Television as a Source of Health Information
for Thai Elderly

Masaki Matsumura *

Introduction

With the rapidly growing elderly population in the world, increasing attention has been focused on health promotion in later life. Health promotion usually suggests self-care activities that allow elderly people to take initiative and responsibility to maintain healthy life and functional ability in the aging years (Easom, 2003). In order to take such initiative and responsibility, however, health information is needed, that encourages individuals to become knowledgeable about diseases, to avoid health risk behaviors, and to practice preventive behaviors. Health information thus becomes a prerequisite for the process of healthy aging.

In addition to advice from health professionals, people utilize various forms of mass media for obtaining health information. Historically, the mass media has disseminated a variety of health information including personal health issues, health habits, medical miracles, and technological breakthroughs (Wallack, 1997). In recent years, television has appeared to be a frequently cited source of health information than conventionally cited sources such as newspapers, books, magazines, and medical personnel (Chew et al., 2002). Given the easiness of access, it is expected that television will continuously play a significant role in disseminating health information among elderly populations.

Research interest in sources of health information can be traced back to more than two decades ago, when the Pittsburgh Health Education survey, conducted in 1978,

* Institute for Population and Social Research, Mahidol University, Salaya, Putthamonthon, Nakhon Pathom 73170 Thailand. E-mail: frmms@mahidol.ac.th

included questions regarding needs, sources, and uses of health information (May, 1981). However, the literature that specifically examined characteristics of the viewers of health related programs on television is scarce. There is little knowledge about what motivates people to turn to television for health information. To fill this gap, the present study analyzes data collected in Thailand, which contain a single item explicitly asking the use of television as a source of health information, as well as various characteristics of the respondents.

In examining characteristics of the viewers of health promoting television programs, this study focuses particularly on a concept that has been postulated by one of the most widely used social-psychological theories in the field of public health, namely, the Health Belief Model. This model states that the individual's personal perception of susceptibility or vulnerability to a disease influences that person's health seeking process. For example, people who perceive themselves as likely candidates for heart disease are more likely to pay attention to an advertisement for a program to reduce the risks of heart disease (Quinn and Coreil, 2001). In this paper, I will examine whether elderly people with high perception of vulnerability are more likely to watch health promoting television programs, compared to the elderly without such perception.

The Health Belief Model and Health-Information Seeking

Health behavior refers to actions undertaken by people who believe they are healthy for the purpose of preventing from diseases and remaining healthy (Gochman, 1988). Thus, health behavior is confined to preventive actions, which include both primary prevention such as diet and exercise and secondary prevention such as medical screening (Quinn and Coreil, 2001). Needless to say, watching health promotion programs by itself does not lead to prevention. Those programs are aimed at improving viewers' knowledge about how to avoid getting diseases and maintain healthy body. If the viewers do not practice activities that they have learned from television programs, that will not result in prevention *per se*. However, preventive health behavior is significantly influenced by health knowledge; the greater the knowledge of health

promotion, the greater the likelihood of preventive activities being practiced (Coburn and Pope, 1974). Therefore, in this study, seeking health information from the media such as television is regarded as an indirect way of preventive health behavior, which attempts to obtain knowledge necessary to avoid getting diseases or to make individuals stay healthy.

A number of models have been used for studies that attempt to explain health behavior. Among those, the Health Belief Model may be one of the most frequently used theoretical models. The Health Belief Model was originally developed by the US Public Service in the 1950s to explain the failure of people to take advantage of prevention and detection programs, despite the widespread publicity of such programs (Quinn and Coreil, 2001). The Model accounts for variations in health practices or health-related decisions by suggesting five basic factors that influence preventive behavior (Chew, Palmer and Kim, 1998; Chew et al., 2002). These include: (a) perceived susceptibility to a disease, (b) perceived severity of the consequences of the disease, (c) perceived benefits of dealing with the unhealthy condition, (d) perceived barriers to adopting the suggested action, and (e) perceived ability to perform the task. The Health Belief Model has been applied in a wide range of health-related research including, for example, health care seeking behaviors among the elderly (Ryan and Zersic, 2003), AIDS risk-taking behaviors (Vanlandingham et al., 1995), and impact of health promoting television programs (Chew, Palmer and Kim, 1998; Chew et al., 2002). While these studies systematically examined all the major components of the Health Belief Model, the present study is able to apply only one component of the model, since it utilizes secondary data from the survey which was initially aimed at recording general baseline information of the respondents. Thus, it is beyond the scope of this study to examine all the five factors postulated by the Health Belief Model.

The present study focuses on the first factor, perceived susceptibility. Perceived susceptibility refers to the individual's perception or belief about his or her vulnerability of getting the disease. For example, a person whose family member died from a heart attack believes he or she may also have the same susceptibility and is more likely to take a preventive action, for example, paying attention to information to reduce

the risks of heart disease (Quinn and Coreil, 2001). In this regard, it is predicted that a person's tendency to take a preventive action increases as his or her perceived susceptibility increases. In other words, compared to a person who does not perceive any risks of disease, a person who does perceive such risks is more likely to watch health promoting television programs. Based on this theoretical postulation, I hypothesize that those elderly with self-reported chronic illness are more likely to access health information from television than those who do not have self-reported chronic illness. Testing this hypothesis is useful to provide a knowledge base for designing health promotion programs particularly targeted to people with disease susceptibility and vulnerability. It may also provide a useful starting point for conceptualizing some factors influencing health-information seeking behaviors.

Data and Variables

Data. The data analyzed in this paper are derived from the baseline demographic survey conducted in 2000 as part of the Kanchanaburi project implemented by the Institute for Population and Social Research at Mahidol University in Thailand. Funded by the Wellcome Trust of the United Kingdom, the main objective of this baseline survey was to monitor population change within a field site in Kanchanaburi province, located about 130 kilometers from Bangkok. As such, the survey questionnaire contains a number of questions related to fertility, mortality, and migration. The survey also included numerous questions investigating social, economic, and health issues (Kanchanaburi Project, 2001).

The individual-level survey contained information collected from 27,920 respondents. The present analysis is based on a subset of the respondents who aged at 60 years and older when the survey was conducted. Thus, the sample contains 1,689 men and 2,027 women, totaling 3,716 elderly people.

Dependent variable. Responses to the following question in the questionnaire are utilized to operationalize the dependent variable of the present study: "Where have you received health knowledge or information?" The list of information

sources (such as radio, television, and newspaper) was shown and the respondents were asked whether they had received health information from each source. The dependent variable is operationalized with a dummy variable whether the respondent has received health information from television, coded as 1 for yes (including yes with probe) and 0 for no. Logistic regression is used to model the odds of receiving health information from television versus not receiving from television.

Independent variables. The concept of perceived disease susceptibility and vulnerability, derived from the Health Belief Model, has been indirectly measured by two dichotomous variables. The first variable indicates whether or not a respondent has chronic illness. This information is based on responses provided by the respondents toward the following question: "Do you suffer from any chronic illness?' Accordingly, it is *self-reported* chronic illness, not *doctor-diagnosed* chronic illness. The rationale of this operationalization is based on an assumption that an affirmative response to this question reflects the individual's personal perception of susceptibility or vulnerability to diseases.

The second proxy measure of perceived disease susceptibility and vulnerability is a variable indicating whether or not a respondent smokes cigarettes. The rationale for the inclusion of this variable into the model is based on an assumption that people who smoke are not very concerned about their health, which is the opposite to the people who perceive their susceptibility or vulnerability.   Based on this assumption, for this variable, it is hypothesized that people who smoke are less likely to report to watch health promoting television programs.

Control variables. It is possible that some elderly people do not employ television as their source of health information, but they may use other sources. In the baseline survey, respondents were asked whether they employed five other sources. These include neighbors, radio, poster, newspaper, and medical personnel. Therefore, in order to control for other sources, I create a dummy variable. This variable indicates whether health information was obtained from other sources alone excluding television (coded as 1), or not (coded as 0).

The respondent's age is included in the model as a control variable, because the presence of a chronic disease, which is the principal independent variable in this analysis, is a function of age; the older, the more chance of having a chronic disease. Since age was expected to have a non-linear relationship with the use of television as a source of health information, age was measured by using a set of dummy variables indicating five-year age intervals with the 60 to 64 years old being the reference category.

The educational level of respondents was measured as a dummy variable differentiating respondents into two categories: those who attended schools at least one year in their lives (with formal education, coded as 1) and those who never attended schools (no formal education, coded as 0). Kanchanaburi is a large province with socio-economic and ecological diversity, involving both less developed upland and more developed municipal areas. Therefore, the model also controls for possible effects of urban/rural differences by including a dummy variable that measures whether an elderly person lives in urban areas (coded as 1) or rural areas (coded as 0). The respondent's sex was measured as a dummy variable with male being the reference category (that is, males coded as 0 and females as 1).

Among the elderly people in the sample, 21 percent do not own a television set (either black-and-white or color) in their houses. However, about 20 percent of the people who do not have television responded that they use television as a source of health information. In one sense, this is possible if they usually watch television at their neighbors' or relatives' houses. Therefore, instead of excluding the cases who do not have television, the presence of television at home (coded 1 if yes, and 0 if otherwise) is included in the model as a control variable.

In a similar sense, those elderly who are regularly at home have more chance to access health information on television. Also true is that elderly people who are chronically ill are more likely to be at home, because of their sicknesses. In order to control for this association, the models need to include a control variable indicating whether a respondent is regualy at home. Since such a variable is not available in this data set, I utilize working status as a proxy variable, based on an assumption that elderly people who are engaged in economic activities are less likely to be at home than elderly

people who are not engaged in economic activities. This variable is dychotomous: working (coded as 1) or not working (coded as 0).

Table 1 reports descriptive statistics for the dependent, independent, and control variables. About 56 percent of the respondents say that they have used television as a source of health information. Some 22 percent of the respondents employ exclusively other sources besides television. Slightly more than two thirds of the elderly people in the sample have chronic diseases. Approximately one third of the respondents smoke. The number of female respondents shares 55 percent of the sample, which may reflect the longer life expectancy of females. Regarding other characteristics of the older people, 63 percent have never attended schools, 78 percent live in rural areas. As mentioned earlier, 21 percent of the total 3,716 respondents do not own television sets at home, neither color, nor black-and-white. Finally, 58 percent of the sampled elderly do not work.

Table 1:   Description of Dependent, Independent, and Control Variables (N=3,716)

		Percentage
Dependent Variable		
Use TV for Hlth. Information	No	44.2
	Yes	55.8
Independent Variables		
Illness		
Has chronic illness	No	31.8
	Yes	68.2
Smoking		
Has habit of regular smoking	No	66.7
	Yes	33.3
Control Variables		
Other sources		
Obtain health information from other	No	77.4
sources than TV?	Yes	22.6
Age		
	60 to 64	35.4
	65 to 69	27.4
	70 to 74	19.0
	75 to 79	10.2
	80 and older	8.0

Table 1:   **(continued)**

		Percentage
Sex		
	Male	45.5
	Female	54.5
Residence		
	Rural	78.1
	Urban	21.9
Education		
Has formal education*	No	36.8
	Yes	63.2
Own television at home?		
	No	21.5
	Yes	78.5
Working status		
	Not working	57.9
	Working	42.1

*   This variable differentiates people with no experience of schooling (No) and people who attended a school for at least one year (Yes).

Results

To assess the effects of self-reported chronic illness and the other factors on watching health promotion television programs, this study uses binary logistic regression models. First, only control variables were entered. Next, the self-reported chronic illness variable was added to the previous model. The final model included both chronic illness and smoking variables as well as the control variables.

In Table 2, logistic regression results are presented, in which the use of television as a source of health information was regressed on the independent and control variables. It is important to note that the figures shown in this table are odds ratios; as such, coefficients greater than one indicate greater odds of obtaining health information from television.

Model 1 is a baseline model which included only variables related to respondent's socio-demographic characteristics. First, the model indicates that as people age, the odds of using television as a health information decreases. Second, elderly people with formal education are 2.6 times more likely to watch health promoting programs than the elderly without formal education. Third, there is no difference between urban elderly and rural elderly in the odds of using television as a source of health information. Fourth, older females are slightly less likely to watch television for health information than older males, but this result is not statistically significant. Finally, elderly people working for economic activities are slightly more likely to employ television as a source of health information than elderly people who do not work, though there is no statistical significance for this finding.

In Model 2, the self-reported chronic illness variable is added to the baseline model. The odds ratio indicates that elderly people with self-reported chronic illness are 1.7 time more likely to report to obtain health information from television than elderly people who do not report chronic illness, while controlling for the effects of other variables included in the model. This finding is statistically significant at the conventional level of 5 percent. It suggests that older people who reported to have chronic diseases are more likely to report to obtain health information from television, thus allowing us to refer to the idea that a person's tendency to take a preventive action increases as his or her perceived susceptibility increases, that is, the idea drawn from the Health Belief Model.

In Model 3, two independent variables, self-reported chronic illness and smoking habit, were included at the same time. After controlling for smoking habit, the effect of the chronic disease variable has remained almost the same as in the previous Model 2, and its statistical significance is also the same. Again, it suggests that older people with self-reported chronic diseases are more likely to be viewers of health-related television programs than their counterparts who have not reported any chronic diseases. On the other hand, the model also indicates that the odds of using television as a source of health information for smokers is about 25 percent smaller than the odds for non-smokers. As expected, this result implies that compared to non-smokers,

smokers are less concerned with health and, therefore, smokers are less likely to watch health-related programs on television. In sum, the results presented here provide partial and indirect support for the idea that the individual's personal perception of susceptibility or vulnerability to a disease influences that person's health seeking behaviors.

Table 2: Logistic Regression Odds Ratios for the Determinants of Receiving Health Information from Television

	Model 1	*Model 2*	*Model 3*
Other sources			
No	1.000	1.000	1.000
Yes	<.001*	<.001*	<.001*
Age			
60 to 64	1.000	1.000	1.000
65 to 69	0.791	0.775*	0.766*
70 to 74	0.674**	0.663**	0.654**
75 to 79	0.442**	0.424**	0.413**
80 and older	0.257**	0.248**	0.235**
Has formal education			
No	1.000	1.000	1.000
Yes	2.627**	2.608**	2.551**
Residence			
Rural	1.000	1.000	1.000
Urban	1.016	1.030	1.012
Sex			
Male	1.000	1.000	1.000
Female	0.827	0.766**	0.667**

Table 2:   (continued)

	Model 1	Model 2	Model 3
Owns television at home			
No	1.000	1.000	1.000
Yes	6.523**	6.404**	6.082**
Working status			
Not working	1.000	1.000	1.000
Working	1.157	1.211	1.208
Has chronic illness			
No		1.000	1.000
Yes		1.760**	1.721**
Smoking			
No			1.000
Yes			0.743*
-2LL	2821.246	2789.597	2783.619
Model chi-square	2280.354**	2312.003**	2317.982**
(d.f. in parentheses)	(10)	(11)	(12)

*p<.05; **p<.01.

Discussion

The growth in the number of older adults in many societies in Asia necessitates the dissemination of preventive health information through various sources. Television is one of the most readily accessible sources for elderly people. However, little is known about who are more likely to use television as a source of health information in non-Western cultural settings. To answer this question, this study was motivated by an attempt to test one of the most widely used social-psychological theories in the field of public health, the Health Belief Model, by using the data collected in a Thai province by means of a general baseline survey.

The research results reported in this article indicate that there is a tendency that elderly people with self-reported chronic diseases are more likely to employ television as a source of health information than elderly people who do not report any chronic diseases. In contrast, people who regularly smoke, implying that they are not concerned about health, are less likely to be viewers of health promotion programs on television. However, these associations have been grounded on very weak data. For example, it is highly speculative that if elderly people report chronic illness, they also perceive their susceptibility and vulnerability to diseases. Thus, while these findings seem plausible, they can provide only indirect support for a prediction from the Health Belief Model that a person's tendency to take a preventive action increases as his or her perceived susceptibility increases.

Another weakness of the present study is that it is unable to examine the presence or absence of reciprocal causation. While as the findings of this study suggest, chronic illness may lead the elderly to more actively see health information on television, it is also true that frequent access to health information may lead to a greater likelihood of reporting chronic diseases. The data set does not enable us to differentiate the directions of the causal linkage, because it includes only "self-reported" chronic illness. The mechanism that links the actual presence of chronic illness, the perception of susceptibility, and preventive behavior is apparently too complicated to be revealed by this type of data.

Furthermore, the present study tested only one component of the Health Belief Model and was unable to incorporate the other components, due to the lack of information which enables us to operationalize the relevant variables. Data from one baseline survey, or secondary data, do not provide all necessary variables to examine the whole model.

Due to these limitations, this study is certainly not comprehensive. Nevertheless, it has demonstrated a useful way of utilizing the general baseline data, which were not initially collected by theoretical motivations, for the purpose of testing a theory-guided hypothesis.

Acknowledgements

References

Chew, Fiona, Sushma Palmer, and Soohong Kim. 1998. Testing the influence of the health belief model and a television program on nutrition behavior, *Health Communication*, 10(3): 227-245.

Chew, Fiona, Sushma Palmer, Zofia Slonska, and Kalyani Subbiah. 2002. Enhancing health knowledge, health beliefs, and health behavior in Poland through a health promoting television program series, *Journal of Health Communication*, 7(3): 179-196.

Coburn, David and Clyde R. Pope. 1974. Socioeconomic status and preventive health behavior, *Journal of Health and Social Behavior*, 15(2): 67-78.

Easom, Leisa R. 2003. Concepts in health promotion: perceived self-efficacy and barriers in older adults, *Journal of Gerontological Nursing*, 29(5): 11-19.

Gochman, David S. 1988. Health behavior: plural perspectives, in *Health Behavior: Emerging Research Perspectives*, Edited by D. S. Gochman, New York: Plenum Press, pp. 3-17.

Kanchanaburi Project. 2001. *Report of Baseline Survey (2000)*, Nakhonpathom, Thailand: Institute for Population and Social Research, Mahidol University.

May, J. T. 1981. Health information needs, sources, and uses reported in the Pittsburgh health education survey, in *Health Education and the Media*, Edited by D.S. Leathar, G.B. Hastings, and J.K. Davies, Oxford: Pergamon, pp. 529-542.

Quinn, Gwendolyn P. and Jeannine Coreil. 2001. Health and illness behavior, in *Social and Behavioral Foundations of Public Health*, Edited by J. Coreil et al., Thousand Oaks, Calif.: Sage Publication, pp. 75-101.

Ryan, Catberine J. and Julie Johnson Zerwic. 2003. Perceptions of symptoms of myocardial infarction related to health care seeking behaviors in the elderly, *Journal of Cardiovascular Nursing*, 18(3): 184-196.

Vanlandinghan, Mark J., Somboon Suprasert, Nancy Grandjean, and Werasit Sittitrai. 1995. Two views of risky sexual practices among northern Thai males: the health belief model and the theory of reasoned action, *Journal of Health and Social Behavior*, 36(2): 195-212.

Wallack, Lawrence. 1997. Media advocacy: A strategy for empowering people and communities, in *Community Organizing and Community Building for Health*, Edited by Meredith Minkler, New Brunswick, N.J.: Rutgers University Press, pp. 339-352.