Research on the Design of General Hospital-signage system from the Perspective of Aging

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Abstract. With the development of social economy and the change of population composition in China, vulnerable groups such as the elderly will occupy a certain proportion of the social population in the future. However, at present, their needs are often ignored in the design of domestic hospital-signage system, and how to solve their special needs in medical space is the focus and difficulty of this study. Based on the aging background, this paper analyzes a series of pathfinding problems caused by the neglect of the elderly in the design of the existing hospital-signage system. Combined with the physiological and psychological characteristics of the elderly, this paper puts forward a specific design method to improve the recognition efficiency of the signage system, hoping to help the elderly quickly adapt to the space environment and promote the design and research of the signage system to a more humane point of view.

Keywords: Signage system; General design; The aged

1 Introduction

With the development of the times and the improvement of economic level, people pay more and more attention to health, and at the same time, the requirements for medical environment, medical level and medical service system are getting higher and higher. However, the signage system, as a part of the hospital soft environment, has failed to keep up with the development of the social status quo, and even led to the current situation that it is more and more inconvenient to seek medical treatment. The complex medical environment makes patients feel confused and inconvenient in the process of seeing a doctor, and even delay the time of seeing a doctor, so the construction of hospital-signage system is particularly important.

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2 The necessity and practical significance of integrating General Design

2.1 The necessity of introducing general design into the design of hospital-signage system

Hospital as a special public space environment, in the face of a variety of users, the use and action of all kinds of people often have different characteristics according to their own factors. In addition, most of the clients of the hospital are sick people, so among the users, the frequency and proportion of vulnerable groups are higher than those of other public buildings. And with the gradual aggravation of the problem of population aging in our country in the future, the number of vulnerable users in the medical space will be more and more large in the future. However, at present, most of the signage systems in medical space in China are designed according to the standards of healthy adults, which are not well suitable for the composition needs of people in medical space now and in the future, and lack the application of general design concept.

2.2 The practical significance of introducing General Design into the Design of Hospital-signage system

In the context of an aging society, we should pay attention to the use needs of all groups, minimize the pathfinding problems encountered in the process of seeking medical treatment, and reduce the discrimination and limitations in the design of the signage system. According to the medical process of the outpatient department of the general hospital and the needs of the elderly, this paper puts forward the aging improvement of the existing hospital-signage system to help improve the medical efficiency of users and create a more comfortable environment for medical treatment. In addition, by improving the basic elements of guide, increasing the utilization rate, attractiveness and attention of sign in hospital space from multiple dimensions, we can improve the current situation that users rely too much on oral information, save hospital expenses and improve pathfinding efficiency. Overcome the habit of asking directions.

3 The main problems at present

3.1 sign is not easy to identify and understand.

The recognizability of the design of the signage system depends on whether the combination of the relevant elements in the design form is effective or not. Proper organization of these elements can give users a good overall feeling, but at present, these morphological elements in the hospital-guiding sign do not fully take into account the actual needs of the elderly.

Among them, color, as an indispensable important element in the form of expression, not only fails to divide the space area and strengthen the attractiveness of the sign, but also often ignores the influence of color emotional factors on the mood and space

atmosphere of the elderly. As an important carrier to convey sign information, text does not guarantee that the type and size of fonts are clearly readable and the text arrangement is orderly and easy to read in the design of many hospital-signage systems. The font color of many signs does not have a strong contrast with the background color, which affects the recognition.

3.2 The sign scale is unreasonable.

The physiology, psychology and behavior of the elderly will be restricted by natural laws and environment in varying degrees. Under the background of aging, the old and weak groups are bound to be the mainstream users of hospitals in the future. However, at present, the guiding signs of domestic hospitals mostly adopt the height and scale of normal adults, without taking into account the particularity of the old and weak groups, the scale of guiding signs, and setting height. And the distance between the signs does not meet the needs of the elderly. Inappropriate sign scale will increase the spatial anxiety of the elderly group to a certain extent, thus increase the difficulty of finding the way, and make the medical experience of the elderly group worse.

3.3 Sign settings are incoherent or information is redundant

With the increase of age, the comprehension and memory of the elderly have declined in varying degrees, but most of the signs do not have clear landmarks and identifiability, which can not provide strong memory symbols for the elderly. The guiding sign systems of some hospitals either do not strengthen the relevance setting for the elderly group, repeatedly prompt and guide the elderly group to reach their destination by using various forms of sign in the space, or set up too many signs in the same location, resulting in information redundancy that reduces the efficiency of pathfinding.

4 Optimization Strategy under the background of Aging

4.1 The font size is clear and easy to read, and the sign color contrast is strong.

In medicine, with the decline of the information processing speed of the elderly, it is more difficult for them to identify useful information in complex information. As an important carrier of conveying information, text is the element with the highest accuracy of transmitting information in the signage system. According to the investigation of font recognizability of 116 people over 60 years old, it is found that the structure of boldface characters is clear and the thickness of strokes does not change much, so it is most popular among elderly patients, with a recognition rate of 41%, followed by round larvae, with a recognition rate of 37%. Elderly patients think that the visual feeling brought by round larvae is more friendly. Italics account for 16%, and most elderly patients think that italics are difficult to recognize in the state of movement; because of the excessive difference in thickness between strokes, the lowest degree of recognition

is only 6%. Therefore, the font in the design of signage system is recommended to choose boldface or round larva.

In addition, for the elderly, the first thing to ensure that the sign is clear, easy to identify, in addition to the font, the size of the font also affects the degree of sign. Based on the investigation and analysis of the eyesight of the elderly, Professor Teng Xuerong calculated the appropriate text height in the near, middle and long distance.

Recognition distance	Text height	The specific location of sign
0-2m close distance reading	The Chinese font is larger than 30mm	Wall sign
A medium distance of about 5m	The Chinese font is larger than 65mm	Indoor hanging sign, department house number
A long distance of about 10m	The Chinese font is larger than 250mm	Outdoor distance sign

Fig. 1. The size of the sign text within different recognition distances

Color as the most easily distinguishable element in the guided sign form, in the process of information transmission, the speed of color information dissemination is the fastest. The proper use of color can not only quickly attract people's attention, but also stimulate rich emotional connotations. First of all, the sign should try to enhance the contrast between the color and the background color of the elements such as graphics fonts in the guide, highlight the content information, and make the sign more clear and easy to identify. Secondly, the range of visual sensitivity of the elderly becomes smaller, the photosensitive recognition of other colors becomes weaker, but the sensitivity to yellow and red is still strong, and yellow and red belong to lively and warm tones, so it can effectively mobilize the positive mood of the elderly to seek medical treatment. It is suggested that the hospital-signage system should use the color design scheme with strong contrast and choose red and yellow as the main tone as far as possible.

4.2 Keep sign settings consistent and enhance relevance design

In the signage system, the thinking of "point", "line" and "face" can be used to sort out the relationship between perceptual design and rational layout 4 to maintain the coherence of sign system design.

From the perspective of "point", the premise for guiding signs to be effectively obtained, explained and understood is that they are set at specific decision points, that is, they need to be set at "suitable" locations, such as entrances, intersections, corners and other locations with architectural characteristic information.

From the point of view of "line", the guiding sign should set the flow line of guide layout according to the flow line of people. The sign is designed as a linear configuration form, and after defining the starting point and the end point, a linear guiding sign is set on the line to induce the crowd to reach the end point. For example, by using the expression of the combination of arrows and the name of the department, the sign interval will be distributed and prompted continuously to ensure the consistency of the sign information of the elderly users to the maximum extent.

From the point of view of "face", many scattered details in "point" and "line" are reasonably integrated into a whole, so that when people are in it, they can form the overall guiding information through the local and detailed information in the space. so.

The design of the hospital-signage system should ensure the relevant memory of the guiding information of the users: unify the installation standards of the sign and make the sign information be expressed as a whole, and connect different medical routes in series. To help the elderly get the information more quickly and clearly.

4.3 The mark scale is consistent with the height characteristics of the elderly.

The height setting of the guiding sign affects the recognition ability and psychological feeling of the elderly to a great extent. The height characteristics, viewpoint height and line of sight of the elderly should be fully taken into account when setting the location of the sign. According to the research data, the average eye height of male and female elderly is 1540mm and 1480mm respectively, and the average value of 1500mm can be taken as the reference value when placing the sign. According to the reference data of ergonomics, when people walk, the range of horizontal vision is larger than that of vertical vision, and the visual range becomes narrower due to the slow walking speed caused by the physiological changes of the elderly. Compared with the visual height limit of 800mm--2200mm in ordinary adults, the visual height limit of the elderly is 30mm--1800mm. Therefore, it is recommended that the signage should be set at about 1500mm for the closer distance and about 1800 for the farther one.

Among the elderly, there is also a large proportion of wheelchair elderly. According to the research data, their average viewpoint height is about 1150mm. When setting a general sign, the low position sign or house number of 1200mm can be set to reduce their inconvenience.

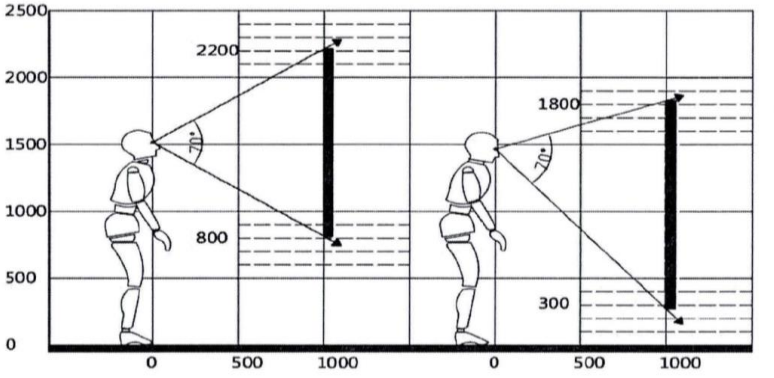

Fig. 2. Sight limit of old people[1]

5 Conclusion

Aging is an unavoidable practical problem in today's society, and the design of hospital-oriented marking system must consider the use of the elderly group, so we must take

[1] Wang Zhaowei. Study on the shape design of guiding sign of apartment for the elderly [J]. Packaging engineering

the physical and psychological needs of the elderly patients as the core and put ourselves in the shoes of the elderly group. In addition, the setting of oriented signs affects the ability of the elderly to adapt to the environment to a great extent. Reasonable and standardized logo design can better respond to the needs of the elderly and help them to move and communicate independently and confidently in the environment. It is hoped that the aging improvement suggestions of the oriented logo in this study can help the elderly to find the destination more conveniently and effectively in the process of seeking medical treatment, and make a certain contribution to the development of aging at the level of the oriented marking system.

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