Original Investigation

Health information seeking and media exposure among smokers: A comparison of light and intermittent tobacco users with heavy users

Lila J. Finney Rutten, Erik M. Augustson, Kelly A. Doran, Richard P. Moser, & Bradford W. Hesse

Abstract

Introduction: We examined population-based data to assess potential differences between light and intermittent smokers as compared with moderate to heavy tobacco users in health information-seeking behavior and attitudes and media exposure.

Methods: Data from the 2003 and 2005 Health Information National Trends Surveys were combined to examine the information-seeking characteristics of light daily smokers ($n=594$), intermittent smokers ($n=532$), and moderate to heavy daily smokers ($n=1,131$).

Results: Compared with moderate to heavy daily smokers, intermittent smokers reported less exposure to television, greater trust in doctors as a source of health information, and greater intention to quit smoking. No differences in information-seeking experiences and preferences were observed between light daily smokers and moderate to heavy daily smokers. Intermittent smokers were distinct from moderate to heavy smokers in their information-seeking experiences and preferences.

Discussion: The insight into the media use and information preferences of different smoking populations lays the groundwork for conducting further research to examine the information needs and preferences of smoking groups and to more effectively develop and deliver smoking cessation interventions.

Introduction

Recent estimates suggest that the percentage of smokers who report light and intermittent smoking is rising (Centers for Disease Control and Prevention [CDC], 2002, 2007). On its own, even a light level of smoking represents a substantial health risk (Bjartveit & Tverdal, 2005). What is interesting about this subgroup, however, is its distinctiveness as a potential beneficiary of health communication efforts (or, conversely, as a vulnerable target for marketing efforts from the tobacco industry).

Previous data suggest that nondaily smokers are generally younger and have higher educational or employment status than daily smokers (Lindström, 2001). Members of that demographic group typically have greater reliance on new media (Internet, text messaging, etc.), which might make them more savvy beneficiaries of online resources on the one hand (Stecher, Shiffman, & West, 2005) or unwitting victims of unregulated online marketing on the other (Williams, Ribisl, & Feighery, 2006). Intermittent smokers also have expressed a greater desire to quit than daily smokers (Lindström & Isacson, 2002), a finding that could imply a promising degree of success from targeted health communication.

Understanding the communication habits of intermittent smokers may be an important step in reaching this pivotal group. If the group is inclined to look for information using the Internet, as is the case with others who are young and well

Lila J. Finney Rutten, Ph.D., M.P.H., *HealthPartners Research Foundation, Bloomington, MN*

Erik M. Augustson, Ph.D., M.P.H., *Division of Cancer Control and Population Sciences, Behavioral Research Program, Health Communication and Informatics Research Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD*

Richard P. Moser, Ph.D., *Division of Cancer Control and Population Sciences, Behavioral Research Program, Health Communication and Informatics Research Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD*

Bradford W. Hesse, Ph.D., *Division of Cancer Control and Population Sciences, Behavioral Research Program, Health Communication and Informatics Research Branch, National Cancer Institute, National Institutes of Health, Bethesda, MD*
Kelly A. Doran, *Division of Cancer Control and Population Sciences and DB Consulting Group, Inc., Silver Spring, MD*

Corresponding Author:

Lila J. Finney Rutten, Ph.D., M.P.H., *HealthPartners Research Foundation, 8170 33rd Ave. S, Bloomington, MN 55425, USA.*
Telephone: 301-594-9056. Fax: 301-480-2198. Email: lila.j.rutten@healthpartners.com

doi: 10.1093/ntr/ntn019

Advance Access publication on March 5, 2009

Received December 10, 2007; accepted April 3, 2008

Published by Oxford University Press on behalf of the Society for Research on Nicotine and Tobacco.

educated (Hesse et al., 2005), then providing online support to support cessation may become a priority. If the group is more inclined to watch television or listen to the radio, then one-way mass media campaigns followed by a hotline may be preferable. What is needed is an analysis of data linking communication channel usage with behavioral risk factors within the changing environments of new communication technology (Viswanath, 2005).

Our analyses aimed to identify trusted sources of health information and media exposure among light daily smokers, intermittent smokers, and moderate to heavy daily smokers.

Methods

Data source

Data were from the 2003 and 2005 Health Information National Trends Surveys (HINTS). HINTS collects nationally representative data on the American public's need for, access to, and use of cancer-relevant information (for instruments and technical documents, see <http://hints.cancer.gov/hints/>).

Data collection, response rates, and sample

Data for HINTS 2003 were collected from October 2002 through April 2003. Data for HINTS 2005 were collected from February 2005 through August 2005. Both surveys were administered to representative samples of U.S. households using computer-assisted random digit dialing from all telephone exchanges in the United States. In 2003, exchanges with high numbers of Blacks and Hispanics were oversampled. One adult aged 18 years or older within each household was selected for the extended interview. Complete interviews were conducted with 6,149 adults in 2003 and with 5,586 adults in 2005. The household-level screening response rates were 55% for 2003 and 34.0% for 2005. Data from HINTS 2003 and 2005 were combined in our analyses, resulting in the following sample sizes: light daily smokers ($n=594$), intermittent smokers ($n=532$), and moderate to heavy daily smokers ($n=1,131$). The percentage of respondents in each of the smoking categories is comparable with other national data (CDC, 2002). Further details about the sampling design are published elsewhere (Nelson et al., 2004).

Survey items

All the survey items for HINTS 2003 and 2005 were evaluated in a cognitive laboratory through concurrent protocol analysis techniques (Sudman, Bradburn, & Schwarz, 1996; Willis, 2005). Survey items were reviewed and modified through an iterative process to ensure stability in interpretation and use. The instruments were pilot tested prior to the main field period (Davis, Park, Covell, Rizzo, & Cantor, 2005).

Sociodemographic characteristics. The following sociodemographic measures adopted from the Behavioral Risk Factor Surveillance System were examined: sex, age, race/ethnicity, income, education, and health insurance coverage.

Information seeking. Respondents were asked the following: "Have you ever looked for information about cancer from any

source?" "In the past 12 months, have you done the following things while using the Internet: Looked for health or medical information for yourself?" (yes/no). Respondents were asked to rate trust (a lot, some, a little, and not at all) in information from the following sources: doctor, family, newspaper, magazine, Internet, and television. Ratings of trust in each information source were dichotomized as "yes" for respondents who indicated trusting a source "a lot" and as "no" for all other responses.

Media exposure. Respondents were asked, "On a typical weekday, about how many hours do you watch television (listen to the radio)?" Respondents were also asked, "In the past 7 days, how many days did you read a newspaper?" Responses to these items were continuous.

Smoking status and cessation intention. Smoking status was assessed through a series of items in HINTS that were adopted from the Tobacco Use Supplement to the Current Population Survey (TUS-CPS). Smoking categories were determined according to previously defined categories (Choi, Okuyemi, Kaur, & Ahluwalia, 2004; Hassmiller, Warner, Mendez, Levy, & Romano, 2003; Lindström & Isacson, 2002; Nollen et al., 2006; Okuyemi, Ahluwalia, Richter, Mayo, & Resnicow, 2001). Light smokers included respondents who reported smoking fewer than 10 cigarettes/day, intermittent smokers included respondents who reported current smoking on only some days, and moderate to heavy daily smokers included respondents who reported smoking 10 cigarettes/day or more.

Respondents who reported that they were current smokers were asked about their intentions to quit. In 2003, respondents were asked, "Would you say that you plan to quit smoking?" In 2005, the wording was changed to that used in the TUS-CPS: "Are you seriously considering quitting smoking within the next 6 months?" Responses were coded to be comparable.

Data analyses

To account for the multistage sample design of HINTS, we used SUDAAN to calculate population estimates and confidence intervals. Data from HINTS 2003 and 2005 were combined by applying a reweighting algorithm to the 50 replicate-weight jackknife design of HINTS to create a new set of weights. The combined data with new weights yield mean estimates that take into account possible changes in subpopulation groups and implicitly compute the population sizes by applying the final weights from multiple years simultaneously. This algorithm has been used previously to combine weighted data across survey years (Lee et al., 2006). We used cross-tabulation with chi square to examine bivariate associations. We conducted logistic regression analyses to examine the association of cessation intention, information, and media variables with smoking status (Model 1: light smokers vs. moderate to heavy smokers; Model 2: intermittent smokers vs. moderate to heavy smokers). The following sociodemographic variables were included as control variables: gender, age, race/ethnicity, income, education, and health insurance status. Survey year (2003 and 2005) was also included in the model as a control variable. Intention to quit, information seeking, and media consumption variables were included in the final logistic models only if they were significantly ($p < .05$) associated with smoking status at the bivariate level.

Results

Table 1 summarizes the sociodemographic characteristics for each smoking group. Significant differences between smoking groups were observed by gender, age, race/ethnicity, income, and education. A significantly higher percentage of intermittent smokers indicated an intention to quit (74.0%) compared with moderate to heavy daily smokers (64.7%).

Table 2 summarizes information-seeking behaviors and attitudes among smoking groups. The mean amount of time spent watching television was significantly lower among intermittent smokers (3.29 hr) than among moderate to heavy daily smokers (3.76 hr). A higher percentage of intermittent smokers (46.7%)

reported having sought health information on the Internet compared with moderate to heavy daily smokers (38.4%). A higher percentage of intermittent smokers (65.3%) reported trusting health information from a doctor compared with moderate to heavy daily smokers (53.7%).

Table 3 summarizes the results of the multivariate model examining independent associations of smoking status: light daily versus moderate to heavy, $F(18) = 13.87$, $p < .0001$. When controlling for sociodemographic variables, we found that trust in health care providers was no longer significantly associated with smoking status when comparing light daily smokers to moderate to heavy daily smokers. Table 3 also summarizes the results of the multivariate model examining independent

Table 1. Sociodemographic status by smoking status

Respondent characteristic	Smoking status		
	Light daily smoker (%)	Intermittent smoker (%)	Moderate to heavy smoker (%)
Survey year			
2003	46.4	51.1	49.5
2005	53.6	48.9	50.5
	$p = .28$	$p = .68$	
Gender			
Male	46.1	53.5	56.5
Female	54.0	46.6	43.5
	$p = .0035$	$p = .4041$	
Age (years)			
18–34	43.7	46.8	29.3
35–49	33.7	32.5	40.3
50–64	16.0	13.5	23.3
65+	6.6	7.1	7.1
	$p = .0012$	$p = .0000$	
Race/ethnicity			
Non-Hispanic White	59.7	59.7	81.6
Non-Hispanic Black	13.4	11.5	8.1
Hispanic	13.9	23.1	4.0
Non-Hispanic other	13.0	5.7	6.3
	$p = .0000$	$p = .0000$	
Income			
<US\$25,000	38.9	31.6	37.1
\$25,000 to <\$50,000	28.3	30.9	32.8
\$50,000 to <\$75,000	15.6	16.9	17.9
\$75,000 and greater	17.3	20.6	12.2
	$p = .1439$	$p = .0113$	
Education			
Less than high school	21.8	17.7	21.9
High school graduate	36.4	30.4	42.7
Some college	31.4	35.2	27.3
College graduate	10.4	16.6	8.2
	$p = .0818$	$p = .0000$	
Health insurance			
Yes	73.4	72.9	74.6
	$p = .6918$	$p = .6097$	
Intention to quit			
Yes	65.2	74.0	64.7
	$p = .8992$	$p = .0056$	

Note. The p values resulting from cross-tabulation with chi square for light daily versus moderate to heavy daily and for intermittent versus moderate to heavy daily.

Table 2. Information seeking and media consumption by smoking status

Smoking status			
Information seeking and media consumption	Light daily smoker	Intermittent smoker	Moderate to heavy daily smoker
Cancer information seeking (%)			
Yes	41.7	42.0	44.4
No	58.3	58.0	55.6
	$p = .3658$	$p = .4870$	
Health/cancer information seeking on Internet (%)			
Yes	42.8	46.7	38.4
No	57.2	53.4	61.6
	$p = .1833$	$p = .0386$	
Trust cancer information from doctor (%)			
Yes	60.5	65.3	53.7
No	39.5	34.7	46.3
	$p = .0499$	$p = .0015$	
Trust cancer information from family (%)			
Yes	21.6	23.2	23.2
No	78.4	76.8	76.8
	$p = .5857$	$p = .9999$	
Trust cancer information from newspaper (%)			
Yes	11.5	19.5	14.9
No	88.5	80.6	85.1
	$p = .1909$	$p = .1476$	
Trust cancer information from magazine (%)			
Yes	17.8	18.1	16.4
No	82.2	81.9	83.7
	$p = .6401$	$p = .5481$	
Trust cancer information from Internet (%)			
Yes	24.2	27.5	24.2
No	75.8	72.5	75.8
	$p = .9999$	$p = .2538$	
Trust cancer information from television (%)			
Yes	22.4	26.2	23.8
No	77.6	73.8	76.2
	$p = .6184$	$p = .4452$	
Mean hours per weekday watching television			
	3.41	3.29	3.76
	$p = .0767$	$p = .0155$	
Mean hours per weekday listening to radio			
	2.69	2.80	3.05
	$p = .0855$	$p = .2686$	
Mean days per week reading newspaper			
	3.03	3.15	2.95
	$p = .6347$	$p = .3509$	

Note. The p values resulting from cross-tabulation with chi square for light daily versus moderate to heavy daily and for intermittent versus moderate to heavy daily.

associations of smoking status for intermittent smokers and moderate to heavy daily smokers: $F(21) = 13.59$, $p < .0000$. Controlling for sociodemographic characteristics, we found that intermittent smokers were significantly more likely to report an intention to quit (odds ratio [OR] = 1.51) and more likely to report trust in health information from a doctor (OR = 1.48) compared with moderate to heavy daily smokers. Intermittent smokers reported fewer hours of exposure to television (OR = 0.92) compared with moderate to heavy daily smokers.

Discussion

In many ways, our analyses using the HINTS dataset replicate those of other population-based surveys with respect to inter-

mittent smokers. Intermittent smokers tended to be female, educated, and young with diverse ethnic backgrounds; moderate to heavy smokers tended to be male, less educated, older, and primarily White (for comparison, see Lindström & Isacson, 2002). Similarly, a significantly greater number of intermittent smokers expressed a desire to quit smoking than did moderate to heavy smokers (see Lindström, 2001); the lack of difference between light smokers and moderate to heavy smokers has previously been noted (see Morley, Hall, Hausdorf, & Owen, 2006). The fact that these findings held constant across administrations of the biennial survey suggests that these characteristics of the subpopulation may be relatively enduring.

What is new in here is the analysis of communication sources associated with types of tobacco user. Intermittent smokers

Table 3. Multivariate logistic regression models comparing independent associates of moderate to heavy smoking with light daily smoking and with intermittent smoking status

Respondent characteristic	Moderate to heavy daily versus light daily smokers (<i>n</i> = 1,661)	Moderate to heavy daily versus intermittent smokers (<i>n</i> = 1,458)
	Odds ratio (95% <i>CI</i>)	Odds ratio (95% <i>CI</i>)
Survey year		
2003	1.00	1.00
2005	1.02 (0.76–1.37)	.80 (0.55–1.17)
Gender		
Male	1.00	1.00
Female	1.81 (1.30–2.52)	1.47 (1.08–2.01)
Age (years)		
18–34	1.00	1.00
35–49	.66 (0.44–1.00)	.49 (0.32–0.73)
50–64	.53 (0.33–0.84)	.46 (0.28–0.76)
65+	.87 (0.49–1.53)	1.29 (0.68–2.41)
Race/ethnicity		
Non-Hispanic White	1.00	1.00
Non-Hispanic Black	2.60 (1.59–4.25)	3.37 (1.79–6.37)
Hispanic	6.63 (3.80–11.56)	11.59 (6.67–20.13)
Non-Hispanic other	2.68 (1.35–5.33)	1.72 (0.85–3.48)
Education		
Less than high school	1.00	1.00
High school graduate	1.53 (0.96–2.42)	1.59 (0.86–2.92)
Some college	1.78 (1.05–3.02)	2.59 (1.48–4.54)
College graduate	2.25 (1.27–3.98)	3.91 (2.13–7.18)
Income		
<US\$25,000	1.00	1.00
\$25,000 to <\$50,000	0.86 (0.57–1.30)	1.14 (0.70–1.83)
\$50,000 to <\$75,000	0.95 (0.56–1.59)	1.42 (0.87–2.33)
\$75,000 and greater	1.53 (0.92–2.54)	2.16 (1.30–3.59)
Insurance status		
No health insurance	1.00	1.00
Has health insurance	1.10 (0.78–1.56)	.94 (0.62–1.43)
Trust cancer information from doctor		
Not a lot ^a	1.00	1.00
A lot	.85 (0.61–1.17)	1.48 (1.03–2.08)
Mean hours of television viewing on a typical weekday ^b		.92 (0.87–0.97)
Health/cancer information seeking on Internet		
No		1.00
Yes		1.01 (0.67–1.52)
Intention to quit ^b		
No		1.00
Yes		1.51 (1.05–2.18)

^aThe following responses were included in the “not a lot” category to reflect level of trust rating: “some,” “a little,” and “not at all.”

^bThese items were not included in this model because they were not significantly associated with smoking status at the bivariate level.

expressed greater trust in doctors as a source of health information compared with moderate to heavy smokers. This finding signals an important opportunity for the promotion of physician-delivered cessation interventions to target intermittent smokers. A number of investigations have demonstrated the effectiveness of physician-delivered smoking cessation interventions (Kottke, Edwards, & Hagen, 1999; Ockene et al., 1988; Ockene & Zapka, 1997; Silagy & Stead, 2001).

Intermittent smokers also expressed a greater facility for looking up health information on the Internet, a finding that is consistent with studies of Internet demographics (Hesse et al.,

2005). This finding provides a starting point for discussions of the role that online smoking cessation resources might play and the groups for which such resources may be effective. Coupled with receptivity to physician recommendations, this group might especially benefit from “information prescriptions” (Kemper & Mettler, 2002) to credible online resources for smoking cessation (Strecher et al., 2005).

By the same token, it is difficult to know from these data whether intentions to quit will translate into successful quit attempts. From other studies, intentions to quit are poorly correlated with cessation success (Farkas, Pierce, Gilpin, & Zhu, 1996;

Littell & Girvin, 2002; Pierce, Farkas, & Gilpin, 1998; Sutton, 2001). Given that many intermittent smokers are younger, a distinct possibility is that these individuals are still in the smoking uptake process. That is, light and intermittent smoking may be a transitional state that would lead, over time, to greater addiction and use. More work is needed to understand the roles of intermittent smoking in the cessation and uptake processes and to identify the necessary resources and information support to assist these smokers.

Limitations

Response rates for HINTS 2003 and 2005, although comparable with those of other random-digit-dialed surveys, were low (Nelson, Powell-Griner, Town, & Kovar, 2003). Low response rates that reflect systematic differences in responders and nonresponders may limit our ability to generalize the results to populations represented by responders (Groves, 1989); however, it cannot be determined from these data whether any systematic differences existed between responders and nonresponders. Another limitation in these data stems from the specificity of the items that assessed information exposure and trust. These items were asked more generally and were not specific to information about tobacco use, risk, or cessation.

Conclusions and implications

Effective information services should be the hallmark of efforts to educate smokers about the risks of tobacco use. Our results offer a first look at how the use of different communication channels may vary based on type of tobacco user. Of particular interest is the group of smokers who consume cigarettes on a periodic, rather than routine, basis. This group may be especially receptive to cessation programs introduced by physicians and made accessible through the Internet, a finding that could help focus scarce resources in an era of limited funding for health education.

Funding

None declared.

Declaration of Interests

None declared.

Acknowledgments

All the authors were National Cancer Institute employees at the time of research, and the work was completed as part of their employment.

References

- Bjartveit, K., & Tverdal, A. (2005). Health consequences of smoking 1-4 cigarettes per day. *Tobacco Control*, 14, 315-320.
- Centers for Disease Control and Prevention. (2002). Cigarette smoking among adults in the United States, 2000. *MMWR Morbidity Mortality Weekly Report*, 51, 642-645.
- Centers for Disease Control and Prevention. (2007). Cigarette smoking among adults—United States, 2006. *MMWR Morbidity Mortality Weekly Report*, 56, 1157-1161.
- Choi, W. S., Okuyemi, K. S., Kaur, H., & Ahluwalia, J. S. (2004). Comparison of smoking relapse curves among African-American smokers. *Addictive Behaviors*, 29, 1679-1683.
- Davis, T., Park, I., Covell, J., Rizzo, L., & Cantor, D. (2005). *Health Information National Trends Survey (2005): Final report*. Rockville, MD: Westat.
- Farkas, A. J., Pierce, J. P., Gilpin, E. A., & Zhu, S. H. (1996). Is stage-of-change a useful measure of the likelihood of smoking cessation? *Annals of Behavioral Medicine*, 18, 79-86.
- Groves, R. (1989). *Survey errors and survey costs*. New York: Wiley.
- Hassmiller, K. M., Warner, K. E., Mendez, D., Levy, D. T., & Romano, E. (2003). Nondaily smokers: Who are they? *American Journal of Public Health*, 93, 1321-1327.
- Hesse, B. W., Nelson, D. E., Kreps, G. L., Croyle, R. T., Arora, N. K., Rimer, B. K., et al. (2005). Trust and sources of health information: The impact of the Internet and its implications for health care providers—Findings from the first Health Information National Trends Survey. *Archives of Internal Medicine*, 165, 2618-2624.
- Kemper, D. W., & Mettler, M. (2002). *Information therapy: Prescribed information as a reimbursable medical service*. Boise, ID: Healthwise, Inc.
- Kottke, T. E., Edwards, B. S., & Hagen, P. T. (1999). Counseling: Implementing our knowledge in a hurried and complex world. *American Journal of Preventive Medicine*, 17, 295-298.
- Lee, S., Davis, W. W., Nguyen, H. A., McNeel, T. S., Brick, J. M., & Flores-Cervantes, I. (2006). *Examining trends and averages using combined cross-sectional survey data from multiple years. California Health Interview Survey 2005 methodology paper*. Retrieved November 15, 2007, from http://www.chis.ucla.edu/pdf/paper_trends_averages.pdf.
- Lindström, M. (2001). Desire to stop smoking among intermittent and daily smokers: A population-based study. *Tobacco Control*, 10, 396-397.
- Lindström, M., & Isacson, S. O. (2002). Long term and transitional intermittent smokers: A longitudinal study. *Tobacco Control*, 11, 61-67.
- Littell, J. H., & Girvin, H. (2002). Stages of change. A critique. *Behavioral Modification*, 26, 223-273.
- Morley, K. I., Hall, W. D., Hausdorf, K., & Owen, N. (2006). 'Occasional' and 'social' smokers: Potential target groups for smoking cessation campaigns? *Australian and New Zealand Journal of Public Health*, 30, 550-554.
- Nelson, D. E., Kreps, G. L., Hesse, B. W., Croyle, R. T., Willis, G., Arora, N. K., et al. (2004). The Health Information National Trends Survey (HINTS): Development, design, and dissemination. *Journal of Health Communication*, 9, 1-18.

Health information seeking and media exposure among smokers

- Nelson, D. E., Powell-Griner, E., Town, M., & Kovar, M. G. (2003). A comparison of national estimates from the National Health Interview Survey and the Behavioral Risk Factor Surveillance System. *American Journal of Public Health, 93*, 1335–1341.
- Nollen, N. L., Mayo, M. S., Sanderson Cox, L., Okuyemi, K. S., Choi, W. S., Kaur, H., et al. (2006). Predictors of quitting among African American light smokers enrolled in a randomized, placebo-controlled trial. *Journal of General Internal Medicine, 21*, 590–595.
- Ockene, J. K., Quirk, M. E., Goldberg, R. J., Kristeller, J. L., Donnelly, G., Kalan, K. L., et al. (1988). A residents' training program for the development of smoking intervention skills. *Archives of Internal Medicine, 148*, 1039–1045.
- Ockene, J. K., & Zapka, J. G. (1997). Physician-based smoking intervention: A rededication to a five-step strategy to smoking research. *Addictive Behavior, 22*, 835–848.
- Okuyemi, K. S., Ahluwalia, J. S., Richter, K. P., Mayo, M. S., & Resnicow, K. (2001). Differences among African American light, moderate, and heavy smokers. *Nicotine & Tobacco Research, 3*, 45–50.
- Pierce, J. P., Farkas, A. J., & Gilpin, E. A. (1998). Beyond stages of change: The quitting continuum measures progress towards successful smoking cessation. *Addiction, 93*, 277–286.
- Silagy, C., & Stead, L. F. (2001). Physician advice for smoking cessation. *Cochrane Database of Systematic Reviews, 2*, CD000165.
- Strecher, V. J., Shiffman, S., & West, R. (2005). Randomized controlled trial of a Web-based computer-tailored smoking cessation program as a supplement to nicotine patch therapy. *Addiction, 100*, 682–688.
- Sudman, S., Bradburn, N. M., & Schwarz, N. (1996). *Thinking about answers: The application of cognitive processes to survey methodology* (1st ed.). San Francisco, CA: Jossey-Bass.
- Sutton, S. (2001). Back to the drawing board? A review of applications of the transtheoretical model to substance use. *Addiction, 96*, 175–186.
- Viswanath, K. (2005). Science and society: The communications revolution and cancer control. *Nature Reviews Cancer, 5*, 828–835.
- Williams, R. S., Ribisl, K. M., & Feighery, E. C. (2006). Internet cigarette vendors' lack of compliance with a California state law designed to prevent tobacco sales to minors. *Archives of Pediatric and Adolescent Medicine, 160*, 988–989.
- Willis, G. B. (2005). *Cognitive interviewing: A tool for improving questionnaire design*. Thousand Oaks, CA: Sage.