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Health literacy

Assessing the influence of health literacy on health information behaviors: A multi-domain skills-based approach☆

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ABSTRACT

Objective: The aim of this study is to investigate the relationship between five domain-specific skills of health literacy: Find Health Information (FHI), Appraise Health Information (AHI), Understand Health Information to act (UHI), Actively Manage One's Health (AMH), and E-health literacy (e-Heals), and health information seeking behaviors and three categories of health outcomes.
Methods: A survey was implemented and data was collected from 1062 college going adults and analyzed using bivariate tests and multiple regression analysis.
Results: Among the five domain-specific Health Literacy skills, AHI and e-Heals were significantly associated with the use of traditional sources and the Internet for healthcare information respectively. Similarly and AMH and e-Heals were significantly associated with the use of traditional sources and the Internet for health lifestyle information respectively. Lastly AHI, AMH and e-Heals were significantly associated with the three categories of outcomes, and AFH was significantly associated with cognitive and instrumental outcomes, but not doctor-patient communication outcomes.
Conclusion: Consumers' ability to use different health sources for both healthcare and health lifestyle information, and the three categories of health outcomes are associated with different domain-specific health literacy skills.
Practice implications: Health literacy initiatives may be improved by focusing on clients to develop domain-specific skills that increase the likelihood of using health information sources and accrue benefits.

1. Introduction

The advancement and diffusion of medical knowledge has led to the realization that medicines alone cannot address health conditions and that certain lifestyle choices may promote them. This realization has shifted the responsibility for health ultimately to oneself through healthy living [1]. Furthermore current trends in the practice of healthcare are increasingly emphasizing involvement from patients in making health related decisions [2] and in managing their own health [3]. However, the ability to manage one's health and take an active part in health-related decisions hinges on among other things, one's health literacy—the ability to obtain health information from a variety of sources, process this information, and act appropriately on health information [4,5].

While most definitions acknowledge that health literacy is more than reading and understanding health information [6], many measures of health literacy that are currently employed in research test only a narrow range of reading and occasionally numeracy skills as a proxy for health literacy [7–10]. On the same lines, studies focusing on the relationship between health literacy and health information seeking behaviors have often employed these instruments to test the association between health literacy and health information seeking behaviors [11]. However, in recent times there has been an increase in the attention being paid to conceptualizing health literacy as a set of independent domain-specific skills [12–14]. If skill-based interventions to teach patients to actively manage their health are to be developed, it is important to obtain insights into the relationship between different domain-specific health literacy skills and individuals' abilities to fulfill an active role in managing their health needs [15]. In this study we use measures that conceptualize health literacy as five domain specific health literacy skills: Ability to Find Health Information (FHI),

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Ability to Appraise Health Information (AHI), Ability to Understand Health Information well enough to act (UHI), Ability to Actively Manage one's Health (AMH) [12], and E-health literacy (e-Heals) [16]. The goal is to investigate how these domain-specific skills are related to health information seeking behaviors, and three distinct categories of health related outcomes. The five domain-specific health literacy skills correspond to the three different types of health literacies: functional, critical, and interactive health literacies [5,17,18], and correlate with the predominant approach of conceptualizing and operationalizing health literacy that is popular with public health promotion and health education strategies in Europe and the Asia-Pacific region [12].

A second issue to consider in research on health information seeking is the type of information that is being sought by a consumer. Drawing on previous research, in our study we distinguish between two categories of health information: healthcare information and health lifestyle information. Healthcare information pertains to content that consumers would seek when faced with an actual medical issue or illness. On the other hand health lifestyle information deals with issues or topics related to promoting or managing specific health or chronic conditions, preventing disease, and less frequently associated with treating specific ailments [19,20]. While findings suggest that consumers' health literacy skills influence their ability to find and evaluate health information from different sources [5,21,22], it is less clear if this relationship varied by specific type of health information sought and the types of information sources used in the process [17,23]. In this study we take both these factors into consideration and formulate our research goals accordingly.

Lastly, an important part of research on health information seeking is to understand how various elements of the search process may be associated with health outcomes. Drawing on previous research [20,24–31] in this study we investigate the relationship between the five domain-specific health literacy skills and three distinct categories of health outcomes: learning outcomes, doctor-patient communication outcomes, and instrumental outcomes. Learning outcomes are defined as the self-reported gains in knowledge about particular health related topics [32,33]. Doctor–patient communication outcomes are defined as the self-reported communication behaviors enacted during the respondents' interaction with their doctors as a result of their information seeking [34]. Instrumental outcomes are defined as self-reported gains in a respondent's knowledge that in turn have influenced their health-related behaviors [35].

1.1. Research questions

The objective of this current study is to gain insights into the extent to which the five domain-specific health literacy skills have differing associations with the use of different types of health information resources—traditional sources and the internet for both healthcare and health lifestyle information, and the relevant health outcomes. Therefore, we formulated the following research questions:

RQ1: To what extent are the respondents' four domain-specific health literacy skills: FHI, AHI, UHI, and AMH associated with their:

RQ1a: Use of traditional health sources for healthcare information?

RQ1b: Use of traditional sources for health lifestyle information?

To investigate the relationship between domain-specific health literacy skills, and the use of Internet for health information we formulated the following two research questions:

RQ2: To what extent are the respondents' five domain-specific health literacy skills: FHI, AHI, UHI, AMH, and e-Heals, associated with their:

RQ2a: Use of the internet for healthcare information?

RQ2b: Use of the internet for health lifestyle information?

To investigate the relationship between domain-specific health literacy skills and health-related outcomes we formulated the following research questions:

RQ3: To what extent are the respondents' five domain-specific health literacy skills: FHI, AHI, UHI, AMH and e-Heals, associated with their:

RQ3a: Learning outcomes?

RQ3b: Doctor–patient communication outcomes?

RQ3c: Instrumental outcomes?

2. Data collection and methods

2.1. Dataset and subjects

To date no dataset currently exists to answer the questions raised in this paper. Thus, we rely on data collected from a sample of ($N = 1062$)[1] college going adults attending a large research university in Singapore. We chose to focus on college going adults for two reasons. First, given that Singapore is a multi-lingual society, the inclusion of people from different demographic segments (specially senior citizens and people from lower socio-economic strata) into the sample would require the implementation of the survey in three different languages (Chinese, Tamil and Malay). At the time when the study was conducted, only an English version of the domain-specific health literacy questionnaire was available and copyright restrictions and the prohibitive transaction costs associated with translating the survey into three different languages and pilot testing them, led us to focus on college age adults who were well conversant in the English. Second, Singapore is a highly wired nation. A report released by the Infocomm and Development Authority of Singapore in 2013 indicated that over 95% of the population between ages 15–35 access internet in some form or the other. In terms of Internet use, over 80% of the people between the age groups 15–35 reported that they use the internet every day. In terms of per-capita consumption, over 60% of the citizens between the ages 15–24 stated that they use internet at least 2 or more hours every day, while 42% of people between the age groups 25–34 reported that they use internet for at least 2 or more hours every day [36]. As in previous studies, focusing on such a wired group of users allows us to control for issues related to basic access and internet literacy skills and emphasize on domain-specific health literacy skills and differentiated use of internet for health [19].

2.2. Data collection

Potential participants were contacted using several email listservs administered by the University, which approximately reache 3000 college adults within the university and invited to take part in the study. Consenting participants were offered the option of either taking the survey online or in hard paper format. By offering the survey in both these formats, we ensured that those

[1] We included a verification question at two different places in the questionnaire to assess whether students were paying attention to the question: "The purpose of this question is to assess if you are paying enough attention to the wording of the questions and responding accordingly. For this question please mark the 'Very often' response." We included the following five possible response options: Never, Rarely, Sometimes, Often, and Very often. We excluded around 1% (11) of the surveys in which respondents failed to choose the "very often" response in either instance [19] Dobransky K, Hargittai E. Inquiring minds acquiring wellness: uses of online and offline sources for health information. Health Communication. 2012;27:331–43. In addition 20 partially completed surveys with incomplete data were also excluded from the final pool of surveys that were included into the analysis.

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