

Mini Review-Initial Exploration of The Significance of Elderly-Friendliness with the Results of Eye-Tracking Research



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Introduction

With the development of medicine and health, the average life expectancy of population in the world continues to increase. In Asian countries, the average age is increasing year by year, and the demand for various services of the elderly has also increased significantly. The crisis facing the health care industry is not only the increase in users of health care resources and the decrease in the supply of medical care manpower, but also the caregiver is too young to understand the elderly's needs. Many advanced countries in the world are facing an aging society, but research on the care environment that meets the needs of "age-friendliness" is relatively rare. It is not easy to promote many new technologies to promote the quality of life care, especially the acceptance of new technologies. How to understand the real needs of the elderly, and design the future care system to increase the acceptance of the elderly, and provide an analysis report on the status of long-term care is an important way to achieve "elderly friendship".

To practice the goal of "elderly friendship", in addition to the above-mentioned complete care system, how to activate the knowledge and abilities of the elderly and younger both, will be a major challenge in the future world [1]. Heilman KM et al. [2] implied that that most elderly did not like the caregiver since most caregiver just take care of their bodies without psychology or mental. Also, a lot of past researches focused on the health care and physical needs of the elderly, and less involved the psychological needs of the elderly for learning [2].

On the other hand, Tirrito T [3] research on the American senior industry has pointed out that since most senior citizens are economically stable and free time consumers, it can be estimated that the mature market will develop rapidly in the world. The most valued senior industries may be leisure, education, religious beliefs, etc. These two aspects implied a possibility reason which is there are generation gaps between caregivers and care recipients. Furthermore, most care recipients are elderly and most caregivers are younger persons. Based

on the initial ideas, this article aims to share the initial exploration of the significance of elderly-friendliness with the results of eye-tracking research [4]. Eight elderly and eight younger persons participated in this research (Table 1). All of the participants are volunteers and have signed the consent form before joining this research. The average age of elderly is 67.2 years old and the average age of younger persons is 26.5 years old. The numbers of male and female are half. The sample size of this study is not a lot, however, the trend of initial results is significant and worthy of being reported.

Table 1: The information of participants.

Group	Total Number	Male Number	Female Number	Average Age	S.D.
Elder	8	4	4	67.2	5.6
Young	8	4	4	26.5	10.4

In this study, all the elder and young group participants are asked to watch any area of interest in a bathroom in the same computer screen (Figure 1) with wearing the eye tracking technology. Each participant can watch the bathroom for one minutes. After watching the bathroom, the participants will be interviewed to explain what they just saw. The results from eye tracking data show that although the participants perform different eye tracking trajectory, the two groups of participant have different pattern. The elder group focused on floor and walls most (Figure 2), and the young group focused on transparent glass and bath supplies most (Figure 3). The interview data indicated that the elder group participants concerned about whether the floor is non-slip and if the wall have handrails or not. On the other side, the young group participants concerned about the beautiful overall design of the bathroom and the brand of the bath supplies.



Figure 1: A set bathroom image in the same computer screen.

The reference website: is <https://kknews.cc/zh-hk/design/oq2mg5.html>



Figure 2: The eye tracking trajectory pattern of elderly.



Figure 3: The eye tracking trajectory pattern of young persons.

Through eye tracking data, the results reflected that the needs and thoughts are very different from elderly and young persons. If the young persons could not understand the elderly's thoughts or needs, they could not be a suitable caregiver. Recently, a lot of advanced countries towards an aging society and want to build an age friendly environment. This study uses the preliminary research results to draw insights. In addition to letting everyone know the

differences in thinking between young people and the elderly through experiments, it is also recommended that follow-up studies can use eye-tracking research methods to provide more diversified evidence so that the elderly's needs can be understood more clear in the near future.

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