



Feature Article

A path analysis of Internet health information seeking behaviors among older adults

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ABSTRACT

The Internet has emerged as an innovative tool that older adults can use to obtain health-related information. However, the relationships among predictors of Internet health information seeking behaviors (IHISB) in this population are not well understood. To fill this gap, this study examined the direct and indirect pathways of potential predictors of IHISB among older South Korean adults, using the modified Technology Acceptance Model 3. Participants were 300 older South Korean adults who had used the Internet to obtain health information within the past month. Data were collected via a self-report questionnaire and were analyzed through structural equation modeling. Two variables—prior experience and behavioral intention to use—had positive direct effects on IHISB. These findings imply that health care providers promoting IHISB among older adults should consider these individuals' prior experience with the Internet and their willingness to use the Internet as a source of health information.

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Introduction

The Internet has emerged as a new and innovative channel for obtaining health information.¹ This information could be particularly useful in helping older adults maintain good physical, psychological, and social well-being, as such information can enhance self-education on issues such as personal care and illness prevention.^{2–4} Another advantage of the Internet is that it is easily accessible to physically frail older adults who have limited access to community health services.¹

In South Korea, the Internet has great potential as an effective source of health information for older adults, given the country's high ratio of Internet usage and rapidly aging population. Over 77.8% of South Koreans use the Internet.⁵ Furthermore, approximately 82% of Korean households have a computer at home, and 81.6% have Internet access.⁵

Approximately 11% of the total South Korean population consists of adults aged 65 years or older, and most of this population has at least one chronic disease. For such patients, appropriate information is necessary for proper care.⁶ These older adults generally have a positive attitude toward health information obtained over the

Internet and are willing to learn how to use the Internet to obtain this information.⁷ However, actual Internet use to obtain health information is comparatively low among South Korean older adults: only 1.8–28% of them search for health information on the Internet, whereas 65.5% of South Koreans between 20 and 40 years old do so.^{7–9} Thus, it is necessary to encourage South Korean older adults to make use of the abundant health information available on the Internet, and to do so, the factors associated with Internet health information seeking behaviors (IHISB) in this age group need to be identified.

Possible predictors of IHISB among older adults have already been identified, such as sociodemographic characteristics, attitudes toward health information from the Internet, and perceived ease of use.^{7,10} However, the complex relationships among these predictors are not well understood in Korean elderly population. To fill this gap, the present study explored the direct and indirect pathways of potential predictors of older adults' IHISB in Korean elderly population. The predictors were selected based on the modified Technology Acceptance Model 3 (TAM 3) and a literature review.

Theoretical framework

The theoretical basis of this study is the TAM 3.¹¹ The TAM was developed to predict individual adoption and use of new information technology (IT).¹² It is currently the most widely applied model of IT user acceptance and usage; the TAM 3 identifies three

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factors predictive of the use of new IT: behavioral intention to use, perceived usefulness, and perceived ease of use. Behavioral intention affects individual user behavior; it is determined by both perceived usefulness and perceived ease of use. Perceived usefulness is determined by several factors, including subjective norms, the image of the technology, job relevance, output quality, result demonstrability, and perceived ease of use. Perceived ease of use is influenced by computer self-efficacy, perception of external control, computer anxiety, computer playfulness, perceived enjoyment, and objective usability.

In the present study, searching for health information on the Internet can be considered a novel form of IT in the TAM 3 because seeking health information on the Internet is new to many older adults, the target population. In addition, previous studies found that determinants of various TAM factors, such as computer anxiety and computer self-efficacy, were associated with Internet use in this population.^{13,14} Therefore, the TAM 3 was selected for this study. The direct and indirect pathways to IHISB in the study were explored using five multidimensional variables selected on the basis of both the TAM 3 and a literature review: perceived usefulness and associated determinants, perceived ease of use and associated determinants, behavioral intention to use, sociodemographic factors, and attitudes toward Internet health information.

Methods

This descriptive study employed a cross-sectional survey. Using a convenience sampling method, 300 older South Korean Internet users were recruited from the largest senior center in South Korea, located in the center of Seoul.¹⁵ The inclusion criteria were as follows: (a) age 55 years and over (chosen according to the definition outlined by the Korean government agency that provides computer educational programs for older adults) and (b) having used the Internet to gather health information in the past month (an “Internet user” is defined as a person who had used the Internet at least once in the past month⁵).

The sample size necessary for a path analysis is 15 times the number of measured variables.¹⁶ Therefore, because the present study measured 20 variables, 300 participants were needed. Thus, the sample size was deemed sufficient.

Measures

Sociodemographic characteristics

Participants were required to report their age, education, perceived family income, marital status, self-reported health status, and current diseases. They were also asked about the sites where they searched for health information, their prior experience with Internet use (measured in years), and the type of Internet health information they had sought.

Perceived usefulness, perceived ease of use, behavioral intention to use, and IHISB

This study used validated items from previous TAM 3 studies to measure these variables and their determinants, with some modifications. Four items on objective usability and voluntariness and two others (“The senior management of this business has been helpful in the use of the system” and “Having the system is a status symbol in my organization”) were excluded because they were not relevant to IHISB.

The Korean version of the TAM 3 scale, developed using back-translation procedures, consists of 45 items rated on a 7-point Likert scale (1 = strongly disagree; 7 = strongly agree), except for one item pertaining to computer self-efficacy, which is measured on a 10-point Guttman scale.¹¹ IHISB was measured using a single self-reported item: “On average, how much time do you spend on

the Internet seeking health information each day?” In a previous study,¹¹ item loadings for the constructs and internal consistency were greater than .70 at three time points (after initial training and at one and three months post-training). In the current study, Cronbach’s alpha coefficients were greater than .70 for all domains, in accordance with previous findings.¹¹

Attitudes toward Internet health information

To evaluate attitudes toward Internet health information, we administered a scale developed by Jung et al.⁷ It consists of five items measured on a 5-point Likert scale (1 = strongly disagree; 5 = strongly agree), pertaining to the reliability, usefulness, concreteness, accuracy, and freshness of health information obtained from the Internet. The Cronbach’s alpha coefficient for this study was .80.

Data collection

Before data collection was started, approval was obtained from the Institutional Review Board of the organization to which the researchers are affiliated. If eligible older adults expressed interest in participating in this study, the investigator explained the nature of the study and its purpose, procedure, duration, benefits, and risks. If an eligible individual decided to participate in the study, both he/she and the investigator signed and noted the time on approved consent forms. A self-administered questionnaire was given to each participant; a trained research assistant worked with participants who needed assistance completing the questionnaire.

Table 1
Sociodemographic characteristics of the study participants (n = 300).

Characteristics	Mean ± SD or N (%)
Age (years)	70.0 ± 8.7
Education level	
≤High school	197 (65.7)
>High school	103 (34.3)
Marital status	
Married/partnered	217 (72.3)
Single/separated	83 (27.7)
Perceived family economic status ^a	
Very difficult	10 (3.4)
Somewhat difficult	85 (28.3)
Not difficult	205 (68.3)
Perceived health status	
Healthy	178 (59.3)
Unknown	59 (19.7)
Unhealthy	63 (21.0)
Diagnosed with a disease	
Yes ^b	126 (42.0)
No	174 (58.0)
Prior experiences with Internet use (years)	
<1	58 (19.3)
≤1 to <3	80 (26.7)
≤3 to <5	50 (16.7)
≥5	112 (37.3)
Place where the Internet was used to obtain health information ^c	
Home	214 (71.3)
Community senior center	96 (32.0)
Workplace	22 (7.3)
Type of Internet health information sought ^d	
Diseases	162 (54.0)
Treatments	77 (25.7)
Medications	53 (17.7)
Healthy behaviors	106 (35.3)
CAM ^c	54 (18.0)

^a Perceived level of difficulty paying for basics such as clothing, food, and housing.

^b Diagnosed diseases included hypertension, diabetes, and cancer.

^c Multiple responses.

^d CAM = complementary and alternative medicine.

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