

The Role and Challenges of Visual Design in Public Health Information Communication

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Abstract: This paper delves into the core role of visual design in the communication of public health information and the challenges it faces. As a crucial means of information dissemination, visual design can significantly enhance the attractiveness, comprehensibility, and action orientation of public health information through elements such as color, graphics, layout, and typography. However, in practice, visual design also faces challenges such as audience diversity, information accuracy, and integration with the communication environment. To address these challenges, strategies such as customized design based on audience characteristics, strengthening the synergy between visual design and health information, and utilizing new technologies to optimize visual design effects are proposed. The implementation of these strategies can better leverage the role of visual design in public health information communication, thereby enhancing public health awareness and behavior.

Keywords: Visual Design; Public Health; Information Communication; Customized Design; Synergy; New Technology

1. Introduction

Effective communication of public health information is crucial for enhancing public health awareness and promoting healthy behaviors. In today's information explosion era, making public health information stand out, attract public attention, and guide them towards positive health behaviors is a significant challenge for public health communicators. As an important means of information dissemination, visual design, through clever color matching, graphic design, and layout, can make information more vivid and interesting, thereby being more easily accepted and understood by the public. Therefore, exploring the role and challenges of visual design in the

communication of public health information is of great significance for improving the effectiveness of public health information dissemination.

2. Theoretical Foundation

2.1 In-depth Exploration of Visual Design Principles

As an art form that conveys information and expresses creativity through visual elements, the core concept of visual design lies in how to achieve the best communication effect through the ingenious combination and arrangement of elements such as color, graphics, text, and layout^[1]. Color, as the most expressive element in visual design, not only evokes emotional resonance from the audience but also attracts their attention through its unique visual impact; the use of graphics helps the audience understand and remember information more quickly and accurately due to their intuitiveness; text and layout are indispensable parts of visual design, providing more detailed information and guidance, making the entire design work more complete and organized. Visual design also involves choosing appropriate visual elements and design styles according to different communication environments and audience characteristics. In visual design targeting children, brighter, livelier colors and cartoon-like graphics may be used to attract their attention; whereas in design targeting adults, more emphasis might be placed on stable colors and concise graphics.

2.2 Theoretical Framework of Public Health Information Communication

The core goal of public health information communication is to disseminate knowledge, skills, and behavior-changing information related to health to the public through various channels and methods, thereby promoting public health awareness and behavior change. In this process, the effectiveness, targeting, and

attractiveness of information are three crucial elements^[2]. Effectiveness requires the information to be accurate, scientific, and capable of truly reflecting the essence of health issues and providing effective solutions; targeting requires the information to be customized according to specific audience groups, fully considering their cultural background, knowledge level, and living habits to ensure the information can be understood and accepted; attractiveness requires the information to be interesting and novel, capable of arousing public interest and attention, thereby increasing the dissemination effect of the information. Public health information communication also needs to consider how to effectively integrate with different communication environments and media. When disseminating health information on social media, it is necessary to fully utilize the characteristics and advantages of social media, such as interactivity and immediacy, to design more attractive and communicative information content.

2.3 The Integration and Interaction of Visual Design and Public Health Information Communication

The intersection of visual design and public health information communication lies not only in their common goal—to convey health-related information to the public and promote their health awareness and behavior change—but also in their integration and interaction^[3]. Visual design, through its unique color matching, graphic design, and layout, adds more vividness and interest to public health information, making it easier for the public to accept and understand; public health information also needs to leverage the power of visual design to enhance its attractiveness and dissemination effect. In this process, visual design and public health information communication draw on and integrate with each other. Visual design needs to fully understand the characteristics and needs of public health information to provide more appropriate and effective design solutions; public health information also needs to fully utilize the advantages and innovations of visual design to continuously improve its communication effect and impact. This integrative and interactive relationship makes the connection and cooperation between visual design and public health information communication closer in practice.

3. The Role of Visual Design in Public Health Information Communication

3.1 Enhancing Information Attractiveness and Attention

In the process of conveying public health information, attractiveness and attention are key elements to ensure effective dissemination. In today's environment of abundant and complex information, the public's attention has become a scarce resource. If public health information cannot stand out and capture the public's attention, no matter how valuable its content, it will struggle to achieve its intended impact. Visual design can create unique and attractive visual effects through the clever use of colors, shapes, and images, making public health information distinct and more likely to attract public interest. For example, a poster designed to prevent myopia in children can use bright colors and fun cartoon characters to capture children's attention, allowing them to receive and remember this important health information in an enjoyable atmosphere. Through the skillful use of visual design, public health information can better capture the public's eye, increasing exposure and dissemination effectiveness. This enhancement of attractiveness not only aids in widespread information dissemination but also stimulates public interest and discussion about health topics, fostering a more positive health atmosphere.

3.2 Enhancing Information Comprehensibility and Memorability

Public health information often contains professional medical knowledge and complex health recommendations, which may be difficult for the non-medical public to understand. Visual design can simplify the content and use intuitive graphics and symbols to help the public quickly grasp the core points of the information, thereby improving comprehension. By translating complex medical knowledge into easy-to-understand graphics and symbols, the public can more easily grasp the core content of health information, reducing information barriers caused by comprehension difficulties. Visual elements such as icons and illustrations can enhance the vividness and interest of the information, allowing the public to remember the content in a relaxed and enjoyable atmosphere. For instance, when promoting

information about cardiopulmonary resuscitation (CPR), animation demonstrations and simple icon explanations can help the public intuitively understand the steps and key points of CPR, increasing the likelihood of correctly performing CPR in emergencies. This enhancement of information comprehension and memorability through visual design not only helps the public better understand health knowledge but also promotes its application in daily life, thereby improving their health status^[4].

3.3 Promoting Action-Oriented Information

The communication of public health information is not just about providing knowledge; it is more importantly about guiding the public to take positive health actions. Visual design can enhance the action-oriented nature of information by incorporating clear action-oriented visual elements, such as buttons, arrows, and signs, to guide the public to take specific health actions. These visual elements can intuitively tell the public what to do and how to do it, thereby enhancing the action-oriented nature of the information^[5]. For example, a poster promoting vaccination can feature a prominent "Book Now" button, along with a simple and clear booking process and key points, encouraging the public to take immediate action to book their vaccinations. Through such design, visual design not only conveys health information but also promotes changes in public health behavior, making the information more effective and influential. This action-oriented design can effectively stimulate public enthusiasm and participation, prompting them to turn the acquired health knowledge into actual actions, thereby achieving the ultimate goal of public health information dissemination.

4. Challenges Faced by Visual Design in Public Health Information Communication

4.1 Audience Diversity and Differentiated Needs

The diversity of the public, as recipients of public health information, poses a significant challenge for visual design in the communication process. Individuals of different ages, genders, education levels, and living habits exhibit notable differences in receiving and understanding public health information. Older adults may prioritize readability and practicality, requiring appropriately sized fonts and clear

color contrast for easy reading and comprehension. In contrast, younger individuals may prefer fashionable, lively design styles and interactive, innovative information presentation methods to attract their attention and engage their participation. This diversity and differentiated needs of the audience require visual designers to possess in-depth market research abilities and user profiling skills. By meticulously analyzing the characteristics and preferences of different audience groups, designers can develop personalized information communication solutions to ensure that public health information effectively covers and resonates with various audiences.

4.2 Information Accuracy and Risk of Misleading

The accuracy and scientific validity of public health information are its core values and fundamental principles that visual design must uphold in the communication process. However, in practice, designers' lack of expertise in health-related knowledge or negligence during the design process can compromise the accuracy of information transmission, potentially leading to misinformation. More severely, some unscrupulous businesses or organizations may deliberately use visual design techniques to disseminate false health information for improper gains, harming public health and undermining the authority and credibility of public health information. Visual design in public health information communication must establish strict information review mechanisms to ensure the transmitted information is accurate and truly reflects the essence of health issues and scientific solutions. Designers also need to enhance their health literacy, improving their sensitivity to and ability to discern health information to avoid misleading the public and maintain the accuracy and authority of public health information.

4.3 Integration of Design and Communication Environment

The communication environment for public health information is complex and diverse, encompassing traditional offline channels such as posters, brochures, and TV ads, as well as emerging online platforms like social media and mobile applications. Different communication environments have varying requirements for visual design, necessitating designers to fully

consider the characteristics and limitations of each environment during the creation process to achieve harmonious integration between design and environment. For example, when designing posters for public places, designers need to focus on the size, color coordination, and layout to ensure attractiveness and readability in complex environments. In designing public health information for social media, considerations must include different device screen sizes, resolutions, and user habits to ensure the design aligns with social media interface styles while providing a good user experience. This integration of design and communication environment requires visual designers to possess cross-disciplinary knowledge and extensive practical experience, enabling them to adapt flexibly to different communication environments and fully utilize the advantages of each environment to maximize the dissemination effect of public health information.

5. Strategies for Enhancing the Effectiveness of Visual Design in Public Health Information Communication

5.1 Customized Design Based on Audience Characteristics

Designers should conduct in-depth market research to understand the cultural background, living habits, aesthetic preferences, and health information needs of different audience groups. This process can involve various research methods such as questionnaires, in-depth interviews, and focus group discussions to ensure a comprehensive and accurate grasp of the audience's characteristics and needs. For instance, public health information targeting young people can employ more fashionable and lively colors and graphics, combined with popular online language and symbols, to create a youthful and vibrant design style. In contrast, designs for the elderly should focus on readability with larger fonts and higher color contrast, using warm colors and clear graphics to ensure usability and friendliness. Additionally, designers can choose appropriate media and platforms such as social media, television, or posters to convey health information in ways that resonate with different audiences. By collecting and analyzing user feedback, designers can more accurately understand audience psychology and needs, enabling the creation of more tailored visual design solutions.

This customized design strategy not only enhances the attractiveness of public health information but also improves its targeting and effectiveness, ensuring that the information truly reaches and influences the target audience.

5.2 Strengthening the Synergy Between Visual Design and Health Information

There should be a close synergy between visual design and health information to jointly promote the effectiveness of information dissemination. Both parties should collaboratively develop strategies and plans for health information communication to ensure consistency and coherence between visual design and health information. In this process, designers need to fully understand the core content of health information and the needs of the target audience, ensuring that visual design accurately conveys the theme and intent of the information. To achieve this, designers can regularly communicate and discuss with health information communicators to ensure a mutual understanding of the information and the mode of transmission. During the creation process, designers should focus on the organic combination of visual elements and text content, using clever layouts and typography to make information easier to understand and accept. For example, using icons and charts to illustrate health information can enhance readability and comprehensibility. Simultaneously, health information communicators need to fully support designers' work by providing accurate, scientific health information and ensuring timely updates and revisions. Establishing long-term cooperative relationships between health information communicators and designers can facilitate joint monitoring and evaluation of information transmission effectiveness, with adjustments and optimizations made based on feedback. Strengthening the synergy between visual design and health information can create more powerful and vivid information dissemination effects, increasing public attention and understanding of health information. This synergy not only improves the communication effectiveness of public health information but also enhances public trust and acceptance, leading to better health promotion outcomes.

5.3 Utilizing New Technologies to Optimize Visual Design Effects

With continuous technological advancement,

new technologies are constantly emerging and being applied in various fields. In public health information communication, new technologies can bring more possibilities and innovations to visual design. Designers should actively follow the development trends of new technologies and understand their potential and prospects in the field of visual design. Technologies such as virtual reality (VR) and augmented reality (AR) can provide the public with immersive health experiences, allowing them to personally experience the importance of health information in a virtual environment. Exploring the combination of new technologies and visual design can create more novel and interesting visual effects. Artificial intelligence (AI) can be used to analyze audience browsing behavior and preferences, providing personalized visual design solutions for different audience groups. Big data can be utilized to analyze audience feedback and interaction data, optimizing visual design effects and communication strategies. To deeply apply new technologies, designers can establish cooperative relationships with technology developers to jointly develop and innovate new technological tools suitable for public health information communication. These tools can include interactive information display platforms and intelligent information push systems, providing more convenient and efficient ways to access information. Strengthening cooperation and communication with technology developers is crucial for promoting the application and development of new technologies in public health information communication. Utilizing new technologies to optimize visual design effects can offer the public more vivid and engaging ways to receive health information, further enhancing the communication effectiveness of public health information. The application of new technologies also provides broader platforms and channels for the dissemination of public health information, enabling health information to reach a wider audience and have a positive impact.

6. Conclusion

Visual design plays an important role in the

communication of public health information. It can enhance the attractiveness and attention of information, improve comprehensibility and memorability, and promote action-oriented information. In practice, visual design also faces challenges such as audience diversity, information accuracy, and integration with the communication environment. To address these challenges and enhance the effectiveness of public health information communication, strategies such as customized design based on audience characteristics, strengthening the synergy between visual design and health information, and utilizing new technologies to optimize visual design effects can be implemented. The implementation of these strategies can better leverage the role of visual design in public health information communication, enhancing public health awareness and behavior. Additionally, it is crucial to continually monitor the development and application of new technologies, exploring and innovating the application methods and possibilities of visual design in the field of public health.

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