing decisions (Tang & Hu, 2019). Its design does play an essential role on multiple levels.

Cultural Heritage and Artistic Value

Graphic design is one of the ways to directly convey the essence of Chinese medicine culture in Chinese herbal medicine packaging. Select those highly representative Chinese medicine patterns, scenes with special referential meanings or traditional Chinese medicine symbols (such as gourds, Tai Chi, etc.), calligraphy fonts, etc., combined with folk stories or myths and legends, and then combine them with appropriate graphic expressions. It can show the unique charm of Chinese medicine culture, deepen consumers' understanding and cognition of Chinese medicine culture, and promote the inheritance and development of Chinese medicine culture (Zhao, 2016). For example, the image of Chinese medicine characters in Figure 4 and the scene of collecting medicine and consulting are all displays of their medical ethics, which can narrow the distance between Chinese medicine culture and the audience, let the audience feel the warmth and human touch of Chinese medicine culture, make them more at ease, and more easily stimulate their emotional resonance, thereby recognizing the medicine itself.



Figure 4 Packaging design of Lingguishugan Decoction and Sanjie Pills

Enhance the Brand Competitiveness and Product Attractiveness of TCM Enterprises

In modern consumer concepts, the audience pays more and more attention to the aesthetic value and emotional experience of products. The packaging design embodies the brand style and concept, and the unique packaging pattern design is the key to improving the product's attractiveness (Huang, 2018). An easily recognizable and uniquely beautiful pattern can quickly catch the consumer's eye, provide them with visual enjoyment and deeper emotional value, and deepen their memory of the pharmaceutical brand and the product itself,

increasing their willingness to buy (Sun, 2012). For example, Hu Qingyu Tang, a time-honored Chinese medicine brand with a history of 150 years, is a treasure of traditional Chinese medicine culture and an essential embodiment of the Jiangnan sentiment. Its unique historical origins, architectural style, business philosophy, cultural activities, and modern development are all part of the charm and style of Jiangnan. In the packaging design of its Chinese medicine tea series, the designer cleverly spliced and reorganized the scenes and graphic elements related to tea. The color tone is elegant and soft, which not only echoes the product name in terms of pattern content but also presents the gentleness and delicacy of the Jiangnan water town in terms of watercolor painting techniques, forming a solid visual symbol. This pattern design, with a strong sense of series and relatively uniform composition rhythm, can leave a deep impression on consumers while enhancing brand recognition (Yang & Zhang, 2023).



Figure 5 Hu Qing Yu Tang Chinese Medicine Tea Series Packaging Design

Research Design

This study used quantitative research methods (questionnaire survey) to achieve the research objectives. This questionnaire is designed with 13 questions, which are divided into three parts according to the purpose of the questions (Tang & Zhang, 2020). After the questionnaires had been collected, the researchers used the SPSS software analysis platform with Questionnaire Star to summarize the original data, conduct a reliability analysis, and then perform a descriptive statistical analysis. First, reliability analysis is used to detect the consistency and stability of the questionnaire items. The analysis results show that Cronbach's alpha value of this questionnaire is 0.722, which means that the questionnaire is highly reliable. In addition, the percentage and average of descriptive statistics are used to analyze the data, and combined with the subjective conclusions of the respondents, efforts are made to explain the obtained data in detail. In short, this study adopts a target population sampling survey method, aiming to understand the respondents' perception of the design elements of Chinese herbal medicine packaging, especially the pattern elements, by analyzing the data of this respondent group.

Respondent Selection and Basic Information

This questionnaire was precisely distributed to the target population according to the research needs. 240 people participated in the questionnaire survey, covering four age groups from 20 to over 50. The questionnaire was mainly distributed to students, programmers, teachers, and other industries (including entrepreneurs, doctors, sales staff, designers, and catering industry practitioners) who have actively purchased Chinese herbal medicines. Finally, 217 valid questionnaires were collected. These occupational groups, due to the high

pressure of study and work, will have periodic disorders in their daily routines, resulting in physical discomfort, such as gastrointestinal dysfunction, qi deficiency, and insomnia. Compared with other diseases, they think this is a "small problem" and will judge according to the symptoms. Buying medicine to regulate the body by themselves is economical and convenient, and it is out of the inherent trust and dependence on traditional Chinese medicine. Minor problems that do not need to go to the hospital can be completely regulated with Chinese herbal medicine, which is more in line with the cultural traditions and values of the Chinese people.

Through the three questions in the first part of the questionnaire (Table 1), the researchers screened out people who were truly interested in and trusted Chinese herbal medicine culture to continue participating in the targeted questions and answers later. From the presentation of the numerical conclusion, only 5 respondents out of 217 valid questionnaires chose "Even if there is a chance. I will not choose Chinese herbal medicine". They will skip all the questions in the middle and go directly to the final open-ended question session. The remaining 212 respondents completed the following items in order.

Table 1

Basic Information of the Respondents

Variables	Characteristics	N	%
Age	20-30	88	40.55%
	31-40	53	24.42%
	41-50	36	16.59%
	≥51	40	18.43%
Have you ever purchased Chinese herbal medicine for yourself or your family or friends?	Yes	183	84.33%
	No	34	15.67%
If you had the opportunity, would you choose Chinese patent medicine when necessary?	Yes	212	97.7%
	No	5	2.3%

Result and Discussion*The Importance Attached to the Visual Elements of Chinese Herbal Medicine Packaging*

In the second part of the questionnaire, we introduced the survey topic through item 4 to understand the respondents' initial impression of Chinese herbal medicine packaging. This is a multiple-choice question and cannot be included in the SPSS platform of Questionnaire Star for data analysis. Still, multiple-choice questions can better capture and cover the respondents' ideas. The final survey results were within the researchers' expectations. After all, medicines are particular commodities. Consumers are responsible for their health by choosing effective and quality-guaranteed medicines. It is usual for them to consider packaging medicine after these two factors are considered. However, this also provides direction for researchers. Since consumers value the efficacy and brand effect of medicines, unique packaging visual elements can better interpret the pharmacology and medicinal properties of medicines, create a unique and reassuring brand image, cater to consumers, and make Chinese herbal medicine packaging take into account multiple advantages, and

truly become a high-quality medium for the dissemination of Chinese medicine culture and information.

Next, items 5 and 6 attempt to dig deeper into respondents' relevant cognition of Chinese herbal medicines and packaging from their purchasing experience. First, a certain trade-off exists between the packaging appearance and the efficacy of Chinese patent medicines in consumers' evaluation. In general, 34.91% of respondents believe that "the packaging appearance of (most) Chinese herbal medicines on the market is poor, but the efficacy of the medicines is good." It can be seen that the impression of most respondents on Chinese herbal medicines is entirely consistent with the researchers' previous survey conclusions. Secondly, more than half of the respondents said they were not sure which category the medicine in the picture belonged to. This suggests that Chinese herbal medicine products lack precise information in their promotion and packaging to guide consumers' cognition. Both data indicate the shortcomings in the design of Chinese herbal medicine packaging and the adverse effects of this deficiency, such as the inability to accurately convey medicine information and the failure to correctly guide consumers' cognition of Chinese herbal medicines and Chinese herbal medicine culture.

Item 7 is a closed-ended question. It serves as a summary of the second part of the questionnaire and is also a node setting for the entire questionnaire. After answering the previous questions and thinking, it is intended to allow respondents to express their opinions and attitudes on Chinese herbal medicine packaging patterns more clearly and accurately.

In summary, the second part of this questionnaire preliminarily explored the respondents' initial impressions, purchasing experiences, and related cognitions of Chinese herbal medicine packaging based on consumer perception. The results show that although consumers primarily consider the efficacy and brand guarantee of Chinese herbal medicines when choosing Chinese herbal medication, the unique visual elements of packaging play an essential role in interpreting pharmacological properties and enhancing brand image. At the same time, the survey revealed the shortcomings of Chinese herbal medicine packaging in appearance design and information transmission in the market, such as the general evaluation of poor appearance but good efficacy and the high proportion of consumers' feedback on unclear medicine classification information, all pointing to the defects of packaging design and its negative impact on consumer cognition and brand image building. Item 7 is a summary question. Obviously, the respondents attach great importance to the packaging patterns of Chinese herbal medicines, which once again confirms the core position of patterns as visual elements of packaging and provides an important reference for subsequent improvement of design and optimization of information transmission. Table 2 presents the detailed information.

Table 2

Respondents' Initial Understanding of Chinese Herbal Medicine Packaging Patterns

Basic information	Characteristics	N	%
For example, Chinese herbal medicines of the same type are all for regulating the spleen and stomach. What are the fundamental reasons that prompted you to make the choice?	Pharmaceutical manufacturers	127	59.91%
	The outer packaging of medicines	50	23.58%
	Efficacy of medicines	189	89.15%
	Advertising Effect	31	14.62%
What is your impression of most Chinese herbal medicine packaging on the market?	The appearance and efficacy of the medicine are very good	57	26.89%
	The packaging looks good, but the medicine efficacy is poor	66	31.13%
	The packaging is not good, but the medicine is effective	74	34.91%
	The packaging appearance and medicine efficacy are not good	15	7.08%
Without looking up online information or consulting a professional consultant, what is your first reaction to the following picture?	Medicines for regulating the liver	13	6.13%
		76	35.85%
	Medicines for regulating the spleen and stomach	5	2.36%
	Medicines for regulating the stomach and intestines	116	54.72%
	Not sure what kind of medicine it is		
If the graphic details on the medicine packaging can provide you with more relevant information about the medicine, will you pay more attention to it?	Yes	201	94.81%
	No	11	5.19%

The Degree of Recognition of Factors that Enhance the Value of Chinese Herbal Medicine Packaging Patterns

In the last part of the questionnaire, the status of patterns as the primary visual element in the packaging design of Chinese herbal medicines in the minds of consumers was verified. The respondents were asked, "If a Chinese herbal medicine you choose will be optimized on the outer packaging, which of the following elements will improve your favorability in purchasing medicines?" The pattern option ranked first with 141 votes. This shows the importance of visual appeal in consumer purchase decisions and confirms that the researchers' focus on packaging patterns is the most direct and effective way to enhance consumer perception and establish emotional resonance with consumers.

Finally, the researchers could visualize the high-quality Chinese herbal medicine packaging design standards from the respondents' points of view. In Project 10, more than 100 respondents hoped that the Chinese herbal medicine packaging patterns would look good

and reflect the diseases and target audiences of the medicines. In Project 11, when asked about the "characteristics of high-quality Chinese herbal medicine packaging," 125 respondents chose the option of "the visual elements on the packaging are clear and relevant information about the medicines can be obtained from the visual elements." This shows that regardless of whether the respondents have a foundation in design aesthetics, their criteria for judging "good" are relatively consistent. Table 3 shows the detailed information.

Table 3

Respondents' Recognition of the Factors that Enhance the Value of Chinese Herbal Medicine Packaging Patterns

Basic information	Characteristics	N	%
If a Chinese herbal medicine you choose is to be optimized in terms of outer packaging, which of the following improvement elements will increase your favorability towards purchasing the medicine?	Color	132	62.26%
	Pattern	142	66.51%
	Material	119	56.13%
	Shape	70	33.02%
What do you most want the pattern on the packaging of Chinese herbal medicines to be?	It just needs to look good	5	2.36%
	It can show the diseases that the medicine targets	88	41.51%
	It can show the target audience of the medicine	17	8.02%
	All of the above	102	48.11%
What qualities do you think high-quality Chinese herbal medicine packaging design should have?	Can reflect the cultural concept of traditional Chinese medicine	62	29.25%
	Can be distinguished from similar products through visual elements on the packaging	18	8.49%
	The visual elements on the packaging have clear meanings, and relevant information about the medicine can be obtained from the visual elements	125	58.96%
	Other	7	3.3%

Conclusion

This study focuses on the packaging design of Chinese herbal medicine, explores the effective combination between traditional cultural elements and modern design, and emphasizes the crucial role of visual elements in consumer perception and brand image establishment. Through an in-depth investigation of consumers' perceptions and preferences for traditional Chinese medicine packaging, we found that unique patterns and symbols can enhance the product's appeal and effectively convey the efficacy and cultural connotation of the medicine. In addition, research results show that when choosing traditional Chinese medicine, consumers pay attention not only to the effectiveness and brand protection of the medicine

but also to the visual elements of packaging design, which significantly impact their purchasing decisions. Based on this finding, we made several optimization suggestions:

1. Designers can learn from these strategies, such as strengthening drug efficacy information, incorporating cultural elements, improving visual uniqueness, etc., to enhance consumers' brand awareness and purchase intention.
2. Based on consumers' emphasis on visual elements of packaging, companies can enhance market competitiveness and product appeal by optimizing packaging design, thereby promoting sales. Enterprises should consider integrating traditional cultural elements to enhance brand stories and emotional resonance.
3. By effectively conveying cultural connotations in packaging, consumers' loyalty to the brand and image can be enhanced.
4. Establish an effective consumer feedback mechanism, collect consumer opinions on packaging design through questionnaires and surveys, and continuously improve the design to ensure the product can better meet market demand.

In conclusion, this study aims to provide a specific theoretical basis and practical data reference for consumer perception intervention in Chinese herbal medicine packaging pattern design.

Although the interviewees of this questionnaire survey are targeted and are based on questions about common medicine packaging on the market, the differences in age, occupation, understanding ability, aesthetic preferences, expression methods, and participation in answering questions of each interviewee will have a certain impact on the final data analysis results. In subsequent studies, researchers can further investigate Chinese herbal medicine packaging of different brands and categories to explore the differences in consumer perception of pattern elements of common medicine packaging and tonic packaging on the market.

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