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Strategic Communication for Cancer Prevention and Control: Reaching and Influencing Vulnerable Audiences

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1. Introduction

Strategic health communication efforts can help reduce cancer risks, incidence, morbidity and mortality, and improve quality of life for at-risk populations. However, providing relevant information about cancer prevention and control to vulnerable populations is fraught with difficulties. Just the ability to get members of at-risk populations to pay attention to information provided about cancer can often be a challenge. Most people do not want to hear or think about cancer unless they are forced into it because they or someone they care about has been diagnosed with some form of the dreaded disease. Since the term “cancer” is surrounded by a significant stigma in modern society that equates cancer with death and suffering, communication about cancer makes many people uncomfortable, forcing them to think about their potential to suffer and die.¹ Strategic cancer prevention and control communication campaigns should be designed to overcome the pervasive social stigma that influences public attitudes towards cancer education.

The good news for health communicators is that the extremely negative social stigma surrounding cancer as an unavoidably deadly disease does not reflect the reality of cancer care in the modern world. Increasingly, those who are diagnosed with cancers are able to get helpful treatments and live productive lives as cancer survivors. Some public health scholars have suggested that with the advent of viable cancer treatments, cancer is becoming a chronic, rather than a terminal, disease due to increases in long-term cancer survivorship.¹ There are also many good evidence-based health promotion strategies available to help people reduce their risks for developing cancers, to help them detect cancers early when the cancers can be most effectively treated, and to get the best care for living with cancer.² However, consumers who have elevated cancer risks need access to the relevant information about cancer prevention and control to make their best health promoting decisions. While the pervasive negative social stigma surrounding cancers makes communicating about cancer prevention very difficult to do well, cancer communication efforts can be strategically planned and executed to encourage key audiences to attend to and respond to relevant cancer prevention information. Access to relevant and persuasive health information is essential for helping vulnerable population members reduce their risks for cancer-related morbidity and mortality by guiding evidence-based decision-making about cancer prevention and control.

In addition to the negative stigma surrounding cancer and the reluctance to communicate about cancer, the complex nature of cancer etiology and treatment needs to be attended to when disseminating relevant cancer prevention and control information to health care consumers. Helping consumers make sense of the complexity of cancer-related information can often be a major challenge for consumers. Many consumers perceive cancer as one general disease and do not clearly differentiate between the unique forms, stages, and responses to different forms of cancer. Yet, cancer is not just one health care problem, but a complex set of diseases. The word cancer is an umbrella term that refers to a broad range of different forms and stages of cancer. These different forms of cancer typically are caused by a range of different factors, affect different parts of the body in unique ways, are displayed in distinct ways, produce a variety of symptoms and effects, are detected and treated in very different ways, and are likely to result in quite distinct prognoses depending on the kind of cancer diagnosed, its stage of detection, the treatments that are available, and the unique health histories and other co-morbidities experienced by the specific individuals who are confronting the cancer diagnosis.

The terminology and concepts related to cancer research and care can also be quite complicated, making it difficult to communicate relevant cancer information fully and clearly. It is not easy for most laypersons to understand the science behind cancer prevention and control recommendations. This can be especially problematic when communicating with representatives of vulnerable populations, such as many immigrants, people with limited education, those with lower socioeconomic status, some minority group members, and elderly individuals who may have limited levels of health literacy.¹ The need for effective communication about cancer risks, early detection, prevention, care, and survivorship is particularly acute for these at-risk populations, yet it is also tremendously challenging.² Effective cancer communicators must develop culturally sensitive communication strategies for addressing health literacy challenges, explaining cancer information clearly to targeted audiences, and promoting full understanding about how to use the relevant information to promote cancer prevention and control. Strategic cancer communication efforts can help reduce the many uncertainties concerning cancer for at-risk consumers. It can provide vulnerable consumers with a rationale for making informed health decisions. It can facilitate participation in cancer prevention and control efforts, empowering consumers to engage in relevant health behaviors, such as adopting healthy living activities (such as recommendations for exercise, nutrition, and risk avoidance), and to seek early detection and screening tests. It can also encourage consumers to seek the best treatments for cancer and to cooperate with prescribed therapeutic regimens.²

However effective cancer communication efforts are further complicated by the sense of fatalism about cancer control that is widely held by many members of at-risk populations. Data reported from recent administrations of the Health Information National Trends Survey (HINTS) conducted by the National Cancer Institute suggest that many members of the American public believe there is little that can be done to prevent cancers and even less that can be done to treat cancers once they are diagnosed.² A large numbers of HINTS respondents reported that they are confused by all the different recommendations they encounter concerning cancer prevention and control and are not sure what to do to reduce their risks for contracting cancers.² The range of competing recommendations about cancer that consumers often encounter gives them the impression that “everything causes cancer.” What is worse, consumers report that the recommendations they hear concerning cancer

prevention and control seem to change all the time, further confusing them.² To counter these communication challenges, cancer communicators should develop clear, easy to understand, and consistent communication strategies for breaking through the confusion. They need to reduce the inertia caused by public fatalism concerning cancer with the use of engaging and persuasive messages that motivate adoption of evidence-based cancer prevention recommendations. This chapter examines the challenges to communicating relevant cancer prevention and control information to vulnerable populations and suggests best practices for designing meaningful messages and effectively using relevant media to reduce cancer-related health disparities and to promote public health.

2. Vulnerable populations and health communication

Communication is the central social process in health promotion and care for informing cancer prevention and control for vulnerable populations.^{1,2} The process of communication is the primary social mechanism used to both seek and deliver cancer care. Communication is the primary process for delivering cancer education and influencing cancer-related health behaviors. Communication is the coordinating process used to manage health care delivery systems. It is also the social process used to establish and reinforce health policies and practices. Health care consumers and providers depend upon communication to gather relevant health information for guiding evidence-based health decision making, encouraging participation in health care and health promotion activities, reducing uncertainty about cancers and increasing understanding about relevant health issues, as well as promoting needed cooperation and collaboration to achieve health goals.

Vulnerable populations are those groups of health care consumers who are most likely to suffer significantly higher levels of morbidity and mortality from cancers than other segments of the general population.³ These vulnerable population members are typically the poorest, least well educated, and most disenfranchised members of modern society, including members of many immigrant and minority groups, the elderly, the socio-economically deprived, the disabled, and people suffering from serious chronic diseases.³ Many members of these vulnerable populations are likely to experience key health communication barriers such as health literacy challenges, limited access to and ability to use key channels of communication (such as new information technologies), as well as suffer from serious social and economic problems that can limit their ability to get needed care and to follow cancer prevention and control recommendations.^{4,5} There are a broad range of significant health risks confronting members of vulnerable populations today, including risks from cancers, heart disease, diabetes, stroke, HIV/AIDS, and other serious health threats.^{6,7} Effective health communication is needed to help those members of the public who are at greatest risk (most vulnerable) for suffering from these health threats to recognize, minimize, and respond effectively to potential health problems.^{8,9}

It is particularly important to effectively communicate clear, accurate, and persuasive information about cancer prevention and control to audiences who are at greatest risk for negative cancer outcomes, those who suffer from cancer health disparities.^{10,11,12,13} Unfortunately, current efforts to educate the most vulnerable segments of society about cancer prevention and control strategies have been insufficient to significantly reduce cancer incidence, morbidity, and mortality for members of these groups by helping them make informed decisions about their best health care and health promotion choices.^{15,16,17,18} The

need for effective communication about cancer risks and responses is particularly acute, yet also tremendously challenging, for reaching vulnerable health care consumers.^{19,20} These vulnerable population members are heir to serious disparities in cancer-related health outcomes, resulting in alarming levels of cancer-related morbidity and mortality, especially in comparison to the rest of the public.^{19,21,22} The cultural barriers and health literacy challenges faced by many members of vulnerable populations, who are often immigrants, as well as non-native and substandard English speakers, readers, and writers, creates significant barriers to accessing and making sense of relevant cancer-related information.^{23,24,25} These consumers are often confused and misinformed about the causes, preventive strategies, early detection procedures, and the treatments for different forms of cancer, which serves to exacerbate their poor cancer-related health outcomes.²⁵

Members of vulnerable populations who are likely to suffer from significant cancer-related health disparities are desperately in need of relevant, accurate, and timely health information about cancer prevention and control.^{26,27,28} Some vulnerable group members, such as elderly health care consumers, have elevated risks for contracting different forms of cancer, while other vulnerable group members, such as African American women, are more likely to die from breast cancer than other women.^{3,16,25,26} Many members of immigrant populations in the US are non-native English speakers and encounter serious language and health belief barriers that necessitate adaptive, culturally-sensitive communication strategies to provide them with needed cancer-related health information.^{27,28,29,30} Furthermore, consumers with serious and chronic medical conditions, as well as individuals who confront physical and mental disabilities, are often particularly vulnerable to health risks and have unique communication needs that must to be adequately addressed to provide them with the relevant health information they need to preserve their health.³¹ Strategic, adaptive, and culturally-sensitive health communication information dissemination programs are needed for reducing cancer-related health disparities by providing vulnerable consumers with relevant and persuasive health information to help them evaluate health risks, make informed health care decisions, and direct their health behaviors.

3. Focus on cultural issues

Vulnerable consumers' unique cultural backgrounds and orientations have powerful influences on their communication practices that must be carefully accounted for when designing and implementing strategic cancer communication efforts.³² It is critically important to identify and examine the relevant cultural issues that are likely to influence the ways consumers, particularly members of vulnerable populations, respond to communication about cancer prevention and control.^{27,29,31} Several of the key cultural variables that influence cancer communication outcomes include the unique health beliefs, values, norms, and expectations that different consumers bring to health situations that influence their cancer-related health decisions and behaviors.²⁶ It is also important to assess consumers' culturally-based language skills and orientations, their health literacy levels (both their levels of literacy for language and numbers), their motivations to seek health information, their unique media use patterns, and their social network memberships.^{33,34} Examination of these key cultural factors can provide relevant information for determining how to best design and deliver key messages for effectively communicating complex health information to diverse and vulnerable populations.^{27,20,31} Culturally-sensitive health

communication is essential to providing vulnerable consumers with relevant information about cancer prevention, screening, and treatment strategies.^{30,31}

The best cancer communication education efforts begin with careful analysis of the critical cultural factors that influence the health beliefs and behaviors of targeted members of at-risk groups, since these cultural factors will also influence these consumers' reception and response to cancer prevention messages. It is important to identify the current levels of relevant cancer-related knowledge, strongly-held health beliefs, and primary health goals of key audience members before composing communication strategies. By determining what consumers know and don't know about cancer, health campaign strategist can guide the design of cancer-related health messages to help fill consumers' cancer information gaps and to correct any misconceptions these consumers may have concerning cancer prevention and control. Too often health communication efforts are based on very good intentions, but extremely limited audience data, so health promotion campaign do not hit the mark, failing to provide consumers with the information they most need. Without collecting good background information about audience members' cultural beliefs, attitudes, expectations, and behaviors, it is very difficult to develop health promotion messages that will be appropriate and influential for targeted audiences. The best health promotion messages are carefully designed to speak to audience members' unique cultural experiences. The messages employ familiar language and provide compelling culturally-rich examples to illustrate key points.

It is also important to carefully assess the level of communication skills and the unique communication orientations of targeted audience members. By learning about the communication skills and orientations of key audiences, campaign planners can design messages that will be easily understood by member of these audiences. They can employ communication channels for delivering the messages that will be easy to use and comfortable for audience members to access. They can also identify and use appropriate information sources to deliver cancer prevention and control messages who are likely to be perceived as interesting and credible by members of key target audiences.

4. Strategic health communication design

Health education messages must be carefully designed to be effective. The critical factor in strategic message design is adapting health education messages to meet the unique needs and communication orientations of specific audiences. This means that effective health communication efforts should adopt a consumer orientation to health education.^{35,36} Careful audience analysis is essential to identify the salient consumer characteristics that can be used for guiding message design.^{37,38}

Good audience analysis research will help answer a variety of important questions for guiding cancer prevention and control efforts. These questions are likely to examine a number of relevant communication factors about members of targeted audiences. For example, what are the typical message exchange and information sharing processes employed by targeted groups of consumers? Who do these consumers typically talk to and acquire health related information from? Who do they trust? How do they receive and provide social support? What are their predispositions for interpreting cancer prevention and control messages? What are most influential factors for persuading members of targeted

groups to attend to and respond positively to health messages? Which communication channels do members of these targeted groups prefer to use? What are the best ways to provide these consumers with feedback about their health behaviors that can promote and reinforce health behavior changes? What are the most influential communication strategies for developing cooperative and trusted relationships with members of targeted groups? The best health communication intervention programs will be designed to be responsive to audience communication patterns. They will be relevant to audience needs and interests. They will be easily accessible to targeted audience members. The messages will be culturally appropriate for key audience members. Messages and communication strategies will be adaptive to changing social situation. The messages provided will also be motivational and reinforcing, as well as engaging, interesting, and interactive.

Messages should be designed to appeal to key beliefs, attitudes, and values of targeted audience members, using familiar and accepted language, interesting images, and vivid examples to illustrate key points.²⁹ It is wise to pre-test sample health education messages with representatives of targeted audiences to make sure the messages hit the intended mark with these audiences before implementing health communication intervention programs. Formative evaluation data gathered through message pre-testing is essential to refining health education messages.³⁹ This is a form of user-centered design, where health education messages are shaped and refined by actively gathering feedback about campaign design from representatives of the actual audiences who are being targeted in health communication interventions.³⁹ Pre-testing is also a strategy for helping to increase audience participation in health education efforts. This active participation can not only help to increase the cultural sensitivity of health communication efforts, but can also enhance audience members receptivity to and cooperation with health promotion efforts.³⁹ Involving consumers, their family members, key members of their social networks, and community representatives can increase support and social encouragement for paying attention to, accepting, and utilizing health education messages.^{40,41,42}

To be effective at presenting cancer prevention and control information it is wise to design multiple, reinforcing strategic messages that will be delivered at several points in time over different complementary channels of communication for reaching, influencing, and reinforcing vulnerable audiences with health education information. This multiple complementary message strategy builds from the communication principles of redundancy and reinforcement to enhance message exposure and impact.⁴³ Multiple, reinforcing cancer prevention and control messages can help to capture audience attention by providing these consumers with relevant information at several points of time. This strategy helps to reinforce message content by repeating key ideas. This also helps to illustrate key health education concepts. The use of vivid imagery in health communication interventions through the use of powerful narrative and visual illustrations can also reinforce message content, especially for audiences with limited health literacy, as well as audience members who have problems with numeracy (understanding numerically presented information) that may make it difficult for them to comprehend statistics and numerical risk estimates.^{39,40,44,45,46,47}

Tailored communication is a powerful approach for designing customized health messages to meet the unique needs and backgrounds of specific individuals.⁴⁸ Tailored approaches provide specific customized messages to an individual that match the person's unique

background, beliefs, and orientations. Key bits of an individual's background information, such as the person's name, age, cultural memberships, or health status are gathered and included in the specific health messages sent to that person. For example, a tailored message might state, "Research has shown that mammograms should be scheduled every other year for a woman of your age, race, and family history with breast cancer Helen." By including specific key information about Helen's background in the message, the information becomes much more interesting and relevant for her. Typically, tailored communication systems employ interactive computer systems that can be used to gather relevant background information from consumers concerning key communication variables (age, race, gender, occupation, health history, etc.) through questions posed to these individuals, including questions eliciting information about individual demographics, psychographics, and health beliefs/behaviors. Once key background information is gathered from the individual, the information is used to select specific messages stored in a library of messages that match the unique background features of the individuals selected to receive health education messages. In this way, information about the individual health risks and orientations of a specific consumer, for example an elderly, African-American, male, with a history of prostate cancer and diabetes, will automatically be selected and used to provide content-appropriate health information to the individuals through a tailored health information communication system. As the consumer continues to interact with the tailored health information system, providing the system with additional background information, a tailored communication computer program can store and catalog this information to continually refine the content of message sent to this consumer to match his or her unique personal characteristics and interests.

In addition to developing strategic messages that match the cultural orientations of at-risk consumers, it is critically important to determine the most effective communication channels for reaching targeted populations of consumers. The best communication channels to utilize are those that are close, familiar, and easily accessible for targeted audience members.⁴⁹ For example, it is important to employ communication channels that are easy for members of the intended audience to use. It would be a serious error to develop an online health education website for consumers who do not have access to computers or who are not sophisticated computer users. Communication channels that are dramatic and memorable can have strong influences on audience attention and interpretation of health messages.⁴⁹ Health educators should consider using communication channels that can be accessed over time, channels that can retain important information for later review, and even interactive channels that can enable consumers to ask questions and receive clarifications about complex health information. The best strategic communication designs use interactive channels where consumers can provide feedback and ask questions to clarify the information provided. Multiple overlapping communication channels can present complementary messages that are reinforcing over time and delivered by multiple credible sources.

It is important to decide what the best sources are for delivering key messages about cancer prevention and control strategies to different audiences.³⁹ It is crucial to identify the most credible sources of health information for members of the intended audiences.⁴⁹ Decisions need to be made about whether it is best to utilize familiar sources of information, expert sources, or perhaps peer communication as the most influential ways to provide cancer-

elated health information to different audiences. Just as with the use of strategic messages, it is a good idea to pre-test the use of different information sources and different communication channels with targeted audiences.³⁹ Message testing research that examines the impact of different communication sources on targeted audience members can help strategic communicators make good decisions about the best representatives to employ to deliver health information to different audiences.

5. Evaluating health communication interventions

Evaluation research should be a basic process that is built in to all cancer prevention and control communication efforts.⁵⁰ Cancer communication efforts should always begin with careful needs analysis and audience analysis to identify the best goals, targets, and strategies for communication interventions. The messages designed and channels identified for delivering cancer prevention and control messages should be carefully tested with representatives from targeted groups to make sure they communicate effectively to these groups and provide them with the intended information. Message testing can also be used to refine and improve message strategies as a form of formative research. Usability testing is also a useful formative research strategy for testing consumer access to, comfort with, and ability to effectively use communication channels and tools.

A critical juncture in communicating risk and benefit information to vulnerable audiences is evaluating how well different communication strategies work to educate targeted audiences about important health issues.⁵⁰ It is important to assess how well consumers really understand the risks and benefits that are being communicated and what differences communication programs are making in promoting informed consumer decision-making. A first step in evaluating the outcomes of communication efforts is to establish clear baseline measures of consumer understanding before introducing new health education programs. These baseline measures can be used as a starting point for tracking the influences of communication efforts on consumer attitudes, beliefs, and behaviors concerning cancer prevention and control.⁴⁵ Feedback mechanisms, such as consumer surveys, focus groups, hotlines, help-desks, and comment cards, can be introduced as integral parts of communication interventions for tracking and evaluating consumer understanding of health messages, as well as their reaction to campaign strategies. The data gathered through these feedback mechanisms can be used to refine health communication programs and track progress in health education. Evaluation research can track the influences of communication efforts on consumer beliefs, behaviors, and even their physiological outcomes. Furthermore, it is important to conduct cost-benefit analyses to determine whether cancer prevention and control communication interventions are cost-effective. (See Figure 1 for a summary of the different forms of evaluation research that should be used to inform strategic cancer communication interventions).

6. Policy and practice implications for strategic communication

What policies and best practices are needed to guide effective communication efforts about cancer prevention and control to vulnerable populations? First and foremost, communication interventions to educate vulnerable populations need to be strategic and evidence-based. Cancer communication is too complex a process to be handled without careful planning

Needs Analysis Research	What is the nature of the health issue, problem or disparity that needs to be addressed? What are the likely causes of the problem? What are the negative outcomes of the problem? What needs to be changed to address this problem? What are the ideal goals to be achieved for improving this situation?
Audience Analysis Research	Who are the key target audiences who are affected by this health problem? What are the target group members' unique beliefs, attitudes, values, and experiences related to this issue? What are their communication skill levels and orientations to this issue? Can these groups be segmented into homogenous sub-groups?
Message Testing Research	What language level is most effectively understood by members of the target audience? What numerical examples will make sense to members of this audience? Which messages resonate with audience members, are interesting, memorable, and persuasive? What narrative examples resonate with this audience?
Channel Testing Research	Which channels of communication are most familiar to audience members? How easy are different communication channels for audience members to use? How likely is it for audience members to access and pay attention to different communication channels. Which channels are likely to work well together?
Source Credibility Testing	Which information sources will be deemed as trustworthy and credible to target audience members? How attractive are different potential message sources for audience members? Which sources will audience members pay attention to? Which sources will be most persuasive?
Usability Testing	How easily can target audience members use the different media selected for delivering health messages? Can they navigate through the different levels of information presented via these different media? Can they find the most relevant health information and the information they are most interested in?
Formative Evaluation Research	How well are strategic communication strategies working with targeted audience members? How are the audience members reacting to key messages and communication strategies? Are there unintended reactions to the health education efforts? Is there a need to change communication strategies to better meet audience needs or respond to changing conditions?
Summative Evaluation Research	How effective was the communication strategy for achieving established health goals? Did the communication effort influence health beliefs, values, attitudes, and behaviors? Did the effort influence cancer incidence, early detection, treatment, morbidity, quality of life, and survivorship? Was the communication program cost-effective?

Fig. 1. The Functions of Evaluation Research for Informing Strategic Cancer Communication Interventions.

and data. It is also critical for health educators to adopt culturally sensitive communication practices to reach and influence vulnerable populations. Community participative communication interventions are a valuable strategy for integrating consumers' perspectives into cancer education efforts and building community commitment to health communication interventions.^{41,42} It is a good idea to consider introduction of relevant communication technologies, such as tailored information systems, to support health

education efforts.¹⁹ It is also a good idea to incorporate health communication training for both health care providers (educators) and consumers to enhance the quality of cross-cultural communication efforts.^{20,51}

Strategic communication efforts can promote cancer prevention and control for at-risk populations. To achieve these goals efforts must be taken to develop evidence-based communication campaigns to increase awareness about prevention. These campaigns must be designed to persuade members of at-risk groups to adopt prevention recommendations, change negative health habits, and adopt healthy lifestyles. Communication campaigns should be designed not only to initiate these healthy behavior changes, but to also reinforce and sustain behavior changes over time. Campaigns should be designed to increase awareness about the importance of developing healthy lifestyles and engaging in regular recommended cancer screening and early detection activities. Efforts should be taken to implement and promote easily accessible and affordable screening programs. Screening practices should be monitored to refine and improve screening programs and promotion activities.

7. Conclusion

Several lessons have been learned from past efforts to increase the effectiveness of cancer communication interventions with vulnerable populations.^{20,29,26} These lessons include the importance of:

- Gathering full audience and needs information to guide health communication efforts.
- Testing message and channel strategies to refine communication activities.
- Using close, familiar, and frequently used communication channels.
- Developing vivid, engaging, and moving messages for interventions.
- Involving and empowering vulnerable and at-risk consumers in health communication efforts;
- Developing inter-organizational partnerships to support intervention efforts;
- Providing appropriate training and support for both consumers and providers;
- Designing culturally appropriate messages and materials for communication efforts;
- Focusing on the family and the community for delivering and reinforcing messages, and;
- Providing consumers with choices and options for promoting their health.
- Evaluating the influences of communication interventions to refine and improve efforts.

The development and implementation of strategic health communication interventions holds great promise for promoting cancer prevention and control for vulnerable populations. By investing in the development of strategic cancer communication efforts we can develop an infrastructure for disseminating relevant cancer information. We can test new strategies, models, and tools for designing effective strategic communication interventions to reduce cancer-related health disparities. We can also encourage the adoption of best practices for cancer prevention and control.

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9. References

- [1] Kreps, G.L., & Sivaram, R. (2008). The central role of strategic health communication in enhancing breast cancer outcomes across the continuum of care in limited-resource countries. *Cancer*, Vol. 113(S8), pp. 2331-2337
- [2] Kreps, G.L. (2008). Strategic use of communication to market cancer prevention and control to vulnerable populations. *Health Marketing Quarterly*. Vol. 25(1/2), pp. 204-216
- [3] Kreps, G.L. (2006). Communication and racial inequities in health care. *American Behavioral Scientist*, Vol. 49(6). pp. 760-774
- [4] Kreps, G.L., & Sparks, L. (2008). Meeting the health literacy needs of vulnerable populations. *Patient Education and Counseling*. Vol. 71(3), pp. 328-332
- [5] Neuhauser, L., & Kreps, G.L. (2008). Online cancer communication interventions: Meeting the literacy, linguistic, and cultural needs of diverse audiences. *Patient Education and Counseling*, Vol. 71(3), pp. 365-377
- [6] Singh, G.K. & Hiatt, R.A. (2006). Trends and disparities in socioeconomic and behavioural characteristics, life expectancy, and cause-specific mortality of native-born and foreign-born populations in the United States, 1979-2003. *International Journal of Epidemiology*. Vol.35, pp. 903-919
- [7] Kunitz, S.J. & Pesis-Katz, I. (2005). Mortality of white Americans, African Americans, and Canadians: The causes and consequences for health of welfare state institutions and policies. *Milbank Quarterly*. Vol.83, pp. 5-39
- [8] Haider, M. (2005). *Global public health communications: Challenges, perspectives, and strategies*. Jones & Bartlett Publishers, ISBN-13: 9780763747763, Sudbury, MA.
- [9] Kreps, G.L. (2003). The impact of communication on cancer risk, incidence, morbidity, mortality, and quality of life. *Health Communication*. Vol.15, pp. 163-171
- [10] Morris L.A., & Aikin, K.J. (2001). The "Pharmokinetics" of patient communications. *Drug Informatics Journal*. Vol.35, pp. 509-527
- [11] Patel, V.L., Branch, T., & Arocha, J.F. (2002). Errors in interpreting quantities as procedures: The case of pharmaceutical labels. *Int J Med Informatics*. Vol.65, pp. 193-211
- [12] Chandra, A., Malcolm, N., & Fetters, M. (2003). Practicing health promotion through pharmacy counseling. *Health Promotion Practice*. Vol.4, pp. 64-71
- [13] Moisan, J., Gaudet, M., Grégoire, J.P., & Bouchard, R. (2002). Non-compliance with drug treatment and reading difficulties with regard to prescription labelling among seniors. *Gerontology*. Vol.48, pp. 44-51
- [14] Kreps, G.L. (2005). Communication and racial inequities in health care. *American Behavioral Scientist*. Vol.49, pp. 1-15

- [15] Thomas, S.B., Fine, M.J., & Ibrahim, S.A. (2004). Health disparities: The importance of culture and health communication. *American Journal of Public Health*. Vol.94, p. 2050
- [16] Ashton, C.M., Haidet, P., Paterniti, D.A., Collins, T.C., Gordon, H.S., O'Malley, K., Petersen, L.A., Sharf, B.F., Suarez-Almazor, M.E., Wray, N.P., & Street, R.L. (2003). Racial and ethnic disparities in the use of health services. *Journal of General Internal Medicine*. Vol. 18, pp. 146-152
- [17] Freeman, H.P. (2004). Poverty, culture, and social injustice: Determinants of cancer disparities. CA: *Cancer Journal for Clinicians*. Vol 54, pp. 72-77
- [18] Kreps, G.L. (1996). Communicating to promote justice in the modern health care system. *Journal of Health Communication*. Vol.1, pp. 99-109.
- [19] Chang, B.L., Bakken, S., Brown, S.S., Houston, T.K., Kreps, G.L., Kukafka, R., Safran, C., & Stavri, P.Z. (2004). Bridging the digital divide: Reaching vulnerable populations. *Journal of the American Medical Informatics Association*. Vol.11(6), pp. 448-457
- [20] Kreps, G.L. (2005). Disseminating relevant information to underserved audiences: Implications from the Digital Divide Pilot Projects. *Journal of the Medical Library Association*. Vol.93(4), pp. 65-70
- [21] Koo, M.M., Krass, I., & Aslani, P. (2003). Factors influencing consumer use of written drug information. *Annals of Pharmacotherapy*. Vol.37, pp. 259-267
- [22] Gazmararian, J.A., Williams, M.V., Peel, J., & Baker, D.W. (2003). Health literacy and knowledge of chronic disease. *Patient Education and Counseling*. Vol.51, pp.267-275.
- [23] Praska, J.L., Kripalani, S., Seright, A.L., Jacobson, T.A.. (2005). Identifying and assisting low-literacy patients with medication use: A survey of community pharmacies. *Annals of Pharmacotherapy*. Vol.39, pp. 441-445
- [24] Wolf, M.S., Davis, T.C., Tilson, H.H., Bass, P.F., & Parker, R.M. (2006). Misunderstanding of prescription drug warning labels among patients with low literacy. *American Journal of Health-System Pharmacies*. Vol.63, pp. 1048-1055
- [25] Kreps, G.L. (1990). A systematic analysis of health communication with the aged. In: Giles H, Coupland N, Wiemann JM, eds. *Communication, health, and the elderly*. Fulbright Series No. 8., University of Manchester Press, ISBN 0-7190-3174-5, p 135-154, Manchester, England
- [26] Kreps, G.L. (1986). Health communication and the elderly. *World Communication*. Vol.15. pp. 55-7.
- [27] Chew, L.D., Bradley, K.A., & Boyko, E.T. (2004). Brief questions to identify patients with inadequate health literacy. *Family Medicine*. Vol.36, pp. 588-594
- [28] Hardin, L.R. (2005). Counseling patients with low health literacy. *American Journal of Health-System Pharmacies*. Vol.62, pp. 364-365
- [29] Kreps, G.L. (2006). One size does not fit all: Adapting communication to the needs and literacy levels of individuals. *Annals of Family Medicine (online)*. 2006; <http://www.annfammed.org/cgi/eletters/4/3/205>
- [30] Parker, R., & Kreps, G.L. (2005). Library outreach: Overcoming health literacy challenges. *Journal of the Medical Library Association*. Vol93(4), pp. 78-82
- [31] Kreps, G.L., & Kunimoto, E. (1994). *Effective communication in multicultural health care settings*. Sage Publications, ISBN-10: 0803947143, Newbury Park, CA

- [32] Kreuter, M.W., & McClure, S.M. (2004). The role of culture in health communication. *Annual Reviews of Public Health*. Vol.25, pp. 439-455
- [33] Youmans, S.L., & Schillinger, D. (2003). Functional health literacy and medication use: The pharmacist's role. *Annals of Pharmacotherapy*. Vol.37, pp. 1726-1729
- [34] Andrus, M.R., & Roth, M.T. (2002). Health literacy: A review. *Pharmacotherapy*. Vol.22, pp. 282-302
- [35] Trewin, V.F., & Veitch, G.B. (2003). Patient sources of drug information and attitudes to their provision: A corticosteroid model. *Pharmacy World Science*. Vol.25, pp. 191-196
- [36] Pilnick, A. (2003). Patient counseling" by pharmacists: Four approaches to the delivery of counseling sequences and their interactional reception. *Social Science and Medicine*. Vol.56, pp. 835-849
- [37] Kreps, G.L. (1996). Promoting a consumer orientation to health care and health promotion. *Journal of Health Psychology*. Vol.1, pp. 41-48.
- [38] Kreps, G.L. (2002). Enhancing access to relevant health information. In: Carveth R, Kretchmer, SB, Schuler, D eds. *Shaping the network society: Patterns for participation, action, and change*. CPSR, OL 19478014M, pp. 149-152, Palo Alto, CA
- [39] Maibach, E.W., & Parrott, R., (Eds). (1995). *Designing health messages: Approaches from communication theory and public health practice*. Sage Publications, ISBN 0803953984, Thousand Oaks, CA
- [40] Kinzie, M.B., Cohn, W.F., Julian, M.F., & Knaus, W.A. (2002). A user-centered model for web site design: Needs assessment, user interface design, and rapid prototyping. *Journal of the American Medical Informatics Association*, Vol.9, pp. 320-330
- [41] Minkler, M. (2000). Using participatory action research to build healthy communities. *Public Health Reports*. Vol.115(2-3), pp. 191-197
- [42] Minkler, M., & Wallerstein, N., (Eds.). (2002). *Community based participatory research for health*. Jossey-Bass, ISBN 0787964573, Indianapolis, IN
- [43] Donohew, L., Lorch, E.P., & Palmgreen, P. (1998). Applications of a theoretic model of information exposure to health interventions. *Human Communication Research*. Vol.24, pp. 454-468
- [44] Dowse, R., & Ehlers, M. (2005). Medicine labels incorporating pictograms: Do they influence understanding and adherence. *Patient Education and Counseling*. Vol.58, pp. 63-70
- [45] Gustafsson, J., Källemark S, Nilsson, G., & Nilsson, J.L.G. (2005). Patient information leaflets – patients comprehension of information about interactions and contraindications. *Pharmacy World Science*. Vol.27, pp. 35-40
- [46] Hwang, S.W., Tram, C.Q.N., & Knarr, N. (2005). The effect of illustrations on patient comprehension of medication instruction labels. *BMC Family Practitioner*. Vol.6, pp.26-32
- [47] Knapp, P., Raynor, D.K., Jebar, A.H., & Price, S.J. (2005). Interpretation of medication pictograms by adults in the UK. *Annals of Pharmacotherapy*. Vol.39, pp. 1227-1233
- [48] Rimer, B.K., & Kreuter, M.W. (2006). Advancing tailored health communication: A persuasion and message effects perspective. *Journal of Communication*. Vol.56(s1), pp. S184-S201

- [49] Maibach, E.W., Kreps, G.L., Bonaguro, E.W. (1993). Developing strategic communication campaigns for HIV/AIDS prevention. In Ratzan S ed. *AIDS: Effective health communication for the 90s*. Taylor and Francis, ISBN: 156032273X, p 15-35, Washington, D.C.
- [50] Kreps, G.L. (2002). Evaluating new health information technologies: Expanding the frontiers of health care delivery and health promotion. *Studies in Health Technology and Informatics*. Vol.80, pp. 205-212
- [51] Coleman, C.L. (2003). Examining influences of pharmacists' communication with consumers about antibiotics. *Health Communication*. Vol.15, pp. 79-99

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This unique synthesis of chapters from top experts in their fields targets the unique and significant area of cancer prevention for different types of cancers. Perspective readers are invited to go through novel ideas and current developments in the field of molecular mechanisms for cancer prevention, epidemiological studies, antioxidant therapies and diets, as well as clinical aspects and new advances in prognosis and avoidance of cancer. The primary target audience for the book includes PhD students, researchers, biologists, medical doctors and professionals who are interested in mechanistic studies on cancer prevention and translational benefits for optimized cancer treatment.

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