



Online health consultation: Examining uses of an interactive cancer communication tool by low-income women with breast cancer

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ABSTRACT

Purpose: To examine how psychosocial variables predicted use of an online health consultation service among low-income breast cancer patients and in turn how using this service affected these same psychosocial outcomes.

Method: This retrospective study included 231 recently diagnosed, low-income (at or below 250% of the federal poverty level) breast cancer patients provided a free computer with 16 weeks of access to the Internet-based ‘Ask an Expert’ service offered as part of the Comprehensive Health Enhancement Support System (CHESS) “Living with Breast Cancer” program. The use activity included a total of 502 messages submitted to the online health consultation service. The data included five psychosocial variables: information seeking, social support, health self efficacy, participation in health care, and doctor–patient relationship, were collected at both the pre-test and 16-week post-test after using the service. Correlation tests were conducted to examine the relationship between pre- and post-test, and use activity. A multiple regression model was formed for each of five psychosocial variables to examine how use activity of the consultation service was associated with various psychosocial measurements.

Results: In total, 865 distinct consulting queries from 502 messages were identified as measurement of patients’ use activities (3.74 consulting queries per participant). Use activity had significant negative relationships with pre-test scores across all five psychosocial variables. The regression models found significant positive main effects (use activity) associated with three of these psychosocial variables: health self efficacy, participation in health care and doctor–patient relationship. Use activity of the online consultation service did not have significant relationships with the dependent variables of information seeking and perceived social support.

Conclusion: Low-income breast cancer patients sought out information from an online cancer information expert. Patients with more negative perceptions at pre-test tended to use the service more. Greater use of the service was associated with improvement in patients’ perception of health self-efficacy, participation in health care and doctor–patient relationship. Moreover, use of online health consultation appears to level the differences, narrowing the

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gaps between those who were worse and better off at pre-test. These findings suggest that online health consultation can serve as an effective complement to other resources, which help low-income, breast cancer patients feel more confident to participate more actively in their health care, become more actively involved in making decisions about their treatments and enhance the relationship with their doctors.

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1. Introduction

Breast cancer is the most common cancer among women in the United States and the second leading cause of cancer death [1]. Women diagnosed with breast cancer often desire more detailed information about their disease and treatment options and also to be more actively involved in the treatment decision-making process [2,3]. They often consult with other resources beyond their healthcare providers to seek additional information or opinions to confirm the prognosis as well as to feel reassured about their prescribed treatments [4,5]. Patients from underserved populations often experience even greater difficulties in accessing adequate information and decision support from healthcare providers due to limited income or lower education levels [6,7], leading to risks for lower knowledge levels, fewer opportunities to participate in care and less interaction with physicians [8–10].

A complementary form of support for breast cancer patients is a type of Internet-based communication service called “Online Health Consultation,” which serves as an alternative source of medical information for patients to cope with their illness beyond that provided by their clinicians [11–14]. This interactive service allows patients to ask questions related to their health care and receive tailored answers based on personal health characteristics and conditions from Cancer Information Specialists trained to give individualized information and support [15]. While patients use an online health consultation service, an ongoing relationship may be less critical than one between patients and their healthcare providers, as patients may not need to rely as much on online health specialists for ongoing care because patients generally have a primary physician with whom they discuss their ongoing care and their treatment decisions [16]. Through obtaining information from online resources, patients can compensate for their perceptions about the inadequacy of information or validate what they are provided by their health care providers and bring supplemental information to their doctors to facilitate more effective sharing of concepts, terminology, and treatment options, feel more involved in making their health decisions, and possibly enhance the existing relationships with their doctors [16–19]. Given the lack of accessibility to health information and decision support in many cases, online health consultation has promising potential to help low-income women coping with breast cancer.

Examining why patients use online health consultation services as well as whether such services may provide benefits is an essential step for strategically developing effective Internet applications that can improve how low-income patients access health care information, learn about their conditions,

and make health care decisions [20,21]. In pursuit of these aims, this study examined low-income breast cancer patients’ use of an online health consultation service called ‘Ask an Expert’ offered as part of the Comprehensive Health Enhancement Support System (CHESS) “Living with Breast Cancer” program developed by the Center for Health Enhancement Systems Studies [14] at the University of Wisconsin – Madison. Five psychosocial health-related variables including information seeking, social support, health self efficacy, participation in health care, and doctor–patient relationship were measured as predictor and outcome measurements. This study analyzed whether those antecedent psychosocial variables could possibly predict the use of an online health consultation tool and how the use of the service may influence those psychosocial outcomes.

2. Ask an expert

The CHESS ‘Living with Breast Cancer’ program offered a set of computer-facilitated online tools including information, communication, and interactive services to help breast cancer patients cope more effectively with their illness (see Appendix A) [14,22]. As one of the communication services in the CHESS system, the ‘Ask an Expert’ service (Fig. 1) was a confidential, anonymous, asynchronous Web-based messaging tool that could serve as a secondary resource enabling patients to ask questions about their health and receive a personalized answer from the cancer experts separate from information provided by their current clinicians. Once a patient submitted a message to the Ask an Expert service, CHESS staff reviewed the message and assigned it to an expert who replied to it within two business days. The experts were Cancer Information Specialists trained by the National Cancer Institute (NCI) to use well-established medical textbooks (e.g., *Diseases of the Breast*) or computer resources (e.g., the NCI’s Physician Data Query database) to offer individualized responses to patients’ questions. In practice, those Cancer Experts provided objective, scientifically validated information and gave advice regarding what questions patients could ask of their clinicians and what topics they might discuss to better understand their disease and treatments. They explained to patients that they were not clinicians and it was not their role to provide advice on medical treatments or prognoses. The Cancer Experts also encouraged patients to discuss the provided information with their clinicians.

Previous studies have found that online health information and support services for cancer patients could empower more active participation in their healthcare and enhance their sense of competence in obtaining the information they

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