

N. Sato, N. Nakamichi, M. Sakai, H. Uwano. *An analysis of information seeking behavior on the web in novice older adults. Gerontechnology 2008; 7(2):205.* The Internet is rapidly becoming one of the most indispensable tools for improving our quality of life. World Wide Web (WWW) may be the most widely applicable and beneficial computer application for older adults<sup>1</sup>. Despite the increased use of the WWW, accessibility to the WWW in older adults is still highly limited. To facilitate the WWW usage and provide equal opportunity to receive benefits via the WWW for older adults, it is necessary to clarify the navigation problems on the WWW site (i.e., a Web site) in older adults. The purpose of this study was to evaluate the factors that influence navigation performance of a Web site for them.

**Methods** Eighteen older females (60-72yrs) and eighteen younger females (30-41yrs) who had no experience in the Internet participated in this study. Before enrollment in the study, written informed consent was obtained from all participants. They performed three Web navigation tasks on the computer. They were to locate the Web pages for: (i) a list of doctors' names in charge of orthopedics in a hospital (T1), (ii) treatment on hypertension in the TV program related to health (T2), and (iii) a recipe of Japanese food in the cooking Web site (T3). To evaluate navigation performance (total number of pages visited, total number of irrelevant pages visited, and time of task completion), participants' moves on the screen during tasks were logged by WebTracer<sup>2</sup> and also recorded on videotape through a scan converter. To gain information about the participants' cognitive process, their verbal reports during tasks were recorded by voice recorder. **Results and discussion** Table 1 shows the results of navigation performance on each task. There were no significant differences in total number of pages visited and total number of irrelevant pages visited in each task between younger and older adults. Time of task completion was significantly longer in older adults than in younger adults ( $p<0.01$ ). The results of analysis on verbal protocol data suggested that older adults had more difficulty to find appropriate buttons for hyperlink than did younger adults because of unfamiliar words and poor design of pages (for instance, contrast, salience of hyperlink, density, character size and clutter), which led to poor navigation performance. On the basis of the results obtained from this study, design considerations on Web pages for novice older adults will be discussed in detail. **Acknowledgements** This research was supported in part by Grant-in-Aid for Scientific Research (C) (No. 18570225) from Japan Society for the Promotion Science (JSPS), and Nanzan University Pache Research Subsidy I-A-2 for the 2008 academic year.

References

1. White H, McConnel E, Clipp E, Bynum L, Teague C, Navas L, Craven S, Halbrecht H. The Journal of Applied Gerontology 1999;18:358-378  
2. Sakai M, Nakamichi N, Shima K, Nakamura M, Matsumoto K. Information Processing Society of Japan Journal 2003;44:2575-2586

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Table 1. Values of navigation performance (mean ± S.E.)

Parameter	Time	Younger adults	Older adults
Total number of pages visited	T1	3.67 ± 0.50	4.89 ± 1.33
	T2	7.44 ± 1.48	5.61 ± 0.70
	T3	5.83 ± 0.88	7.31 ± 0.83
Total number of irrelevant pages visited	T1	1.17 ± 0.33	1.83 ± 0.88
	T2	1.83 ± 0.94	1.89 ± 0.57
	T3	2.17 ± 0.45	2.44 ± 0.64
Time of task completion (sec)	T1	81.33 ± 15.26	164.44 ± 28.51
	T2	164.17 ± 37.91	424.33 ± 58.65
	T3	159.28 ± 24.83	333.19 ± 39.37