HOW CAN CONSUMERS OF INTERNET HEALTHCARE INFORMATION BE SEGMENTED? A SYSTEMATIC REVIEW

by

Ronald C. Stevenson, MD

A CAPSTONE

Presented to the Department of Medical Informatics
and the
Oregon Health & Science University School of Medicine

in partial fulfillment of the requirements for the degree of

Master of Biomedical Informatics

October 2008

School of Medicine
Oregon Health & Science University

CERTIFICATE OF APPROVAL

This is to certify that the Master's Capstone Project of

Ronald C. Stevenson, MD

"How can consumers of Internet healthcare information be segmented?
A systematic review"

has been approved

Holly Jimison, PhD

TABLE OF CONTENTS

ACKNOWLEDGEMENTS

There are several individuals that played critical roles in my accomplishment of this capstone. Most important is my daughter Emma, who is ultimately the reason I do anything these days. Other family, especially my mother and siblings, have provided moral and other support, without which there would be no capstone. Likewise for some of my friends that I gained through OHSU Department of Medical Informatics, namely Denise, Hari, and Heather. Finally, I want to thank Holly Jimison (my capstone advisor) and Diane Doctor (the department's educational program coordinator) for their vital roles beyond the dutiful. Their tremendous help and understanding throughout the capstone process will be of no surprise to anyone that knows them.

ABSTRACT

Objective

To systematically review the literature on the segmentation of Internet consumer healthcare information seekers and identify variables that characterize these seekers.

Methods

Search strategy: Electronic databases searched included Business Source Premier, CINAHL, Compendex, EBSCOHost, ERIC, LISTA, MEDLINE, PsycINFO, Web of Science, ISI Proceedings, SocINDEX, Sociological Abstracts, Library Literature, PAIS International, and Dissertations and Masters Theses. A manual search of references from citations retrieved from these databases was also performed.

Inclusion criteria: I included all study types that investigated consumers seeking information on the Internet and either compared healthcare information seekers with non-seekers, or compared segments within the healthcare information seeking population.

Outcomes sought in the studies were 1) searching for consumer healthcare information on the Internet, and 2) the frequency of such searches. I also sought articles describing the segmentation of Internet healthcare information seekers.

Data extraction and synthesis: I screened all papers and assessed studies against the selection criteria. The resulting data was compiled and assessed, but no attempt was made to combine the data for statistical analysis.

Results

I identified 18 studies that met inclusion criteria. Most of the included studies were analyses of surveys. Internet healthcare information seekers have been described and compared with non-seekers using a variety of demographic, psychographic,

behavioral, situational, medical, and computer-related characteristics. The importance of the variables found to characterize seekers is assessed.

Conclusion

Internet healthcare information seekers may be segmented using a variety of demographic, geographic, psychographic, behavioral, medical, computer/Internet-related, and situational variables. Demographic variables are the best studied; psychographic and behavioral factors may be more important but are less well studied. There is a lack of segmentation studies and controlled studies on variables describing Internet healthcare information seekers.

INTRODUCTION

Background

A large number of consumers seek health information on the Internet. The latest Harris Interactive poll on this topic found that 150 million US adults have ever gone online for health information and 50% of all US adults have done so in the last month [1]. These healthcare information seekers are, of course, a diverse group - both in terms of their descriptive characteristics, such as demographics, medical status, and lifestyle, and how they seek and use consumer health information (CHI). While the Internet is already a well-used source for health information, one of its more appealing strengths is the potential to provide tailored information to this diverse group of healthcare information seekers.

One way to tailor CHI would be to divide the broad consumer market into smaller segments that characteristically seek and use information in distinct ways. Conceivably, the most effective information and formats could then be presented to the defined segments, thereby tailoring the healthcare information and better satisfying their needs.

As a concrete example of tailoring healthcare information on the Internet, we can look at a potential project between OHSU and a commercial provider of consumer health information. This commercial provider has a vast amount of demographic, medical, and other personal data on the thousands of consumers of its website. Presumably, the provider also has data related to each consumer's access and use of information for health purposes. If the appropriate individual factors were known, this specific data could be gathered and - along with individual web site use data – analyzed (typically by cluster analysis) to partition the consumers into segments which access or use its health

information in characteristic ways. Health information could then be tailored, for example in its depth or method of presentation, to the identified segments for improved satisfaction and/or efficacy. A crucial aspect of the segmentation process is some knowledge of which factors (i.e. variables) are most likely associated with CHI seeking of the consumers.

The division of a consumer market into different homogeneous groups is the business practice known as market segmentation. Consumers within these groups (segments) should behave in similar ways or have similar needs. Typically, consumer markets are segmented based on four general categories of characteristics: [2]

- Demographic (e.g., age, gender, ethnicity, occupation, income, family size, education)
- Geographic (e.g., region, city size, population density (urban vs. rural), climate)
- Psychographic (e.g., values, attitudes, interests, activities)
- Behavioral (e.g., usage rates, benefits sought, brand loyalty, readiness to buy)

In the healthcare market, another potentially useful category would be medical factors, which could include information such as diagnoses, medications, family history, and healthcare plan. For consumer markets involving the Internet, a potentially useful category would be computer and Internet factors, which could include aspects such as computer literacy and Internet experience. Another category not classically included, but which has garnered increasing attention in the last several years, is situational factors,

which could include issues such as the urgency of the information need and the beneficiary of the information.

Studies of consumer segmentation in the realm of healthcare are limited compared to other consumer areas. Within the healthcare arena, published segmentation studies have typically related consumers to health products (other than information) and healthcare delivery. In the area of consumer health information, market segmentation related to non-Internet (and mixed Internet/non-Internet) sources of information has been investigated [3] [4] , but studies addressing strictly online health information are lacking in the published literature. Similar to other Internet products, some of the most extensive and practical research in the Internet healthcare information seeking population has been by consulting groups where the specifics of segmentation analysis are proprietary.

The goal of my capstone was to determine the most useful market segmentation variables for consumers seeking healthcare information on the Internet. To this end, I planned a systematic review of the literature on the segmentation of consumers seeking healthcare information on the Internet. The systematic review was to encompass quantitative and qualitative studies and other articles in both the commercially-published and "gray" literature.

Key Questions and Analytic Framework

The capstone goal specifies the who, where, and what of the literature search; that is, I was interested in healthcare consumers seeking CHI (who), on the Internet (where), for the identification of useful consumer segments (what).

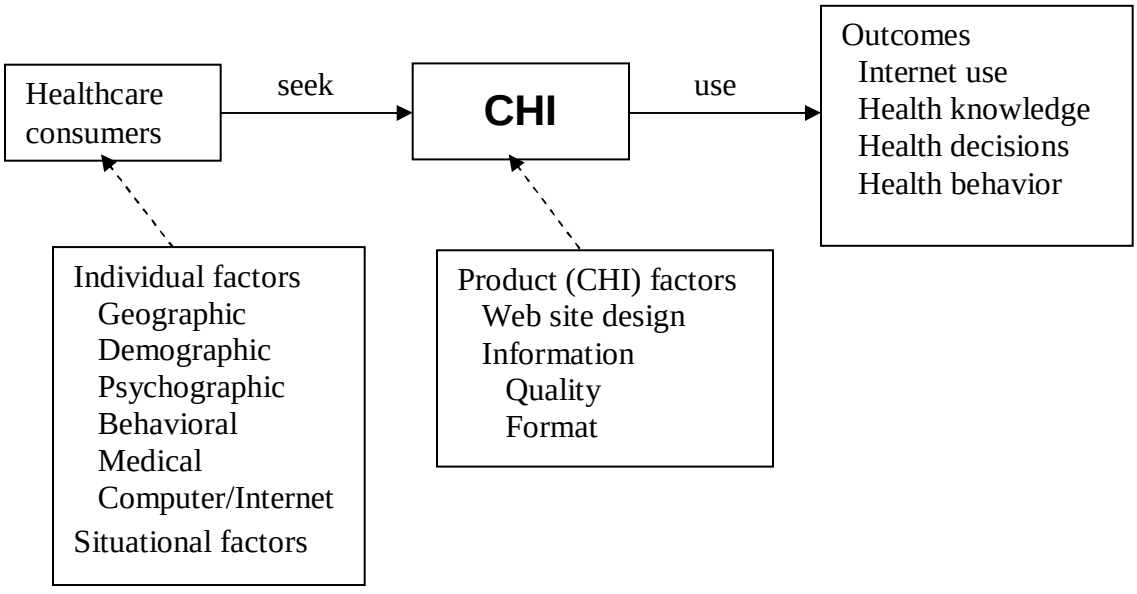
Key questions were developed to plan and carry out the literature search effectively. The primary question identified was:

1) What consumer variables identify Internet CHI seeking patterns?

Other questions felt to be important were:

2) How are CHI consumers segmented?
3) Do specific segments characteristically seek CHI on the Internet?
4) Do specific segments characteristically use the CHI obtained to make healthcare decisions and/or change behavior?

An analytical framework that diagrams the project goal and the key questions is:



Originally, the goals of this capstone included identifying variables associated with all reported outcomes of CHI seeking and its frequency. For example, outcomes related to healthcare knowledge, health decisions, and behavioral change were of particular interest.

The amount of relevant data proved to be too great for clear and timely summation (and thus, completion of this capstone), so the outcomes of interest were reduced to two: the absolute seeking of CHI and the frequency of CHI seeking.

METHODS

Inclusion criteria

A main criterion for inclusion was that the study investigated consumers seeking health information on the Internet. I included all study types; comparative studies were included as long as there were comparisons made between healthcare information seekers and non-healthcare information seekers, or between segments within the Internet healthcare information seeking population. In the end, the only outcomes sought in the comparison studies were health information seeking and seeking frequency. As stated previously, I originally included outcomes other than the absolute occurrence or the frequency of CHI seeking, but the amount and nature of the results proved excessive for a capstone project. Surveys were included as long as correlations were tested and reported between possible segment variables and healthcare information seeking or seeking frequency

Studies that investigate the characteristics of Internet CHI seeking do not always limit the study population to those with computer/Internet access. In order to provide a more comparable group of study populations, I included only studies that looked at Internet users.

Although not an inclusion criterion, I also sought descriptive studies that illustrated the segmentation of Internet healthcare information seekers.

Exclusion criteria

I excluded non-Internet sources of health information. Many sources for health information (e.g., magazines, television, experts, or other computer-based sources such as

information kiosks) are available and have been studied. I was specifically interested in the Internet as a direct source of health information because of its universal availability and its potential for providing customized information. Also, I was strictly interested in the information seeking of healthcare consumers, so I excluded studies that investigated information seeking of providers or other health professionals.

I was most interested in the informational aspects of the Internet, as opposed to its social or communicative features. Thus, I excluded studies and/or results in which CHI seeking was limited to messaging or support groups, even if the activity involved health information. Also, I excluded studies in which the CHI was limited to health insurance or health records. I excluded studies that specifically compared different sources of CHI on the Internet and studies on the quality, credibility, or trust of Internet CHI or websites.

Identification of studies

Studies were identified from multiple electronic databases covering medical, sociological, and business publications, which were chosen in consultation with reference librarians at Oregon Health & Science University and Portland State University. Multiple disciplines were required because of the nature of the capstone goal and key questions. The specific databases searched were Business Source Premier, CINAHL, Compendex, EBSCOHost, ERIC, LISTA, MEDLINE, PsycINFO, Web of Science, ISI Proceedings, SocINDEX, Sociological Abstracts, Library Literature, PAIS International, and Dissertations and Masters Theses.

A MEDLINE search was developed using search terms including Internet, web, online, consumer, health, medical, information, seek, search, sought, segment. A strictly

keyword search strategy was used so that the same search query could be used for all the selected literature databases. The specific keyword query was: (Internet OR web OR online) AND (consumer*) AND (health* OR medical) AND (information) AND (seek* OR search* OR sought OR source* OR segment*), where * represents additional letters or suffixes. This keyword query was made on the titles, abstracts, and subject terms of MEDLINE. The results were compared with those from a more complex MEDLINE search (formulated by an OHSU research librarian) using subjects and keywords. The comparison was done in order to ensure that comparable search results were obtained and that specific vital articles were identified. Searching was not restricted by study type, language, or publication date.

The keyword search developed for MEDLINE was then adapted and used to search the other databases. Depending on the database, the keyword query was made on the abstracts, +/-titles, and +/-subject terms. All searches were conducted in March 2008. The search results are shown in Appendix A.

A manual search of references from citations retrieved from these databases was also performed.

Study selection and data extraction

Citations retrieved by the searches described above were downloaded to individual files using a bibliographic application (EndNote 9.0), then combined to form a single library. Duplicates were removed. I reviewed the abstracts and used the inclusion/exclusion criteria to remove citations that clearly did not meet criteria. Full texts of the remaining citations were sought and appraised by me for final inclusion.

Statistical analysis

I intended to assess the relative contribution of included studies, but the nature of the studies did not allow data pooling or statistical analysis.

RESULTS

Combining the searches from all databases and removing duplicates resulted in 748 citations. Initial application of selection criteria to abstracts resulted in 104 citations (see Appendix B). Full articles were obtained for these citations; application of selection criteria and inclusion of manual search articles resulted in 19 citations.

Of these 19 citations, five were authored by Lorence and Park or Lorence, Park, and Fox [5-9], and all five used data, at least in part, from a single survey (the 2002 Tracking Survey Data of the Pew Internet and American Life Project). Upon careful inspection of these articles, it was discovered that there was replication (and questionable presentation) of pertinent results in two of the articles. In one [6], there were results besides the repetitive results that added to this review, thus this citation was maintained among the included. In another [9], all results pertinent to this review were included in another citation, thus, it was excluded, leaving 18 included citations. For my summary, the repetitive pertinent results are disregarded. Also, some results from the other three studies use overlapping samples from the above-referenced survey; I attempt to account for this in my summary tables and analyses.

The results of the included citations are summarized in Table 1 and Table 2. Table 1 shows the studies in which the outcome was the searching of consumer health information on the Internet; Table 2 shows those in which the outcome related to the frequency of such searching. For each of these tables, I list the study type, relevant sample size and population description, and pertinent results for each study. The results include the outcome or dependent variable (as described by the study authors), the

independent variables for which results are reported, and the significance and (when reported) direction of effect.

The results for each citation in Tables 1 and 2 are also categorized by the statistical tests used, with the results separated by whether they were determined by logistic regression analysis or other statistical testing. Logistic regression analysis is considered to be stronger evidence of the variables' effects on CHI seeking and/or CHI seeking frequency because this type of analysis controls for other variables; it also can clearly show both the direction and magnitude of an effect.

Table 1: Summary of included studies on consumer health information seeking

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Baker (2003) [10] Survey	n = 4764 Respondents from a national research panel of adult (≥ 21 yr) who were Internet users prior to panel inclusion (panel maintained by Knowledge Networks, Menlo Park CA)	Use of Internet for health information or advice in past year	Gender male vs female Age 35-49 yr vs 21-34 yr 50-64 yr vs 21-34 yr 65-74 yr vs 21-34 yr >75 yr vs 21-34 yr Household income $25k – $49,999 vs < $25k $50k - $74,999 vs < $25k > $75k vs < $25k Education 13-16 yr vs < 12 yr ≥ 17 yr vs < 12 yr Residence MSA vs not MSA Health status (self-report) good vs excellent/v. good fair/poor vs exc./v. good	 p < 0.001 (male less likely) NS NS NS p = 0.048 (> 75 yr less likely) NS NS NS p <0.001 (13-16 yr more likely) p <0.001 (≥ 17 yr more likely) NS NS p < 0.001 (fair/poor more likely)
		Logistic regression analysis For the variable of Residence, MSA is Metropolitan Statistical Area		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Berger (2005) [11] Survey	n = 6246 Respondents from a national research panel of adult (≥ 21 yr) Internet users who had one of 15 chronic illnesses (panel maintained by Knowledge Networks, Menlo Park CA) Analyses weighted to match 2001 US population on age, sex, race/ethnicity, education, region, and metropolitan residence.	Use of Internet for CHI in past year	Diagnosis of a stigmatized illness (anxiety, depression, herpes, or urinary incontinence)	$p < 0.01$ (more likely than those diagnosed with a chronic non-stigmatized illness, e.g., arthritis)
		Multivariate logistic regression model. Covariates controlled for included number of chronic illnesses, self-reported health status, age, education, race, Hispanic ethnicity, income, gender, veteran status, rural residence, employment status, marriage status, distance to medical care		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Bessell (2002) [12] Survey	n = 1380 Subset of Internet users in a survey of 3027 South Australians, age 15 yr and older	Use of Internet for CHI in past year	Gender male vs female Age < 35 yr vs 55+ yr 35-54 yr vs 55+ yr Region non-metro vs metropolitan Household income $40k+ vs < $40k Education <15 yr / trade vs >15+ yr In school vs >15+ yr Degree/certificate vs >15+ Employment employed vs not employ'd Marital status married vs never married sep'd/divorced/widowed vs never married	 p = 0.001 (male more likely) p < 0.001 (<35 yr more likely) p < 0.001 (35-54 yr more likely) NS p < 0.001 ($40k+ more likely) NS p = 0.002 (in school more likely) p < 0.001 (degree more likely) NS NS NS
		Logistic regression analysis. $ not specified but probably refers to Australian currency. Years in Education refers to age.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Brodie (2000) [13] Survey	n = 656 (approx) Respondents from the (nationally representative) 2000 National Survey of American Adults and Kids on Technology (by NPR/Kaiser FF/ Kennedy School of Government) who were < 60 yr old and had Internet access at home.	Use of the Internet to get health or medical information (timeframe not clearly specified)	Gender female vs male Income < \$30k vs ≥ \$50k \$30k - \$49,999 vs ≥ \$50k Education ≤12 yr vs > 12 yr Race Black vs White	 p < 0.05 (female more likely) NS NS NS NS
		Statistical test(s) not stated.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Bundorf (2006) [14] Survey	n = 8378 Respondents from a national research panel of Internet users (panel maintained by Knowledge Networks, Menlo Park CA)	Use of the Internet to search for CHI at least once in past year	Gender male vs female Age: 21-30 yr vs 41-50 yr 31-40 yr vs 41-50 yr 51-64 yr vs 41-50 yr 65-74 yr vs 41-50 yr 75+ yr vs 41-50 yr Education > 12 yr vs ≤ 12 yr Income $35-75 k/yr vs < $35 k/yr >$75 k/yr vs $35 k/yr Travel time for care 15-29 min vs < 15 min 30+ min < 15 min Rural Health insurance and presence of chronic illness: Private/Yes vs Private/No Public/No vs Private/No Public/Yes vs Private/No None/No vs Private/No None/Yes vs Private/No	 p ≤ 0.01 (male less likely) NS NS NS p ≤ 0.01 (65-74 yr less likely) p ≤ 0.01 (75+ yr less likely) p ≤ 0.01 (> 12 yr more likely) NS NS NS NS NS p ≤ 0.05 (Private/Yes more likely) NS p ≤ 0.01 (Public/Yes more likely) p ≤ 0.05 (None/No less likely) p ≤ 0.01 (None/Yes more likely)
		Logistic regression analysis. Chronic illness is at least one of HTN, DM, CA, cardiac disease, depression.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Dey (2008) [15] Cross-sectional	n = 333 Women 40+ years old who had a screening mammogram at a breast screening site in Northern Sydney, Australia	Access of Internet CHI (timeframe not clearly specified)	Age Marital status Education Rating of computer skills Behavioural intention Health status	NS NS $p < 0.001$ $p < 0.001$ $p < 0.001$ NS
		Chi-square testing Behavioural intention refers to a plan to access the Internet for CHI if diagnosed with breast CA		
		Access of Internet CHI (timeframe not clearly specified)	Age 65+ yr vs. <65 yr Marital status married vs. single Education higher vs. school Computer skills average vs. exc./good not good/poor vs. exc./good Behavioral intention yes vs. no Health status fair/poor vs. excellent/good	 NS NS NS $p < 0.001$ (average less likely) $p < 0.001$ (not good/poor less likely) $p < 0.001$ (yes more likely) NS
		Logistic regression analysis Behavioural intention refers to a plan to access the Internet for CHI if diagnosed with breast CA		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Dutta-Bergman (2004) [16] Survey	n = 2636 Respondents from the (random, nationally representative) 1999 Porter Novelli HealthStyles Survey Data who were identified as Internet users	Search for Internet CHI (timeframe not clearly specified)	Health consciousness Health information orientation Health beliefs Health activities	NS $p < 0.001$ $p < 0.001$ $p < 0.001$
		Independent sample t-tests Health consciousness based on five items (e.g., "I do everything I can to stay healthy".) Health information orientation based on eight items (e.g., "It's important to me to be informed about health issues.") Health beliefs based on perceived importance of eight items (e.g., "exercising regularly") Health activities based on eight items currently performed (e.g., "eating a diet that is low in fat")		
Goldner (2004) [17] Survey	n = 418 Two samples: 97 undergrad students at private upstate NY college and 321 adults in peds and holistic clinic waiting rooms and two shopping malls all of whom were Internet users	Search for CHI (timeframe not clearly specified)	Gender Education Employment	$p< 0.01$ (larger proportion of women than men) $p < 0.01$ (larger proportion of college-degreed than not college degreed) $p < 0.05$ (larger proportion of employed than not employed)

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
		Chi-square testing Author investigated variables of age, race/ethnicity, marital status, no. of children, ages of children, family income, religion, health status, and medical conditions of self and family but did not specifically report results of these related to CHI seeking. Statements like "non-Hispanic whites more likely" and "less affluent more likely" were made but not backed up by p-values.		
	n = 377	Search for CHI (timeframe not clearly specified)	Gender	$p < 0.05$ (women more likely)
			Age	NS
			Education	NS
			Employment	NS
			Race/ethnicity	NS
			Marital status	NS
			No. of children	NS
			Family income	NS
			Religion	NS
			Health status	NS
			Medical conditions (self)	NS
			Medical conditions (family)	NS
		Logistic regression analysis Except for gender and income, the other results here are assumed from statements that the variable was investigated and significant results were reported.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Lorence (2006) [7] Survey	n = 1494 Respondents from the 2002 Tracking Survey Data of the Pew Internet and American Life Project who were defined as Internet users	CHI seeking (sought CHI at any time)	Gender Age Education level Race/ethnicity Marital status Income level Internet connection Internet experience Internet frequency Health status Health service utilization w/in 1 year Health conditions (self) Health conditions (dependents)	$p < 0.0001$ $p < 0.0001$ NS $p < 0.05$ $p < 0.0001$ NS NS $p < 0.0001$ $p < 0.05$ NS $p < 0.0001$ $p < 0.0001$ NS
		Chi-square testing		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
		CHI seeking (sought CHI at any time)	Gender male vs. female Age 18-29 yr vs. ≥50 yr 30-49 yr vs. ≥50 yr Internet experience ≤1 yr vs. >3 yr 2-3 yr vs. >3 yr Frequency of Internet access daily vs. monthly weekly vs. monthly Health conditions (self) yes vs. no	 <0.0001 (male less likely) p = 0.048 (younger less likely) NS p = .0.0047 (≤ 1 yr less likely) NS p = 0.0016 (daily more likely) p = 0.0279 (weekly more likely) p = 0.0054 (yes more likely)
		Logistic regression analysis		
Lorence (2006) [8] Survey	n = 1316 (2000) n = 1172 (2002) Respondents from the 2000 and 2002 Tracking Survey Data of the Pew Internet and American Life Project who were defined as Internet users.	CHI seeking (sought CHI at any time)	Race African-American vs White (2000) African-American vs White (2002) Hispanic vs White (2000) Hispanic vs White (2002)	 NS NS p < 0.05 (Hispanic less likely) p < 0.05 (Hispanic less likely)
		Logistic regression analysis		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Lorence (2008) [6] Survey	n = 1316 (2000) n = 1172 (2002) Respondents from the 2000 and 2002 Tracking Survey Data of the Pew Internet and American Life Project who were identified as Internet users.	CHI seeking (sought CHI at any time)	Income high vs low (2000) high vs low (2002)	 p < 0.05 (high more likely) p < 0.05 (high more likely)
		Logistic regression analysis		
Lorence (2006) [5] Survey	n = 1216 Respondents from the 2002 Tracking Survey Data of the Pew Internet and American Life Project who reported an income and were identified as Internet users	CHI seeking (sought CHI at any time)	Gender Age 18-29 yr vs ≥ 50 yr 30-49 yr vs ≥ 50 yr Internet experience ≤ 1 yr vs > 3 yr 2-3 yr vs > 3 yr Internet frequency daily vs monthly weekly vs monthly Health condition (self) yes vs no Level of income low vs high medium vs high	p < 0.0001 (male less likely) p = 0.0408 (18-29 yr less likely) NS p = 0.0047 (≤ 1 yr. less likely) NS p = 0.0016 (daily more likely) p = 0.0279 (weekly. more likely) p = 0.0054 (yes more likely) NS NS
		Logistic regression analysis Health condition refers to the presence of a disability, handicap, or chronic disease		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Pena-Purcell (2008) [18] Survey	n = 955 Subset of adult (>18 yr) Hispanic and non-Hispanic white respondents who sought CHI in the past year) from the nationally representative Impact of the Internet and Advertising on Patients and Physicians, 2000-2001 survey.	Looked for Internet CHI in past year	Gender Age Household income Education	NS $p < 0.001$ (t-test) Hispanics seeking CHI younger than non-Hispanic whites seeking CHI $p < 0.05$ (Chi-square) "greater proportion of Hispanics were low-income wage earners than non-Hispanic whites" and "higher proportion of non-Hispanic whites were high-income wage earners than Hispanics" NS (Chi-square)
		Chi-square test for gender, income, and education; t-test for age. Compared Hispanics vs non-Hispanic whites.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Ybarra (2006) [19] Survey	n = 1459 Respondents from Surveying the Digital Future (2004) (USC Annenberg School for the Digital Future), a national, longitudinal telephone survey of Americans, who were current Internet users.	Access of Internet CHI in the previous year	Demographic: gender age race Hispanic income education Psychosocial: social support unhappiness loneliness Internet usage: perception of utility intensity of use location of use duration of use expertise	 $p < 0.001$ $p < 0.001$ $p < 0.001$ $p < 0.05$ $p < 0.001$ $p < 0.001$ $p < 0.001$ $p < 0.001$ $p < 0.001$ $p < 0.001$ NS $p < 0.001$ $p < 0.001$ $p < 0.001$
		Chi-square testing		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
		Access of Internet CHI in the previous year	Gender female vs. male	 p < 0.001 (female more likely)
			Age 20-39 yr vs 12-19 yr 40-59 yr vs 12-19 yr 60-97 yr vs 12-19 yr	 p < 0.001 (20-39 yr more likely) p < 0.001 (40-59 yr more likely) p < 0.001 (60-97 yr more likely)
			Race Black vs. White Other vs. White	 p = 0.001 (Black less likely) NS
			Education (12 possible levels)	p < 0.001 (higher levels more likely)
			Internet expertise fair vs. poor good vs. poor excellent vs. poor	 NS p < 0.001 (good more likely) p < 0.001 (excellent more likely)
		Logistic regression analysis		

Table 2: Summary of included studies on CHI seeking frequency

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Berger (2005) [11] Survey	n = 2134 Respondents from a national research panel of adult (≥ 21 yr) Internet users who had one of 15 chronic illnesses and had searched for CHI on the Internet at least once in the past year (panel maintained by Knowledge Networks, Menlo Park CA) Analyses weighted to match 2001 US population on age, sex, race/ethnicity, education, region, and metropolitan residence.	At least monthly use of the Internet for health information or advice	Diagnosis of a stigmatized illness (anxiety, depression, herpes, or urinary incontinence)	NS
		Logistic regression analysis Covariates controlled for included: number of chronic illnesses, self-reported health status, age, education, race, Hispanic ethnicity, income, gender, veteran status, rural residence, employment status, marriage status, distance to medical care		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Houston (2002) [20] Survey	n = 521 National survey conducted in 2000 by Pew Internet & American Life Project of adult (age 18+ yr) Internet users who reported searching for health information.	Look for Internet CHI about once a week	Self-assessment of global health status good vs excellent fair/poor vs excellent trend (poor → excellent)	 $p < 0.05$ (good more likely) NS $p < 0.05$ (lower health more frequent)
		Logistic regression analysis and chi-squared trend statistics. Health status adjusted for demographic variables.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Lorence (2006) [7] Survey	n = 987 Respondents from the 2002 Tracking Survey Data of the Pew Internet and American Life Project who were identified as Internet health information seekers	Frequency	gender age education level race/ethnicity marital status income level Internet connection Internet experience Internet frequency health status health service utilization w/in 1 yr health conditions (self) health conditions (dependents)	NS (n =980) NS (n = 951) p = 0.0012 (n = 975) NS (n = 947) p = 0.0410 (n = 976) NS (n = 838) NS (n = 877) p = 0.0278 (n = 963) p < 0.0001 (n = 951) NS (n = 977) p = 0.0410 (n = 973) NS (n = 975) p = 0.0100 (n = 977)
		Chi-square testing Same data as two Lorence and Park articles (Lorence and Park (2008) "Group disparities and health information: a study of online access for the underserved" [6] and Lorence and Park (2006) "Measuring dissimilarity in online health activities" [9].		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Lueg (2003) [21] Survey	n = 222 Respondents from the Pew Internet and American life Project 2000 survey who were identified as CHI seekers and were looking for CHI for themselves.	Frequency of CHI seeking	Gender Age Education Income Health status	NS NS NS NS $p < 0.05$ (Poor health more likely)
		Logistic regression analysis		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Millard (2002) [22] Survey	n = 10,069 Randomly selected sample of adults (age 18+ yr) from a subset of the Harris Poll Online panel with chronic medical conditions .	Frequency of CHI seeking during the past year	Gender	p < 0.01 (larger proportion of women searched for Internet CHI 'often' or 'sometimes' vs men)
			Health status	p < 0.01 (larger proportion of 'poor' search for Internet CHI 'often' compared to'fair' or better)
			Satisfaction with healthcare services	p < 0.01 (larger proportion of 'somewhat or very dissatisfied' searched 'often' compared to 'somewhat or very satisfied')
			Satisfaction with health insurance	p < 0.01 (larger proportion of D or F sought Internet CHI more often compared to A or B)
			Difficulty accessing healthcare	p < 0.01 (larger proportion of 'very or extremely difficult' sought 'often' compared to'not too difficult' or 'not at all difficult')
			Health coverage	p < 0.01 (larger proportion of those without health coverage sought Internet CHI 'often' compared to those with)
			Self-managed with lifestyle changes	p < 0.01 (larger proportion of those who did sought CHI 'often' compared to those who did not)
		Statistical test not specified, but likely chi-square testing.		

Study	Population	Outcome	Variable	Significance and/or direction
		Comments		
Taubenheim (1999) [23] Survey	n = 707 A self-selected sample of adults (from 49 states and 23 countries) using the Internet to search for health info on arthritis and musculoskeletal and skin diseases on one of 16 participating websites	Use of Internet to search for health information (number of times in past 2 mo divided into low, medium, and high)	Demographics gender age education level income level Self-rating of computer skills Frequency of computer use at home Self-efficacy score Costs of obtaining info score Reasons for using the Internet score Purpose of the info found Rating of format of information on website Rating of usefulness of Internet information found Rating of newness of Internet information found	 NS NS NS NS NS p = 0.002 p = 0.002 NS NS p = 0.028 p = 0.001 NS NS
		Chi-square testing Self-efficacy refers to ability to find health information on the Internet. Newness of Internet information found refers to newness to the seeker, not chronologic.		

One goal of the capstone was to determine the variables that may be important in describing the Internet CHI seeker and in segmentation of this population. To this end, Table 3 lists variables that were studied in the included citations. The variables have been grouped into the categories that are classically associated with consumer segmentation (demographic, geographic, psychosocial, and behavioral) and other categories mentioned in the literature (and my introduction). The variables in normal font are ones that were found to be significantly related to either Internet CHI seeking or its frequency; those in italics were not found to be significantly associated, either because they were investigated in the included citations, but not significant (noted with *NS*), or found in literature other than the included citations.

Table 3: Study variables

Demographic	Gender Age Race/ethnicity Hispanic Marital status Education Income Employment *Number of children NS* *Religion NS*
Geographic	Region Travel time for care
Psychographic	Health orientation *Health consciousness NS* Health information orientation Health beliefs Health activities Social support Unhappiness Loneliness Perception of utility

Behavioral*	Health service utilization Self-managed with lifestyle changes
Medical	Health status (self-assessment) Health conditions (self) Health conditions (dependents) Stigmatized illness Chronic illness/Health insurance Health coverage Satisfaction with healthcare services Satisfaction with health insurance Difficulty accessing healthcare services
Computer/Internet-related	Computer skills Internet expertise/self-efficacy *Internet connection method NS* Internet/computer location of use Internet experience (duration) Internet frequency *Internet intensity NS* *Costs of obtaining information NS*
Situational	Behavioral intention *Reasons for using Internet NS* Purpose of the information found
Site-dependent	*Rating of CHI usefulness NS* *Rating of CHI newness NS* Rating of CHI format

* Some variables that could be considered to be in this category (Internet frequency, Internet intensity, behavioral intention, and reasons for using the Internet) have been placed in other categories (computer/Internet-related and situational)

For clarity, the pertinent results of the included citations are presented below for each variable and organized by general category (demographic, medical, etc.).

As previously mentioned, the results of the logistic regression analyses are the strongest evidence of an effect on CHI seeking or frequency due to its ability to clearly show both the direction and magnitude of its effect and because this type of analysis controls for other variables. Thus, in the tables for each variable below, the results are not only separated by outcome (CHI seeking vs. CHI seeking frequency), but also whether results were determined using logistic regression or other statistical tests. Some studies reported results on a specific variable from both logistic regression and univariate testing; in most of these cases, only the result from logistic regression analysis is shown (the exception being the variable of employment status).

Demographic factors

Variables that are typically classified as demographic factors were investigated by a majority of the included citations.

Gender

Twelve studies were found that presented results for gender. Most of these showed a significant statistical association with CHI seeking or with seeking frequency, and most used logistic regression analysis to investigate the direction and strength of the association.

Seven of the eight logistic regression investigations showed that females are more likely than males to seek consumer health information on the Internet. The one study that showed males being more likely used a survey of South Australians; certainly cultural differences between countries may account for the obvious difference. Regarding CHI seeking frequency, a relatively small study using logistic regression showed no significant association between gender and seeking frequency, as did two studies using chi-square testing. Conversely, one large survey (not using logistic regression) indicated that females are more likely than males to seek CHI frequently.

Based on the entirety of the results, females are more likely than males to seek consumer health information on the Internet and may seek this information more frequently.

Gender

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
female more likely***	4764	Baker (2003)[10]
*male more likely****	1380	Bessell (2002)[12]
female more likely*	656	Brodie (2000)[13]
female more likely**	8378	Bundorf (2006)[14]
female more likely*	377	Goldner (2004)[17]
female more likely*****	1494 /1216	Lorence (2006)[7]/ Lorence (2006)[5]
female more likely***	1459	Ybarra (2006)[19]
CHI seeking (other stat tests)		
NS	955	Pena-Purcell (2008)[18]
CHI seeking frequency (log regression)		
NS	222	Lueg (2003)[21]
CHI seeking frequency (other stat tests)		
NS	980	Lorence (2006)[7]
female with larger proportion**	10,069	Millard (2002)[22]
NS	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Age

Eleven studies were found that presented results for age. Analysis of the results is complicated by the use of different age groups for comparison. Nonetheless, most of these studies showed a significant statistical association with CHI seeking within at least one age group comparison, but none showed a significant association with seeking frequency.

Eight of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with age. Five logistic regression investigations showed that younger Internet users are more likely than older ones to seek consumer health information on the Internet. Among the three other studies using logistic regression, the two studies that did not show a significant association with age used smaller samples than the others and one study showed that their youngest group is less likely to seek Internet CHI than each of their older groups. Notably, the youngest age group in the latter study was 12-19 years old; thus, it covered younger respondents (including non-adult respondents) than the other studies, which may account for any apparent difference. The Pena-Purcell (2008) study uniquely compared Hispanic and non-Hispanic whites using chi-square testing and found that, as a group, Hispanics seeking Internet CHI were younger than whites. The effect of age alone cannot be discerned from this study.

Regarding CHI seeking frequency, none of the studies showed a significant association between age and seeking frequency.

Based on the entirety of the results, it appears that adults older than 55-65 years and younger than 20 years are less likely to seek CHI on the Internet than those in between.

Those in the 35-50 years old age group may be the most likely of all. There is no evidence that age is significantly associated with CHI seeking frequency.

Age

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (35-49 yr vs 21-34 yr) NS (50-64 yr vs 21-34 yr) NS (65-74 yr vs 21-34 yr) 21-34 yr more likely vs >75 yr*	4764	Baker (2003)[10]
< 35 yr more likely vs 55+ yr*** 35-54 yr more likely vs 55+ yr***	1380	Bessell (2002)[12]
NS (21-30 yr vs 41-50 yr) NS (31-40 yr vs 41-50 yr) NS (51-64 yr vs 41-50 yr) 41-50 yr more likely vs 65-74 yr** 41-50 yr more likely vs 75+ yr**	8378	Bundorf (2006)[14]
NS (65+ yr vs. <65 yr)	415	Dey (2008)[15]
NS	377	Goldner (2004)[17]
18-29 yr more likely vs. ≥50 yr* NS (30-49 yr vs. ≥50 yr)	1494 /1216	Lorence (2006)[7]/ Lorence (2006)[5]
20-39 yr more likely vs 12-19 yr*** 40-59 yr more likely vs 12-19 yr*** 60-97 yr more likely vs 12-19 yr***	1459	Ybarra (2006)[19]
CHI seeking (other stat tests)		
Hispanics younger vs whites***	955	Pena-Purcell (2008)[18]
CHI seeking frequency (log regression)		
NS	222	Lueg (2003)[21]
CHI seeking frequency (other stat tests)		
NS	951	Lorence (2006)[7]
NS	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Race/ethnicity

Five studies were found that presented results for race/ethnicity. Analysis of the results is complicated by the use of different race/ethnicity groups for comparison (and possibly, different race/ethnicity definitions). Nonetheless, three of these studies showed a significant statistical association with CHI seeking within at least one race/ethnicity comparison. The one study reporting results for CHI seeking frequency did not indicate a significant association between race/ethnicity and seeking frequency. Four of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with age.

The largest of the logistic regression investigations showed that, among Internet users, Blacks are more likely than Whites to seek consumer health information on the Internet. The two smallest studies using logistic regression analysis did not show a significant association of race/ethnicity with CHI seeking. One study using logistic regression looked at data from two years (2000 and 2002) and reported results for Blacks vs. Whites and for Hispanics vs. Whites. In this study, Hispanics were more likely than Whites to seek Internet CHI for both years, but there was no such statistical association between Blacks and Whites in the data of either year. Among the two studies using chi-square testing, both showed a significant association between race/ethnicity and CHI seeking, with one specifically looking at Hispanics vs. non-Hispanics.

As discussed for the age variable above, the Pena-Purcell (2008) study uniquely compared Hispanic and non-Hispanic whites using chi-square testing and found that, as a group, Hispanics seeking Internet CHI were younger than whites. The effect of

race/ethnicity alone cannot be discerned from this study, but this result is consistent with a race/ethnicity effect.

Based on the entirety of the results, it appears that race/ethnicity is a demographic variable significantly associated with CHI seeking on the Internet and that Blacks and Hispanics may be less likely to seek CHI on the Internet. There is no evidence that race/ethnicity is significantly associated with CHI seeking frequency.

Race/ethnicity

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (Black vs White)	656	Brodie (2000)[13]
NS	377	Goldner (2004)[17]
NS (African-American vs White) Hispanic less likely vs. White*	1316	Lorence (2006)[8] (2000 data)
NS (African-American vs. White) Hispanic less likely vs. White*	1172	Lorence (2006)[8] (2002 data)
Black less likely vs White***	1459	Ybarra (2006)[19]
NS (Other vs White)		
CHI seeking (other stat tests)		
Race/ethnicity*	1494	Lorence (2006) [7]
Hispanic***	1459	Ybarra (2006)[19]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
NS	947	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Marital status

Four studies were found that presented results for marital status. Analysis of the results is complicated by the use of different marital status groups for comparison. Three

of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with marital status, yet none of these indicated a significant association with this variable. One study using chi-square testing found that a significant association exists between marital status and both CHI seeking and its frequency.

Based on the entirety of the results, it appears that marital status may be associated with CHI seeking on the Internet and with the frequency of CHI seeking.

Marital status

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (married vs never married)	1380	Bessell (2002)[12]
NS (sep'd/divorced/widowed vs never married)		
NS (married vs single)	415	Dey (2008)[15]
NS (marital status)	377	Goldner (2004)[17]
CHI seeking (other stat tests)		
marital status****	1494	Lorence (2006)[7]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
marital status*	975	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Education

Eleven studies were found that presented results for education. Analysis of the results is complicated by the use of different education groups for comparison. Nonetheless, most of these studies showed a significant statistical association (within at least one group comparison) with either CHI seeking or seeking frequency.

Seven of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with education level. Four of these logistic regression investigations showed that more educated Internet users are more likely than less educated ones to seek consumer health information on the Internet. The three studies using logistic regression analysis that did not show a significant association with education used smaller samples than the others. One study using a survey of South Australians included respondents as young as 15 years old and showed that their most educated group, as well as those still in school, are more likely to seek Internet CHI than (what could be considered) one of their less educated group. Neither of the two studies using chi-square testing showed a significant association between education level and Internet CHI seeking, although one of them specifically looked at Hispanics vs. non-Hispanic whites.

Regarding CHI seeking frequency, the largest of the three studies showed a significant association between education level and seeking frequency, whereas two of the three (including the one that used logistic regression analysis) showed no such association.

Based on the entirety of the results, it appears that education level is a demographic variable that is significantly associated with CHI seeking on the Internet, and possibly with its frequency. Those Internet users with higher levels of education are more likely than those with only a high school education (or less) to seek Internet CHI.

Education

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
13-16 yr more likely vs < 12 yr***	4764	Baker (2003)[10]
≥ 17 yr more likely vs < 12 yr***		
NS (<15 yr / trade vs >15+ yr)	1380	Bessell (2002)[12]
In school more likely vs >15+ yr**		
Degree/certificate more likely vs >15+ yr***		
NS (> 12 yr vs ≤ 12 yr)	656	Brodie (2000)[13]
> 12 yr more likely vs ≤ 12 yr**	8378	Bundorf (2006)[14]
NS (higher vs. school)	415	Dey (2008)[15]
NS	377	Goldner (2004)[17]
Higher levels more likely***	1459	Ybarra (2006)[19]
CHI seeking (other stat tests)		
NS	1494	Lorence (2006)[7]
NS	955	Pena-Purcell (2008)[18]
CHI seeking frequency (log regression)		
NS	222	Lueg (2003)[21]
CHI seeking frequency (other stat tests)		
Education level**	975	Lorence (2006)[7]
NS	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

NB The number of years refers to school years, except for the Bessell study in which the years refer to the age of the survey respondent.

Income

Twelve studies were found that presented results for income. Analysis of the results is complicated by the use of different income level groups for comparison. Nonetheless, most of these studies did not show a significant statistical association (within at least one group comparison) with either CHI seeking or seeking frequency.

Seven of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with income level. Five of these logistic regression investigations, including the two largest studies, did not show a significant association between income level and Internet CHI seeking; two of these logistic regression investigations did show a significant association. The two with significant associations both indicated that their highest income group was more likely to seek Internet CHI compared to the lower income group. Of note, one of the studies indicating a significant association used data from the same study as one of the studies finding no significant association; this discrepancy could not be easily explained based on the data presented. Two of three studies reporting only chi-square testing showed a significant association between income level and Internet CHI seeking, although one of them specifically looked at Hispanics vs. non-Hispanic whites.

Regarding CHI seeking frequency, none of the three studies showed a significant association between income level and seeking frequency.

Based on the entirety of the results, it appears that income level is a demographic variable that may be significantly associated with CHI seeking on the Internet, although the results are inconsistent. The studies that do show a statistically-significant association (and in which direction is clear) indicate that higher income earners are more likely than lower income earners to seek Internet CHI. There does not appear to be a significant association of income level with the frequency of Internet CHI seeking.

Income

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS ($25k – $49,999 vs < $25k) NS ($50k - $74,999 vs < $25k) NS (>$75k vs < $25k)	4764	Baker (2003)[10]
$40k+ vs < $40k***	1380	Bessell (2002)[12]
NS (<$30k vs ≥ $50k) NS ($30k - $49,999 vs ≥ $50k)	656	Brodie (2000)[13]
NS ($35-75 k/yr vs < $35 k/yr) NS (>$75 k/yr vs $35 k/yr)	8378	Bundorf (2006)[14]
NS (family income)	377	Goldner (2004)[17]
high income more likely vs low*	1316	Lorence (2008)[6] (2000 data)
high income more likely vs low*	1172	Lorence (2008)[6] (2002 data)
NS (low vs high) NS (medium vs high)	1216	Lorence (2006)[5] (2002 data)
CHI seeking (other stat tests)		
NS	1494	Lorence (2006)[7] (2002 data)
Hispanics lower earners vs whites*	955	Pena-Purcell (2008)[18]
Income***	1459	Ybarra (2006)[19]
CHI seeking frequency (log regression)		
NS	222	Lueg (2003)[21]
CHI seeking frequency (other stat tests)		
NS	838	Lorence (2006)[7] (2002 data)
NS	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Employment status

Two studies were found that specifically presented results for employment status. Neither logistic regression analysis indicated a significant association even though one of these studies did initially find an association based on chi-square testing. No studies

were found that investigated the possible association between employment status and CHI seeking frequency.

Employment status has not been well studied. Based on two studies, employment status may be associated with CHI seeking on the Internet, although its effect may be negated when controlling for other variables.

Employment

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (employed vs not employed)	1380	Bessell (2002)[12]
NS (employment)	377	Goldner (2004)[17]
CHI seeking (other stat tests)		
*larger proportion of employed than not employed**	418	Goldner (2004)[17]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Other demographic variables

One study was found that presented results for the variables of religion and number of children. Its logistic regression analysis did not indicate a significant association between CHI seeking and either variable, and the study did not investigate CHI seeking frequency.

Other demographic factors have not been well studied. Based on one study, neither religion nor the number of children appears to be associated with CHI seeking on the Internet.

Other demographics

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) NS (Religion) NS (Number of children) **CHI seeking** (other stat tests) **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	377	Goldner (2004)[17]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Geographic factors

Variables that are can be classified as geographic factors were found to be rarely investigated. Two such variables related to residence were found in the included citations: region of residence and travel time for care. The results are shown below. Based on these results, residence does not appear to be associated with CHI seeking on the Internet, neither with respect to the region type nor travel time for care.

Residence: region type

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) NS (MSA vs not MSA) NS (non-metro vs metropolitan area) NS (rural vs urban) **CHI seeking** (other stat tests) **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	 4764 1380 8378	 Baker (2003)[10] Bessell (2002)[12] Bundorf (2006)[14]

Residence: travel time for care

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) NS (15-29 min vs < 15 min) NS (30+ min < 15 min) **CHI seeking** (other stat tests) **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	8378	Bundorf (2006)[14]

Psychographic factors

Variables that are classified as psychographic factors were uncommonly investigated. Psychographic factors are the individual characteristics that describe one's values, attitudes, interests, and activities. One study looked at four such variables that I collectively call "health orientation". Another study looked at three variables that I collectively call "psychosocial condition", as well as a rating of the seekers' perception of Internet CHI utility. The results are shown below. Health orientation, specifically one's health information orientation, health beliefs, and health activities (but not health consciousness), appears to be associated with the seeking of Internet CHI. Likewise, psychosocial condition (specifically one's social support, unhappiness, and loneliness) and the perception of CHI utility may be associated with the seeking of Internet CHI.

Based on these results, variables related to health orientation, psychosocial condition, and perception of CHI utility may be associated with CHI seeking on the Internet.

Health orientation

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) **CHI seeking** (other stat tests) NS (health consciousness) Health information orientation*** Health beliefs*** Health activities*** **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	2636	Dutta-Bergman (2004)[16]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Psychosocial condition

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) **CHI seeking** (other stat tests) Social support*** Unhappiness*** Loneliness*** **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	1459	Ybarra (2006)[19]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Perception of CHI utility

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) **CHI seeking** (other stat tests) Perception of utility*** **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests)	1459	Ybarra (2006)[19]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Behavioral factors

Health service utilization

One study investigated the possible association of the Internet CHI seeking and the frequency of CHI seeking with one's utilization of health services. Using chi-square testing, it found a significant association with both. Based on this study, health service utilization may be associated with the seeking of Internet CHI and its frequency

Health service utilization

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests) health service utilization w/in 1 year***	1494	Lorence (2006)[7]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests) health service utilization w/in 1 year*	973	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Self-managed with lifestyle changes

One study investigated the possible association of the frequency of CHI seeking with whether or not one uses lifestyle changes to self-manage their health condition. It found a significant association. Based on this study, whether one self-manages with lifestyle changes may be associated with the frequency of seeking Internet CHI.

Self-managed with lifestyle changes

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
More of those who self-managed with lifestyle changes sought CHI often vs those who did not**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Medical factors

Health status

Seven studies were found that presented results for self-assessed health status. Most of these studies showed a significant statistical association with either CHI seeking or seeking frequency.

Three of the studies on CHI seeking used logistic regression analysis to investigate the direction and strength of the possible association with health status. The largest of these showed that those in poor or fair health (but not those in good health) were more likely than those in very good or excellent health. The other two smaller studies, each with smaller samples by an order of magnitude, did not show a statistically-significant association. The single study reporting only chi-square testing showed a significant association between income level and Internet CHI seeking.

Regarding CHI seeking frequency, two studies used logistic regression analysis and both showed a significant association between health status and seeking frequency. One study showed that those in good health (but not in poor or fair health) were more

likely than those in excellent health to seek Internet CHI frequently. The other study showed that those in poor health were more likely to seek CHI frequently (but the comparison group was not clearly identified). Three studies used chi-square testing for an association between health status and frequency. Two studies showed a significant association, while one did not. Of note, the one with the largest sample size used chi-square trend analysis to show that those in poor health searched for Internet CHI often compared to those in better health.

Based on the entirety of the results, it appears that health status is significantly associated with both CHI seeking on the Internet and the frequency of seeking. Although there is some inconsistency among the results, the studies demonstrate a tendency for those in poorer health to search for Internet CHI absolutely and with greater frequency compared to those in better health.

Health status

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (good vs excellent/v. good)	4764	Baker (2003)[10]
fair/poor more likely vs exc./v good ***		
NS (fair/poor vs. excellent/good)	415	Dey (2008)[15]
NS	377	Goldner (2004)[17]
CHI seeking (other stat tests)		
NS	1494	Lorence (2006)[7]
CHI seeking frequency (log regression)		
good more likely vs excellent*	521	Houston (2002)[20]
NS (fair/poor vs excellent)		
poor health more likely	222	Lueg (2003)[21]
CHI seeking frequency (other stat tests)		
trend (poor → excellent)*	521	Houston (2002)[20]
NS	977	Lorence (2006)[7]
more of those in 'poor' health search 'often' compared to those in 'fair' or better health**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Health conditions (self)

Three studies were found that presented results for health conditions (self). All three on CHI seeking used logistic regression analysis, although two of them used the same survey and are considered together. These both indicated that Internet users with a health condition (chronic illness or disability) were more likely than those without to seek CHI. The other study was smaller and did not show a significant association. Regarding CHI seeking frequency, only one study investigated a possible association with health conditions (self) but did not reveal a significant association.

Based on these results, it appears that having a health condition may be associated with the seeking of Internet CHI but not its frequency. It appears that those with a health condition may be more likely to seek CHI compared to those without.

Health conditions (self)

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS	377	Goldner (2004)[17]
health conditions (self) more likely vs no**	1494 /1216	Lorence (2006)[7]/ Lorence (2006)[5]
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
NS	975	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Health conditions (dependent)

Three studies were found that presented results for health conditions (dependent). Neither study on CHI seeking showed a significant association with this variable. The one study investigating this variable and CHI seeking frequency showed a significant association using chi-square testing. Based on these results, having a family member with a health condition may be associated with the frequency of Internet CHI seeking, but not whether or not it is done.

Health conditions (dependents)

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS	377	Goldner (2004)[17]
CHI seeking (other stat tests)		
NS	1494	Lorence (2006)[7]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
health condition (dependents)**	977	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Stigmatized illness

One study investigated the possible association of CHI seeking and seeking frequency with having a stigmatized illness. Using logistic regression, it found a significant association with the seeking of Internet CHI, but not its frequency. Based on this study, the diagnosis of a stigmatized illness is probably associated with seeking CHI on the Internet, but not the frequency of seeking - at least in relation to other chronic, but non-stigmatized illnesses. It appears that those with a stigmatized illness (anxiety, depression, herpes, or urinary incontinence) are more likely seek CHI compared to those a non-stigmatized illness.

Stigmatized illness

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
Those with a stigmatized illness more likely vs those with a chronic non-stigmatized illness **	6246	Berger (2005)[11]
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
NS (Diagnosis of a stigmatized illness)	2134	Berger (2005)[11]
CHI seeking frequency (other stat tests)		

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Combined chronic illness and health insurance

One study investigated the possible association of CHI seeking with the various combinations of chronic illness and health insurance. Using logistic regression, it found a significant association with the seeking of Internet CHI. Based on this study, the combination of health insurance type and presence of a chronic illness may be associated with the seeking of Internet CHI. It appears that those having a chronic illness and any type of health insurance are more likely to seek CHI compared to those with private insurance and no chronic illness. Also, it appears that those having no health insurance, whether or not they have a chronic illness, are more likely to seek CHI compared to those with private insurance and no chronic illness.

Combined chronic illness and health insurance

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) Health insurance/Chronic illness Private/Yes more likely vs Private/No* NS (Public/No vs Private/No) Public/Yes more likely vs Private/No** None/No less likely vs Private/No* None/Yes more likely vs Private/No**	8378	Bundorf (2006)[14]
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Health coverage

One study investigated the possible association of the frequency of CHI seeking with one's health coverage and found a significant association. Based on this study, health coverage may be associated with the frequency of seeking of Internet CHI.

Health coverage

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests) More of those without health coverage search often vs those with coverage**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Satisfaction with healthcare services and with health insurance

One study investigated the possible association of the frequency of CHI seeking with one's satisfaction with healthcare services and with health insurance. It found a significant association with both. Based on this study, both satisfaction with healthcare services and satisfaction with health insurance may be associated with the frequency of seeking Internet CHI.

Satisfaction with healthcare services

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
More of those who were dissatisfied sought CHI often vs those who were satisfied**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Satisfaction with health insurance

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
More of those who were dissatisfied sought CHI often vs those who were satisfied**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Difficulty accessing healthcare services

One study investigated the possible association of the frequency of CHI seeking with one's difficulty accessing healthcare services and found a significant association. Based on this study, difficulty accessing healthcare services may be associated with the frequency of seeking Internet CHI.

Difficulty accessing healthcare services

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
More of those who found accessing health services difficult sought CHI often vs those who did not**	10,069	Millard (2002)[22]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Computer and Internet related factors

Computer skills

Two studies were found that investigated results a possible association with (self-assessed) computer skills and CHI seeking or seeking frequency. One study used logistic regression and showed that those having computer skills that are good or excellent are more likely to seek Internet CHI compared to those having either average skills and to those having poor or not good skills. The second study used chi-square testing and showed no significant association between the seeking frequency and computer skills.

Based on these studies, computer skills may be associated with seeking CHI on the Internet but not necessarily with the frequency of such seeking. Those with better than average skills appear to be more likely to search for Internet CHI compared to those with poor to average skills.

Computer skills

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
Computer skills average less likely vs. exc./good***	415	Dey (2008)[15]
Computer skills not good/poor less likely vs. exc./good***		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
NS (computer skills)	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Internet skills

Two studies were found that investigated results a possible association with (self-assessed) Internet skills and CHI seeking or seeking frequency. One study used logistic regression and showed that those with good expertise and those with good expertise (but not those with fair expertise) were more likely to seek CHI than those with poor expertise. The second study used chi-square testing and showed that one's self-efficacy (of finding Internet CHI) was significantly associated with CHI seeking frequency.

Based on these studies, Internet skills may be associated with seeking CHI on the Internet and the frequency of seeking. Those with better than average skills appear to be more likely to search for Internet CHI compared to those with poor to average skills.

Internet skills/expertise/self-efficacy

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
NS (expertise fair vs. poor)	1459	Ybarra (2006)[19]
Expertise good more likely vs poor***		
Expertise excellent more likely vs. poor***		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
Self-efficacy score**	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Internet connection – method and location

Three studies were found that presented results for either Internet connection method or Internet use location. One study looked at the possible associations of connection method with CHI seeking and seeking frequency. It used chi-square testing and found no significant associations. Another study used chi-square testing and found that mostly home use was significantly associated with CHI seeking. The third study found that frequency of use at home was significantly associated with the frequency of CHI seeking.

Based on these three studies, Internet location use, but not connection method, may be associated with seeking CHI on the Internet and the frequency of seeking.

Internet connection – method and location

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
NS (Internet connection method)	1494	Lorence (2006)[7]
Location of use mostly home***	1459	Ybarra (2006)[19]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
NS (Internet connection method)	877	Lorence (2006)[7]
Frequency of computer use at home**	707	Taubenheim (1999)[23]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Internet experience (duration)

Three studies were found that presented results for Internet experience (where experience is equated with duration of Internet use). Two of the CHI seeking studies used the same survey and are considered together. These both used logistic regression analysis and showed that those users with greater than three years Internet experience were more likely to seek CHI compared to those with one year or less, but not compared to those with two to three years. Another study used chi-square testing and found duration of use was significantly associated with CHI seeking. Regarding CHI seeking frequency, only one study investigated a possible association with Internet experience and it revealed a significant association.

Based on these results, Internet experience (i.e., duration of use) appears to be associated with seeking CHI on the Internet and the frequency of seeking. Those users

that have less than one year of Internet experience are less likely to seek Internet CHI compared to those with more than 3 years experience.

Internet experience (duration)

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
Internet experience ≤1 yr less likely vs. >3 yr	1494 /1216	Lorence (2006)[7] /Lorence (2006)[5]
NS (experience 2-3 yr vs. >3 yr)		
CHI seeking (other stat tests)		
duration of use***	1459	Ybarra (2006)[19]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
Internet experience*	963	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Internet frequency and intensity

Three studies investigated the outcomes of interest with respect to the variables of Internet frequency (of access) and Internet intensity (of daily use). Two of the CHI seeking studies used the same survey and are considered together. These both used logistic regression analysis and showed that users who accessed the Internet either daily or weekly were significantly more likely to seek CHI compared to users who accessed the Internet monthly. One study looked at Internet intensity (measured as daily hours of Internet use) and, using chi-square analysis, found no significant association with CHI seeking. Regarding CHI seeking frequency, one study found a significant association with Internet use frequency.

Based on the three studies, the frequency of Internet use - measured as daily, weekly, or monthly access - appears to be associated with seeking CHI on the Internet and the frequency of seeking. Those users that access the Internet more often are more likely to seek Internet CHI compared to those that access it less often. The intensity of Internet use – measured as daily hours of use - does not appear to be significantly associated with CHI seeking.

Internet frequency and intensity

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
Frequency of Internet access daily more likely vs. monthly**	1494 /1216	Lorence (2006)[7] /Lorence (2006)[5]
Frequency of Internet access weekly more likely vs. monthly*		
CHI seeking (other stat tests)		
NS (intensity of use as daily hours)	1459	Ybarra (2006)[19]
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
Internet frequency****	951	Lorence (2006)[7]

* $p \leq 0.05$ ** $p \leq 0.01$ *** $p \leq 0.001$ **** $p \leq 0.0001$

Costs of obtaining information

One study looked at a score based on a user's perceived costs of obtaining Internet CHI and found no significant association with CHI seeking frequency. Based on one study, the perceived cost of obtaining Internet CHI does not appear to be associated with the frequency of CHI seeking.

Costs of obtaining information

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		
NS (costs of obtaining info score)	707	Taubenheim (1999)[23]

Situational factors

Few studies were found that investigated situational factors as variables related to absolute CHI seeking and the frequency of CHI seeking.

Behavioral intention

One study investigated the possible association of CHI seeking with what the study's authors termed behavioral intention. Behavioral intention in this study was a plan to access the Internet for CHI if diagnosed with breast cancer after receiving a screening mammogram. Using logistic regression analysis, this study found that those with behavioral intention were more likely to seek CHI than those without.

Based on this study, behavioral intention may be associated with CHI seeking; however, this variable (as defined in the study) may be too specific and hypothetical to be generally useful.

Behavioral intention

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) Behavioral intention yes more likely to seek CHI***	415	Dey (2008)[15]
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests)		

Reasons for using Internet and Purpose of information found

One study investigated the possible association between the frequency of CHI seeking and both the reasons for using the Internet and the purpose of information found. It used chi-square testing and found a significant association with the purpose of information, but not with their reasons for using the Internet score. Based on this study, the purpose of the information found may be associated with the frequency of CHI seeking, but a score for reasons for using the Internet does not appear to be associated with the frequency of CHI seeking.

Reasons for using Internet

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression)		
CHI seeking (other stat tests)		
CHI seeking frequency (log regression)		
CHI seeking frequency (other stat tests) NS (reasons for using the Internet score)	707	Taubenheim (1999)[23]

Purpose of the information found

Outcome (statistical test) and result	Sample size	Source
CHI seeking (logistic regression) **CHI seeking** (other stat tests) **CHI seeking frequency** (log regression) **CHI seeking frequency** (other stat tests) Purpose of the information found*	707	Taubenheim (1999)[23]

DISCUSSION

I will first discuss the results of individual variables by general category (demographic, medical, etc.), followed by the other implications, limitations, and future work indicated by my literature review. The discussion of the results of individual variables by general category is, to a large extent, a repetition of results from the previous section.

Demographic factors

Females are more likely than males to seek consumer health information on the Internet and may seek this information more frequently.

It appears that adults older than 55-65 years and younger than 20 years are less likely to seek CHI on the Internet than those in between. Those in the 35-50 years old age group may be the most likely of all. There is no evidence that age is significantly associated with CHI seeking frequency.

It appears that race/ethnicity is a demographic variable significantly associated with CHI seeking on the Internet and that Blacks and Hispanics may be less likely to seek CHI on the Internet. There is no evidence that race/ethnicity is significantly associated with CHI seeking frequency.

It appears that marital status may be associated with CHI seeking on the Internet and with the frequency of CHI seeking.

It appears that education level is a demographic variable that is significantly associated with CHI seeking on the Internet, and possibly with its frequency. Those

Internet users with higher levels of education are more likely than those with only a high school education (or less) to seek Internet CHI.

It appears that income level is a demographic variable that may be significantly associated with CHI seeking on the Internet, although the results are inconsistent. The studies that do show a statistically-significant association (and in which direction is clear) indicate that higher income earners are more likely than lower income earners to seek Internet CHI. There does not appear to be a significant association of income level with the frequency of Internet CHI seeking.

Employment status has not been well studied. Based on two studies, employment status may be associated with CHI seeking on the Internet, although its effect may be negated when controlling for other variables.

Other demographic factors have not been well studied. Based on one study, neither religion nor the number of children appears to be associated with CHI seeking on the Internet.

Among demographic variables, gender, age, race/ethnicity, education, and income are variables that are the most important to use in segmentation of consumers seeking Internet health information. The results for gender may be related to differences among males and females in their involvement in healthcare and their care-taking roles. Regarding age, the decline of Internet health seeking in the oldest age groups may be related to differences in comfort and experience with digital technology, whereas the decline in the youngest age groups may be related to differences in interest and/or need for health information. Race/ethnicity, education, and income are oft-cited factors in the "digital divide" and the overall results for these variables found here support a concern

that a divide in access correlates with a divide in health information seeking. Among the other demographic variables studied, marital status and employment status may be useful segmentation variables, whereas religion and number of children do not appear to be useful segmentation variables.

Geographic factors

Variables that are can be classified as geographic factors were found to be rarely investigated. Two such variables related to residence were found in the included citations: region of residence and travel time for care. Based on these results, residence does not appear to be associated with CHI seeking on the Internet, neither with respect to the region type nor travel time for care.

Among geographic variables, the region of residence and travel time for care do not appear to be variables that are important to use in segmentation of consumers seeking Internet health information. These variables are seemingly related to both access of medical care and access of the Internet, and perhaps there is a canceling effect with respect to seeking Internet health information.

Psychographic factors

Psychographic factors were uncommonly investigated. Variables related to health orientation, psychosocial condition, and perception of CHI utility may be associated with CHI seeking on the Internet.

Psychographic factors are the individual characteristics that describe one's values, attitudes, interests, and activities. Arguably, these factors may be some of the most

critical ones influencing the desire and use of consumer products, including Internet health information, and thus their value as segmentation variables. Although the studies found in this review do provide evidence that psychographic factors (namely health orientation, psychosocial condition, and perception of CHI utility) may include useful segmentation variables, the paucity of psychographic investigations is obvious.

Behavioral factors

As previously noted, some factors that could be reasonably categorized as behavioral factors, such as Internet use frequency and behavioral intention, were placed under other categories. Nevertheless, behavioral factors were uncommonly studied. Based on one study, health service utilization may be associated with the seeking of Internet CHI and its frequency. Based on another single study, whether one self-manages with lifestyle changes may be associated with the frequency of seeking Internet CHI. These variables may be related to the perceived value and need for Internet health information.

Medical factors

Health status appears to be significantly associated with both CHI seeking on the Internet and the frequency of seeking. Although there is some inconsistency among the results, the studies demonstrate a tendency for those in poorer health to search for Internet CHI absolutely and with greater frequency compared to those in better health.

It appears that having a health condition may be associated with the seeking of Internet CHI but not its frequency. It appears that those with a health condition may be more likely to seek CHI compared to those without.

Having a family member with a health condition may be associated with the frequency of Internet CHI seeking, but not whether or not it is done.

Based on one study, the diagnosis of a stigmatized illness is probably associated with seeking CHI on the Internet, but not the frequency of seeking - at least in relation to other chronic, but non-stigmatized illnesses. It appears that those with a stigmatized illness (anxiety, depression, herpes, or urinary incontinence) are more likely seek CHI compared to those a non-stigmatized illness.

Based on one study, the combination of health insurance type and presence of a chronic illness may be associated with the seeking of Internet CHI. It appears that those having a chronic illness and any type of health insurance are more likely to seek CHI compared to those with private insurance and no chronic illness. Also, it appears that those having no health insurance, whether or not they have a chronic illness, are more likely to seek CHI compared to those with private insurance and no chronic illness.

Based on one study, health coverage may be associated with the frequency of seeking of Internet CHI. Based on the same study, both satisfaction with healthcare services and satisfaction with health insurance may be associated with the frequency of seeking Internet CHI. Also, based on this study, difficulty accessing healthcare services may be associated with the frequency of seeking Internet CHI.

Among medical factors, health status and the presence of a health condition are the best-studied and most clearly important variables to use in the segmentation of

consumers seeking Internet health information. This makes sense since these variables presumably influence the perceived need for such information. For the same reason, the presence of a health condition in a family member or use of self-management as segmentation variables is reasonable, although the evidence for doing so is less strong. The diagnosis of a stigmatized illness may be an important segmentation variable, which could be related to the anonymity provided by the Internet. Other possibly valuable segmentation variables revealed here- health insurance coverage (or lack of), the utilization of health services, the satisfaction of healthcare services, the satisfaction with health insurance, and the difficulty accessing services – could be related to the perceived value and/or low cost of Internet health information as a supplement (or alternative) to direct medical care.

Computer and Internet related factors

Computer skills may be associated with seeking CHI on the Internet but not necessarily with the frequency of such seeking. Those with better than average skills appear to be more likely to search for Internet CHI compared to those with poor to average skills.

Internet skills may be associated with seeking CHI on the Internet and the frequency of seeking. Those with better than average skills appear to be more likely to search for Internet CHI compared to those with poor to average skills.

Internet location use, but not connection method, may be associated with seeking CHI on the Internet and the frequency of seeking.

Internet experience (i.e., duration of use) appears to be associated with seeking CHI on the Internet and the frequency of seeking. Those users that have less than one year of Internet experience are less likely to seek Internet CHI compared to those with more than 3 years experience.

The frequency of Internet use - measured as daily, weekly, or monthly access - appears to be associated with seeking CHI on the Internet and the frequency of seeking. Those users that access the Internet more often are more likely to seek Internet CHI compared to those that access it less often. The intensity of Internet use – measured as daily hours of use - does not appear to be significantly associated with CHI seeking.

Based on one study, the perceived cost of obtaining Internet CHI does not appear to be associated with the frequency of CHI seeking.

Among computer- and Internet-related factors, computer skills and Internet skills and experience are the most important variables to use in the segmentation of consumers seeking Internet health information. It seems reasonable that consumers more comfortable and capable of using the digital technology would more likely use it for health information. Similarly, the frequency of Internet use may also be useful as a segmentation variable, although the evidence is less strong. On the other hand, location and intensity of use may relate more to purpose than comfort or efficacy, and their use as segmentation variables is not supported.

Situational factors

Based on one study, behavioral intention (in a screening situation) may be associated with CHI seeking. Based on another single study, the purpose of the

information found may be associated with the frequency of CHI seeking, but a score for reasons for using the Internet does not appear to be associated with the seeking frequency.

Situational factors are the characteristics that describe the relatively variable circumstances associated with seeking Internet health information. Although they seemingly would be important in determining whether or not a particular search is undertaken, it would be difficult to elucidate their effect when attempting to characterize CHI seeking in general, as was done here. The included citations were, in general, investigating relatively constant situations over multiple searches; thus, it is not surprising that this review did not uncover many situational factor variables that would be useful in the segmentation of consumers seeking Internet health information. In particular, there were no studies found that specifically looked at the urgency of the information need or the stage of a diagnosed disease. Despite this, there was some evidence indicating the importance of situational segmentation variables, specifically related to the intention of search in a screening situation and the purpose of searching. Although the studies found in this review do provide evidence that some situational factors may be associated with CHI seeking, there is a clear lack of investigations on such factors.

Site-dependent factors

Site-dependent factors were not a primary focus of this review although were included in the tables as evidence of their potential utility in the segmentation of CHI seeking. There was only one study found that presented site-dependent variables, and

appraisal is limited by the fact that these variables are a combination of seeker and site characteristics. Nevertheless, there is some evidence that the format (i.e., how the CHI is presented) may be a useful site-dependent segmentation variable. It was somewhat surprising that, in the same study, the perceived usefulness or newness of the health information was not associated with CHI seeking.

Use and limitations of this review

This is, to my knowledge, the first systematic review of the segmentation variables that characterize the online consumer health information seeker. As such, the information presented in this review gives a more complete profile of the seekers of consumer health information than the individual studies cited. Although this review was limited to the outcomes of absolute CHI seeking and its frequency, the combination of variables found here to be significant in previous studies could be used as a starting point for multivariate or segmentation analysis of the CHI seeker in future studies. If, for example, a consumer health information provider wanted to segment their users in order to effectively customize the presentation of health information, the significant demographic variables listed in Table 3 could be used as an initial set of demographics to collect and use in a cluster analysis of their data.

The goal of this review was to show what variables have been shown to be significantly associated with the seeking of Internet health information by consumers. As such, this review was limited not only to the domains of health information and the Internet, but also to consumers (as opposed to patients). There are likely many additional variables that could be useful in market segmentation of the Internet health information

seeker, which may be discovered by broader reviews, such as that of non-health or non-Internet information seekers (e.g., Wellness Orientation scale [24], [25], CHI Preferences screening instrument [26]) and by examining the numerous studies on information seeking of patients with specific diseases. Similarly, the list of useful market variables would be undoubtedly broadened by inclusion of outcomes other than absolute CHI seeking and CHI seeking frequency.

There was a lack of controlled studies and a small number of studies on psychographic, behavioral, and situational factors, thus limiting the strength and breadth of the study conclusions. The included citations show correlations between the variables and outcomes; nevertheless, controlled studies would provide stronger evidence for correlation and causality. Also, psychographic and behavioral factors are thought to be particularly important in segmentation of healthcare markets [24, 26, 27]. For example, persons with greater wellness orientation could be targeted for health-related products, while those with lower wellness orientation may be better candidates for health promotion program intervention.

This review was also limited by differences in variable definitions, study populations, and statistical methods among the citations that are included.

There were differences in the definitions of both study variables and outcomes used by the included studies. While the variable of gender is specific and dichotomous, variables like age and health status were not uniquely defined and/or categorized among the studies. Even the investigated outcomes of CHI seeking and seeking frequency, in general, were similarly but not identically defined. The broad nature of the conclusions was an attempt to overcome these particular limitations.

The study populations of the included citations differed greatly. The samples differed in country (most were US-based surveys), age (although most were adult populations), and sampling and survey technique, including weighting of results. Most of the studies involved samples from national surveys, although several used more specific populations, for example women from a mammogram clinic, a self-selected sample of users of specific arthritis and musculoskeletal and skin disease websites, and a sample consisting of a hodgepodge of college students, clinic patients and mall shoppers.

Another limitation was differences in the statistical methods used in the included citations. Although the results presented in this review were categorized on the basis of multivariate logistic regression versus bivariate methods, the analyses within each category differed considerably. For example, within the logistic regression methods on the same variable, the other variables that were controlled for varied among the included citations. If the same control variables had been used throughout, different conclusions may have been reached regarding which variables are significantly associated and to what level. Similarly, the results categorized as non-logistic regression were mostly, but not exclusively, analyzed using chi-square analysis. Finally, the statistical methods used and results obtained in the original citations were not always completely or clearly described.

Finally, there is a lack of published market segmentation analyses on consumers of Internet health information. This review was not limited to the standard research publication databases, and there were a couple relevant segmentation studies alluded to in the "gray" literature (e.g., [28] [29]). However, these segmentation studies were from consulting firms and details of methods and results could not be obtained.

Future work

Arguably the most important uses of segmentation of the Internet CHI seeking population would be those that aim to improve the health of consumers. This would require the identification of relatively homogeneous consumer groups that acquire and use health information to change behavior and improve lifestyle in a similar manner within the segment, but distinct (and identifiable) from other segments. To this end, the most important factors are probably psychographic (i.e., characteristics that describe the beliefs, attitudes, and values related to health) and behavioral (e.g., usage patterns and readiness to act); however, these are appear to be the least studied, at least with respect to the outcomes investigated here. Medical and situational factors are also important, but these are likely more important in terms of the information topics required rather than their presentation. Thus, future work identifying and quantifying psychographic and behavioral factor correlates with Internet CHI would be valuable.

Future studies using controls, including longitudinal studies, should be considered, which would certainly strengthen the conclusions drawn about specific variables or combinations of variables and their effect on CHI seeking and other outcomes. Perhaps just as valuable, though, might be true segmentation studies that use multiple variables identified here (and elsewhere) to group consumers into useful market segments.

CONCLUSION

Internet healthcare information seekers may be segmented using a variety of demographic, geographic, psychographic, behavioral, medical, computer/Internet-related, and situational variables. Demographic variables are the best studied; psychographic and behavioral factors may be more important but are less well studied. There is a lack of segmentation studies and controlled studies on variables describing Internet healthcare information seekers.

REFERENCES

1. *Number of "Cyberchondriacs" – Adults Going Online for Health Information – Has Plateaued or Declined*. 2008 [cited October 18, 2008]; Available from: http://www.harrisinteractive.com/harris_poll/index.asp?PID=937.
2. *News study shows fewer Americans going to the Web for health guidance.* Medical Marketing & Media, 2003. **38**(6): p. 27.
3. Risker, D.C., *A segmentation analysis of consumer uses of health information.* Health Marketing Quarterly, 1995. **12**(4): p. 39-48.
4. Morris, L.A., et al., *A segmentational analysis of prescription drug information seeking.* Medical Care, 1987. **25**(10): p. 953-64.
5. Lorence, D. and H. Park, *Web-based consumer health information: public access, digital division, and remainders.* Medgenmed: Medscape General Medicine, 2006. **8**(2): p. 4-4.
6. Lorence, D. and H. Park, *Group disparities and health information: a study of online access for the underserved.* Health Informatics Journal, 2008. **14**(1): p. 29-38.
7. Lorence, D.P., H. Park, and S. Fox, *Assessing health consumerism on the Web: a demographic profile of information-seeking behaviors.* Journal Of Medical Systems, 2006. **30**(4): p. 251-258.
8. Lorence, D.P., H. Park, and S. Fox, *Racial disparities in health information access: resilience of the Digital Divide.* Journal Of Medical Systems, 2006. **30**(4): p. 241-249.
9. Lorence, D.P. and H. Park, *Measuring dissimilarity in online health search activities.* Technology And Health Care, 2006. **14**(2): p. 79-89.
10. Baker, L., et al., *Use of the Internet and e-mail for health care information: results from a national survey.[see comment][erratum appears in JAMA. 2003 July 16;290(3):334].* JAMA, 2003. **289**(18): p. 2400-6.
11. Berger, M., T.H. Wagner, and L.C. Baker, *Internet use and stigmatized illness.* Social Science & Medicine, 2005. **61**(8): p. 1821-1827.
12. Bessell, T.L., et al., *Prevalence of South Australia's online health seekers.* Australian And New Zealand Journal Of Public Health, 2002. **26**(2): p. 170-173.
13. Brodie, M., et al., *Health information, the Internet, and the digital divide.* Health Affairs, 2000. **19**(6): p. 255-65.
14. Bundorf, M.K., et al., *Who searches the internet for health information?* Health Services Research, 2006. **41**(3 Pt 1): p. 819-836.
15. Dey, A., et al., *Perceptions and behaviour of access of the Internet: A study of women attending a breast screening service in Sydney, Australia.* International Journal of Medical Informatics, 2008. **77**(1): p. 24-32.
16. Dutta-Bergman, M.J., *Health attitudes, health cognitions, and health behaviors among Internet health information seekers: population-based survey.* Journal Of Medical Internet Research, 2004. **6**(2): p. e15-e15.
17. Goldner, M. *Health-Related Information on the Internet: The Impact of Race, Class and Gender*. in *Conference Papers -- American Sociological Association*. 2004: American Sociological Association.

18. Pena-Purcell, N., *Hispanics' use of Internet health information: an exploratory study.* Journal Of The Medical Library Association: JMLA, 2008. **96**(2): p. 101-107.
19. Ybarra, M.L. and M. Suman, *Help seeking behavior and the Internet: a national survey.* International Journal Of Medical Informatics, 2006. **75**(1): p. 29-41.
20. Houston, T.K. and J.J. Allison, *Users of Internet health information: differences by health status.* Journal Of Medical Internet Research, 2002. **4**(2): p. E7-E7.
21. Lueg, J.E., R.S. Moore, and M. Warkentin, *Patient health information search: An exploratory model of web-based search behavior.* Journal of End User Computing, 2003. **15**(4): p. 49-61.
22. Millard, R.W. and P.A. Fintak, *Use of the Internet by patients with chronic illness.* Disease Management & Health Outcomes, 2002. **10**(3): p. 187-194.
23. Taubenheim, A.M., *Conducting survey research on the Internet: Use of the Internet to search for information on arthritis and musculoskeletal and skin diseases*. 1999, University of Maryland College Park: United States -- Maryland.
24. Kraft, F.B. and P.W. Goodell, *Identifying the health conscious consumer.* Journal of Health Care Marketing, 1993. **13**(3): p. 18-25.
25. Cotten, S.R. and S. Gupta, *Characteristics of Online and Offline Health Information Seekers.* Southern Sociological Society, 2003, 2003.
26. Maibach, E.W., et al., *Understanding consumers' health information preferences: Development and validation of a brief screening instrument.* Journal of Health Communication, 2006. **11**(8): p. 717-736.
27. Navarro, F.H. and S.T. Wilkins, *A new perspective on consumer health Web use: "valuegraphic" profiles of health information seekers.* Managed Care Quarterly, 2001. **9**(2): p. 35-43.
28. *How will patients behave?* Medical Marketing & Media, 2006. **41**(6): p. 49-58.
29. *2008 Survey of health care consumers - Executive summary*. 2008 [cited March 2008]; Available from: http://www.deloitte.com/dtt/cda/doc/content/us_chs_ConsumerSurveyExecutiveSummary_200208.pdf.

APPENDIX A

The number of citations from the keyword search (described in the Methods section) for each database is shown in the table below. These total 1288 citations. Combining the searches and removing duplicates resulted in 748 citations.

Literature Database	**Number of citations**
Business Source Premier	111
CINAHL	131
Compendex	58
EBSCO Host	29
ERIC	12
LISTA	184
MEDLINE	269
PsychINFO	76
Web of Science	276
ISI Proceedings	48
SocINDEX	31
Sociological Abstracts	10
Library Literature	8
PAIS International	7
Dissertations and Masters Theses	38

The initial pages for each of the specific database searches follow.

Results for: AB (Internet ***OR*** web ***OR*** online) ***AND*** AB consu... Add search to folder Display link to search

Create alert for this search

☑ **Suggest Subject Terms**

Find:	Internet OR web OR online	in	AB Abstract or Author-Supplied Abstract
and	consumer*	in	AB Abstract or Author-Supplied Abstract
and	health* OR medical	in	AB Abstract or Author-Supplied Abstract
and	information	in	AB Abstract or Author-Supplied Abstract
and	seek* OR search* OR sought OR source* OR segment*	in	AB Abstract or Author-Supplied Abstract

Search Clear

Add Row | Remove Row

in: Business Source Premier

(Searching: *Business Source Premier*)

F

All Results: 1-20 of 111 **Page: 1** 2 3 4 5 Next **Sort by:** Date

See: All Results Academic Journals Trade Publications Magazines Newspapers Market Researc

Product Reviews

Narrow Results by Subject

UNITED States

INTERNET

MEDICAL care

WEB sites

MEDICAL informatics

COMPUTER network resources

ONLINE information services

PHARMACEUTICAL industry

HEALTH

CONSUMER behavior

1. Pharma still searching online. By: Chase, James. Medical Marketing & Media, Mar2008, Vol. 43 Issue 3, p6-6, 2/3p; (*AN 31202704*)

   PDF Full Text (494K) Find It@OHSU Library

2. Consumers tend to turn to web for wellness info. By: McGuire, Stephen. Medical Marketing & Media, Feb2008, Vol. 43 Issue 2, p24-24, 1/4p; (*AN 29968100*)

   PDF Full Text (549K) Find It@OHSU Library

3. Google, Merck tout benefits of online. By: S. M.. Medical Marketing & Media, Feb2008, Vol. 43 Issue 2, p24-24, 1/5p; (*AN 29968101*)

   PDF Full Text (549K) Find It@OHSU Library

4. Consumer choice for over-the-counter drugs and supplements in the healthcare arena: Approaches to a macro-database across topics. By: Ashman, Hollis; Rabino, Samuel; Minkus-McKenna, Dorothy; Moskowitz, Howard R.. Journal of Medical Marketing, Jan2008, Vol. 8 Issue 1, p49-67, 19p, 1 chart; DOI: 10.1057/palgrave.jmm.5050113; (*AN 27941138*)

   Cited References (18)

   Find It@OHSU Library

5. The Ethical Challenges of Direct-to-Consumer Genetic Testing. By: Berg, Cheryl; Fryer-Edwards, Kelly. Journal of Business Ethics, Jan2008, Vol. 77 Issue 1, p17-31, 15p, 3 charts; DOI: 10.1007/s10551-006-9298-8; (*AN 27540229*)

Cited References (42)

Find It@OHSU Library

6. Identifying Premier Medical Outsourcing Providers-an Imperfect Process. Journal of Financial Planning, Oct2007, Vol. 20 Issue 10, p64-64, 2/3p; (*AN 27037079*) Add

PDF Full Text (129K) Find It@OHSU Library

7. Consumers trust Web for drug info. By: S. M.. Medical Marketing & Media, Sep2007, Vol. 42 Issue 9, p26-26, 1/5p; (*AN 26475427*) Add

PDF Full Text (515K) Find It@OHSU Library

8. MB STAT. Medical Benefits, 8/30/2007, Vol. 24 Issue 16, p11-11, 2/3p, 1 graph; (*AN 26374932*) Add

PDF Full Text (41K) Find It@OHSU Library

9. Here Come the Cyberchondriacs. By: King, Rachael. Business Week Online, 8/3/2007, p25-25, 1p; (*AN 26098904*) Add

HTML Full Text Find It@OHSU Library

10. Here Come the Cyberchondriacs. By: King, Rachael. Business Week Online, 8/2/2007, p8-8, 1p; (*AN 26053436*) Add

HTML Full Text Find It@OHSU Library

11. How Does Your State Measure Up? Health Management Technology, Aug2007, Vol. 28 Issue 8, p8-8, 1/3p; (*AN 26400378*) Add

HTML Full Text PDF Full Text (129K) Find It@OHSU Library

12. Search behavior varies based on stage of illness. By: McGuire, Stephen. Medical Marketing & Media, Jul2007, Vol. 42 Issue 7, p20-20, 1/4p; (*AN 25762584*) Add

PDF Full Text (112K) Find It@OHSU Library

13. Google turns to health care data. By: Perelman, Deborah. eWeek, 6/4/2007, Vol. 24 Issue 20, p21-21, 1/3p; (*AN 25314461*) Add

PDF Full Text (70K) Find It@OHSU Library

14. The Buzz on Energy Drinks. By: Montalvo, Kristin V.. Gourmet Retailer, Jun2007, Vol. 28 Issue 6, p38-42, 4p, 1c; (*AN 25486134*) Add

HTML Full Text Find It@OHSU Library

15. JOINING THE SOCIAL CIRCLE. (cover story) By: Barrette, Jack; Becker, Bonnie. Medical Marketing & Media, Apr2007, Vol. 42 Issue 4, p59-61, 2p; (*AN 24991473*) Add

PDF Full Text (804K) Find It@OHSU Library

16.

Results Manager

Select all on page - Select range: [ ] to [ ] Go - Clear all on page - Clear all selections

Choose format: Citation Abstract Detailed record Clear selected records on new search

View Selections | E-Mail | Print | Download | Save to Folder

Search Results

58 records in Compendex for 1969-2008 Save Search - Create Alert - RSS

+((Internet OR web OR online) AND consumer* AND (health* OR medical) AND information AND (seek* OR search* OR sought OR source* OR segment*)) wn KY

Sort by: Relevance Date Author Source Publisher

1. **Guiding users to quality information about osteoarthritis on the internet: A pilot study**
Ilic, Dragan (Monash Institute of Health Services Research, Monash Medical Centre); Maloney, Stephen; Green, Sally **Source:** *Telemedicine Journal and e-Health*, v 11, n 6, December, 2005, p 703-706
Database: Compendex
Abstract - Detailed - Find It@OHSU Library

2. **Medical portals: web-based access to medical information**
Shepherd, Michael (Dalhousie Univ); Watters, Carolyn; Zitner, David **Source:** *Proceedings of the Hawaii International Conference on System Sciences*, 2000, p 110
Database: Compendex
Abstract - Detailed - Find It@OHSU Library

3. **Help seeking behavior and the Internet: A national survey**
Ybarra, Michele L. (Internet Solutions for Kids, Inc.); Suman, Michael **Source:** *International Journal of Medical Informatics*, v 75, n 1, January, 2006, *Health and the Internet for All*, p 29-41
Database: Compendex
Abstract - Detailed - Full text - Find It@OHSU Library

4. **Consumer trust in health information on the web**
Huntington, Paul (Centre for Information Behaviour and the Evaluation of Research (CIBER), School of Library, Archive and Information Studies, University College London); Nicholas, David; Gunter, Barrie; Russell, Chris; Withey, Richard; Polydoratou, Panayiota **Source:** *Aslib Proceedings*, v 56, n 6, 2004, p 373-382
Database: Compendex
Abstract - Detailed - Full text - Find It@OHSU Library

5. **Combining different standards and different approaches for health information retrieval in a quality-controlled gateway**
Soualmia, Lina F. (CISMeF Team, Medical School, Rouen University Hospital); Darmoni, Stefan J. **Source:** *International Journal of Medical Informatics*, v 74, n 2-4, March, 2005, *MIE 2003*, p 141-150
Database: Compendex
Abstract - Detailed - Full text - Find It@OHSU Library

6. **Doc, I've been looking at some web sites-so what should I believe?**
Freeman, Kris S. (Public Information Specialist, University of Washington) **Source:** *Proceedings/STC, Society for Technical Communication Annual Conference*, 2002, p 349-350
Database: Compendex
Abstract - Detailed - Find It@OHSU Library

Refine Results

? Help

Include | Exclude

Author
- Nicholas, David (5)
- Huntington, Paul (5)
- Sillence, Elizabeth (4)
- Briggs, Pam (4)
- Harris, Peter (3)
- Williams, Peter (3)
- Fishwick, Lesley (3)
- Meric, Bernstam Funda (2)
- Luo, Wenhong (2)
- Najdawi, Mohammad (2)

more...

Author affiliation
- Pact Lab, School Of Psychology And Sports Science, Northumbria University (4)
- Us Fda, Dep Of Health & Human Services, Usa (2)
- Internet Studies Research Group, Department Of Information Science, City University (2)
- Exponent (1)
- Information Security Research Centre, Queensland University Of Technology (1)
- Inst. Biostatistics/Documentation, University Of Innsbruck (1)
- Institute For Information Technology, National Research Council Canada (1)
- Internet Solutions For Kids, Inc. (1)
- Mississippi State University (1)
- Monash Institute Of Health Services Research, Monash Medical Centre (1)

more...

Controlled vocabulary
- Health Care (24)
- Websites (14)
- Internet (13)
- Online Searching (11)
- World Wide Web (10)
- Information Retrieval (9)
- Search Engines (8)
- Information Analysis (7)
- Online Systems (7)
- Information Technology (7)

more...

Classification code
- Computer Applications (26)
- Health Care (25)
- Information Retrieval and Use (21)

Find: (S6 and S5 and S4 and S3 and S2) and DE "ONLINE information services" in Select a Field (optional) Search Clear
and in Select a Field (optional)
and in Select a Field (optional) Add Row

in: Specific Databases

(Searching: *Academic Search Premier, Health Source: Nursing/Academic Edition, Health Source - Consumer Edition, MedicLatina, Agricola, MasterFILE Premier, Newspaper Source, Professional Development Collection, Regional Business News, Funk & Wagnalls New World Encyclopedia, EBSCO Animals, MAS Ultra - School Edition, Middle Search Plus, Primary Search, TOPICsearch, Fuente Académica, Vocational and Career Collection, Alt HealthWatch, Computer Source, Legal Collection, Military & Government Collection, Psychology and Behavioral Sciences Collection, Religion and Philosophy Collection*)

Print Search History | Retrieve Searches | Retrieve Alerts | Save Searches / Alerts | Clear Search History

Combine searches with: and Add

Add to Search	Search ID#	Search Terms	Limiters and Expanders	Actions	Delete
☐	S15	(S6 and S5 and S4 and S3 and S2) and DE "ONLINE information services"		View Results (36) Revise Search View Details	X
☐	S14	(S6 and S5 and S4 and S3 and S2) and DE "HEALTH education"		View Results (58) Revise Search View Details	X
☐	S13	(S6 and S5 and S4 and S3 and S2) and DE "INTERNET searching"		View Results (29) Revise Search View Details	X
☐	S12	(S6 and S5 and S4 and S3 and S2) and DE "health"		View Results (39) Revise Search View Details	X
☐	S11	(S6 and S5 and S4 and S3 and S2) and DE "MEDICAL informatics"		View Results (49) Revise Search View Details	X
☐	S10	(S6 and S5 and S4 and S3 and S2) and DE "MEDICAL care"		View Results (57) Revise Search View Details	X
☐	S9	(S6 and S5 and S4 and S3 and S2) and DE "Internet"		View Results (88) Revise Search View Details	X
☐	S8	(S6 and S5 and S4 and S3 and S2)		View Results (558) Revise Search View Details	X

☐	S7	S6 and S5 and S4 and S3 and S2		View Results (418) Revise Search View Details	X
☐	S6	AB seek* or AB search* or AB sought or AB source* or AB segment*		View Results (1632929) Revise Search View Details	X
☐	S5	AB information		View Results (5291684) Revise Search View Details	X
☐	S4	AB health* or AB medical		View Results (2593690) Revise Search View Details	X
☐	S3	AB consumer*		View Results (548720) Revise Search View Details	X
☐	S2	AB Internet or AB web or AB online		View Results (1639389) Revise Search View Details	X
☐	S1	AB (Internet OR web OR online) and AB consumer* and AB (health* OR medical) and AB information and AB (seek* OR search* OR sought* OR source* OR segment*)		View Results (0) Revise Search View Details	X

Top of Page

Results for: (S5 ***AND*** S4 ***AND*** S3 ***AND*** S2 ***AND*** S1) ***AND*** DE "IN... Add search to folder | Display link to search | Create alert for this search

Find: (S5 and S4 and S3 and S2 and S1) and DE "INTERNET in Select a Field (optional) Search Clear

and in Select a Field (optional)

and in Select a Field (optional) Add Row

in: Specific Databases

(Searching: *Academic Search Premier, Health Source: Nursing/Academic Edition, Health Source - Consumer Edition, MedicLatina, Agricola, MasterFILE Premier, Newspaper Source, Professional Development Collection, Regional Business News, Funk & Wagnalls New World Encyclopedia, EBSCO Animals, MAS Ultra - School Edition, Middle Search Plus, Primary Search, TOPICsearch, Fuente Académica, Vocational and Career Collection, Alt HealthWatch, Computer Source, Legal Collection, Military & Government Collection, Psychology and Behavioral Sciences Collection, Religion and Philosophy Collection*)

Folder has items.

Refine Search | Search History/Alerts | Results

All Results: 1-20 of 29 **Page: 1** 2 Next **Sort by:** Relevance Add (1-20)

S5 and S4 and S3 and S2 a... INTERNET searching

Narrow Results by Subject

- INTERNET
- UNITED States
- INFORMATION retrieval
- ELECTRONIC information resource searching
- MEDICAL care
- ONLINE information services
- WEB sites
- MEDICAL informatics
- HEALTH education
- INTERNET users

1. HEALTH INFORMATION ON THE INTERNET: PATIENT EMPOWERMENT OR PATIENT DECEIT? By: Akerkar, S. M.; Bichile, L. S.. Indian Journal of Medical Sciences, Aug2004, Vol. 58 Issue 8, p321-326, 6p; (*AN 14855745*) Added
   PDF Full Text (47K) Find It@OHSU Library

2. Where Am I to Go? Use of the Internet for Consumer Health Information by Two Vulnerable Communities. By: Detlefsen, Ellen Gay. Library Trends, Fall2004, Vol. 53 Issue 2, p283-300, 18p; (*AN 15353374*) Added
   PDF Full Text (115K) Find It@OHSU Library

3. Surfing the Net for medical information aboutpsychological trauma: An empirical study of thequality and accuracy of trauma-related websites. By: Bremner, J. Douglas; Quinn, John; Quinn, William; Veledar, Emir. Medical Informatics & the Internet in Medicine, Sep2006, Vol. 31 Issue 3, p227-236, 10p, 7 charts, 1 graph; DOI: 10.1080/14639230600887866; (*AN 22249529*) Added
   PDF Full Text (85K) Find It@OHSU Library

4. How do consumers search for and appraise health information on the world wide web? Qualitative study using focus groups, usability tests, and in-depth interviews. By: Eysenbach, Gunther; Kohler, Christian. BMJ: British Medical Journal, 3/9/2002, Vol. 324 Issue 7337, p573, 5p, 1 graph; (*AN 6361989*) Added
   Find It@OHSU Library

5. Is the Doctor Online? By: Conhaim, Wallys W.; Page, Loraine. Information Today, Feb2003, Vol. 20 Issue 2, p29, 3p, 3c; ()

PDF Full Text (107K) Find It@OHSU Library

15. Semantics and the medical web: a review of barriers and breakthroughs in effective healthcare query. By: Lorencet, Daniel P.; Spink, Amanda. Health Information & Libraries Journal, Jun2004, Vol. 21 Issue 2, p109-116, 8p; DOI: 10.1111/j.1471-1842.2004.00491.x; (*AN 13416547*)
PDF Full Text (104K) Find It@OHSU Library — Added

16. Vaccination or Immunization? The Impact of Search Terms on the Internet. By: Wolfe, Robert M.; Sharp, Lisa K.. Journal of Health Communication, Sep2005, Vol. 10 Issue 6, p537-551, 15p, 2 charts, 1 diagram, 4 graphs; DOI: 10.1080/10810730500228847; (*AN 18448910*)
Find It@OHSU Library — Added

17. Chiropractic and the Internet: Opportunity or Liability? (cover story) By: Newborg, Herb. American Chiropractor, Jul2006, Vol. 28 Issue 8, p38-40, 2p; (*AN 21657807*)
PDF Full Text (1.1MB) Find It@OHSU Library — Added

18. A Study of the Web as DTC Drug Marketing Agent. By: Lorence, Daniel; Churchill, Rick. Journal of Medical Systems, Dec2007, Vol. 31 Issue 6, p551-556, 6p, 4 charts; DOI: 10.1007/s10916-007-9098-4; (*AN 27053633*)
Find It@OHSU Library — Added

19. Academic Health Sciences Libraries: An Underutilized Resource for Patients and Consumers. By: Hollander, Sue. Journal of Consumer Health on the Internet, 2003, Vol. 7 Issue 4, p1-6, 6p; (*AN 12539162*)
Find It@OHSU Library — Added

20. Producing an information leaflet to help patients access high quality drug information on the Internet: a local study. By: Coleman, Bridget. Health Information & Libraries Journal, Sep2003, Vol. 20 Issue 3, p160, 12p; DOI: 10.1046/j.1365-2532.2003.00426.x; (*AN 10593294*)
PDF Full Text (459K) Find It@OHSU Library — Added

All Results: 1-20 of 29 **Page: 1 2 Next** Add (1-20)

Top of Page

Results for: AB (Internet ***OR*** web ***OR*** online) ***AND*** AB consu...

Add search to folder | Display link to search

Create alert for this search

Find:	Internet OR web OR online	in	AB Abstract
and	consumer*	in	AB Abstract
and	health* OR medical	in	AB Abstract
and	information	in	AB Abstract
and	seek* OR search* OR sought* OR source* OR segment*	in	AB Abstract

Search | Clear

Add Row | Remove Row

in: ERIC

(Searching: *ERIC*)

Fold

Refine Search | Search History/Alerts | Results

All Results: 1-12 of 12 **Page: 1** **Sort by:** Date

Narrow Results by Subject

- World Wide Web
- Internet
- Access to Information
- Information Services
- Information Sources
- Health Education
- Library Collection Development
- Reliability
- Annotated Bibliographies
- Higher Education

1. Short and Long-Term Impacts of Biotechnology Education on Professionals Who Communicate Science to the Public . By: Fritz, Susan M.; Ward, Sarah M.; Byrne, Pat F.. Journal of Natural Resources and Life Sciences Education, v33 p111-116 2004. (EJ756023)
   Find It@OHSU Library

2. Internet Librarian 2001. Proceedings of the Internet Librarian Conference (5th, Pasadena, California, November 6-8, 2001). . By: Nixon, Carol; Burmood, Jennifer. 2001 269 pp. (ED464641)

3. PERSIVAL, a System for Personalized Search and Summarization over Multimedia Healthcare Information. . By: McKeown, Kathleen R.; Chang, Shih-Fu; Cimino, James. 2001 12 pp. (ED459839)
   Full Text from ERIC

4. General Orientation to New Knowledge Utilization Fields of Informatics, Knowledge Management, and Information Technology. . By: Southwest Educational Development Lab., Austin, TX.. 2001 41 pp. (ED457621)
   Full Text from ERIC

5. Proceedings of the Annual Meeting of the Association for Education in Journalism and Mass Communication (83rd, Phoenix, Arizona, August 9-12, 2000). Advertising Division. . By: Association for Education in Journalism and Mass Communication.. 2000 311 pp. (ED447537)
   Full Text from ERIC

6. How To Find Medical Information on the Internet: A Print and Online Tutorial for the Healthcare Professional and Consumer. Internet Workshop Series Number 10. . By:

	Kovacs, Diane K.; Carlson, Ann L.. 2000 128 pp. (ED440656)	
7.	Computers in Libraries, 2000: Proceedings (15th, Washington, D.C., March 15-17, 2000). . By: Nixon, Carol; Burmood, Jennifer. 2000 296 pp. (ED447817)	Add
8.	Educational Resources Available on the Internet: Assessing the Quality of Psychological Healthcare Sites. . By: DiBlassio, Jamie; Simonin, Danielle; DeCarolis, Anthony. 1999 39 pp. (ED425368) Full Text from ERIC	Add
9.	The Asymmetrical Quality of Psychological Internet Resources for Addressing Common versus Rare Problems. . By: Doran, Matt; Simonin, Danielle; Morse, Laura. 1998 33 pp. (ED415478) Full Text from ERIC	Add
10.	Guide to Reference Materials for School Library Media Centers, Fifth Edition. . By: Safford, Barbara Ripp. 1998 353 pp. (ED426696)	Add
11.	Consumer Health Libraries: A New Diagnosis. . By: Moeller, Kathleen A.. Library Journal, v122 n12 p36-38 Jul 1997. (EJ547868) HTML Full Text PDF Full Text Find It@OHSU Library	Add
12.	Home Economics Tests. Annotated Bibliography of Tests. . By: Educational Testing Service, Princeton, NJ. Test Collection.. 1991 31 pp. (ED369789) Full Text from ERIC	Add
All Results: 1-12 of 12	**Page: 1**	Add (1-12)

Top of Page

Results for: AB (Internet ***OR*** web ***OR*** online) ***AND*** AB consu... Add search to folder | Display link to search | Create alert for this search

Find:	Internet OR web OR online	in	AB Abstract or Author-Supplied Abstract
and	consumer*	in	AB Abstract or Author-Supplied Abstract
and	health* OR medical	in	AB Abstract or Author-Supplied Abstract
and	information	in	AB Abstract or Author-Supplied Abstract
and	seek* OR search* OR sought OR source* OR segment*	in	AB Abstract or Author-Supplied Abstract

Search | Clear

Add Row | Remove Row

(Searching: *Library, Information Science & Technology Abstracts*)

To store items added to the folder for a future session, Sign In to M

All Results: 1-10 of 184 **Page:** 1 2 3 4 5 **Next** **Sort by:** Date

See: All Results | Academic Journals | Magazines | Newspapers

Narrow Results by Subject

- INTERNET
- MEDICAL informatics
- MEDICAL care
- INFORMATION resources
- HEALTH education
- WEB sites
- INTERNET searching
- UNITED States
- ONLINE information services
- INFORMATION retrieval

1. Group disparities and health information: a study of online access for the underserved. By: Lorence, Daniel; Heeyoung Park. Health Informatics Journal, Mar2008, Vol. 14 Issue 1, p29-38, 10p, 3 charts, 4 graphs; (*AN 31200516*)

2. A study of peer-to-peer information in a domain of uncertainty: the case of epilepsy. By: Lorence, Daniel; Li Chen. Health Informatics Journal, Dec2007, Vol. 13 Issue 4, p303-316, 14p, 1 chart, 7 diagrams; (*AN 27987387*)

3. Evolution from medical bibliographic information services to health information services. By: Atsutake, Nozoe. Joho Kanri, Dec2007, Vol. 50 Issue 9, p580-593, 14p; (*AN 30001191*)
Cited References (8)

4. Time, Cost, Information Seeking Skills and Format of Resources Present Barriers to Information Seeking by Primary Care Practitioners in a Research Environment. By: Preddie, Martha Ingrid. Evidence Based Library & Information Practice, Oct2007, Vol. 2 Issue 3, p105-107, 3p; (*AN 28018347*)

5. Do People Experience Cognitive Biases while Searching for Information? By: Lau, Annie Y. S.; Coiera, Enrico W.. Journal of the American Medical Informatics Association, Sep/Oct2007 Vol. 14 Issue 5, p599-608, 10p, 7 charts, 7 diagrams, 5 graphs; DOI: 10.1197/jamia.M2411; (*AN 26964137*)

6. "If My Mother Was Alive I'd Probably Have Called Her.". By: Harris, Roma; Wathen, Nadine. Reference & User Services Quarterly, Fall2007, Vol. 47 Issue 1, p67-79, 13p, 1 chart; (*AN 27350259*)
Cited References (27)

Results for: AB (Internet ***OR*** web ***OR*** online) ***AND*** AB consu...

Added to folder | Display link to search

Create alert for this search

☑ **Suggest Subject Terms**

Find:	Internet OR web OR online	in	AB Abstract
and	consumer*	in	AB Abstract
and	health* OR medical	in	AB Abstract
and	information	in	AB Abstract
and	seek* OR search* OR sought OR source* OR segment*	in	AB Abstract

Search | Clear

Add Row | Remove Row

in: MEDLINE

(Searching: *MEDLINE*)

Refine Search | Search History/Alerts | Results

All Results: 1-20 of 269 **Page: 1** 2 3 4 5 Next **Sort by:** Date

Narrow Results by Subject

Humans

Internet

United States

Female

Adult

Male

Middle Aged

Internet utilization

Aged

Information Storage and Retrieval methods

1. Hispanics' use of Internet health information: an exploratory study. (eng; includes abstract) By Peña-Purcell N, Journal Of The Medical Library Association: JMLA [J Med Libr Assoc], ISSN: 1558-9439, 2008 Apr; Vol. 96 (2), pp. 101-7; PMID: 18379664
Find It@OHSU Library

2. Commonly cited website quality criteria are not effective at identifying inaccurate online information about breast cancer. (eng; includes abstract) By Bernstam EV, Walji MF, Sagaram S, Sagaram D, Johnson CW, Meric-Bernstam F, Cancer [Cancer], ISSN: 0008-543X, 2008 Mar 15; Vol. 112 (6), pp. 1206-13; PMID: 18266210
Find It@OHSU Library

3. Evaluating Online Direct-to-Consumer Marketing of Genetic Tests: Informed Choices or Buyers Beware? (eng; includes abstract) By Geransar R, Einsiedel E, Genetic Testing [Genet Test], ISSN: 1090-6576, 2008 Spring; Vol. 12 (1), pp. 13-23; PMID: 18373401
Find It@OHSU Library

4. Group disparities and health information: a study of online access for the underserved. (eng; includes abstract) By Lorence D, Park H, Health Informatics Journal [Health Informatics J], ISSN: 1460-4582, 2008 Mar; Vol. 14 (1), pp. 29-38; PMID: 18258673
Find It@OHSU Library

5. [The analysis of health related behavior after using health information on the internet.] (kor; includes abstract) By Jo HS, Kim HJ, Song YL, Journal Of Preventive Medicine And Public Health = Yebang Ŭihakhoe Chi [J Prev Med Pub Health], ISSN: 1975-8375, 2008 Mar; Vol. 41 (2), pp. 121-7; PMID: 18385553

Find It@OHSU Library	
6. Building Quality Report Cards for Geriatric Care in The Netherlands: Using Concept Mapping to Identify the Appropriate "Building Blocks" From the Consumer's Perspective. (eng; includes abstract) By Groenewoud Msc AS, van Exel Msc NJ, Berg Phd M, Huijsman Phd R, The Gerontologist [Gerontologist], ISSN: 0016-9013, 2008 Feb; Vol. 48 (1), pp. 79-92; PMID: 18381835 Find It@OHSU Library	Added
7. Audio-visual presentation of information for informed consent for participation in clinical trials. (eng; includes abstract) By Ryan RE, Prictor MJ, McLaughlin KJ, Hill SJ, Cochrane Database Of Systematic Reviews (Online) [Cochrane Database Syst Rev], ISSN: 1469-493X, 2008; (1); Cochrane AN: CD003717; PMID: 18254029 Find It@OHSU Library	Added
8. College health professionals and academic librarians: collaboration for student health. (eng; includes abstract) By Hallyburton A, Kolenbrander N, Robertson C, Journal Of American College Health: J Of ACH [J Am Coll Health], ISSN: 0744-8481, 2008 Jan-Feb; Vol. 56 (4), pp. 395-400; PMID: 18316283 PDF Full Text Find It@OHSU Library	Added
9. Impact of web searching and social feedback on consumer decision making: a prospective online experiment. (eng; includes abstract) By Lau AY, Coiera EW, Journal Of Medical Internet Research [J Med Internet Res], ISSN: 1438-8871, 2008; Vol. 10 (1), pp. e2; PMID: 18244893 Find It@OHSU Library	Added
10. Quality of information accompanying on-line marketing of home diagnostic tests. (eng; includes abstract) By Datta AK, Selman TJ, Kwok T, Tang T, Khan KS, Journal Of The Royal Society Of Medicine [J R Soc Med], ISSN: 0141-0768, 2008 Jan; Vol. 101 (1), pp. 34-8; PMID: 18263912 Find It@OHSU Library	Added
11. The authority and utility of internet information. (eng; includes abstract) By Merrell RC, Cone SW, Rafiq A, Studies In Health Technology And Informatics [Stud Health Technol Inform], ISSN: 0926-9630, 2008; Vol. 131, pp. 265-72; PMID: 18305336 Find It@OHSU Library	Added
12. A study of peer-to-peer information in a domain of uncertainty: the case of epilepsy. (eng; includes abstract) By Lorence D, Chen L, Health Informatics Journal [Health Informatics J], ISSN: 1460-4582, 2007 Dec; Vol. 13 (4), pp. 303-16; PMID: 18029406 Find It@OHSU Library	Added
13.	

Enter Keyword or phrase (use "*" or "$" for truncation):

(•) Keyword ( ) Author ( ) Title ( ) Journal

Search

[x] Map Term to Subject Heading

In Basic Search, results are ranked by relevancy based on the search terms.

Limits (Click to close)

[ ] Full Text [ ] Human [ ] English Language
[ ] Abstracts [ ] PsycARTICLES Journals [ ] All Journals
[ ] Latest Update

Publication Year - -

Additional Limits

Search History (18 searches) (Click to close) View Saved

	#	Searches	Results	Display
[ ]	1	(Internet or web or online).mp. [mp=title, abstract, heading word, table of contents, key concepts]	20896	DISPLAY
[ ]	2	consumer$.mp. [mp=title, abstract, heading word, table of contents, key concepts]	27111	DISPLAY
[ ]	3	(health$ or medical).mp. [mp=title, abstract, heading word, table of contents, key concepts]	361248	DISPLAY
[ ]	4	information.mp. [mp=title, abstract, heading word, table of contents, key concepts]	225693	DISPLAY
		(seek$ or search$ or sought or source$ or segment$).mp.		

CONTRACT

☐	5	[mp=title, abstract, heading word, table of contents, key concepts]	185128	DISPLAY
☐	6	1 and 2 and 3 and 4 and 5	98	DISPLAY
☐	7	(Internet or web or online).ab,sh,ti.	20054	DISPLAY
☐	8	consumer$.ab,sh,ti.	26589	DISPLAY
☐	9	(health$ or medical).ab,sh,ti.	327925	DISPLAY
☐	10	information.ab,sh,ti.	208409	DISPLAY
☐	11	(seek$ or search$ or sought or source$ or segment$).ab,sh,ti.	178063	DISPLAY
☐	12	7 and 8 and 9 and 10 and 11	84	DISPLAY
☐	13	(Internet or web or online).ab.	18560	DISPLAY
☐	14	consumer$.ab.	17660	DISPLAY
☐	15	(health$ or medical).ab.	289250	DISPLAY
☐	16	information.ab.	199373	DISPLAY
☐	17	(seek$ or search$ or sought or source$ or segment$).ab.	168817	DISPLAY
☐	**18**	**13 and 14 and 15 and 16 and 17**	**76**	DISPLAY

Remove Selected | Combine selections with: And Or

RSS Save Search History

In Basic Search, results are ranked by relevancy based on the search terms.

Search Aid

Your search

Search terms used:

consumer
health
information
internet
medical
online
search
seek
segment
sought
source

Narrow search

Narrow your results by:

Subjects
Authors
Journals

Customize Display | Reset Display

View All Abstracts: ☐

Sort By: -

Results Per Page: 10

Results of your search: **13 and 14 and 15 and 16 and 17**

Viewing **1-10** of **76** Results

Next Page »

Go to #: 1 GO

☐ 1.

Mukamel, Dana B; Weimer, David L; Mushlin, Alvin I. **Interpreting market share changes as evidence for effectiveness of quality report cards. [References].** [Journal; Peer Reviewed Journal] *Medical Care. Vol 45(12) Dec 2007, 1227-1232.*

- Abstract
- Complete Reference
- Ovid Full Text
- Find It@OHSU Library

Year of Publication

2007

View Abstract

Search Results

Search Aid

Your search

Search terms used:

consumer
health
information
internet
medical
online
search
seek
segment
sought
source

Narrow search

Narrow your results by:

Subjects
Authors
Journals

Results Manager

Actions

Display
Print Preview
Email
Save

Results

- Selected Results
- All on this page
- All in this set (1-76)

and/or Range:

Clear Selected Results

Customize Display | Reset Display

View All Abstracts:

Sort By: -

Results Per Page: 10

Results of your search: **13 and 14 and 15 and 16 and 17**

Viewing **1-10** of **76** Results

Your Recent Searches [+]

Next Page »

Go to #: 1 GO

1. Mukamel, Dana B; Weimer, David L; Mushlin, Alvin I. **Interpreting market share changes as evidence for effectiveness of quality report cards. [References].** [Journal; Peer Reviewed Journal] *Medical Care. Vol 45(12) Dec 2007, 1227-1232.*

- Abstract
- Complete Reference
- Ovid Full Text
- Find It@OHSU Library

Year of Publication
2007

View Abstract

Find Similar | Find Citing Articles

2. Vinker, Shlomo; Weinfass, Michael; Kasinetz, Lior M; Kitai, Eliezer; Kaiserman, Igor. **Web-based question-answering service of a family physician--The characteristics of queries in a non-commercial open forum. [References].** [Journal; Peer Reviewed Journal] *Medical Informatics and The Internet in Medicine. Vol 32(2) Jun 2007, 123-129.*

- Abstract
- Complete Reference
- Find It@OHSU Library

Year of Publication
2007

View Abstract

Find Similar | Find Citing Articles

3. Porter, Ann; Edirippulige, Sisira. **Parents of deaf children seeking hearing loss-related information on the Internet: The Australian experience. [References].** [Journal; Peer Reviewed Journal] *Journal of Deaf Studies and Deaf Education. Vol 12(4) Fal 2007, 518-529.*

- Abstract
- Complete Reference
- Find It@OHSU Library

Year of Publication

Fields

- Citation (Title,Author,Source)
- Citation + Abstract
- Citation + Abstract + Subject Headings
- Complete Reference

Select Fields

Result Format

- Ovid
- BRS/Tagged
- Reprint/Medlars
- Brief (Titles) Display
- Direct Export

Include Search History

Sort Keys

Primary:

-

Ascending

Secondary:

-

Ascending

Actions

Display

Print Preview

Email

Save

2007

View Abstract

Find Similar | Find Citing Articles

---

4. Anderson, James G. Consumers of e-Health: **Patterns of Use and Barriers. [References].** [Journal; Peer Reviewed Journal] *Social Science Computer Review. Vol 22(2) Sum 2004, 242-248.*

Year of Publication

2004

View Abstract

Find Similar | Find Citing Articles

- Abstract
- Complete Reference
- Find It@OHSU Library

---

5. Bates, Benjamin R; Romina, Sharon M; Ahmed, Rukhsana. **The effect of improved readability scores on consumers' perceptions of the quality of health information on the internet. [References].** [Journal; Peer Reviewed Journal] *Journal of Cancer Education. Vol 22(1) Spr 2007, 15-20.*

Year of Publication

2007

View Abstract

Find Similar | Find Citing Articles

- Abstract
- Complete Reference
- Find It@OHSU Library

---

6. Norman, Cameron D; Skinner, Harvey A. **eHEALS: The eHealth Literacy Scale. [References].** [Journal; Peer Reviewed Journal] *Journal of Medical Internet Research. Vol 8(4) 2006, No Pagination Specified.*

Year of Publication

2006

View Abstract

Find Similar | Find Citing Articles

- Abstract
- Complete Reference
- Find It@OHSU Library

---

7. Ivanitskaya, Lana; O'Boyle, Irene; Casey, Anne Marie. Health information **literacy and competencies of information age students: Results from the interactive online research readiness self-assessment (RRSA). [References].** [Journal; Peer Reviewed Journal] *Journal of Medical Internet Research. Vol 8(2) 2006, No Pagination Specified.*

- Abstract
- Complete Reference
- Find It@OHSU Library

Web of Science®

Results Topic=(Internet OR web OR online) AND Topic=(consumer*) AND Topic=(health* OR medical) AND Topic=(information) AND Topic=(seek* OR search* OR sought OR source* OR segment*)
Timespan=All Years. Databases=SCI-EXPANDED, SSCI, A&HCI.

Thon 5c
View \

Results: **276** Page 1 of 28 Go Sort by: Lat

Hide Refine

Refine Results

Search within results for

Search

Subject Areas Refine

- HEALTH CARE SCIENCES & SERVICES (59)
- MEDICAL INFORMATICS (59)
- INFORMATION SCIENCE & LIBRARY SCIENCE (56)
- COMPUTER SCIENCE, INFORMATION SYSTEMS (46)
- PUBLIC, ENVIRONMENTAL & OCCUPATIONAL HEALTH (27)

more options / values...

Document Types Refine

- ARTICLE (252)
- REVIEW (20)
- EDITORIAL MATERIAL (2)
- CORRECTION (1)
- MEETING ABSTRACT (1)

more options / values...

Authors

Source Titles

Publication Years

Institutions

Languages

Countries/Territories

For advanced refine options, use Analyze Results

Print | E-mail | Add to Marked List | Save to EndNote Web | more options

Analyze Results | Crea

1. Title: Effects of the metacognitive computer-tool met.a.ware on th laypersons
Author(s): Stadtler M, Bromme R
Source: **COMPUTERS IN HUMAN BEHAVIOR** Volume: **24** Issue: **3** **737** Published: **MAY 2008**
Times Cited: **1**

2. Title: The public's need for dentistry information on the Internet ai status in Taiwan
Author(s): Chiang YY, Shiau DK, Wang SL, et al.
Source: **JOURNAL OF DENTAL SCIENCES** Volume: **2** Issue: **1** Pa Published: **MAR 2007**
Times Cited: **0**

3. Title: Commonly cited website quality criteria are not effective at i inaccurate online information about breast cancer
Author(s): Bernstam EV, Waiji MF, Sagaram S, et al.
Source: **CANCER** Volume: **112** Issue: **6** Pages: **1206-1213** Publis **2008**
Times Cited: **0**
Full Text

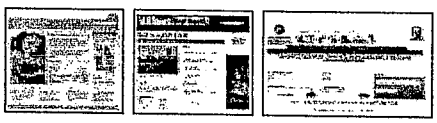
4. Title: The return of the house call: The role of Internet-based inte bringing health information home to older adults
Author(s): Macias W, McMillan S
Source: **HEALTH COMMUNICATION** Volume: **23** Issue: **1** Pages: Published: **JAN-FEB 2008**
Times Cited: **0**

5. Title: How complementary and alternative medicine practitioners
Author(s): Willinsky J, Quint-Rapoport M
Source: **JOURNAL OF MEDICAL INTERNET RESEARCH** Volume: Article Number: **e19** Published: **2007**
Times Cited: **0**
Full Text

6. Title: Internet-based physical activity interventions: A systematic literature

1. Comparing Staffing Levels in the Online Survey Certification and Reporting (OSCAR) System With the Medicaid Cost Report Data: Are Differences Systematic? By: Kash, Bita A.; Hawes, Catherine; Phillips, Charles D.. Gerontologist, Aug2007, Vol. 47 Issue 4, p480-489, 10p, 4 charts, 2 graphs; (*AN 27273595*)
   Cited References (21)
   Find It @ PSU

2. Public information on health care providers. By: Golder, Su; Light, Kate; Wright, Kath. Journa of Health Services Research & Policy, Jan2007, Vol. 12 Issue 1, p59-60, 2p, 3bw; DOI: 10.1258/135581907779497611; (*AN 23686871*)
   PDF Full Text (212K) Find It @ PSU



3. Gender and Web information seeking: A self-concept orientation model By: Hupfer, Maureen E.; Detlor, Brian. Journal of the American Society for Information Science & Technology, Jun2006, Vol. 57 Issue 8, p1105-1115, 11p, 4 Charts, 1 Diagram, 2 Graphs; DOI: 10.1002/asi.20379; (*AN 20916965*)
   Cited References (21)
   Find It @ PSU

4. Poster 33. Exploring Health Information Relationships and Boundaries: Telephone Survey Results of an African-American Community. By: Morey, Ophelia. Conference Papers -- American Sociological Association, 2006 Annual Meeting, Montreal, p1, 1p; ()

American Sociological Association, 2006 Annual Meeting, Montreal, p1, 1p; (*AN 26643022*)
PDF Full Text (55K)

5. P.O.W.E.R. Surfers: Bridging the Digital Divide to Quality Consumer Health Information By: Janik, Toni E.; Chateau, Joann L.. Journal of Consumer Health on the Internet, 2005, Vol. 9 Issue 4, p1-10, 10p; DOI: 10.1300/J381v09n04_01; (*AN 20625673*) Add
Find It @ PSU

6. Creating a More Informed Health Care Consumer: How One Medical Library Participates in Mini Medical School By: Werner, Susan E.; Chimato, Mary Carmen. Journal of Consumer Health on the Internet, 2005, Vol. 9 Issue 4, p27-33, 7p; DOI: 10.1300/J381v09n04_03; (*AN 20625675*) Add
Find It @ PSU

7. How Health Status Impacts the Types of Health Information Consumers Seek Online. By: Goldner, Melinda. Conference Papers -- American Sociological Association, 2005 Annual Meeting, Philadelphia, p1-20, 20p; (*AN 18615186*) Add
Cited References (21)
PDF Full Text (48K)

8. State Health Department Web Sites: Rich Resources for Consumer Health Information By: Alpi, Kristine M.. Journal of Consumer Health on the Internet, 2005, Vol. 9 Issue 1, p33-44, 12p, 1 Black & White Photograph, 4 Charts; DOI: 10.1300/J381v09n01_04; (*AN 16773004*) Add
Find It @ PSU

9. Health Information Seals of Approval: What do they Signify? By: Burkell, Jacquelyn. Information, Communication & Society, Dec2004, Vol. 7 Issue 4, p491-509, 19p; DOI: 10.1080/1369118042000305610; (*AN 15645037*) Add
Cited References (1)
Find It @ PSU

10. Health-Related Information on the Internet: The Impact of Race, Class and Gender. By: Goldner, Melinda. Conference Papers -- American Sociological Association, 2004 Annual Meeting, San Francisco, p1-25, 27p, 4 charts; DOI: asa_proceeding_35109.PDF; (*AN 15929598*) Add
Cited References (30)
PDF Full Text (276K)

All Results: 1-10 of 31 **Page: 1** 2 3 4 **Next** Add (1-10)

Top of Page

SEARCH RESULTS:

8 Records found for **(<and> (<near> (information)<in> KW , <near> (seek* OR search* OR sought OR source* OR segment*) <in> KW))<And> (<and> (<near> (Internet OR web OR online) <in> KW , <near> (consumer*)<in> KW , <near> (health* OR medical)<in> KW))**

In Library Lit & Inf Science

Find:

Search Within Results New Search

Revise Search Create Alert Link to Search

ALL RESULTS PEER REVIEWED

0 MARKED RECORDS: GET MARKED | CLEAR MARKS **SHOW FULL DISPLAY**

Sort By : Relevance

10 Records per Page

Browse Pages: 1

Suggested Subject

- Health / Internet resources
- Web sites / Evaluation
- Internet search engines / Evaluation
- Reference services / Michigan
- Internet searching / Evaluation
- Reference services / Evaluation
- Metadata
- Medical libraries and collections / Michigan
- Information services / Directories
- Medical literature / Evaluation

100% 1 Volk, R. M. Expert ***searching*** in ***consumer health***: an important role for librarians in the age of the ***Internet*** and the ***Web***. *Journal of the* ***Medical*** *Library Association* v. 95 no. 2 (April 2007) p. 203-7

Find It @ PSU

100% 2 Good, L. V. The ***Seeking*** Behaviors of First and Second Year Undergraduate Students When ***Searching Online*** for ***Consumer Health Information***. 2005. 39 p.

Find It @ PSU

100% 3 Burkell, J., et. al., "What does this mean?" How ***Web***-based ***consumer health information*** fails to support ***information seeking*** in the pursuit of ***informed*** consent for screening test decisions. *Journal of the* ***Medical*** *Library Association* v. 93 no. 3 (July 2005) p. 363-73

Find It @ PSU

100% 4 Maguire, S. The Indiana State Department of ***Health*** as a ***Source*** of ***Consumer Health Information***. *Indiana Libraries* v. 24 no. 3 (2005) p. 14-16

Find It @ PSU

100% 5 Tu, F. Are ***information seekers*** and users among the general public at a crossroads? An examination of the quantity of ***consumer health*** publications on eating disorders in popular magazines and on the ***Internet*** in 1998. *Public Library Quarterly* v. 18 no. 3/4 (2000) p. 139-68

Find It @ PSU

100% 6 Wood, M. S., ed ***Health*** care resources on the ***internet***: a guide for librarians and ***health*** care ***consumers***. Haworth Press, 1999. 205 p.

Find It @ PSU

100% 7 Wu Gang. , et. al., Comparing ***Web search*** engine performance in ***searching consumer health information***: evaluation and recommendations [presented at the 1998 MLA Conference]. *Bulletin of the* ***Medical*** *Library Association* v. 87 no. 4 (October 1999) p. 456-61

Find It @ PSU

100% ☐ 8 Frank, R. C., ed, et. al., The Directory of food and nutrition ***information*** for professionals & ***consumers***. 2nd ed. Oryx Press, 1992. 332 p.

Find It @ PSU

0 MARKED RECORDS: GET MARKED | CLEAR MARKS **SHOW FULL DISPLAY**

Sort By : Relevance

10 Records per Page

Browse Pages: 1

7 results found for: (KW=(**Internet** or **web** or **online**) and KW=**consumer*** and ... in ? PAIS International | Alert Me

7 ? **PAIS International**

Published Works 7 | Scholars 1087 | Web Sites 3

All Publication Types 7 | Journals 4 | Peer-Reviewed Journals 3 | Other 3

1. The Ethical Challenges of Direct-to-*Consumer* Genetic Testing
Berg, Cheryl; Fryer-Edwards, Kelly
Journal of Business Ethics, vol. 77, no. 1, pp. 17-31, Jan (I) 2008
... led to little progress in the policy arena. A 2005 ***Internet search*** identified 13 websites offering ***health***-related genetic testing for direct purchase by the ***consumer***. Further examination of these sites showed that ...
View Record | Find It @ PSU

Database: PAIS International
Descriptors: *Genetic testing | *Ethics | ***Consumers*** | *Business enterprises | *Counseling | ***Internet*** | More...

2. *Internet* Marketing of Neuroproducts: New Practices and *Healthcare* Policy Challenges
Racine, Eric; Van Der Loos, Hz Adriaan; Illes, Judy
Cambridge Quarterly of Healthcare Ethics, vol. 16, no. 2, pp. 181-194, May 2007
Draws on an analysis of ***Internet searches*** conducted in 2005 to identify emerging practices in ***Internet*** direct-to-***consumer*** advertising (DCTA) of products designed for brain function & to examine how Food & Drug ...
View Record | Find It @ PSU

Database: PAIS International
Descriptors: ***Internet*** advertising - United States | *Neurosciences

3. SARS Wars: An Examination of the Quantity and Construction of *Health Information* in the News Media
Berry, Tanya R.; Wharf-Higgins, Joan; Naylor, P.J.
Health Communication, vol. 21, no. 1, pp. 35-44, 2007
The media have the power to sway public perception of ***health*** issues by choosing what to publish and the context in which to present ***information***. The media may influence an individual's tendency to overestimate the risk of some ...
View Record | Find It @ PSU

Database: PAIS International
Descriptors: *News | *Public ***health - Information sources*** | *Mass media

4. Casting the *health*.net: advertisers are reaching out to *health*-conscious *consumers* who turn to the *Web* on a need-to-know basis
Wellner, Alison Stein
American Demographics, vol. 22, no. 3, pp. 46-49, March 2000
... efforts by drug marketers to sell their products over the ***Internet*** by advertising on ***health*** and ***medical information Web*** sites, and other sites that attract their target audience, such as mothers and seniors; US.

Database: PAIS International
Descriptors: ***Internet*** advertising | Pharmaceutical industry -- Marketing | Advertising -- Pharmaceutical industry | Medicine -- ***Web*** sites | Medicine -- ***Information sources***

View Record | Find It @ PSU

5. American Indian *Health* ***Information*** portal to documents, ***Web*** sites, databases, and other resources covering issues affecting the ***health*** and well-being of American Indians including policies, ***consumer health information***, ...
Resource Location: http://americanindianhealth.nlm.nih.gov [cited 15 July 2004]
View Record | Find It @ PSU

Database: PAIS International
Descriptors: ***Information sources*** | Indians | ***Medical*** service | Native races | Public ***health*** | United States

6. PDR.net: Getting Well Network
Web site of the ***searchable*** Physician's Desk Reference (published by Thomson ***Medical*** Economics), containing current ***information*** about drugs; includes overviews of various diseases, clinical trials, ...
Resource Location: http://www.gettingwell.com [cited 21 Jan 2004]
View Record | Find It @ PSU

Database: PAIS International
Descriptors: Physician and patient | Prescriptions | Drugs | Diseases

7. Genetics Home Reference
The National Library of Medicine's ***Web*** site for ***consumer information*** about genetic conditions and the genes responsible for those conditions.
Resource Location: http://ghr.nlm.nih.gov [cited 24 October 2003]
View Record | Find It @ PSU

Database: PAIS International
Descriptors: Genetics | ***Information sources*** | Public ***health*** education

Previous 1 Next

Record # Go

Show Short format Go

Results per page: 25 Go

```
(KW=(Internet or web or online) and KW=consumer* and KW=(health* or
medical)) and(KW=information and KW=((seek* OR search*) or sought or
(source* OR segment*)))
```

Insert field code
Keywords, KW= Insert

Search Clear

Now Selected: PAIS International

Change: --- Subject Area --- or Specific Databases

Date Range: Earliest to 2008

Limited to: Latest Update | Journal Articles Only | English Only

More Search Options: (Hide)

PAIS International Indexes & Limits

Author — Browse Author
Journal Name — Browse Journal Name
Publication Type — Browse Publication Type

Results

Dissertations & Theses RSS Feeds

38 documents found for: *(Internet OR web OR online) AND (consumer*) AND (health* OR medical) AND (information) AND (seek* OR search* OR sought OR source* OR segment*)*

» Refine Search | Set Up Alert

Dissertations

Mark all | 10 marked items: Email / Cite / Export | Show only full text | Sort results by: Most recent first

1. **Personal health records: An empirical user taxonomy**
by *Lafky, Deborah Beranek*, Ph.D., **The Claremont Graduate University**, 2008, 275 pages; AAT 3296160
Abstract | 24 Page Preview | Full Text - PDF (17 MB) | Order a copy

2. **Serial and concurrent intra-program objective sequences for children with autism**
by *Cross, Scott C.*, Ph.D., **The Florida State University**, 2007, 102 pages; AAT 3282594
Abstract | 24 Page Preview | Full Text - PDF (6 MB) | Order a copy

3. **A study on the adoption of a Web page content assessment tool: SPAT**
by *LaRue, Elizabeth Marie*, Ph.D., **University of Pittsburgh**, 2006, 137 pages; AAT 3250985
Abstract | 24 Page Preview | Full Text - PDF (2 MB) | Order a copy

4. **Consumer use of external information in choosing health plans: A model of external information search and its relationship to personal influence**
by *Schwalenstocker, Ellen S.*, Ph.D., **The George Washington University**, 2006, 551 pages; AAT 3209934
Abstract | 24 Page Preview | Full Text - PDF (24 MB) | Order a copy

5. **Health literacy and the World Wide Web: Assessing text readability and older adults' comprehension of cancer information on the Internet**
by *Friedman, Daniela B.*, Ph.D., **University of Waterloo (Canada)**, 2006, 293 pages; AAT NR17446
Abstract | 24 Page Preview | Full Text - PDF (15 MB) | Order a copy

6. **Nursing home spending, staffing and turnover**
by *Kash, Bita Arbab*, Ph.D., **The Texas A&M University System Health Science Center**, 2006, 126 pages; AAT 3238272
Abstract | 24 Page Preview | Full Text - PDF (383 K) | Order a copy

7. **Perceptions and uses of the Internet as a new health information source among Saudi college students**
by *Alrashid, Saad Abdullah*, Ph.D., **Howard University**, 2006, 97 pages; AAT 3249973
Abstract | 24 Page Preview | Full Text - PDF (5 MB) | Order a copy

8. **Physical activity on the Internet: Will typical users find quality information?**
by *Bonnar-Kidd, Kelly K.*, Ph.D., **Purdue University**, 2006, 110 pages; AAT 3251590
Abstract | 24 Page Preview | Full Text - PDF (7 MB) | Order a copy

9. **See one, do one, teach one: HIV/AIDS learners participate in communities of practice**
by *O'Grady, Laura Anne*, Ph.D., **University of Toronto (Canada)**, 2006, 231 pages; AAT NR15776
Abstract | 24 Page Preview | Full Text - PDF (12 MB) | Order a copy

10. **Taste and odor problems in source waters and water treatment facilities**
by *Dempster, Thomas Alexander*, Ph.D., **Arizona State University**, 2006, 182 pages; AAT 3210122
Abstract | 24 Page Preview | Full Text - PDF (15 MB) | Order a copy

APPENDIX B

The following table (generated using a spreadsheet application) shows the 104 citations resulting from initial application of the selection criteria to abstracts of the 748 citations shown in Appendix A. Full articles were obtained for these citations; application of selection criteria and inclusion of manual search articles [10, 13] resulted in 19 citations. As explained in the Results section, one citation [9] was removed due to duplication of results, resulting in the final 18 included citation

Author	Year	Title	Database	Included?
	1996	Online health and medical information seekers identified	Business Source Premier	no
	2000	Information About Quality in a Randomized Evaluation	SocINDEX	no
	2001	Consumers use Internet when sick, and they favor disease-specific Web s	Business Source Premier	no
	2001	Patients Using Internet For Health Care Guidance Are Responsive, But N	Business Source Premier	no
	2004	Health Attitudes, Health Cognitions, and Health Behaviors Among Interne	Business Source Premier	no
	2006	How will patients behave?	Business Source Premier	no
	2006	INCREASING USE OF THE INTERNET FOR HEALTH CARE DECISION	LISTA	no
	2007	The Adaptive Web Methods and Strategies of Web Personalization	Compendex	no
Akesson	2007	Health care consumers' experiences of information communication techn	Medline	no
Anton	2006	Literacy, consumer informatics, and health care outcomes: Interrelations	Medline	no
Ashman	2008	Consumer choice for over-the-counter drugs and supplements in the heal	Business Source Premier	no
Barrette	2007	Joining the social circle	Business Source Premier	no
Berger	2005	Internet use and stigmatized illness	Web of Science	**yes**
Bernhardt	2004	Online pediatric information seeking among mothers of young children: R	Web of Science	no
Bessell	2002	Do Internet interventions for consumers cause more harm than good? A s	Medline	no
Bessell	2002	Prevalence of South Australia's online health seekers	Medline, BSP, SocINDEX, W of S	**yes**
Bundorf	2004	Consumers' use of the Internet for health insurance	Medline	no
Bundorf	2006	Who searches the internet for health information?	Medline	**yes**
Burk	2003	An online consumer health information resource: 3-year usage summary	Medline	no
Chandra	2004	Utilization of the Internet by Rural West Virginia Consumers	CINAHL, LISTA, SocINDEX	no
Choi	2007	Understanding the impact of direct-to-consumer (DTC) pharmaceutical ac	Web of Science	no
Cline	2001	Consumer health information seeking on the Internet: the state of the art	Medline	no
Cotten	2003	Characteristics of Online and Offline Health Information Seekers	Sociological Abstracts	no
David	2003	Search disclosure: Understanding digital information platform preference	LISTA, EBSCOhost	no
Dey	2008	Perceptions and behaviour of access of the Internet: A study of women at	Web of Science	**yes**
Dutta-Bergman	2003	Trusted online sources of health information: differences in demographics	Medline	no
Dutta-Bergman	2004	Health attitudes, health cognitions, and health behaviors among Internet h	Medline	**yes**
Dutta-Bergman	2004	Primary sources of health information: comparisons in the domain of heal	Medline, Web of Science	no
Dutta-Bergman	2005	Developing a profile of consumer intention to seek out additional informati	Medline, Web of Science	no
Eysenback	2002	How do consumers search for and appraise health information on the wor	Medline	no
Fowles	2004	Patients' interest in reading their medical record: relation with clinical and	Medline	no
Fowles	2004	Early experience with employee choice of consumer-directed health plans	Medline	no
Frisby	2002	Smoking cessation and the Internet: a qualitative method examining onlin	Medline	no

Goldner	2004	Health-Related Information on the Internet: The Impact of Race, Class an	SocINDEX	**yes**
Goldner	2006	How Health Status Impacts the Types of Information Consumers Seek Or	PyschInfo, Sociological Abstracts	no
Greenberg	2004	Setting the public agenda for online health search: a white paper and actic	Medline	no
Hardey	2001	'E-Health': The Internet and the Transformation of Patients into Consume	Sociological Abstracts	no
Hart	2004	The role of the Internet in patient-practitioner relationships: Findings from	Web of Science	no
Hattery	1999	Wired for health: a report on electronic consumer health information	LISTA	no
Hesse	2006	The health information national trends survey: research from the baseline	Medline, Web of Science	no
Hong	2002	A query analysis of consumer health information retrieval	ISI Proceedings	no
Houston	2001	The potential of consumer health informatics	Medline	no
Houston	2002	Users of Internet health information: differences by health status	Medline	**yes**
Huntington	2003	Characterising and profiling health web user and site types: Going beyonc	Compendex	no
Huntington	2004	Consumer trust in health information on the web	Compendex	no
Huntington	2004	The general public's use of (and attitudes towards) interactive, personal d	Web of Science	no
Jo	2008	Korean [The analysis of health related behavior after using health informa	Medline	no
Jones	2001	eHealth consumerism: An exploratory study of the impact people who wis	Dissertations & Masters Theses	no
Kahn	2001	How the media influences women's perceptions of health care	Medline, Business Source Premier	no
King	2007	Here Come the Cyberchondriacs	Business Source Premier	no
Kivits	2006	Informed patients and the Internet - A mediated context for consultations \	Web of Science	no
Kontos	2007	Barriers and facilitators to home computer and Internet use among urban	Web of Science	no
Lacroix	2001	How consumers are gathering information from MEDLINEplus	Web of Science	no
Lafky	2008	Personal health records: An empirical user taxonomy	Dissertations & Masters Theses	no
Landro	2000	More People Are Using Internet Health Sites, But Fewer Are Satisfied	Business Source Premier	no
Lewis	2006	Seeking Health Information on the Internet: Lifestyle Choice or Bad Attack	Sociological Abstracts	no
Licciardone	2001	Use of the internet as a resource for consumer health information: results	Medline	no
Lorence	2006	Web-based consumer health information: public access, digital division, a	Medline	**yes**
Lorence	2006	Assessing health consumerism on the Web: a demographic profile of info	Medline	**yes**
Lorence	2006	Racial disparities in health information access: resilience of the Digital Div	Medline	**yes**
Lorence	2006	Measuring dissimilarity in online health search activities	Medline	**yes**
Lorence	2006	New technology and old habits: The role of age as a technology chasm	Medline	no
Lorence	2008	Group disparities and health information: a study of online access for the I	Medline	**yes**
Lueg	2003	Patient health information search: An exploratory model of web-based sea	Compendex	**yes**
Macias	2004	Dr. Mom and Dr. Web: A Qualitative Analysis of Women's Use of Health I	Business Source Premier	no
Macias	2008	The return of the house call: The role of Internet-based interactivity in brin	Web of Science	no
Maibach	2006	Understanding consumers' health information preferences: Development	Web of Science	no

Massoni	2000	A case study of a health-related Internet discussion group as a venue for :	Dissertations & Masters Theses	no
McGuire	2007	Search behavior varies based on stage of illness	Business Source Premier	no
McGuire	2008	Consumers tend to turn to web for wellness info	Business Source Premier	no
McKeown	2001	PERSIVAL, a System for Personalized Search and Summarization over M	ERIC	no
McMullan	2006	Patients using the Internet to obtain health information: how this affects th	Medline	no
Millard	2002	Use of the Internet by patients with chronic illness	Web of Science	**yes**
Minor-Cooley	2006	The effects of information situation and information source on the perceiv	Dissertations & Masters Theses	no
Moen	2006	Informatics-based learning resources for patients and their relatives in rec	ISI Proceedings	no
Morahan-Martin	2004	How Internet users find, evaluate, and use online health information: A cr	Web of Science	no
Morey	2006	Poster 33. Exploring Health Information Relationships and Boundaries: Te	SocINDEX	no
Murray	2004	Interactive Health Communication Applications for people with chronic dis	Medline	no
Nammacher	1998	Consumer use of the Internet for health information: A population survey	Web of Science	no
Navarro	2001	A new perspective on consumer health Web use: "valuegraphic" profiles c	Medline	no
Nicholas	2001	Digital health information provision and health outcomes	Compendex	no
Nicholas	2001	Searching intention and information outcome	Web of Science	no
Nicholas	2002	Evaluating metrics for comparing the use of web sites: A case study of tw	Compendex	no
Nicholas	2003	Assessing used content across five digital health information services usir	Web of Science	no
Nicholas	2004	The characteristics of users and non-users of a kiosk information system	Compendex	no
Nicholas	2004	Re-appraising information seeking behaviour in a digital environment - Bo	Web of Science	no
Niederdeppe	2007	Examining the dimensions of cancer-related information seeking and scar	Web of Science	no
Norman	2006	eHEALS: The eHealth Literacy Scale	Medline	no
Norman	2006	eHealth literacy: Essential skills for consumer health in a networked world	Web of Science	no
Oetjen	2006	Consumer determinants of the use of health plan information in plan selec	Medline, Business Source Premier	no
Pena-Purcell	2008	Hispanics' use of Internet health information: an exploratory study	Medline	**yes**
Peterson	2003	How do consumers search for and appraise information on medicines on	Medline	no
Price	2001	Needs assessment of those who seek information about clinical depressic	Dissertations & Masters Theses	no
Rains	2007	Perceptions of traditional information sources and use of the world wide w	Web of Science	no
Rana	2007	KidsHealth: Child Health Information for All Ages	CINAH, LISTA	no
Renahy	2006	Internet uses for health information seeking: A literature review	Medline	no
Rieg	2000	Information retrieval of self-care and dependent-care agents using NetWe	Dissertations & Masters Theses	no
Rozmovits	2004	What do patients with prostate or breast cancer want from an Internet site	Web of Science	no
Snipes	2005	Information search in health care decision-making: a study of word-of-mo	Medline	no
Taubenheim	1999	Conducting survey research on the Internet: Use of the Internet to search	Dissertations & Masters Theses	**yes**
van Dillen	2004	Perceived relevance and information needs regarding food topics and pre	Web of Science	no

Wilkins	2001	Has the Web really empowered health care consumers? The truth is cust	Medline	no
Ybarra	2006	Help seeking behavior and the Internet: a national survey	Medline	**yes**
Yorn	2006	Consumers' use of the internet for health information	Medline	no