Assessment of Health Information on the Internet: Implication for Health Education

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Presenter Disclosures

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The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose

Background- Internet Usage

- Since 1998, the number of households with Internet use at home increased from 42.1% to almost 62% (about 72 million households) in the U.S. Census Bureau, Current Population Survey, October 2007.
  - The householders who are aged 55 and older: 30% with Internet use at home (about 21 million households)
- The most current estimates show that more than 227 million individuals are accessing the Internet, 74.1% of the U.S. population (Internet World Stats, 2009).

Background-
Seeking Medical Information

- The Internet has become a more frequently used and powerful tool for patients seeking medical information.
  - In the US, 70%+ of patients reported that the health information they found on the internet influenced their treatment decisions (Berland et al., 2001)
  - People prefer to use the internet first when seeking information about cancer, and internet users tend to be young and better educated (Hesse et al., 2006).
  - In the aging society, the internet provides a significant means for dispersing important health education (Burd, Chiu, & Mcnaught, 2004).

Background-
Patients and Providers Relationship

- Significantly change the relationship between patient and provider
- Alter the ways patients and providers communicate
- Help create a consumer base of power in health policy and decision making.
  - Harris Interactive (2003)
    - ✓ About 60% of users agree that health information technology gives them a sense of control and empowerment in managing their health.
    - ✓ Another 63% believe information technology will save them from making unnecessary visits to the doctor).

Background-
Health information on the Internet

- Empirical studies suggest that web users rely on a limited set of websites (Tauscher & Greenberg, 1997).
- Recent research indicates that few health-information seekers have a specific site in mind prior to searching for health information on-line (Pew Internet & American Life Project, 2002).
- Many health related sites provide information that is of poor quality, inaccurate, and inconsistent with established professional guidelines (Berland et al., 2001; Griffiths & Christensen, 2000).

Colorectal Cancer

- **Colorectal Cancer (CRC)**
  - Incidence
  - Mortality

- **Strategies for CRC Screening**
  - Home Fecal Occult Blood Test (FOBT): Annually
  - Flexible Sigmoidoscopy (FSIG): Every 5 years, and/or
  - Colonoscopy (COL): Every 10 years

- **Healthy People 2010 Objectives**
  - Increase FOBT test within the past 2 yrs (Target: 50%)
  - Increase SIG or COL test (Target: 50%)

Problem Statement

- CRC screening rates remain low
- Sensitivity of finding CRC by screening

- **FOBT-** The impact of FOBT in reducing mortality from any cause is uncertain.
- **SIG-** The detection of CRC may be missed by a flexible SIG.
- **COL-** The greatest sensitivity and specificity for the detection of CRC and remarkable reduce both incidence and mortality of CRC

Study Objectives

- Little is known about how health information on the internet influences the decision of people to be screened for colorectal cancer.
  - To evaluate how qualitative and quantitative health information on the internet affects the amount of people getting screened for colorectal cancer.
  - Are better-informed individuals, with reliable and trustworthy health information, enabled to make the sound decision to be tested for CRC?

Theoretical Framework

- Precede-Proceed model
  - This model is based on the principle that long-lasting change always occurs voluntarily (Communication Initiative, 2003; NCI, 2005).
  - It is determined by the individual motivation to become directly involved with the process of change.
  - Individual need to feel empowered to change their quality of life (NCI, 2005).

Theoretical Framework (cont.)

- Process evaluation and behavior impact evaluation by Precede-Proceed model
- Key behavioral indicators are divided in three categories:
  - *Predisposing factors-* the individual's knowledge, attitudes, behavior, and value about the behavior change
  - *Enabling factors-* factors in the environment or community of an individual that facilitate or present obstacles to behavior
  - *Reinforcing factors-* the positive or negative effects of adopting the behavior

Method- Data

- The 2003 Health Information National Trends Survey
  - Developed by the NCI
  - A probability cross-sectional sample design
  - American public's need for, access to, and use of cancer-relevant information
  - Computer-assisted telephone interview
  - October 2002 ~ April 2003
  - N= 6,369 respondents (18+)

- The present study is delimitated to:
  - Male and female adults (55+) who did not have colorectal cancer at the time of survey (n=2,150)

Dependent and Independent Variables

- Dependent variables
  - Compliance with colorectal cancer screening- When did you do your most recent colorectal cancer screening?
    - 1= COL in past 10 years, or sigmoidoscopy in past 5 years, or FOBT in past 2 years;
    - 0= otherwise
- Independent variables
  - Cancer information seeking on the Internet
  - Credibility and reliance of the cancer information on the Internet (Quality oriented information)
  - Predisposing factors
  - Enabling factors
  - Reinforcing factors

Cancer information seeking on the Internet

- Internet usage
  - The most recent time you looked for information on cancer, where did you look for first?
    - 1= Internet;
    - 0= others

Credibility and Reliance of the Cancer Information on the Internet

- Quality oriented information
  - Unsatisfied with the most recent searching experiences on the Internet (4 point scale)
  - Didn’t know where to get wanted information (4 point scale)
  - Took a lot of effort to get the needed cancer information on the Internet (4 point scale)
  - Felt frustrated during your search for the cancer information on the Internet (4 point scale)
  - Not confident regarding receiving information about cancer prevention and early detection by the Internet if you needed (4 point scale)
  - The cancer information found on the Internet was too hard to understand (4 point scale)
  - Getting cancer information from the Internet with strong needs relative to other media (4 point scale)

Predisposing Factors

- Educational level
  - Less than high school, some college, university and more
- Knowledge about CRC and CRC screening
  - Age to begin FOBT, SIG/COL; Frequency of FOBT, SIG/COL
  - Getting checked regularly for colon cancer increases the chances of finding cancer when it's easy to treat
  - Family history of cancer may affect a person’s chances of getting cancer?
- Perceived Risk
  - Absolute risk; Relative risk; Cancer worry
- Cancer History
- Sociodemographic Factors: Age, gender, marital status, race/ethnicity

Enabling Factors

- Medicare health insurance
  - Less than high school
  - Some college
  - University and more
- Availability of healthcare provider
- Level of income

Reinforcing Factors

- Interpersonal trust
  - Listen carefully;
  - Explain understandable;
  - Show respect;
  - Spend enough time with you;
  - Involve you in decision making about your health;
  - Trust the cancer information from the doctor

Cancer related health information on the Internet and colorectal cancer screening: the results of Probit regression

Variables	Estimate	P-value
Cancer information seeking on the Internet		
▪ Internet usage	3.252	< 0.05
Credibility and Reliance of the Cancer Information on the Internet		
▪ Unsatisfied with the most recent searching experiences on the Internet	-0.737	< 0.05
▪ Felt frustrated during your search for the cancer information on the Internet	-0.518	< 0.10
▪ The cancer information found on the Internet was too hard to understand	- 0.470	< 0.10
▪ Getting cancer information from the Internet with strong needs relative to other media	-0.798	< 0.05

Cancer related health information on the Internet and colorectal cancer screening: the results of Probit regression

Variables	Estimate	P-value
Predisposing factors		
▪ Knowledge about CRC and CRC Screening	0.465	< 0.01
▪ Cancer history	1.266	< 0.01
▪ Sociodemographic		
Black	1.072	< 0.05
Hispanic	-1.526	< 0.05
▪ Income	0.227	< 0.10

Conclusions and Implications

- The higher the level of information seeking on the internet, the greater the probability that an individual will participate in CRC screening.
  - Acquiring cancer related health information on the internet increases one's health knowledge, improves their attitude towards their health, and provides the motivation to obtain health-risk information and health services.
- People who are dissatisfied with their most recent research experiences, tend to reduce the CRC screening.
  - Health communicators should pay great attention to how users may interpret their web pages' credibility, specifically the dimensions of depth and trust=expertise.

Conclusions and Implications (cont.)

- People who felt too frustrated to search for information on the Internet were less likely to participate in CRC screening.
  - The better designed information source sites, and easy access to the source of cancer related health information will induce those people to have CRC screening within the recommended time period.
  - Healthy care professionals need to recognize these unsatisfied searching experiences and be ready to provide the websites that could help in cancer information searching on the Internet.

Conclusions and Implications (cont.)

- The fact that the “easy to understand” coefficient was calculated to have a positive estimate, confirms that an individual is more likely to comply with CRC screening if the sources on the internet are easy to understand.
  - Clear, timely, accurate, and audience-specific messages on the web sites would lead to a compliance with CRC screening.