

A decade of **h**ints



*Quantifying the Health Information
Revolution through Data Innovation
and Collaboration*

Summaries of Presentations and Posters



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Revolution through Data Innovation
and Collaboration*

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PRESENTATIONS

Paper Session #1

Patient-Provider Communication and Care Delivery Across the Cancer Control Continuum

Receipt of Treatment Summaries and Care Plans: A Comparison of the 2012 LIVESTRONG Survey and the 2012 Health Information National Trends Survey

Stephanie Nutt, MA, MPA, LIVESTRONG Foundation

Ellen Beckjord, PhD, MPH, and Ruth Rechis, PhD

There are more than 14 million cancer survivors in the United States—a number that is on the rise. Care coordination resources will be essential to provide support to this growing population. Key stakeholders have proposed treatment summaries (TS) and survivorship care plans (SCPs) as a way to extend support.

In a 2012 LIVESTRONG Survey, the LIVESTRONG Foundation included questions to understand the role of TSs and SCPs in survivorship care and post-treatment quality of life. Several of the questions used on the LIVESTRONG Survey mirrored those used on the 2012-2013 HINTS Cycle 4, Cycle 2. While the LIVESTRONG Survey was an online convenience sample, HINTS was mailed to a nationally representative sample.

In total, 5,313 individuals who had completed treatment or were living with cancer as a chronic condition answered the LIVESTRONG questions, and 367 post-treatment cancer survivors answered the HINTS questions. Both the LIVESTRONG sample and HINTS demonstrated that the majority of cancer survivors received instructions on follow-up care (92% and 79%, respectively). Interestingly, a higher percentage received a TS in the HINTS sample (66%) as compared with 51% of the LIVESTRONG sample. Not asked on HINTS was whether survivors had received an SCP. In the LIVESTRONG sample, only 17% of survivors indicated that they had. However, the more recently survivors had completed treatment, the more likely they were to have received an SCP ($p < .001$). Compared with survivors without care plans, survivors with SCPs felt very confident that they could openly discuss problems related to their cancer diagnosis with their doctor ($p < .001$).

Many survivors do not receive TS, and even fewer survivors receive SCPs, but the survivors in the LIVESTRONG sample reported benefits from receiving them, specifically around improving communication with providers.

Role of Patient-Centered Communication in the Association Between Usual Source of Healthcare and Patients' Ratings of Quality of Care

Lila J. Finney Rutten, PhD, MPH, Mayo Clinic

Amenah Agunwamba, PhD; Ellen Burke Beckjord, PhD, MPH; Bradford Hesse, PhD; Richard P. Moser, PhD; and Neeraj Arora, PhD

Having an ongoing relationship with a healthcare provider or a usual source of healthcare has been associated with greater use of preventive services and decreased use of emergency services and with patients' ratings of quality and satisfaction. A growing body of research demonstrates that patient-centered communication results in improvements in adherence to treatment recommendations, improvements in the management of chronic disease, and improvements in quality of life and disease-related outcomes. We analyzed data from HINTS 4, Cycle 1. Data for HINTS 4, Cycle 1 were collected via mailed questionnaire from October 2011 to February of 2012 ($N = 3,959$). We hypothesized that the association between having a usual source of care and ratings of healthcare quality would be mediated by the patient-centeredness of communication between patients and clinicians. We used Baron and Kenny's method for calculating multiple regression analyses to test for mediation to assess whether patient-centered communication mediates the association between usual source of care and patient ratings of healthcare quality. Overall, ratings of quality of care and ratings of the patient-centeredness of communication were higher among those with a usual source of care. For the mediation model, parameter estimates for each pathway were estimated through regression analysis, controlling for gender, age, race/ethnicity, education, income, health insurance status, and frequency of healthcare use. Evidence for partial mediation was observed (Sobel test statistic: 4.82, $p < .0001$). These results confirm the importance of patient-centered communication in shaping patients' perceptions of the quality of their care, accounting for a significant portion of the observed relationship between having a usual source of care and quality of care ratings.

The Impact of Guideline Changes on Shared Decision-Making and Utilization of Cancer Screenings

Marina Soley-Bori, MA, PhD student in Health Services Research, Health Economics, Boston University

Christine Gunn, MA, PhD student in Health Services Research, Outcomes Research, Boston University

Recent changes in prostate and breast cancer screening guidelines promote the use of shared decision-making (SDM) between patients and providers. Given the mandate of the ACA to use SDM in clinical practice, it is imperative to develop an understanding of its impact on quality and cost of care in the United States.

This study evaluated the current use of SDM in screening decisions for prostate and breast cancer from the patient perspective.

We used the HINTS 2 ($N = 5,394$) and HINTS 4 Cycle 1 ($N = 3,959$) data to measure cancer screening utilization before and after guideline changes. Generalized logit models assessed the impact of patient-reported choice on utilization of cancer screenings in 2012. All models controlled for socioeconomic variables, health insurance, family and personal history of cancer, risk perception, and a composite indicator of communication.

In 2012, 27.75% of men reported ever having a prostate-specific antigen (PSA) test, while 60.36% of women reported ever having a mammogram. These rates are significantly less than those reported in 2005 (71.98% and 84.19%, respectively). As these numbers suggest, PSA testing demonstrated significantly greater declines over this period relative to mammogram screening ($p = .03$). By 2012, only 28% of men and 35% of women reported being given a choice to undergo cancer screening, suggesting relatively low levels of patient-perceived shared decision-making in clinical practice. In multivariate analysis, those who were provided a choice to have a PSA test were less likely to have never received a test (OR: 0.045; 95% CI 0.02, 0.10). For women, choice reduced the odds of never having had mammogram versus having had one within the last two years by 64.8% (95% CI: 0.196, 0.632).

While SDM is infrequently perceived to occur in cancer-screening discussions, patient-reported choice appears to be a key driver in the use of screening services.

Paper Session #2

Health Cognition

Are Perceptions of the Roles of Behaviors and Genetics in Disease Risk Associated with Behavior Change?

Anh Bao Nguyen, PhD, MPH, National Cancer Institute

Heather Patrick, PhD, and April Oh, PhD

This study examined national trends in behavioral change and how they are associated with beliefs about the role of genetics and behaviors in determining disease risk. The data are from HINTS 4. Weighted multinomial logistic regression models were conducted to examine whether perceptions surrounding the role of behaviors and the role of genetics for obesity, heart disease, diabetes, and cancer were associated with behavioral change. Behavioral change was assessed for exercise, weight loss, fruit intake, vegetable intake, and soda intake. Findings indicated that overall, greater perception of the role of behaviors in determining obesity, heart disease, and diabetes were significantly associated with behaviors involved with weight loss: increasing exercise and increasing vegetable intake. In addition, beliefs that the role of genetics in determining cancer was either “a little” or “a lot” were more likely to predict weight maintenance behaviors in comparison to those who answered “somewhat.” The study's findings highlight the need for strategies that will increase the public's awareness and knowledge of the role of modifiable risk factors such as diet and nutrition for chronic health conditions; these public health strategies have large potential for inducing health promotion and lifestyle changes.

Awareness and Perceived Harmfulness of E-Cigarettes Among Current, Former, and Non-Smokers

Andy SL Tan, MBBS, MPH, PhD, University of Pennsylvania
Cabral Bigman, PhD

Electronic nicotine delivery systems (ENDS), also known as e-cigarettes, are increasingly marketed as harm-reduction approaches for tobacco cessation. However, the safety and efficacy of ENDS are not yet fully evaluated, and FDA regulation is still pending. This study assessed the trends in e-cigarette awareness and perceived harmfulness compared with smoking cigarettes based on survey data from a nationally representative sample of Americans age 18 years or older.

We obtained data from HINTS 4 Cycle 2, conducted from October 2012 to January 2013. E-cigarette awareness was dichotomized ('yes' versus 'never heard of e-cigarettes'). Perceived harmfulness of e-cigarettes was dichotomized as 'less/much less harmful' versus 'just as/more/much more harmful' compared with smoking cigarettes. Predictors included smoking status, demographic factors, and health status. We performed weighted multiple logistic regressions models to predict awareness and perceived harmfulness.

In this sample, 57% were non-smokers, 26% were former smokers, and 16% were current smokers. Overall, more than three-fourths of American adults (77.1%) were aware of e-cigarettes. Of these, 51% believed e-cigarettes were less harmful than cigarettes. Younger, white (compared with Hispanic), more educated respondents, and current or former smokers (compared with non-smokers) were more likely to be aware of e-cigarettes. Among adults who were aware of e-cigarettes, younger, more educated respondents, and current smokers (compared with former and non-smokers) were more likely to believe that e-cigarettes were less harmful.

A majority of American adults are aware of e-cigarettes; about half who are aware think e-cigarettes are less harmful than regular cigarettes. Awareness and perceptions of lower harm have increased compared with earlier national surveys (2009-11). The findings inform efforts to promote ENDS for harm reduction strategies for current smokers and concurrent efforts to monitor whether ENDS marketing inadvertently encourages adoption of these devices among non-smokers.

Using HINTS Data to Assess a Theoretical Model of Health Information Seeking

Denna Wheeler, PhD, Oklahoma State University Center for Health Sciences
Laura L. B. Barnes, PhD

Increasingly, patient involvement in medical decision-making has become a focus of health care research. Numerous programs to improve patient-provider interaction include health literacy interventions and cultural competence training. Their goal is to empower patients to fully engage in health information seeking, shared decision-making regarding treatment options, and self-care in order to improve health behaviors and treatment compliance, ultimately leading to better health outcomes. The results of these initiatives have been inconsistent due in part to substantial variability in patients' preferences for participation.

Though the Internet has increased health information resource availability, many are reluctant to engage in information seeking. In this study, we empirically tested components of a model recently proposed by Anker, Reinhart, and Freeley (2011) based on a systematic review of literature. The model was tested using data from HINTS 2013 Cycle 2. The focus of this study was limited to Internet users who had never received a cancer diagnosis.

The degree to which people monitor health information resources for cancer information was hypothesized to be directly predicted by concerns about environmental causes of cancer, perceived personal cancer risk, and fatalistic attitude. Family cancer history was included as an indirect predictor of monitoring via perceived cancer risk.

Structural Equation Modeling conducted using AMOS (version 19) software resulted in a well-fitting model that explained 23.3% of the variance in monitoring. People expressing greater environmental concerns and perceived personal risk for cancer were more likely to monitor sources of cancer information. The effect of fatalistic attitude on monitoring was complex. While its direct effect and total net effect were negative (i.e., those with a more fatalistic attitude were less likely to monitor), fatalism had a positive indirect effect on monitoring via its positive effect on perceived personal risk.

Paper Session #3

Special Populations

HINTS-China: Promoting Understanding About Consumer Health Information Needs and Practices in China

Xiaoquan Zhao, PhD, George Mason University (presented on behalf of Gary L. Kreps, PhD, George Mason University)

Guoming Yu, PhD; Xiaoquan Zhao, PhD; Qunan Mao, PhD; Wen-Ying Chou, PhD; Xu Zihao, PhD; Meije Song, PhD; and Paula Kim

The U.S.-based HINTS conducted biennially since 2003 by the National Cancer Institute (NCI) has become a major source for important data about the public's access to and use of relevant health information for cancer prevention and control in the United States. The data gathered from past administrations of HINTS have illustrated serious health information deficits and needs for different segments of the U.S. population and have suggested directions for guiding the development of evidence-based health communication intervention programs to reduce health information gaps and promote informed health decision-making. The HINTS research program has become an important public health research model for how to generate relevant national health information data for guiding evidence-based public health intervention and promotion programs. Based on the successes of the HINTS-U.S. research program, an innovative collaboration has been established among the Chinese Ministry of Health, NCI, George Mason University's Center for Health and Risk Communication, and Renmin University of China's Public Opinion Research Institute to establish a biennial representative national HINTS survey research program in China. The program will be conducted under the auspices of the Chinese Ministry of Health. Pilot data collected in late 2012 and early 2013 from two major Chinese cities (Beijing and Hefei) have demonstrated the viability of conducting HINTS research in Chinese with different segments of the Chinese public. A full national administration of the first biennial HINTS-China research program is currently being prepared for administration in late 2013. Data gathered from the HINTS-China surveys will be used to guide evidence-based health promotion interventions across China to promote public health. This exciting international research program opens the door to expanding the HINTS research program to many other countries around the world to help promote global health.

Perceived Cancer Risk Among Smokers in China

Alexander Persoskie, National Cancer Institute

Wen-Ying Sylvia Chou, Bradford Hesse, Xiaoquan Zhao, Gary L. Kreps, Qunan Mao, Guoming Yu, Yinghua Li, Zihao Xu, Meijie Song, Xueqiong Nie, and Paula Kim

How well do smokers in China understand the health risks of smoking? Recent research suggests that many Chinese smokers are aware of a link between smoking and lung cancer. However, a large literature on optimistic bias indicates that people often acknowledge health risks to others while downplaying their own personal vulnerability. The present study asked a sample of Chinese people ($n = 2,535$; 558 current smokers) from four different localities (urban and rural areas of two cities: Beijing and Hefei, Anhui Province) to estimate their personal risk of developing cancer, both in absolute terms (overall likelihood) and in comparative terms (relative to other similarly aged people). Smokers judged themselves to be at significantly lower risk of cancer than did nonsmokers. Moreover, beliefs about the preventability of cancer moderated this effect, such that smokers judged themselves to be at lower risk only if they believed cancer to be highly preventable. Among current smokers, those who smoked a greater number of cigarettes per day also judged themselves to be at lower risk of cancer than did those who smoked fewer cigarettes. These results suggest that scientific knowledge about the links between smoking and cancer have yet to affect people's personal assessments of risk in China. Tobacco control through public education is poised to make a tremendous public health impact in China, and communication efforts should emphasize smoking cessation as a primary method of preventing cancer.

Health Information Data About Pacific Islanders in Guam: Using the Respondent-Driven Sampling (RDS) Method as a Viable Alternative to the Random-Digit Dialing (RDD) Method

Lilnabeth P. Somera, PhD, University of Guam

Grazyna Badowski, PhD; Hye-ryeon, PhD; Kevin Cassel, DrPH; Vejohn Torres, BA; Dani Reyes, BA; Brayan Simsiman, BA; and Alisha Yamanaka, BA

This study took advantage of the unique opportunity offered by the Guam population to learn about Americans of Pacific Island ancestry and their communication and information-seeking behaviors, experiences, and needs relevant to cancer. Data on cancer-information-seeking behaviors as well as basic cancer-relevant knowledge, attitude, and behaviors in Guam's general population were collected, in order to better inform cancer prevention and control program efforts. Additionally, the study tested the efficacy of the respondent-driven sampling method (RDS, Heckathorn, 1997) in generating valid population estimates, with the goal of identifying a cost-efficient non-probability sampling strategy that can generate reasonable population estimates for minority and hard-to-reach populations.

We conducted a survey on health communication in Guam using the RDS method, with the HINTS instrument as the basis and developed additional items aimed at identifying specific cultural factors and communication practices that may influence health behaviors related to cancer risk and prevention in this population. We started with 14 initial "seeds," who were invited to recruit up to three additional participants each. Succeeding participants were given the same opportunity to recruit others, in the RDS method, which is a systematic modification of snowball sampling. Gas coupons were offered as incentives for participation as well as recruitment. The sample of 511 was reached within a month, even after intentionally slowing down the administration of the surveys because of limited research personnel.

Comparison with BRFSS data on selected variables for Guam suggests that the RDS sample provides a reasonable population estimate, which was generated through the more cost-effective and less time-consuming process compared to the typical sample generated through telephone surveys using random digit dialing (RDD) methods. Discussion will also include cultural factors that are significantly related to information-seeking behaviors, along with potential sources of bias and methods to reduce them.

Paper Session #4

Data Integration

Cancer Survivors' Experience of Patient-Centered Communication 2007-2012: Lost in Transition or Just Lost?

Danielle Blanch-Hartigan, PhD, MPH, National Cancer Institute

Neetu Chawla, PhD, MPH; Richard P. Moser, PhD; Lila J. Finney Rutten, PhD; Bradford W. Hesse, PhD; and Neeraj K. Arora, PhD

In 2006, a landmark Institute of Medicine report suggested that cancer survivors often feel “lost in transition” from active treatment to survivorship care. Cancer survivors' experiences of patient-centered communication (PCC) represent a central aspect of this transition that has not been systematically investigated.

Weighted data from three administrations of HINTS (2007, 2011, 2012) were pooled to assess: (1) What proportion of cancer survivors report less than ideal PCC? (2) Does PCC vary by time since cancer diagnosis? (3) Has PCC experience changed over time?

Survivors ($n = 1,367$) reported communication experiences with healthcare providers on six core functions of PCC: managing uncertainty, responding to emotions, making decisions, fostering healing relationships, enabling self-management, and exchanging information. Responses were dichotomized as always/usually vs. sometimes/never. Overall PCC score was calculated by averaging scores on individual items and transforming to a 0-100 scale.

Survivors generally reported high PCC experience (mean = 79.7/100); however, approximately one in five reported they rarely (sometimes/never) felt providers helped them manage uncertainty (20.5%) or attended to their emotions (16.7%). One in seven felt providers rarely involved them in decisions as much as they wanted (13.7%). One in 10 felt they could not always or usually rely on providers to take care of their needs (9.3%), that providers rarely allowed them to ask all of their questions (9.5%), or that providers made sure they fully understood what was needed to care for their health (9.3%). In unadjusted analyses, overall PCC score did not vary by time since diagnosis ($p = .56$). Overall, average PCC among survivors was higher in the 2012 survey than in the previous two HINTS iterations (78.1, 78.0, 82.9, $p = .01$).

With over 14 million cancer survivors in the United States, results suggest that an appreciable number of survivors are experiencing suboptimal patient-centered communication, particularly with respect to providers helping manage uncertainty and attending to emotions (2.9 and 2.3 million, respectively).

Internet Adoption Among U.S. Adults in 2003 and 2008: Diffusion Patterns and Digital Disparities

Philip Massey, PhD, MPH, Drexel University School of Public Health
Deborah Glik, ScD, and Abdelmonem Afifi, PhD

Internet use among the U.S. adult population has steadily grown over the past two decades, with nearly 80% use in 2012. However, despite its nearly ubiquitous use, adoption is not equally distributed among the population. For health sciences researchers and practitioners, this has major implications regarding access and use of the Internet for health information and communication. This study examined Internet diffusion patterns among U.S. adults, highlighting disparities in adoption over time. Data from two waves of HINTS, 2003 and 2008, a nationally representative cross-sectional survey, were examined ($N = 8,495$). Multiple logistic regression was used to examine predictors of Internet use as well as diffusion patterns. Spatial analysis was used to examine geographic patterns of Internet use. Results suggest that women ages 50-64 are among the fastest growing groups of Internet users. Furthermore, disparities in Internet use are growing between men and women, with women Internet users increasing at significantly greater rates compared to men. While not increasing over time, other Internet use disparities based on race/ethnicity, income, and education remain constant—vulnerable populations remain relatively disadvantaged. Internet adoption continues to spread throughout the U.S., with only a few rural communities indicating less than 50% use. This study supports a disparities diffusion model that highlights disparities in both Internet adoption rates as well as adoption saturation levels. Health researchers and practitioners can use this information to better develop interventions to help vulnerable populations transition into the ever-expanding digital age of health care and health promotion.

Combining HINTS Data With State Level Policy to Impact the Public Health

Stefanie Winston, JD MPH, The MayaTech Corporation
Liza Fues, JD, and Shelby Eidson, JD

While the U.S. Surgeon General has declared smoking an epidemic, and it is the leading cause of preventable death in the United States, federal policies banning smoking in public places (including bars, restaurants, and worksites) are lacking. State and local governments, instead of the federal government, have led the way, with 27 states banning smoking in public places as of June 2013. Assessing the impact of state smoke-free laws on health outcomes may increase the likelihood of legislative action at the federal level and serve as an effective mechanism for supporting increased evidence-based legislation to protect the public health. The State Tobacco Activities Tracking and Evaluation (STATE) database and the State Cancer Legislative Database (SCLD) both contain state-level laws on smoke-free indoor air and will be cross-referenced with HINTS data before 2004, when many state laws were enacted, through the present dataset. Both databases also contain laws regarding disparities, which may be valuable in analyzing the health impact. According to a HINTS study, individuals with lower socio-economic status were less likely to have access to information on smoking cessation than those of higher socio-economic status. Similar studies have shown the implementation of state-level laws can be analyzed through national datasets, including a study on competitive food laws in schools. Another analysis will be done on the HINTS nutrition data, showing how the impact of state-level laws on competitive food in schools (from the Classification of Laws Associated with School Students database) created an evidence base used to pass the recent competitive food regulations in the federal Healthy Hunger Free Kids Act. This analysis will show how state laws and better health outcomes can lead to effective implementation of federal policy to protect the public health on a national level.

Data Blitz

**A Decade of HINTS: How Has
the Environment Changed?**

Are Electronic Medical Records Leading Patients to Withhold Information From Their Providers?

Celeste Campos-Castillo, PhD, Dartmouth College

Denise L. Anthony, PhD

Some research suggests that patients are reluctant to share at least some sensitive health information with providers, particularly when entered into an electronic medical record (EMR). At the same time, patients report satisfaction with care when an EMR is used, which should improve information sharing with providers. To clarify these relationships, we used data from Cycles 1 and 2 of the 2012 HINTS. Our dependent variable was a binary, self-reported measure of whether respondents ever withheld information from their providers because of concerns over the privacy or security of their medical records. Our main independent variables were respondents' self-report of whether their providers have an EMR and their global rating of care received. Because our dependent variable did not vary significantly by cycle, we combined data from both cycles ($n = 4,713$). Results from nested multivariate binary logistic regressions suggest that having an EMR has two distinct effects on the probability of reporting having withheld information: (1) a direct positive effect and (2) an indirect negative effect, where having an EMR is associated with higher global ratings of care, which in turn decreases the likelihood of withholding information. We conclude that the relationship between having an EMR and withholding information from a provider is complex. On one hand, having an EMR may inadvertently raise concerns regarding the privacy or security of personal health information, a view that resonates among policy advocates. On the other hand, having an EMR may improve evaluations of care received, thereby alleviating concerns. Moreover, the nature of self-reported data highlights additional complexities. Actually having a provider that offers an EMR is distinct from perceiving so. Therefore, the mere perception—not the actual presence—of these technologies may be associated with privacy concerns.

Trends in Cancer-Related Information Seeking Among Cancer Survivors: 2003-2012

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The demonstrated benefits of information seeking in optimizing health outcomes and experiences for cancer patients, coupled with significant changes in information availability, underscore the importance of monitoring patient information-seeking experiences and evaluating the ways in which they evolve over time.

HINTS collects nationally representative data on the use of and experiences with cancer-related information in the U.S. adult population. Data from five administrations of HINTS (2003, 2005, 2007, 2011, and 2012) were analyzed to examine information-seeking trends over time among those with a personal history of cancer, those with a family history, and those with no cancer history. Frequencies, cross-tabulations using Chi-square tests, and multivariable logistic regressions were conducted. All data were weighted to provide representative estimates of the adult U.S. population.

Cancer information seeking was more frequent among cancer survivors (69.8%) compared to those with a family history (51.2%) and no history (29.6%) ($p < .001$). Over time, all three groups significantly increased their cancer information-seeking behaviors ($p < .001$ for all), with the most drastic increase among those with a personal history (66.8% in 2003 vs. 80.8% in 2013). In multivariable analyses among cancer survivors, less frequent cancer-related information seeking occurred among older ($p < .001$), less educated ($p < .001$), lower income adults ($p < .05$) as well as individuals reporting greater number of years post diagnosis ($p < .05$). Compared to those with breast cancer, individuals with other types of cancer were less likely to report seeking cancer information, particularly those with other female cancers ($p < .001$).

Cancer-related information seeking has increased over the last decade, particularly among those with a personal history of cancer. Variation in information-seeking trends was observed by socio-demographic and clinical characteristics pointing to the need for targeted interventions among certain groups.

Is the Quality of Patient-Provider Interactions Associated With Use of the Internet as a Preferred Source of Health and Medical Information? Findings From HINTS 4 Cycle 1

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Negative health care experiences have been linked to poor health and health-related outcomes. Individuals who have poor quality interactions with health care providers may preferentially use the Internet to fulfill their health information needs, which could improve their access to important health information but could also result in missed opportunities for education, screening, diagnosis, and treatment by providers. Our objective was to examine the association between perceived quality of patient-provider interactions and use of the Internet as a preferred source of health and medical information. Data are from HINTS 4 Cycle 1. We conducted weighted logistic regression analyses adjusting for sociodemographic characteristics, health insurance status, and other variables. Most individuals (69.7%) reported that they went to the Internet first the most recent time they looked for information about health and medical topics. In contrast, when asked a question regarding hypothetical or future use of information sources, only 36.8% reported that they would seek information from the Internet first if they had a strong need for information about health or medical topics. Perceived quality of patient-provider interactions was not significantly related to using the Internet first on the most recent health information search. However, intending to use the Internet first in the event of a strong need for health or medical information was more likely among those who reported fair (AOR=1.48; CI: 1.02, 2.13) or poor (AOR=1.99; 1.32, 3.01) interactions with providers when compared with those who reported good interactions with providers. Results suggest that patient-provider relationships may influence individuals' preferences for where or from whom they obtain health information, which has implications for health care utilization, health education, health-related behaviors, and health status. Future research should examine these issues further.

Preferences for Not Knowing Cancer Risk: Prevalence and Correlates in HINTS 4

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Perceived health risk is a central construct in many health decision-making models. However, the nature of risk perception is complex—there are individual differences in whether individuals report risk perceptions, how risk perceptions are constructed, and how they influence behavior. One facet of this complexity is individual differences in preferences for knowing versus not knowing one’s personal risk for cancer. We examined the prevalence and correlates of preferences for knowing risk using the HINTS 4 Cycle 2 dataset. Responses to the item “I’d rather not know my chance of getting cancer” were examined as an indicator of preferences for not knowing cancer risk (4-point response option, strongly disagree–strongly agree). Both demographic and psychosocial correlates of preferences for not knowing cancer risk were examined. Overall, a large proportion (39%) of the population indicated agreeing or strongly agreeing that they would rather not know their risk. Preferences for not knowing were greater among older participants, female participants, current smokers, and divorced participants (relative to married). Preferences for not knowing were lower among those with higher levels of education. Those agreeing with the beliefs that everything causes cancer, that there is not much you can do to prevent cancer, and that there are too many recommendations to follow were more likely to prefer to not know risk. These findings suggest that many people prefer not to know about their cancer risk—a cornerstone of public health messaging around cancer risk reduction—and that these preferences are a multi-determined phenomenon associated with both demographic characteristics and psychosocial individual differences. Given the ubiquity of risk perception in health decision-making models, it is important to better understand both why a preference for not knowing one’s risk exists and what implications that preference has for behavioral decision-making.

Applying the HINTS Research Model to Studying Korean American Immigrants’ Access to and Use of Health Information

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Many Korean Americans (KAs) suffer from high levels of cancer incidence and mortality and have low cancer screening rates, particularly in comparison to other U.S. populations and to Korean Nationals (KNs). However, little is known about the health behaviors and levels of health knowledge of KAs. This research program was designed to increase understanding about KA cancer information access to guide evidence-based health promotion interventions for KAs. HINTS was translated into the Korean language for use with KAs, who typically have low levels of English language proficiency. The studies examined health information behaviors, experiences, preferences, and outcomes of KAs with comparison studies conducted with KNs. These studies examined exposure to relevant information about cancer screening, cancer information access, trust and use of health information sources, and relevant health behaviors. Cross-sectional, community-based surveys were conducted in the Washington, DC, metropolitan area with 254 KAs and 208 KNs in the Gwangju metro area. These studies are part of the first health-related program of research to study exposure to mass media, health and cancer information sources, and seeking preferences and experiences of KAs and KNs. Results indicated that immigration is a significant factor in access to health information and cancer health outcomes. Both KAs and KNs trust doctors and TV for health information. KAs were far more trusting of ethnic print media and the Internet, while KNs were more trusting of family sources of health information. KAs also do not actively seek health information, have negative experiences accessing cancer information, and have low levels of awareness about cancer information sources. KAs are also far less likely to engage in cancer screening than KNs. These data suggest the need for targeted, culturally sensitive, Korean language health communication interventions using multiple media with KAs to increase relevant health knowledge.

Is Religiosity Associated with Cancer Screening?: Results From a National Survey

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In the past decade, a large body of literature has focused on the effects of religiosity on individual and population health. However, there is inconclusive evidence about the relationship between religious involvement and cancer screening. The objectives of this study were to examine: (1) associations between religiosity—as measured by religious-service attendance—and cancer screening for breast, cervical, and colorectal cancers; (2) the potential mediating role of social support in the relationship between religious attendance and cancer screening; and (3) the potential moderating effect of race/ethnicity in understanding the relationship of religious services attendance with social support. The present study used data from the National Cancer Institute’s 2005 HINTS. Statistical analysis showed that religious-service attendance was associated with higher levels of breast, cervical, and colorectal cancer screening. In addition, religious-service attendance was associated with increased social support. When we explored social support as a potential mediator, we found evidence for full mediation in the relationship between religious-service attendance and recent Pap screening and partial mediation in the relationship between religious-service attendance and recent colorectal screening, but not recent mammogram. Black racial identification significantly moderated the relationship between religious-service attendance and social support. This study contributes to the growing scientific literature on religion and health by suggesting underlying mechanisms that relate religiosity with cancer screening behavior. Our findings suggest that using social networks and religious institutions as an intervention strategy may be an effective way to promote the use of early detection tests among adults, especially Black Americans.

Do Prescription Drug Ads Tell Consumers Enough About Benefits and Side Effects? Results From the Health Information National Trends Survey

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Direct-to-consumer prescription drug advertising (DTCA) is a major source of information about prescription drugs for consumers, yet a 2002 U.S. Food and Drug Administration (FDA) survey found that 44% of respondents thought DTCA did not include enough information about benefits, and 61% thought DTCA did not include enough information about risks. The current study, based on questions FDA submitted to HINTS, examined recent beliefs about DTCA using a nationally representative sample and provides a more in-depth understanding of how these beliefs relate to demographic and health characteristics. Data collected from 3,959 respondents to HINTS in 2011 were used to classify participants by whether they agreed that DTCA tells enough about drug benefits and side effects (23.2%), disagreed that DTCA tells enough about drug benefits and side effects (41.1%), had no opinion about the presentation of drug benefits and side effects in DTCA (17.5%), or had discordant beliefs about the presentation of drug benefits and side effects in DTCA (18.2%). Age, education, income, whether they purchased prescription drugs, and understanding of prescription drug information were associated with DTC beliefs. A plurality of Americans believes that DTCA does not include enough information about both benefits and risks, suggesting that the educational impact of DTCA could be improved.

Beliefs and Knowledge Are Associated With Cancer Information-Seeking Behaviors in the General Population: Findings From the HINTS 4 Cycle 2 Data

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Little information is known about the association of beliefs about health behaviors and knowledge of genetic testing with cancer information-seeking behaviors in the general population. To examine the factors associated with the cancer information-seeking behaviors in individuals without cancer history, we examined the Cycle 2 data from 1,142 cancer information seekers and 1,336 non-seekers from the population-based 2012 HINTS. The SURVEYLOGISTIC procedure in SAS 9.2 was used to account for the nationwide sample sampling methodology. Weighted univariate and multiple logistic regression analyses were used to estimate odds ratios (ORs) and 95% confidence intervals (CIs). There were more seekers than non-seekers in female persons (59% vs. 49%), more seekers with higher education (78% vs. 67%) and with knowledge of genetic testing (60% vs. 47%). More seekers strongly believed in easily getting cancer (19% vs. 8%). A few more seekers strongly believed in the effects of health behaviors on the development of cancer (49% vs. 42%) but fewer seekers weakly believed in the effect of health behaviors on development of cancer (30% vs. 38%). Multiple logistic regression analyses showed that cancer information-seeking behavior was positively associated with female (OR = 1.47, 95% CI = 1.09-1.97, $p = .0108$), higher education (OR = 1.87, 95% CI = 1.27-2.73, $p = .0014$), family cancer history (OR = 1.54, 95% CI = 1.01-2.41, $p = .05$), strong belief in easily getting cancer (OR = 2.71, 95% CI = 1.45-5.08, $p = .00005$), and knowledge of genetic testing (OR = 1.52, 95% CI = 1.12-2.07, $p = .0077$), but negatively associated with weak belief in the effects of health behaviors on the development of cancer (OR = 0.61, 95% CI = 0.41-0.89, $p = .0013$). In conclusion, beliefs and knowledge were associated with cancer information-seeking behavior. To improve the seeking behavior in the general population, educational materials can be developed accordingly to strengthen awareness for both cancer susceptibility and benefits of health behaviors as well as knowledge of genetic testing.

Predicting Intentions to Seek Cancer Information in China: Using the China HINTS Pilot Data to Test the Model of Risk Information Seeking and Processing

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Cancer is now the leading cause of death in China. Yet little is known about how Chinese people seek and access cancer information and the motivational bases of these behaviors. This study used the model of risk information seeking and processing (RISP) to guide a preliminary investigation of Chinese people's intention to seek cancer-related information. In 2012, the Chinese Ministry of Health conducted a probability sample survey in two Chinese cities (Beijing and Hefei, $N = 2,568$) to pilot test a national survey on cancer information use and cancer-related attitudes and beliefs. The survey was modeled after the U.S. HINTS, but many changes were made to adjust the survey to the unique characteristics of the Chinese context. Multiple regression analysis showed robust explanatory power of RISP (Adjust $R^2 = .49$). Intentions to seek cancer information were most strongly associated with informational subjective norms ($\beta = .59, p < .001$). People were much more likely to seek cancer information if the behavior was approved and supported by their family and relatives. Other positive predictors of intentions included perceived cancer risk ($\beta = .05, p = .007$), perceived efficacy in prevention and treatment ($\beta = .04, p = .006$), worry about cancer ($\beta = .08, p < .001$), current cancer knowledge ($\beta = .05, p = .002$), perceived need for more information ($\beta = .14, p < .001$), and trust in health information from government and non-government organizations ($\beta = .09, p < .001$). Surprisingly, family income emerged as a negative predictor of seeking intentions ($\beta = -.05, p = .006$). These results suggest that cancer communication in China should focus on mobilizing family support as well as raising individual awareness and building trust in institutional sources of information.

The Relationship Between Smoking and Psychological Distress Among the White Appalachian Population: Using the 2007 HINTS Survey

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Despite a gradual, steady decline of cigarette use through 2002-10, there are increased rates of smoking among individuals with psychological distress. The purpose of this study was to examine the relationship between smoking behavior and serious psychological distress (SPD) in Appalachia, a region characterized as being “stressed” by the Appalachian Regional Commission, versus the rest of the United States outside of this region. A nationally representative, cross-sectional dataset from the 2007 HINTS was used, which included a dichotomous Appalachia variable determined by the respondent’s reported county of residence. The sociodemographic factors (age, sex, income, and education), smoking status (never smokers, former smokers, and current smokers), number of cigarettes smoked per day (CPD), smoking intensity (light, moderate, and heavy), and quit attempts among current smokers were all self-reported by the respondents. SPD was used as the main outcome measure using the clinically validated instrument, Kessler six-item Distress Scale (K6). Bivariate analyses and logistic regressions were used to examine associations between smoking behaviors in individuals with and without SPD. Interactions between the smoking variable of interest and Appalachia residence were used to detect if place of residence was a significant effect modifier in these associations. The results show that people who currently smoke were more likely to have SPD (prevalence odds ratio (POR): 1.9; 95% CI, 1.15-3.20) and smoke more cigarettes per day (POR 1.02; 95% CI, 1.01-1.04); however, place of residence was not a significant modifying factor for either ($p = .56$ and $p = .62$, respectively). No significant associations were found with smoking intensity and quit attempt status. Although the findings here are analogous to the strong evidence between current smoking and SPD, they do not provide significant evidence to the association being modified by residing in the Appalachia region.

POSTERS

Factors Influencing Online Seeking of Smoking Cessation Information Among Adult Smokers in the U.S.

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Cigarette smoking poses a major public health concern and is responsible for nearly 20% of U.S. deaths; yet, online smoking-cessation programs are underutilized. We analyzed HINTS 4 (CYCLE 1) data to estimate proportions of U.S. adult smokers who sought online smoking-cessation information (OSCI) in the last 12 months and to describe associations between OSCI-seeking and sociodemographic factors, healthcare-related factors [given opportunity to ask questions (C6a), able to rely on health professionals to care for healthcare needs (C7), overall healthcare quality rating (C8)], and trust in Internet information (A7e). Weighted proportions accounting for the complex sample design were estimated. Current smoking was reported by 17.5% ($n = 615$) of respondents, among whom 22.0% had sought OSCI. Approximately 24.0% of 18- to 64-year-olds reported OSCI-seeking compared with <10% among those 65+ ($p < .05$). OSCI-seeking was also associated with education—reported by 27.7% of college-educated respondents, 27.9% of high-school graduates, and 16.6% of those with less than high-school education. No significant difference in OSCI-seeking was noted between males (22.2%) and females (21.8%), between respondents with >\$35,000 income (33.0%) and those with lower incomes (17.7%), or across racial/ethnic groups—Hispanics (11.8%), Whites (22.0%), Blacks (27.2%), and others (28.9%). Surprisingly, respondents who expressed trust in Internet information were only slightly more likely to seek OSCI than those who do not trust Internet information (24.8% vs. 17.4%). This difference was not significant before or after controlling for sociodemographic factors ($OR_{ADJ} = 1.3$, 95% CI = 0.3-6.1). Similarly, none of the three healthcare-related factors were associated with OSCI seeking. Exploring factors associated with seeking OSCI can enhance utilization of effective web-assisted tobacco interventions.

Perceptions About HPV Vaccine Effectiveness: Findings From the 2012 Health Information Trends Survey (HINTS)

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Although human papilloma virus (HPV) vaccination has been available for seven years, uptake remains low. The purpose of this study was to examine perceptions about HPV vaccine effectiveness and the extent to which these are associated with provider communication, health-information-seeking behaviors, and cancer beliefs. Using HINTS 4 Cycle 2 data, variables of interest were examined using bivariate and logistic regression analyses among respondents for whom the vaccine was relevant. Respondents were considered “HPV vaccine-relevant” if they or someone in their immediate family was ages 9-27 years. Of the 3,551 adults in the survey population, 1,417 (52%) were HPV vaccine-relevant. Among these individuals, 25% ($n = 348$) reported talking with a healthcare provider about the vaccine, and 70% ($n = 980$) reported not knowing how successful the HPV vaccine is at preventing cervical cancer. Uncertainty about HPV vaccine effectiveness was significantly higher among those who had not talked with a provider about the vaccine, had not sought cancer information from any source, had not sought cancer information on the Internet in the past 12 months, agreed that there’s not much one can do lower his/her chances of getting cancer, and agreed that there are so many recommendations about cancer prevention that it’s hard to know which to follow. In a logistic regression model adjusting for age, gender, race/ethnicity, insurance status, income, and education, vaccine-relevant respondents who had never talked with a provider about the HPV vaccine were nearly four times more likely to not know about its effectiveness (aOR 3.89; 95% CI 2.31-6.55); those who had not sought cancer information on the Internet in the past 12 months were twice as likely to not know about the HPV vaccine’s effectiveness (aOR 2.10; 95% CI 1.21-3.65). Uncertainty about HPV vaccine effectiveness remains high. Findings suggest HPV communication and messages need refinement to clearly highlight vaccine efficacy.

Sources of Cancer Information for Cancer Survivors in the U.S.: Comparing Information-Seeking Behaviors of National Workshop Attendees With a General Population Sample

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Individuals diagnosed with cancer desire useful and reliable cancer information, not only at diagnosis but decades beyond. Given the expanse of cancer information today, yet the varying credibility and usefulness of content, the Cancer Support Community (CSC) investigated the experiences of cancer survivors seeking information.

Data on information-seeking patterns were analyzed from 4,148 cancer survivors who attended CSC psychoeducational workshops across the U.S. from 2009-2012. Respondents were Caucasian (81.2%), female (83.3%), and the average age was 59.8. A total of 35.6% had been first diagnosed within the past year, while 22.8% had been diagnosed over 5 years ago. Most sought information about cancer from their doctor/nurse (81.5%), though nearly half found information online (48.6%) or through support groups (45.8%). Additionally, respondents sought information from other cancer patients (33.7%), educational workshops (36.5%), medical literature (37.5%), patient support organizations (29.8%), and friends/family (26.4%). Those diagnosed more than 5 years ago were more likely to have sought information from workshops and patient support organizations, compared with those more recently diagnosed, and less likely to seek information from friends and family (all $p < .01$).

CSC data were interpreted in the context of results from a national general sample survey assessing information seeking among cancer survivors. Data from the 2005 HINTS showed cancer survivors sought information from healthcare providers (41.9%) and the Internet (36.0%) in the past year, though the patterns of information seeking vary by time since diagnosis. Additionally, while 21.4% and 19.0% have “a lot” of trust in cancer information from the Internet and friends/family respectively, many turn to these sources.

The CSC data support the HINTS finding that seeking cancer information does not diminish over time; rather information-seeking needs continue throughout survivorship.

Association Between Cigarette Smoking and Consumption of Daily Fruits and Vegetables With Human Papillomavirus Infection Among Women in the United States

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The human papillomavirus (HPV) is a sexually transmitted infection that can cause several diseases, including genital warts and, more importantly, carcinoma of the cervix. Although the HPV prevalence of 99.7% among diagnosed patients of cervical cancer confirms the causative role of infection toward cancer, it does not necessarily mean that every woman who is exposed to HPV will acquire the infection or progress toward cancer after being infected. There are some important risk factors thought to alter the probability of acquisition and progression of HPV infection. The purpose of this study was to increase the understanding of the association between smoking and consumption of daily fruits and vegetables with HPV infection positivity among women.

Secondary data from the 2007 HINTS were analyzed in this study. STATA (version 10.1) was used for data analysis. Smoking status and daily fruits and vegetables consumption of women with and without HPV infection were compared by chi-square. Logistic regression analysis was used to examine the association between smoking status and women's consumption of daily fruits and vegetables with HPV infection positivity.

The analysis indicated a statistically significant association between ever and current smokers with HPV infection positivity. Conversely, a nonsignificant association was seen between daily consumption of fruits and vegetables with HPV infection positivity. Results from the analysis demonstrated that smoking was a significant risk factor, while daily consumption of fruits and vegetables were nonsignificant risk factors for the HPV infection among women.

The positive association of smoking with HPV infection observed in this study may seem due to deleterious effects of smoking, which is responsible for causing changes in cervical epithelium. While to prove causality between consumption of daily fruits and vegetables with acquisition of HPV infection, more prospective cohort studies with long follow-up time are well warranted.

Social Networks and Physical Activity Behaviors Among Cancer Survivors: Data From the Health Information National Trends Survey

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The study examined the relationship between social networks and physical activity behaviors among cancer survivors. It examined 873 cancer survivors (596 women, 277 men) age 50 years or older who participated in the 2005 HINTS.

Multivariate logistic regression analysis showed that survivors who talked about health with friends/family were more likely to pay attention to new physical activity recommendations (OR = 2.97, CI: 1.13, 7.93). Female survivors were more likely to pay attention to new physical activity recommendations (OR = 2.12, CI: 1.13, 3.95) and more likely to have seen, heard, or read physical activity/exercise and cancer information within the past 12 months (OR = 2.14, CI: 1.16, 3.91) compared to their male counterparts. For male survivors, those who were a member of at least one community organization were more likely to pay attention to new physical activity/exercise recommendations (OR = 5.97, 95% CI: 1.65, 21.49) than the males who were not members.

Results showed that cancer survivors with social networks were more likely to pay attention to new exercise recommendations. Female cancer survivors were more likely to report better physical activity knowledge and attitudes, but males reported higher physical activity levels. Males who were a member of a community organization were more likely to have better physical activity knowledge than those who were not members. Findings warrant further investigation in meaning of various social networks and physical activity behaviors among cancer survivors.

Preliminary Findings on Cancer Survivors' Use of Information and Communication Technologies (ICTs) to Seek Health Information

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Little is known about how cancer survivors in the United States use information and communication technologies (ICTs) for health-related purposes, particularly regarding their use of mobile devices and social media. This poster reports preliminary findings on the analysis of a secondary dataset, the NCI's HINTS 2012, that was analyzed to better understand the mobile and social media use by this important group. Research questions included (1) what is the mobile health information-seeking behavior of cancer survivors? And (2) what is the social media health information-seeking behavior of cancer survivors?

This HINTS dataset includes information on the ICT-related health information behavior of a population of 3,959 respondents, including 563 cancer survivors (someone having received a cancer diagnosis). The specific HINTS dataset retrieved and analyzed for this study was the HINTS 4 Cycle 1 data SPSS, which included new survey questions on mobile and social media use. After creating a subset of the HINTS dataset that contained only those cases pertaining to cancer survivors, specific variables associated with Internet, mobile device, and social media use were isolated for analysis using the IBM SPSS statistical software package ver. 21 for Windows.

Findings indicate a low percentage of mobile and social media use by the cancer survivor sample group for health information seeking, especially when compared to their Internet use. For example, 78.6% of cancer survivors ($n = 364$) used the Internet to look for health information, while only 7.7% of cancer survivors used a mobile device ($n = 337$), and 13.1% used social media ($n = 337$). As these findings are preliminary, further research is needed to better understand the ICT-based health information needs and habits of cancer survivors. Such knowledge could potentially lead to new and improved programs for communicating vital health information.

Cancer Survivors' Treatment Summary Receipt Associated With Higher Patient-Centered Communication and Quality of Care Ratings

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The American College of Surgeons' Commission on Cancer accreditation standards mandate that by 2015 all patients completing active cancer treatment be provided with a treatment summary to support the delivery of patient-centered care and facilitate transition to post-treatment survivorship care. However, the relationship between receipt of these summaries and patient reports of patient-centered communication and overall quality of care ratings are not well understood.

Using data from HINTS 4 Cycle 2, unweighted univariate statistics and multivariable logistic regressions were examined to assess the following: (1) overall prevalence of cancer survivors' receipt of treatment summaries, (2) social determinants and clinical characteristics associated with receipt of treatment summaries, and (3) association between receipt of treatment summaries and reports of patient-centered communication (6-factor scale, quartiled) and overall ratings of care received in the past 12 months (dichotomized as excellent/very good vs. good/fair/poor).

Of the 371 respondents with a cancer history who had completed active treatment, 29.6% reported receiving a treatment summary. In multivariable logistic regression models, those with a college education were more likely to have received a treatment summary than those with less than high school education ($p = .04$). Those reporting excellent/very good current health status were less likely to report having received a treatment summary than those with poor/fair health status ($p = .02$).

After controlling for age, gender, education, race, income, current health status, and time since treatment, receipt of treatment summaries was associated with more positive reports of patient-centered communication ($p = .03$) and overall quality of care ($p = .005$). Individuals in the highest quartile of perceived patient-centered communication were almost four times more likely to have received a treatment summary than those in the lowest quartile ($p = .003$).

Results suggest that receipt of cancer treatment summaries may improve patient-provider communication and quality of care among cancer survivors.

Consumer Attitudes About Risk & Benefit Information in Advertisements for Over-the-Counter and Prescription Drugs

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The Food and Drug Administration (FDA) promotes clear and complete information to consumers about the risks and benefits of the drugs they buy and use. In the 2010 HINTS, respondents were asked whether drug advertisements tell them enough about the (1) risks of the drugs they purchase and the (2) benefits of the drugs they purchase for (3) over-the-counter (OTC) drugs and for (4) prescription drugs. The results of these analyses are presented, with emphasis on both similarities of consumer attitudes as well as important differences in the way consumers view ads for OTC drugs versus prescription drugs as well as the way consumers view the value of communications about benefits versus those about risks. The presentation includes interpretation of the findings and discusses the role that FDA plays in the monitoring of drug advertisements.

An Experiment to Improve Spanish Language Response Rates in HINTS 4, Cycle 2

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In the first cycle of HINTS 4, non-responding households were mailed both an English and Spanish questionnaire in the second mailing if their address was linked to a Hispanic surname and/or was in a linguistically isolated (LI) area as indicated on the frame. This strategy yielded a sample that was 8.5% Hispanic, which was significantly lower than ACS figures. Compared to prior telephone versions of HINTS, significantly fewer surveys were completed in Spanish in Cycle 1. Since Cycle 1, Brick et al. (2012) have reported on a different mailing procedure that was tested with a short screening survey on education. This test found significantly more returns of Spanish language surveys when compared to the Cycle 1 HINTS procedure. The purpose of this report was to test whether these results generalize to HINTS, which is a long survey (about 20 pages) on a topic that is less salient than that tested by Brick et al. The poster reports on the results of an experiment that was carried out in Cycle 2 of HINTS 4, which compared two different mailing methods intended to reach more Spanish speakers and Hispanics. In the first condition, based on Brick et al., about 2,000 respondents were sent both a Spanish and English questionnaire in all mailings (treatment). In the second condition, about 10,000 were sent a Spanish and English questionnaire in all mailings only if the household was linked to a Hispanic surname and/or linguistically isolated area (control). The treatment yielded more Spanish language returns than the control group and had only a slightly smaller overall response rate. No difference was observed in the rate of Hispanic ethnicity reporting between the two conditions.

Knowledge Gap Theory in Finding Health Information Through Internet Usage

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Previous studies in health communication have suggested differences across various demographic groups in information-seeking access and skills, including variables related to the knowledge gap assumption. This study examined the data from the 2012 HINTS to explore the individuals' cancer information-seeking behavior difference using the knowledge gap hypothesis. Specifically, this study concentrates on the difference in individuals' Internet usage regarding cancer information.

Among 3,959 respondents of the study, logistic regression showed that lower education and lower income status populations were less likely to seek cancer information and have health insurance, not to mention seeking information through the Internet. Implications of these disparities were explored through multiple linear regressions that revealed negative association between Internet usage and undesirable socioeconomic status.

Predictors of Interest in Learning One's Own Cancer Risk: Assessing Differences by Attitudes, Health Behaviors, and Sociodemographic Status

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Altovise Ewing, PhD

This study sought to find attitudinal, behavioral, and sociodemographic factors that are associated with interest in learning one's own individual cancer risk. Evaluating data on 2,484 respondents from HINTS 4 Cycle 2, we used ordinal logistic regression to find predictors of interest in knowing cancer risk [RatherNotKnowChance variable]. We found that race and ethnicity are associated with interest in knowing cancer risk ($p = .018$). Specifically, we found that African Americans are about twice as likely as Whites to express an interest in learning about their cancer risk (OR = 2.1, 95% CI = (1.35,3.28), $p = .001$). Other factors associated with being interested in knowing cancer risk were younger age, not believing that everything causes cancer, believing that prevention is possible, and believing that health behaviors contribute to cancer risk ($p < .01$ for all). Being male, having any postsecondary education, and distrusting cancer information from religious organizations were marginally significant ($p < .07$). These results suggest that although African Americans are currently underutilizing genetic testing services, it is not due to a lack of interest in learning about future cancer risk. Some other potential reasons for this underuse are barriers to health care access, lower rates of referrals to genetic counselors for African Americans at increased risk, and concerns over privacy of their medical and genetic information. Attitudinal variables found here contribute to interest in learning cancer risk capture information about respondents' knowledge about cancer and how cancer risks can be reduced. These results suggest that campaigns to educate the general public about cancer research findings and health behaviors that have been found to reduce cancer risk are needed. Additionally, we need to evaluate the resources and mechanisms we use to provide cancer risk information and risk-reducing strategies to patients and ensure that they are sensitive to an individuals' racial/ethnic and socioeconomic background.

Does a Digital Divide in Accessing Health Information Exist Among Population Groups?

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Spencer Lott; Brian Rivers, PhD; and B. Lee Green, PhD

Research on the “digital divide” has shown several levels of division, including gaps in Internet skills and the content accessed among users and inequalities among populations within a nation. The purpose of this study was to assess if there are any differences in accessing health information content on the Internet among various population groups. HINTS 4 Cycle 1 data were used for this analysis. The variables assessed include whether an individual used the Internet for the following reasons: to quit smoking; to communicate with a doctor; to help with diet, weight, or physical activity; to download health-related information to a device; to read/share medical topics on a social networking site; and to track personal health information. Demographic variables assessed were gender, race/ethnicity, age, education, and income level. Multivariate logistic regressions calculated differences in the Internet variables among the demographic variables. Overall, gender, age, and education level resulted in being significantly associated with many of the Internet variables. Females were more likely compared to males to use email/Internet to communicate with a doctor; use a website to help with diet, weight, or physical activity; to read/share medical topics on a social networking site; and to track personal health information. However, it was found that individuals with lower education and older individuals were less likely to engage the Internet for those reasons. Differences among minority groups compared to Whites did not occur among any of the Internet variables, except Asians were more likely to report downloading health-related information to a device compared to Whites. Income was not associated with any of the Internet variables. These results should assist health professionals and researchers looking to incorporate the Internet in their practice, such as for research recruitment, implementing health programs, or delivering health education among a variety of populations.

Public Perceptions of Medical Record Security

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Electronic health records (EHRs) are promoted as tools for improving healthcare delivery, but they have also raised significant concerns about the security of patient health information. We examined patients’ perceptions of the security of their health records, both electronic and paper-based formats, to identify factors that influence their perceptions.

We conducted univariate, bivariate, and multivariate analyses of data from HINTS, a population-based survey of adults in the United States. We examined respondents’ use and ratings of the quality of their healthcare services, experience with online health resources, and demographic information for their association with perception of record security. We expected that increased experience with the Internet and/or EHRs would decrease their sense of security.

Perceptions of record security were not significantly associated with whether patients thought their providers used electronic or paper records. However, respondents’ perception of good quality of care (OR 3.83 (95% CI 2.18-6.74)), ratings of more trust in healthcare providers (OR 2.08 (95% CI 1.15-3.78)), and use of a regular provider (OR 1.22 (95% CI 0.74-2.01)) were associated with higher perceptions of record security in the multivariate model.

The present study’s findings suggest that concerns about record security cited in the literature may not be uniform across patients. Concerns about security may be mitigated by experiences with the healthcare system wherein patients perceive good quality care and trust their providers.

Race/Ethnic and SES Differences in Relations Between Psychological Distress and Smoking Behavior

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Cigarette smoking rates differ across racial/ethnic groups and by socioeconomic status. These differences may reflect differences in the underlying mechanisms driving use. For example, there is a positive relation between psychological distress and smoking for White, but not Black individuals. The purpose of the current study was to further examine race/ethnic differences in the relation of psychological distress and smoking and, given differences in smoking behavior by race and the relation of SES and race/ethnicity, to examine the interrelation of race and SES in the distress-smoking relation. Data from the HINTS 4 Cycle 1 dataset on self-reported smoking status, race/ethnicity, income, and current psychological distress were examined. Both overall psychological distress and anxiety and depression subscales were analyzed. White and Black participants who reported their smoking status as never or current ($n = 1,917$) were included in analyses. Controlling for age and education, the odds of being a current smoker increased as levels of psychological distress increased (OR = 1.08, $p = .006$). This was true for both depression (OR = 1.14, $p = .02$) and anxiety (OR = 1.16, $p = .004$). However, income and race moderated these effects. At annual incomes below \$20,000, race moderated the effect of distress ($b = -0.23$, $p = .029$), depression ($b = -0.48$, $p = .019$), and anxiety ($b = -0.34$, $p = .07$), such that each was positively associated with the odds of smoking for White (distress: OR = 1.18, $p = .016$; depression: OR = 1.36, $p = .02$; anxiety: $b = 1.32$, $p = .017$), but not Black participants (p 's > .27). At annual incomes exceeding \$20,000, race did not moderate the effect of distress on smoking. These findings suggest that the positive relation between psychological distress and smoking may not be universal and may be affected by both race/ethnicity and SES; there are potential conceptual as well as methodological explanations for this finding. For both understanding mechanisms describing smoking behavior and developing effective interventions, elucidating why race/ethnicity and SES are associated with different affect-smoking relations is important.

Predictors of Direct-to-Consumer Genetic Testing Awareness: Sociodemographics and Cancer Beliefs

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The use of direct-to-consumer (DTC) genetic testing, genetic tests that do not require health care providers' approval and are marketed directly to consumers, is on the rise. However, disparate use of this resource is pronounced among various populations. Therefore, it is important to understand characteristics of individuals who know this technology exists. The purpose of this study was to identify associations between DTC genetic testing awareness and sociodemographic factors, cancer beliefs, and health perceptions.

We report findings collected from the National Institutes of Health 2013 HINTS 4 Cycle 2 ($n = 3,219$). We examined associations of sociodemographics, familial and personal health characteristics, and cancer beliefs with DTC awareness using multivariate logistic regression models.

Overall, 49% of the sample was knowledgeable about DTC genetic testing. Multivariate analyses revealed that females (odds ratio [OR], 1.26; 95% confidence interval [CI], 1.01-1.62), college-educated individuals (OR, 2.72; 95% CI, 1.70-4.35), and persons who disagree that there are too many cancer recommendations that it is hard to know which ones to follow (OR, 1.41; 95% CI, 1.03-1.93) are significantly more likely to know about DTC genetic testing. Contrastingly, those significantly less likely to be familiar with DTC technology perceive their health to be fair or poor (OR, 0.55; 95% CI, 0.34-0.89), are born outside of the United States (OR, 0.60; 95% CI, 0.37-0.96), and are 65 or older (OR, 0.56; 95% CI, 0.37-0.81).

Knowledge disparities of DTC genetic testing highlight the importance of developing educational interventions inclusive of men, individuals with lower education, older individuals, and those with varying health beliefs, perceptions, and social networks. As medicine evolves and becomes more personalized, it is important that individuals are informed of the availability, associated risks, benefits, and limitations of resources marketed to improve understanding of disease risk.

Cancer-Related Ambiguity Perceptions Predict Misconceptions About the Relative Prevalence of Cancer Versus Heart Disease

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Although at the population level cancer is less prevalent than heart disease, extensive media attention to cancer paired with perceived ambiguity about cancer causes and recommendations may bias public views of relative prevalence. In a nationally representative sample, 43% of respondents endorsed the belief that cancer was more prevalent than heart disease; endorsement was highest among those lower in educational level yet was still high among the well-educated (with no ethnic, gender, age, or numeracy differences). Endorsement was not related to personal risk perceptions or cancer exposure or to beliefs about the causes of cancer and heart disease. The strongest predictors of endorsement were perceptions that cancer messages were ambiguous and hard to understand and that cancer was unpreventable. Endorsement was also associated more highly with sunscreen use but not mammography nor behaviors associated with both cancer and heart disease (diet, weight, physical activity, quit intentions in smokers). Findings suggest the need for risk communication campaigns to take into account public perceptions of relative disease risk.

Characteristics of Smokers by Internet Use

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Tobacco use continues to be the greatest preventable cause of death and disease in the United States. Understanding the differences between smokers who use the Internet and those who do not can guide the development of smoking cessation resources for these two groups.

This study used the 2012 HINTS Cycle 4 database to compare a nationally representative sample of current smokers who use the Internet against current smokers who do not on sociodemographics, healthcare (status, care access, and coverage), and beliefs about health risks. It also examined the differences in Internet access channels between current smokers, former smokers, and never smokers. Analysis of the HINTS dataset was conducted using SPSS software. Associations between Internet use and categorical variables were examined by generating cross-tabulations, and associations between Internet use and one continuous variable were examined with a t-test. Calculated values of $p < .05$ were assigned statistical significance.

This study found that smokers using the Internet were generally younger, more educated, and better off financially than smokers not using the Internet. Similarly, the Internet-connected smokers reported better health and were more likely to have access to a regular health care provider. Both groups of smokers had equal beliefs about health risks associated with cancer. The use of various Internet access channels differed among current, former, and never smokers, and cellular networks were a popular means of connecting to the Internet.

Compared to smokers who are using the Internet, non-Internet-using smokers face several disadvantages related to accessing healthcare information and resources. Future research should evaluate tailored messaging to promote cessation resources to these two groups of smokers.

Discrepancies Between Black Males and Their Healthcare Providers: Implications for Shared Decision-Making Regarding PSA Testing

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Due to the uncertainties associated with prostate-specific antigen (PSA) testing and invasive treatments, experts strongly advise that all men considering PSA testing practice informed decision-making before receiving the test. This is especially important among Black men because of the disproportionate rate of diagnosis and deaths. Despite the recommendation to practice informed decision-making, we know little about how Black men are being informed about the benefits, risks, and options associated with PSA testing.

The study sheds light on the communication that has taken place between healthcare providers and Black men regarding PSA testing. Data from HINTS 4 Cycle 2 provide further insight into the informed decision-making process and its impact on shared decision-making between Black men and their healthcare providers regarding PSA testing. This study reports PSA testing information received by Black male patients and possible variables that predict the outcomes of Black male patients receiving or not receiving PSA testing information.

Analysis revealed that less than 50% of the respondents ($N = 178$) reported that a doctor discussed whether they should have a PSA test, and of those, 86% reported that their doctor asked if they wanted the test. Over 70% reported not being informed that some experts disagree with PSA testing use; the PSA test is not always accurate; some prostate cancer is slow-growing and needs no treatment; and treating prostate cancer can lead to serious side effects. Age and health insurance were predictor variables for being/not being informed of PSA testing information.

These results suggest that many healthcare providers are not following the PSA testing recommendations to inform patients, and this could significantly affect the shared decision-making process. Other interventions might need to be developed and disseminated to Black men to facilitate shared decision-making about the decision to receive a PSA test.

Mammography Screening in Women Age 40-49 Vs. 50-74 Years: What Factors Affect Decision-Making?

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USPSTF guidelines released in 2009 recommend biannual mammogram for women ages 50-74. However, ACS continues to recommend annual mammograms for women ages 40 and over. Inconsistent guidelines increase decision-making challenges for women ages 40-74.

The purpose of this study was to (1) compare time since last mammogram for women ages 40-49 vs. 50-74 and (2) explore factors associated with women having a mammogram within the past 2 years.

Secondary data analysis included 1,303 women without breast cancer ages 40-74 from HINTS Cycle 2 in 2012-2013. Sociodemographic information, family cancer history, cancer information seeking, communication with health professionals, cancer beliefs, and years since last mammogram were examined. Descriptive statistics and logistic regression were used to address aims.

The result was that age was significantly associated with time since last mammogram ($p < .001$). For women ages 40-49, 53.1% had their last mammogram within the past year, 13.4% between 1 and 2 years ago, and 20.7% had never had a mammogram. For women ages 50-74, 62.8% had their last mammogram within the past year, 15.3% between 1 and 2 years ago, and 4.0% had never had a mammogram. More years of education (OR = 1.89, $p = .01$), being married (OR = 1.66, $p = .02$), better communication with health professionals (OR = 1.58, $p = .001$), seeking cancer information (OR = 1.97, $p = .03$), and less belief that everything causes cancer (OR = 1.32, $p = .03$) were associated with having a mammogram in the past 2 years. There were interactions between age and several information-seeking variables. Paying more attention to cancer information and trusting information from all sources were both associated with having a mammogram in the past 2 years for older women, but not for younger women. Conversely, never having looked for cancer information was associated with not having a mammogram in the past 2 years for younger women only. Findings can inform future investigations of mammogram decision-making.

Examining Threat Appraisal and Information Seeking About Adaptive Sun Safety Behaviors From a Protection Motivation Theoretical Framework

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This study explored the role of information seeking within protection motivation theory (PMT), in the context of skin cancer prevention. Specifically, the seeking of information regarding adaptive behaviors following an appraisal of skin cancer threat (perceived severity, perceived susceptibility, and rewards from maladaptive behaviors) was examined. Items from the National Cancer Institute's HINTS 2005 data set were analyzed ($N = 847$). Results suggest that perceived severity and perceived susceptibility influence the probability that an individual will seek information about adaptive sun safety behaviors. This supports the idea that individuals may be more likely to seek information about adaptive sun safety behaviors following an appraisal of their overall skin cancer risk. Theoretical and practical implications of these findings are discussed, specifically the potential role of information seeking within PMT and message design strategies for health communicators advocating for the adoption of sun safety behaviors.

The Effect of Food Advertising and Screen Time on Adults' Diet and BMI: A Multilevel Study

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Accumulated evidence suggests that dietary choices (such as fruit and vegetables), physical activity, and a healthy body weight are important parts of lifestyle in cancer prevention (Umar, Dunn, and Greenwald, 2012). However, it is not clear how television and other screen time influence a cancer-preventing lifestyle, although recent review has associated TV watching with the risk of weight-related chronic diseases in adults.

This multi-level study examined the relationship between screentime and adult dietary consumption and Body Mass Index (BMI) and explored the role of food marketing as a potential moderator, controlling for physical activity, adult obesity rate, and demographic factors. The analysis integrated data from the national representative sample of 3,630 adults collected by the National Cancer Institute's HINTS 4 C2, the industry advertising data by Kanta Media Inc., and the Gallup-Healthways Well-Being Index.

Adults in the weighted sample did 4 hours physical activity over 2.6 days every week, which was above the recommended amount. They ate 1.2 cups of fruit and 1.4 cups of vegetables daily, which were lower than the recommended amounts. They drank, 1.8 times, regular sodas per week, which is regarded as empty calories that should be limited.

Regarding the effect, we found that screentime, food-specific TV advertising, and physical activity did not relate to consumption of fruit and vegetables. However, screentime, soda advertising, and citywide adults' obesity rate were positively related to soda consumption. Indeed, soda consumption was negatively related to consumption of fruit and vegetables. More importantly, screentime and soda consumption were positively related to BMI, whereas fruit consumption and fruit advertising was negatively related to BMI. However, physical activity did not have a significant influence on soda consumption and BMI. The results have implications for life style modification in cancer interventions and for public policy on food marketing.

Does Health Information Source Matter? Examining the Relationship Between Information Sources and the Patient-Provider Encounter

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In 2013, 72% of Internet users say that they look online for health information. Additionally, more and more health consumers are discussing what they find online with their health provider. The purpose of this study was to examine the impact of using the Internet as a first source for health information on the patient-provider encounter. Cross-sectional data ($n = 2,925$) were examined from the 2008 HINTS. The elaboration method using multiple linear regression was used to examine the focal relationship between health information source and the health consumer rating of the patient-provider encounter (PPE, measured by the first component score of six items). A final model was developed using exclusionary and inclusionary steps that included the examination of two potential mediating variables: gratification from the last information search and trust in the information source. Compared with respondents who used a health provider as a first source for health information, respondents who used the Internet or print material had on average a lower PPE score (Internet: -0.625 ; print: -0.716). The effect of gratification on the focal relationship was modified by race/ethnicity, and trust in the information source demonstrated partial mediation. Findings suggested that in order to maintain a positive PPE, health providers and organizations must develop strategies to manage and respond to the growing number of health consumers who bring health information found online to the consultation. This is particularly relevant for collaborative care models for chronic disease that emphasize patient-oriented care and incorporate patient satisfaction and quality of care measures to evaluate performance.

Perceived Helpfulness and Utilization of Menu Labeling: An Examination of the HINTS 4

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This study attempts to identify sociodemographic traits and health conditions that are likely to be associated with higher use and perceived helpfulness of menu-labeling information. The data are from the 2012 HINTS 4. Weighted logistic and linear regression models were conducted to examine whether health confidence, daily fruit and vegetable intake, behavioral change items, medical conditions, and higher order interaction effects were associated with use of menu information and perceived helpfulness of menu information while adjusting for selected covariates. Findings indicated that higher levels of education, being White, higher levels of fruit and vegetable intake, and behavioral changes (with regard to weight loss, fruit intake, vegetable intake, and soda intake) were associated with higher use of menu-labeling information. Also, there was significant interaction between health confidence and high blood pressure status. For those without high blood pressure, high confidence in one's ability to take good care of one's health was associated with higher likelihood of using menu information. However, this effect was not found among those diagnosed with high blood pressure. Last, findings also indicated being female, higher levels of health confidence, and weight loss behavior were associated with higher levels of perceived helpfulness of menu information. The study's findings have implications for health education awareness and intervention programs as well as practical policy implications.

Speaking the Same Language: Exploring the Relationship Between Patient Confidence and Provider Communication

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Although the benefits of effective patient-provider communication have long been identified, less is known about how specific components of this communication—i.e., involving patients in decisions, explaining information clearly, discussing information found on the Internet, and helping to deal with feelings of uncertainty—affect the ability of patients age 50 and older to feel confident about taking care of their health. The objective of this analysis was to assess the relationship between patient-provider communication and how confident patients were in taking good care of their health. Using data from HINTS 4 Cycle 2, predictors of self-reported confidence in ability to take good care of health were determined by ordered logistic regression analyses.

Within the sample ($N = 2,164$), 64% of older adults reported they felt very confident or completely confident in their ability to take good care of their health. The odds of self-reported complete confidence in taking good care of health is higher for patients whose healthcare provider involves them in decisions about their health (OR = 1.33, 95% CI = 1.14-1.56), explains things in a way the patient can understand (OR = 1.61, 95% CI = 1.33-1.95), and helps the patient deal with feelings of uncertainty (OR = 1.27, 95% CI = 1.10-1.46).

Effective communication between patients and their healthcare provider is important for gaining confidence in taking care of one's health, increasing patient compliance with provider instructions, and feeling confident to carry out health behaviors. The benefit of better communication between older adult patients and their providers is a mutually agreed-upon care plan that empowers patients to care for themselves. Better communication may also increase health literacy and use of health information. These results have implications for disease self-management programs and highlight communication components that may lead to improvements in the health and quality of life of older adults.

Adherence to Strength Training Recommendations, How Do Cancer Survivors Fare?

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Research has shown that both aerobic and resistance exercise have positive effects on physical and mental well-being among cancer survivors. Yet, strength training, a component of a physically active lifestyle directly tied to clinically relevant outcomes in some survivor groups, is less studied among cancer survivors. The purpose of this secondary data analysis was to (1) identify the percentage of cancer survivors who meet current American College of Sports Medicine guidelines for strength training (at least 2 days/week) and (2) compare strength training rates among cancer survivors to those with no history of cancer. The data for this study included merged HINTS 4 Cycle 1 and 2 data. Cancer survivors were self-identified as “ever been diagnosed with cancer.” Individuals reporting at least 2 days/week of leisure-time exercises designed to strengthen muscles were classified as meeting strength training recommendations. Frequencies were calculated, as well as unadjusted and adjusted logistic regressions to evaluate the association between a history of cancer and meeting strength training recommendations ($N = 6,365$). Weighted analyses were performed using SUDAAN. Results show that 27% of survivors engage in at least 2 days/week of strength training, while 32% of individuals with no history of cancer meet strength training recommendations (OR = 0.79, 95% CI = 0.63-0.98). After adjusting for age, race, sex, education, and body mass index, there was no longer a significant association between history of cancer and meeting strength training recommendations (OR = 0.96, 95% CI = 0.76-1.21). This null result is encouraging given that strength training may reduce the incidence of lymphedema and muscle wasting among cancer survivors, though the overall percentage of those meeting recommendations is still low. Health professionals must communicate the benefit of, and advocate for maintaining, a strength training program for all people, regardless of cancer status.

Understanding and Overcoming Barriers for Improving Spanish-Language Response Rates and Data Quality in the National Health Information National Trends Survey

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One in six U.S. residents is Latino; about 40% of U.S. Latinos are Spanish monolingual; another 40% are bilingual English/Spanish. In order for national surveys to be adequately representative of the U.S. population, they must include Spanish-speaking Latinos. However, this population is notoriously difficult to sample for a variety of reasons. Additionally, ensuring that the responses are high-quality is particularly challenging given issues with literacy and translation. These are the same issues health communicators face when understanding how best to communicate important health information to Latinos. HINTS offers a unique opportunity to understand the health communication landscape and information needs of the U.S. population. This paper describes the challenges in recruiting Spanish-speaking HINTS respondents and strategies used to improve rates and quality of responses among Spanish-speaking Latinos. Methods included oversampling high-minority Census blocks and mailing both Spanish and English questionnaires to households in linguistically isolated areas or with a Spanish surname. Beyond sampling, the survey development team used cognitive interviewing techniques to better understand how Spanish-speaking Latinos were interpreting the survey questions and the extent to which these interpretations matched English-speaking respondents' interpretations. Cognitive testing found that some Spanish-speaking respondents had difficulty with the questions because of a lack of access to health care. We also found that Spanish-speaking respondents had a particularly hard time answering questions in a grid format. This prompted the survey design team to recommend a single column format for the questionnaire that appeared to be less complex to answer. This paper examines the impact of these changes on the response of Spanish-speaking households and the quality of responses as measured by the percentage of missing data. We discuss important challenges that remain in understanding the health information needs of non-English-speakers and opportunities for additional, complementary studies to examine these needs.

Risk Perceptions and Self-efficacy as Predictors of Cancer Information Seeking Among General Populations

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In the light of health consumerism, health-information seeking, and subsequent decision-making are significant for individuals. Previous research has clarified characteristics of cancer-information seeking with social determinants, such as socioeconomic status, race/ethnicity, education, and/or relevant behavioral outcomes (e.g., intention to carry out a health behavior, speaking with others about relevant information, changing a treatment decision on the basis of information sought). Still, little research has examined the predictors to facilitate the cancer-information seeking in social settings (Anker, Reinhart and Feeley, 2011). In this study, we evaluated risk perceptions and self-efficacy as the potential predictors of cancer-information seeking among non-patients. Logistic regression analyses with HINTS 4 Cycle1 data were used. Results show that perceived cancer vulnerability (OR = 1.19; 95% CI, 1.04-1.38) and self-efficacy (OR = 1.20; 95% CI, 1.01-1.41) are significant, respectively. General health status and fatalism did not predict cancer health-information seeking. This implies that the level of self-efficacy and the perceived cancer vulnerability could predict cancer-information seeking among non-patients. Implications for a campaign strategy for non-patients are discussed.

Health Care Avoidance Among Rural Populations: Results From a Nationally Representative Survey

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Previous research suggests that certain populations, including rural residents, exhibit health care avoidant behaviors more frequently than other groups. Additionally, health care avoidance is related to sociodemographics, attitudes, social expectations, ability to pay for care, and prior experiences with providers. However, previous studies have been limited to specific geographic areas, particular health conditions, or by analytic methods.

The 2008 HINTS was used to estimate the magnitude of health care avoidance nationally and, while controlling for confounding factors, identify groups of people in the United States who are more likely to avoid health care. Chi-square procedures tested the statistical significance ($p < .05$) of bivariate relationships. Multivariable analysis was conducted through a weighted multiple logistic regression with backward selection.

For 6,714 respondents, bivariate analyses revealed differences ($p < .05$) in health care avoidance for multiple factors. However, multiple regression reduced the set of significant factors ($p < .05$) to rural residence (OR = 1.69), male sex (OR = 1.24), younger age (18-34 years OR = 2.34; 35-49 years OR = 2.10), lack of health insurance (OR = 1.43), lack of confidence in personal health care (OR = 2.24), lack of regular provider (OR = 1.49), little trust in physicians (OR = 1.34), and poor provider rapport (OR = 0.94).

The results of this study will help public health practitioners develop programs and initiatives targeted and tailored to specific groups, particularly rural populations, which seek to address avoidant behavior, thereby reducing the likelihood of adverse health outcomes.

Patient-Provider Communication to Reduce Depression and Anxiety Among Cancer Survivors

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Cancer is a complex disease that can dramatically influence psychosocial well-being of those affected. Even when “cured,” late effects of treatment or fear of recurrence of cancer can cause cancer survivors a great deal of psychosocial distress. Health providers are in a position to potentially reduce the burden of anxiety and depression among cancer survivors through effective communication strategies. HINTS presents an opportunity to study outcomes of anxiety and depression as related to patient-provider communication.

Four hundred sixty-four cancer survivors were identified in the HINTS 4 Cycle 2 data set. Using STATA, a logistic regression model predicting PHQ-4 dichotomous score for anxiety and depression (no depression vs. any depression) was created. Independent variables that included age, sex, race, ethnicity, income, education, and marital status were analyzed in Model One. Model Two included Model One as well as time since diagnosis, type of treatment, and eight patient-provider communication variables.

In Model One, income was the only significant predictor of depression. Income was no longer significant however, on including patient-provider communication and cancer treatment variables in Model Two. Among patient-provider communication variables, making sure patients understood the things they needed to do to take care of their health significantly predicted ($p < .05$) a PHQ score indicating no depression, but involving patients in decisions as much as they wanted significantly predicted ($p < .05$) a PHQ-4 score indicating depression.

Cancer survivors may experience significantly less anxiety and depression when physicians take time to make sure that they are able to self-manage their disease and take care of their own health. Shared decision-making is a complex process, but it may be more complex in cancer diagnoses. Additional investigation into shared decision-making may elicit further information about why this communication function may increase anxiety and depression.

Understanding the Factors Influencing Health Information Seeking

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The primary objective of this exploratory study was to identify the factors that affect seeking health information. The variables examined in this study were trust in health information sources (grouped into one variable), attention to health information sources (grouped into one variable), self-efficacy in finding health information, health condition, feelings (e.g., hopeless, nervous, worrying), self-efficacy in taking care of health, age, education, income, and race/ethnicity. The selected variables were previously identified as important variables that are associated with health information-seeking behavior. By eliminating missing values, a sample size of 2,800 was obtained from the 2012 HINTS 4 database. Multivariate logistic regression was used to model the dichotomous dependent variable, that is, seeking information, from the various antecedent variables.

Results indicate that four variables are significant ($p < .05$). Health information seekers are more likely to pay attention to health information sources (OR 2.42, CI 1.93-3.02), more likely to be female (OR 1.88, CI 1.50-2.36), more educated (OR 1.43, CI 1.32-1.54), and have greater income (OR 1.15, CI 1.08-1.22). The results confirm and contradict previous results that have mapped antecedent variables in relation to health information seeking. They align with prior research in that gender, education, and income have a significant relationship with seeking health information. Additionally, health condition, feelings, and race ethnicity do not have a significant relationship. Yet, the contradicting evidence is that there is no effect of trust in health information sources, self-efficacy in finding health information, and age on seeking health information. While prior research has neglected to use attention to health information sources as a critical variable, results show that it is a strong predictor of seeking health information.

Research Using HINTS Data in Health Communication Journals: Tracking Research Trends Over Ten Years

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Although a few studies have summarized the most updated research findings derived from HINTS data and have offered overviews of the most recent HINTS data collection methodologies, we believed a quantified comprehensive analysis of the studies using HINTS data was necessary. This study attempted to provide a general picture of how scholars were using HINTS data, as well as what authorial, institutional, topical, theoretical, and methodological patterns were used. Specifically, this study explored: (1) to what extent health communication scholars were publishing studies using HINTS data in health communication journals and (2) the status of these studies in major health communication journals. This study examined 50 published studies using HINTS data in two leading health communication journals: *Health Communication* and *Journal of Health Communication*. The time frame selected was between 2003 and 2012. The findings identified some notable trends in research for the future development of studies using HINTS data. First, the results revealed a steady pattern of publication trends during the 10-year period, except for two notable increases in terms of the numbers in the years 2006 and 2010 in the *Journal of Health Communication*. In terms of interdisciplinary collaboration, the majority of the studies were collaborative work between multiple authors ($n = 48$). However, most of the collaborations were within one discipline instead of between multiple disciplines. Explicit theoretical frameworks were absent for a majority of the articles ($n = 46$). This analysis also identified seven general research topics in the published articles. Among them, mediated health communication was the most frequently studied area. These and other findings were discussed.

Absolute Risk, Comparative Risk, Worry, and Cancer Screening Behaviors

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This study aimed to understand the interrelationships between risk perceptions of cancer, negative affect, and cancer screening behaviors in order to increase the cancer screening rates in the population. HINTS 2012 Cycle 1 data were used.

In the first study, the differential effects of absolute risk and comparative risk perceptions on the affective and behavioral outcomes were examined. Two cancer screening practices, mammogram and prostate-specific antigen (PSA) test, were used to see whether the results can be generalized to different genders. Hierarchical logistic regressions were used. The results showed that comparative risk was a stronger predictor of affective outcomes (e.g., cancer worry), whereas absolute risk was a stronger predictor of behavioral outcomes (e.g., cancer screening behavior). But the stronger predictive effect of absolute risk exists only in prostate cancer screening, not in mammogram screening.

The second study examined how risk perceptions work with negative affect (worry) to affect the screening behavior. Cervical cancer screening practices were examined. The PROCESS Macro of SPSS was used to examine the hypotheses. It was demonstrated that worry mediates the relationship between risk perception and cancer screening behavior. This mediating effect is consistent no matter whether absolute risk or comparative risk perception is modeled.

This provides empirical evidence that supports that affect plays a primary role in the decision-making process and may even guide the behavior. To some extent, affect transfers complex risk cognitions into simpler affect heuristics to motivate the screening behavior. Negative affective feelings rather than risk evaluations provide decision-makers with more informational inputs that affect the behavioral outcomes.

