ORIGINAL ARTICLE

Online health promotion strategies and appeals in the USA and South Korea: a content analysis of weight-loss websites

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Despite the potential utility of the Internet as a health promotion medium, relatively few studies have been devoted to online health promotion strategies and appeals in cross-cultural settings. This study explores how theory-based health promotion strategies and appeals are used differently in US and South Korean weight-loss websites. The findings of this study indicate that collectivistic culture-bound health promotion strategies are more prevalent in South Korean weight-loss websites than in their US counterparts. Furthermore, testimonials were the most dominant appeals shared by the two countries' websites while the use of advertising appeals (i.e., comparison, caricature/animation, demonstration, threat, and sex appeals) is significantly different between the two countries. Practical implications for both health communication and international advertising are discussed in detail.

Keywords: cultural difference; online health promotion strategy; advertising appeal; weight-loss website

Introduction

Health professionals are increasingly interested in the use of the Internet as a health promotional medium due to its advantageous properties such as the availability of health information, interactivity, online support groups, e-tailored health messages, and so forth (Neuhauser & Kreps, 2003). It appears that the public's growing appetite for health-related information leads to the popularity of the Internet as a health promotion tool. According to a recent study by the Pew Internet and American Life Project (2005), 79% of American Internet users have looked for at least one major health topic online. Approximately 60 million Americans per year use the Internet to search for health information (Doshi, Patrick, Sallis, & Calfas, 2003). Cline and Haynes (2001) reported that more than 70,000 web sites were associated with health and medical information. Indeed, more people than ever use the Internet to seek health information about medical conditions and treatment options (Huh & Cude, 2004). As the Internet has become more popular as a source of health information, a recent wave of interest in using the Internet has stimulated increasing health promotion efforts to engage people to change health behavior within the complex contexts of their lives (Evers, Prochaska, Prochaska, Driskell, Cummins, &

Velicer, 2003; Fotheringham, Owies, Leslie, & Owen, 2000; Neuhauser & Kreps, 2003).

Recognizing the potential utility of the Internet for health promotion and intervention, many health communication experts have attempted to develop a variety of health promotion strategies on the Internet based on behavior change theories (e.g., Cassell, Jackson, & Cheuvront, 1998; Doshi et al., 2003). For example, Doshi, Patrick, Sallis, and Calfas (2003) developed 20 health intervention strategies, which were validated by 19 health promotion and communication experts, by applying behavior change theories to US-based physical activity websites. However, very little attention has been given to online health promotion strategies outside the USA. Furthermore, relatively few studies have empirically examined whether the health promotion strategies and appeals are closely tied to the cultural values across different countries.

This study focuses on weight-loss websites as an interesting case of online health promotion because the purpose of these websites is to encourage individuals' health behavior changes through dieting and physical activity. Recent statistics indicate that obesity is widely recognized as a major health problem that poses a serious threat to public health; more than 1 billion adults are overweight or obese (World Health Organization, 2007). There has been a rapid increase in obesity throughout the world, particularly in the USA. For instance, it is estimated that more than 50% of the US population is overweight or obese (Kuczmarski, Carrol, Flegal, & Troiano, 1997) and more than 12 million American adults are seriously overweight (Kissebah, Freedman, & Peiris, 1989; Kuczmarski, 1992; Williams, Grow, Freedman, Ryan, & Deci, 1996). Clearly, obesity is of major public health concern in the USA; likewise, the prevalence of obesity has substantially increased in South Korea (Kim, Ahn, & Nam, 2005). According to the third Korea National Health and Nutrition Examination Survey in 2005 (Korean Ministry of Health and Welfare, 2006), the overall prevalence of obesity in South Korean adults is 31.8% (35.2% in men and 28.3% in women). Not surprisingly, many people engage in dieting for successful weight control.

Given the importance of the Internet as a global medium for health promotions, and the lack of cross-cultural research on online health intervention strategies and appeals, the purpose of this study is to investigate how theory-based health promotion strategies are used differently in cross-cultural settings on the Internet and to what extent advertising appeals depicted in US and South Korean weight-loss websites are different. The current research is an important exploratory step in understanding the appropriate use of online health promotion strategies and appeals in cross-cultural settings.

Literature review

Behavior change theories

Over recent decades, there has been a considerable body of research grounded in behavior change theories that has shaped health communication strategies (Ajzen, 1991; Bandura, 1986; Becker et al., 1977; Elder, Ayala, & Harris, 1999; White, 2004). These theories include the health belief model (e.g., Becker, 1974; Janz & Becker, 1984), the theory of planned behavior (e.g., Ajzen, 1991), social cognitive theory (e.g., Bandura, 1986), and the trans-theoretical model (e.g., Marshall & Biddle, 2001; Prochaska & Velicer, 1997). According to Kreps, Bonaguro, and Query (1998), these

theories are heavily influenced by literature on relational communication, persuasion, and social marketing.

First, the health belief model demonstrates its usefulness for understanding and predicting preventive health behavior by emphasizing individuals' attitudes and beliefs (Elder et al., 1999; Janz & Becker, 1984). This model has been applied and supported in health communication contexts ranging from dietary compliance (Becker et al., 1977) to condom use (White, 2004). Most importantly, the health belief model includes four main dimensions (Glanz, Rimer, & Lewis, 2002; Risker, 1996): (1) perceived susceptibility, (2) perceived severity, (3) perceived benefits, and (4) perceived barriers. Common to these concepts is an individual's readiness to act. According to Risker (1996), *perceived susceptibility* is defined as one's perception of the chances of developing a particular health problem. *Perceived severity* refers to how serious one feels the health problem is. *Perceived benefits* are the positive outcomes that one believes his treatment or prevention actions to reduce the health risk will have. *Perceived barriers* refer to one's perception of the tangible and psychological cost, pain, or effort of the health behavior.

Second, social cognitive theory has been very meaningful and useful for explaining health behavior changes. A basic premise underlying social cognitive theory is that human behavior can be shaped and controlled by social systems. This theory emphasizes a dynamic interaction between inner experience and the outside world because human social behaviors are shaped by triadic reciprocal mechanisms through which personal, behavioral, and environmental factors affect each other bidirectionally (Bandura, 1989, 2001). In the contexts of health promotion and intervention, social cognitive theory holds that health behavior is formed through psychosocial processes such as self-efficacy and outcome expectancies (Bandura, 1989). Self-efficacy refers to the self-perception of having the necessary skills to perform a behavior, and outcome expectancies refer to the expectancy that a positive consequence will occur as a function of the behavior (Elder et al., 1999). Bandura (1998) argued that self-efficacy serves as a key factor that operates on individual motivation, affect, and behavior, whereas outcome expectations serve as incentives. According to social cognitive theory, people tend to increase self-efficacy and outcome expectancies when they have health-related behavior changes. It is important to note that self-efficacy beliefs influence the outcomes that people expect their efforts to produce (Bandura, 2004).

Most importantly, social cognitive theory places emphasis on the importance of observing and modeling the behaviors, attitudes, and emotional reactions of others. Observational learning referred to as modeling is defined as individuals' beliefs based on observing others' experience or physical results (Bandura, 1998). This means that people can acquire knowledge, emotional reactions, and behavioral patterns by observing others' experiences, thoughts, or physical changes. For example, children may observe their parents smoking cigarettes. If they do not see any negative effects, they are more likely to follow these behaviors and adopt these smoking behaviors themselves. Given that the basic assumption of social cognitive theory is that humans learn from observation, an individual's health behavior may be influenced by observing the actions of others and the consequences of these actions.

Next, drawing upon the theory of reasoned action (Fishbein & Ajzen, 1975), the theory of planned behavior emphasizes the attitude–behavior relationship (Ajzen, 1991). A basic premise of this theory is that behavior is predicted by the intention to

enact behavior. *Intention* refers to a motivation that is part of a conscious plan or decision in an effort to perform a certain behavior (Cook, Moore, & Steel, 2005). It has been suggested that the notion of behavioral intention can be determined by attitudes toward the behavior, subjective norms, and perceived behavioral control (Ajzen, 1991; Albarracin, Johnson, Fishbein, & Muellerleile, 2001; Bamberg, Ajzen, & Schmidt, 2003; Cook et al., 2005). In other words, the combination of attitude toward the behavior, subjective norms, and perception of behavioral control leads to behavioral intention formation.

Finally, the trans-theoretical model, first proposed by DiClemente and Prochaska (1982), has been used to understand health behavior change and to provide direction for health promotion strategy development. Relying on cognitive-behavior change, this model postulates that health behavior change progresses through the following six stages: (1) pre-contemplation (e.g., benefits of lifestyle are not being considered), (2) contemplation (e.g., starting to consider change but not yet acting on this intention), (3) preparation (e.g., ready to change the behavior and preparing to act), (4) action (e.g., making the initial steps toward behavior change), (5) maintenance (e.g., maintaining behavior change while often experiencing relapses), and (6) termination (e.g., completing the change process to prevent relapse) (Elder et al., 1999; Prochaska & Velicer, 1997). Wilson and Schlam (2004) noted that 'a key assumption of the trans-theoretical model is that interventions need to be matched to an individual's specific stage of change to be effective' (p. 362). In the context of health communication, the trans-theoretical model recommends that health communication strategies should be tailored to an individual's level of readiness to change (Neuhauser & Kreps, 2003).

Cultural value framework: individualism–collectivism

Cultural values are characterized as the deepest manifestations of culture within a given society. Cultural values play a critical role in shaping consumers' motivations and lifestyles and determining product choices (Tse, Belk, & Zhou, 1989). In an effort to discover and verify culture-level variation, several cultural value frameworks and dimensions have been proposed. Among these, Hofstede's (1980) typology has been widely accepted as a cultural value framework in the fields of social psychology, sociology, marketing, and communication because it has proven useful for understanding the cultural differences across countries. According to Hofstede (1980), there are four cultural dimensions, including individualism/collectivism, power distance, masculinity/femininity, and uncertainty avoidance.

Among Hofstede's cultural dimensions, the individualism and collectivism dimensions have most frequently employed a theoretical underpinning of cross-cultural research (e.g., Taylor, Wilson, & Miracle, 1994). This cultural dimension demonstrates the extent to which the society values group-norms or individual freedom (Singh, Zhao, & Hu, 2005). According to Hofstede (1980), the contrast between individualism and collectivism is one of 'people taking care of themselves and their immediate family only in a loosely-knit social structure, versus people belonging to in-groups to look after them in a tightly-knit social organization' (p. 87). In individualistic cultures, the emphasis is on 'I-consciousness': self-actualization, independence, and expression of private opinions. On the other hand, in collectivistic cultures, the emphasis is on 'we- consciousness': group achievement, interdependence,

and in-group ties on the basis of the social system to which they belong (Han & Shavitt, 1994; Gudykunst, Yang, & Nishida, 1987; Hui & Triandis, 1986). According to De Mooij (2005): 'When one has done something wrong, it reflects not on oneself but on the group to which one belongs, and one therefore feels shame' (p. 62). Furthermore, collectivistic cultures are related to high-context communication, involving the use of implicit and indirect messages (De Mooij, 2005; Hall, 1984; Hofstede, 1980). Hofstede (1980) found that most Western countries (e.g., the USA) are individualistic-oriented while Asian countries (e.g., South Korea) are collectivistic-oriented.

Cultural influences on online health promotion strategies

Health-related issues are often investigated in conjunction with cultural meanings, norms, and expectations (Albrecht, 1994; Bandura, 2002, 2004). A considerable amount of research provided empirical evidence that health promotion approaches would be more effective if they were culturally congruent (Bechtel & Davidhizar, 2000; Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003; Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999). Along this line, Penner (2000) theorized that acceptance and adoption of health promotion strategies are based on socio-cultural contexts and social influences. On the other hand, the Internet has been considered a global medium that crosses cultural barriers and national boundaries because of its universal access (Bennett, 1997).

In the case of health promotion on the Internet, the foregoing argument raises the following questions: is online health promotion approach 'culture-free,' or is it 'culture-bound'? This question can be answered by comparing the usage of online health promotion strategies across different cultures. In an effort to understand cross-cultural similarities and differences in the practice of online health promotion strategies in weight-loss websites in the USA and South Korea, the first research question was raised.

> RQ1: What are the dominant health promotion strategies used in US and South Korean weight-loss websites?

Given that health-related behaviors and health outcomes are particularly linked to socio-cultural norms and values, this study focuses on the five concepts (subjective norms, perceived social norms, self-monitoring, social support, and modeling) that can be incorporated into collectivistic culture-bound health promotion strategies since they pertain to collectivistic characteristics. The concepts of subjective norm and perceived social norm can be explained within the theory of planned behavior. Subjective norm is defined as an individual's normative belief that specific significant groups think in terms of whether a certain behavior should or should not be performed (Conner & Armitage, 1998). Perceived social norm refers to an individual's belief about the attitudes and behaviors that are prevalent, normal, or acceptable among the members of a community (Perkins & Berkowitz, 1986). On the surface, subjective norm differs from perceived social norm because the former is associated with an individual's perception about significant others (e.g., family, friends, and partners) and perceived social norm is associated with an individual's perception about anonymous and/or generalized others (e.g., the general public). Nevertheless, subjective norm is akin to perceived social norm due to the likelihood

that individuals' attitudes and behaviors might be influenced by their perceptions of how significant or generalized others think (Gibbons & Gerrard, 1995; Prentice & Miller, 1993). In short, these norms might be determined by perceived social pressures from either significant others or generalized others. Prior research has also attempted to link subjective norm and perceived social norm to cross-cultural value systems (Bagozzi, Wong, Abe, & Bergami, 2000; Lee & Green, 1991). Because collectivist cultures tend to be more susceptible to social influence than individualistic cultures, it is not surprising that collectivism is an important factor in understanding the influence of subjective norms and perceived social norms.

Self-monitoring refers to self-management and self-regulation behaviors in response to the relationship one has with others in social situations (Snyder, 1974). In particular, self-monitoring pertains to the concept of self-efficacy guided by social cognitive theory because individuals' self-efficacy perceptions may play both moderating and mediating roles in the process of self-monitoring a particular health-related behavior. To illustrate, Kitsantas (2002) confirmed that individuals with high self-efficacy are more likely to employ the self-regulatory strategies (e.g., self-monitoring) for weight loss maintenance than those with low self-efficacy. The author also revealed that self-efficacy perceptions can serve as a mediator in the relationship between the use of self-regulatory strategies and weight control.

To the best of our knowledge, self-monitoring might be associated with collectivism–individualism binary (Gudykunst et al., 1992). Some scholars have argued that people in individualistic cultures have higher self-monitoring than people in collectivistic cultures (Goodwin & Soon, 1994; Gudykunst et al., 1987). For example, Gudykunst et al. (1987) found that individuals in the USA have significantly higher levels of self-monitoring than individuals in Japan and South Korea. Nevertheless, Kim (1998) suggested that people in high collectivistic cultures tend to be high self-monitoring, whereas people in high individualistic cultures tend to be low self-monitoring. According to Snyder (1974), individuals with high self-monitoring are sensitive to the expression and self-presentation of others in social situations and use those cues as guidelines for monitoring and modifying their own behavior. Consistently, Hui and Triandis (1986) pointed out that people in collectivistic cultures are more concerned about self-presentation than those in individualistic cultures.

Social support has been given much attention in social psychology literature for more than two decades (Goodwin & Plaza, 2000). Heaney and Israel (2002) defined social support as 'aid and assistance exchanged through social relationships and interpersonal transactions' (p. 187). It has been acknowledged that social support varies across collectivistic and individualistic countries (Goodwin & Plaza, 2000; Kim, Triandis, Kagitcibasi, Choi, & Yoon, 1994; Triandis, 1995). People in collectivist societies tend to enjoy more supportive networks, while those in individualistic societies tend to enjoy less social connection (Hofstede, 1980). Given the potential usefulness of social support, its impact on health, illness, mortality, and morbidity has been examined (Burish, 2000). Accordingly, social support is related to collectivism and social interaction, including group identity, social ties, and collective accomplishment.

The notion of modeling on the basis of social cognitive theory has also been utilized in health promotion strategies (Bandura, 1998). For example, Doshi et al. (2003) reported that there have been numerous applications of modeling in a variety of health issues, ranging from physical activity to AIDS and smoking. Considering

the model characteristics, modeling may be divided into two main parts: (1) an actual model demonstrating a certain behavior; and (2) a symbolic model portrayed via mass communication. In cross-cultural contexts, the use of celebrity endorsers is viewed as an application of modeling because celebrity endorsers are actual models and echo the symbolic meanings within a given set of cultural values and norms. Previous research has indicated that there is more extensive use of celebrities in collectivistic cultures than in individualistic cultures (Choi, Lee, & Kim, 2005; Cutler, Javalgi, & Lee, 1995; Paek, 2005). Hence, the concept of modeling would play a prominent role in cultural contexts (Bandura, 2002).

Since South Korea is considered a collectivistic culture while the US has been regarded as an individualistic culture (e.g., Hofstede, 1980), South Korean weight-loss websites may tend to implement more culture-bound health promotion strategies that are congruent with the collectivistic characteristic than US websites. Therefore, the following hypothesis is proposed.

> H1: South Korean weight-loss websites will use more collectivistic culture-bound health promotion strategies than their US counterparts.

Advertising appeals used in US and South Korean weight-loss websites

There has been a great deal of research examining the differences in advertising appeals reflecting cultural values across countries (Caillat & Mueller, 1996; De Mooij, 2005; Moon & Chan, 2003). A cross-cultural comparison in advertising appeals proves to be useful in understanding how cultural norms and characteristics are embedded in advertising contexts (Albers-Miller & Gelb, 1996). Previous research on cross-cultural advertising has shown that specific advertising appeals are more frequently used in some cultures than others (Han & Shavitt, 1994; Moon & Chan, 2003; Tse et al., 1989). For instance, despite the prevalence of comparison appeals in advertising in the USA, comparison appeals are not widely used in South Korea due to the cultural norm that confrontation is avoided and harmony is sought (Choi & Miracle, 2004). Nelson and Paek (2005) argued that using sex appeal in advertising was not popular in Asian countries such as China and South Korea due to the influence of Confucianism and patriarchal norms. Furthermore, the use of celebrity endorsement in newspaper advertising was found to be more prevalent in South Korea than in the USA, while the use of expert endorsement in advertising was found to be more prevalent in the USA than South Korea (Paek, 2005).

According to the Federal Trade Commission (2002), the following promotional claims have been used in weight-loss advertising: consumer testimonials (e.g., 'I lost 26 lbs in 30 days'), before/after photos, rapid weight-loss claims, no diet or exercise required (e.g., 'you can eat as much as you want and still lose weight'), long-term weight-loss claims (e.g., 'take it off and keep it off'), scientifically-proven/doctor-endorsed claims, and safety claims. In a cross-cultural study on weight-loss advertising, Yu (2004) examined the advertising appeals used in US and South Korean weight-loss websites with respect to verbal and visual appeals. The author reported that appearance/looks appeals (e.g., body-line, the beauty of body-shape) and caricature/animation appeals were more frequently used in South Korean weight-loss websites than in their US counterparts. The following research question was formed to examine differences in appeals between the two countries' websites.

RQ2: To what extent do advertising appeals used in weight-loss websites differ between the USA and South Korea?

Method

Sampling

Weight-loss websites in the USA and South Korea were selected for a two-week period from 29 January to 12 February 2007. We used the front page of weight-loss websites as a sampling unit because the first page serves as a gateway to other pages within the same website and as an advertising medium (Bucy, Lang, Potter, & Grabe, 1999; Chan-Olmsted & Park, 2000; Ha & James, 1998). To develop a sample frame, weight-loss websites were collected through the Google search engine because this is known to be one of the most frequently used search engines worldwide (Sullivan, 2007). The key words used to find weight-loss websites were 'weight loss' and 'diet' or the equivalent Korean words. When the word 'diet' was typed into the Google search engine, it yielded approximately 173,000,000 links for US weight-loss websites and approximately 16,300,000 links for South Korean weight-loss websites (accessed on 30 March 2007).

In the current study, a systematic random sampling method through the use of dice rolls was employed to select specific sites for the sample. According to Wimmer and Dominick (2005), systematic random sampling is the approach used to select every *n*th subject or unit from a population. For example, if we got a '2' as a sampling interval after rolling the die, every second website from the top of the list was chosen. Selecting websites from the top was particularly useful and worthwhile because the Google search engine tends to list more popular or relevant sites first. Following Yu's (2004) study, we excluded the following types of weight-loss websites in both samples: (1) those designed only for sales (excluded only if there was no other information about weight-loss except information about products and how to purchase them) and (2) those run only for individual use (if the website was a personal homepage, likely used by extremely small groups). With the systematic random sampling procedure, a total of 200 weight-loss websites were selected for data coding and analysis, 100 from the USA and 100 from South Korea.

Coding procedure

Two bilingual coders fluent in both Korean and English (one female and one male) were hired to code the selected weight-loss websites. Although cultural biases inherent in the coders could have somewhat affected the results, the use of bilingual coders could improve the judgment validity on the basis of their extensive understanding of the two different cultures (Alden, Hoyer, & Lee, 1993). The female coder was a Korean-American graduate student with sufficient knowledge of both Korean and American cultures and the male coder was a South Korean graduate student studying in the USA for more than 5 years. With a codebook containing operational definitions of each item, they worked independently and were blind to the research questions and hypothesis. A 3-hour training session was conducted. Before the main analysis began, we conducted a pilot study to determine whether the proposed coding scheme and operational definitions were precise and to establish inter-coder reliability.

Following Neuendorf (2002), 40% of the weight-loss websites from each country (a sample of 40 from each country) were selected for the pilot study. Using *PRAM* (Program for Reliability Assessment with Multiple Coders), an agreement percentage was calculated to measure inter-coder reliability. According to Kassarjian (1977), an agreement percentage has been a popular and well-accepted approach to studying content analysis in an attempt to examine inter-coder reliability. Consequently, the average inter-coder agreement for each item ranged from 85% to 100% for US weight-loss websites and ranged from 86% to 100% for South Korean weight-loss websites. Since the inter-coder reliability values in each case exceeded the acceptable level (i.e., 85%) recommended by Kassarjian (1977), the coefficient of reliability was deemed satisfactory.

Coding scheme

The coding scheme included: (1) 20 health promotion strategies from four theories of behavior change (i.e., health belief model, social cognitive theory, the theory of planned behavior, and trans-theoretical model); and (2) eight advertising appeals. Among the health promotion strategies, we categorized subjective norm, perceived social norm, self-monitoring, social support, and modeling into culture-bound health promotion strategies. Each item was operationalized based on past research: (1) the health promotion strategies analyzed were based on Doshi et al. (2003); and (2) the advertising appeals analyzed were based on Paek (2006), Beaudoin (2002), and Yu (2004). The operational definitions of the 20 health promotion strategies and eight appeals are presented in Table 1.

Data analysis

To determine the statistical significance of differences in each item between the two countries' weight-loss websites, we conducted a series of cross-tabulations. First, Chi-square tests were used to determine whether differences in each item between the two countries' websites existed, which were followed by Fisher's Exact Test. According to Fleiss (1981), Fisher's Exact Test is a more appropriate alternative to the chi-square test, especially when the sample size is small and the 2-by-2 tables are highly unbalanced, which was true in our study. Second, we conducted independent samples *t*-tests to determine statistically significant mean differences in culture-bound health promotion strategies between the two countries' websites.

Results

RQ1. The dominant health promotion strategies in different countries

The first research question addressed the dominant health promotion strategies between US and South Korean weight-loss websites. Table 2 shows that the most dominant health promotion strategies used in US weight-loss websites were 'general information' (69%), 'skill-building/overview' (69%), 'self-monitoring' (51%), 'social support' (47%), and 'increasing knowledge' (37%), whereas the most dominant health promotion strategies used in South Korean weight-loss websites were 'social support' (66%), 'self-monitoring' (64%), 'modeling' (60%), 'skill-building/overview'

Table 1. Operational definitions.

	Online health promotion strategies
1. General information	Providing sensory or procedural information (knowledge) about weight loss
2. Perceived benefits	Positive outcome expectations of weight loss (e.g., to maintain good health, to get fit, or to socialize)
3. Perceived barriers	(e.g., work/study commitments, time constraints, or no need to do anymore)
4. Perceived risks	Risk or danger resulted from overweight (e.g., 'Being overweight causes type-2 diabetes or obesity-related diseases')
5. Self-efficacy	Confidence in one's ability to take action to lose weight or resistance to obesity (e.g., 'You can do it')
6. Subjective norm	Mentioning how much significant others (friends, parents, romantic partners, teachers) approve of weight loss (e.g., 'Your family will feel happy if you lose weight')
7. Perceived social norm	Social pressure related to what the general public is doing and how one ought to do weight loss ('Regular physical activity is socially acceptable')
8. Self-monitoring	Identifying external cues for weight-loss management, along with self-instruction regarding what people do to keep track of their weight (e.g., 'Get your free diet profile!')
9. Realistic goal setting	Setting up realistic weight-loss goals (e.g., 'Lose 35 lbs')
10. Time management	Identifying the length of weight-loss management (e.g., '30 day task!')
11. Stimulus control	Controlling overwhelming stimulus affecting weight loss (e.g., 'Throw away the snack basket!')
12. Self-reward	Expression of self-reward/praise for weight loss (e.g., 'Feel pride in yourself')
13. Social support	Appraisal, encouragement, and other extrinsic rewards from others; providing feedback and reinforcement in learning a new way (e.g., 'Join a weight-loss support community!')
14. Modeling	Learning a weight-loss method from what has happened to others, including celebrities and actual users (e.g., Jenny Craig's successful diet story)
15. Relapse prevention	Mentioning stages of change, pre-contemplation, contemplation, preparation, action, and maintenance after weight loss (e.g., 10 ways to prevent relapse after weight loss)
16. Stress management	Providing guidelines or techniques about what to do when people get stressed out during the diet (e.g., diet stress reduction services, physical therapists, or biofeedback centers)
17. Negative affect management	Providing guidelines or techniques about how to deal with negative mood states as a result of weight loss
18. Skill-building/overview	Providing opportunities to master the necessary skills of weight loss (e.g., top 5 tips on successful weight loss)
19. Increasing knowledge	Providing additional resources about issues of weight loss or the concerns of obesity (e.g., 'You may find very useful advice on weight-loss success in this e-book and download it for free')

Table 1 (*Continued*)

	Online health promotion strategies
20. Motivational readiness	One's motivation, readiness, and suitability for weight loss (e.g., 'Ask yourself to see if you're ready to start a weight-loss program')

	Advertising appeals
1. Comparison appeals	Explicit mention of competitive products or comparative appeals (e.g., before/after photo; dieter vs. non-dieter; competitive products)
2. Humor appeals	Identifying the humorous device expressed by words only, pictures only, or a combination of words and pictures
3. Sex appeals	Identifying whether the sexual appeal is done pictorially or verbally, whether there are nudity/provocative dress, sexual attractiveness, sexual behavior, or sexual referents on the website (e.g., showing physically attractive models whose alluring bodies are partially revealed by tight-fitting attire or underwear)
4. Threat appeals	Elicit fear, worry, and uneasiness (e.g., 'Obesity may cause colon cancer')
5. Curiosity/teaser appeals	Not necessarily related to weight-loss contents, but try to elicit excitement, curiosity, or interest
6. Testimonial appeals	Use of human models as testimonial: actual user
7. Demonstration appeals	Use of medical personnel demonstrating the benefits of weight loss: not actual user, but spokesperson or medical specialists with scientific knowledge
8. Caricature/animation	Use of caricature/animation that portrays people

Note: Online health promotion strategies and appeals were measured with a binary scale ('1' = yes and '0' = no).

(56%), and 'general information' (46%). Common to both countries were 'general information,' 'self-monitoring,' 'social support,' and 'skill-building/overview.'

A comparison of these dominant health promotion strategies with respect to their differences in frequency revealed three important findings. First, the strategies 'social support' ($\chi^2(1) = 7.34$, $p < .05$; Fisher's Exact Test = .010) and 'modeling' ($\chi^2(1) = 11.53$, $p < .01$; Fisher's Exact Test = .001) were significantly more prevalent in South Korean weight-loss websites than in their US counterparts. On the other hand, the strategy 'general information' ($\chi^2(1) = 10.82$, $p < .01$; Fisher's Exact Test = .002) was significantly more prevalent in US weight-loss websites than in South Korean weight-loss websites. Third, there were no statistically significant differences in the frequencies of 'self-monitoring,' 'skill-building/overview,' and 'increasing knowledge.'

H1. Culture-bound health promotion strategies

Because collectivistic cultures are more associated with subjective norm, perceived social norm, self-monitoring, social support, and modeling as indicators of culture-based health promotion strategies, we hypothesized that collectivistic culture-bound

Table 2. Health promotion strategies by behavior change theories.

	USA (n = 100) %	South Korea (n = 100) %	χ2 (df = 1)	Fisher's Exact Test
General information	69	46	10.82**	0.002
Perceived benefits	33	18	5.92*	0.023
Perceived barriers	35	31	0.36	0.652
Perceived risks	24	21	0.25	0.735
Self-efficacy	29	22	1.29	0.33
Subjective norm	11	10	0.05	1.00
Perceived social norm	16	12	0.66	0.542
Self-monitoring	51	64	3.45	0.086
Realistic goal setting	25	19	1.04	0.394
Time management	26	16	3.01	0.118
Stimulus control	15	9	1.7	0.276
Self-reward	27	15	4.34	0.055
Social support	47	66	7.34*	0.01
Modeling	36	60	11.53**	0.001
Relapse prevention	2	23	20.16***	0.00
Stress management	10	7	0.57	0.613
Negative affect management	10	7	0.57	0.613
Skill-building/overview	69	56	3.6	0.079
Increasing knowledge	37	29	0.08	0.884
Motivational readiness	29	23	0.93	0.42

*p < .05; **p < .01; ***p < .001.

health promotion strategies would be more frequently used in South Korean weight-loss websites than in their US counterparts (H1). As shown in Table 3, the sum of the five types of health promotion strategies (i.e., subjective norm, perceived social norm, self-monitoring, social support, and modeling) was used to represent the 'collectivist-culture health promotion strategy index score' for each weight-loss website.

We found that the South Korean weight-loss websites were more likely to use 'social support' and 'modeling' than the US websites. For example, 60 South Korean websites used the modeling strategy, while 36 US websites did ($\chi^2(1) = 11.53$, $p < .01$; Fisher's Exact Test = .001). However, there was no significant difference in the frequencies of 'subjective norm,' 'perceived social norm,' and 'self-monitoring' between the two countries. Furthermore, South Korean weight-loss websites had significantly more culture-bound health promotion strategies than the US websites (South Korea = 2.12, USA = 1.61, t (df = 198) = −3.22, $p < .01$). Therefore, H1 was generally supported.

RQ2. Advertising appeals of weight-loss websites across cultures

The second research question inquired about any different uses of advertising appeals between US and South Korean weight-loss websites. Table 4 presents the frequencies of the eight advertising appeals and the differences between the two countries. The results indicated that the three advertising appeals most frequently used in South Korean weight-loss websites were testimonial appeals (26%),

Table 3. Collectivistic culture-bound health promotion strategy index score.

Countries	N	Mean	SD
USA	100	1.61	1.12
South Korea	100	2.12	1.11

Note: Collectivistic culture-bound health promotion strategy index score is measured by summing the five types of health promotion strategies (subjective norm + perceived social norm + self-monitoring + social-support + modeling).

Mean differences in collectivistic culture-bound health promotion strategy index score

Country pairs	Mean differences	df	*t*-value	*p*-value
USA versus South Korea	−0.51	198	−3.22**	0.001

Note: Because F was not significant in Levene's test for equality of variances (Levene = 0.176, $p = .676$), equal variances were assumed.
**$p < .01$.

caricature/animation characters (25%), and sex appeals (24%). On the other hand, the three appeals most frequently used in US weight-loss websites were testimonial appeals (29%), comparison (28%), and threat (17%). More importantly, testimonial appeals were predominant appeals shared by the two countries. However, there was no significant difference in the testimonial appeals between the two countries' weight-loss websites ($\chi^2(1) = 0.22$, $p > .05$; Fisher's Exact Test = .75). Furthermore, we found that South Korean weight-loss websites used caricature/animation characters ($\chi^2(1) = 22.65$, $p < .001$; Fisher's Exact Test = .00) and sex appeals ($\chi^2(1) = 5.85$, $p < .05$; Fisher's Exact Test = .025) more frequently than their US counterparts, while US weight-loss websites used comparison appeals ($\chi^2(1) = 10.52$, $p < .01$; Fisher's Exact Test = .002), threat appeals ($\chi^2(1) = 7.35$, $p < .05$; Fisher's Exact Test = .011), and demonstration ($\chi^2(1) = 9.82$, $p < .01$; Fisher's Exact Test = .003).

Table 4. Advertising appeals in US and South Korean weight-loss websites.

	USA (*n* = 100) %	South Korea (*n* = 100) %	χ^2 (*df* = 1)	Fisher's Exact Test
Comparison appeals	28	10	10.52**	0.002
Humor appeals	0	1	1	1
Sex appeals	11	24	5.85*	0.025
Threat appeals	17	5	7.35*	0.011
Curiosity/teaser appeals	1	0	1	1
Testimonial appeals	29	26	0.22	0.75
Demonstration appeals	16	3	9.82**	0.003
Caricature/ animation	2	25	22.65***	0

*$p < .05$; **$p < .01$; ***$p < .001$.

Discussion

The objective of this study was to investigate how theory-based online health promotion strategies are used differently in US and South Korean weight-loss websites and to what extent advertising appeals differ cross-culturally. Not only were various behavior change theories used to guide many current health promotion strategies, but cross-cultural studies of the Internet and health communication were also used to explain differences in online health promotion strategies and appeals between the USA and South Korea. We found that 'general information,' 'self-monitoring,' 'social support,' and 'skill-building/overview' were four common dominant strategies shared by weight-loss websites in the USA and South Korea. This finding is generally consistent with the previous findings of Doshi et al. (2003), in which 'general information,' 'social support,' and 'skill-building/overview' were the most common theory-based intervention strategies in physical activity websites. This finding implies that weight-loss websites in both the USA and South Korea hold that the essential characteristics of health promotion strategies are to promote effective and efficient use of informational resources (Elder et al., 1999) and to provide benefits of collaboration (Butterfoss, Goodman, & Wandersman, 1993).

The results also illustrate the differences between the two countries' websites in the use of health promotion strategies. Among the dominant health promotion strategies, 'social support' and 'modeling' were more frequently used in South Korean weight-loss websites than in their US counterparts. This can be explained by the cultural characteristics of South Koreans. Previous research has asserted that South Koreans are group-oriented and respectful of social hierarchies (Choi et al., 2005; Hofstede, 1980). With these collectivistic patterns, South Koreans might want to obtain appraisal and encouragement from similar peers or experts and to be more congruent with celebrity endorsers or people who have actually achieved weight loss. Interestingly, 'general information' was more frequently used in US weight-loss websites than in their South Korean counterparts. One explanation might be that Americans are likely to prefer direct or explicit forms of communication, known as 'low context communication' (Hall, 1984). This argument is consistent with the study of Cho et al. (1999), which found that US commercials use more knowledge-based information and utilitarian aspects of the product than South Korean commercials.

As anticipated, South Korean weight-loss websites were found to contain more health promotion strategies that reflect collectivistic characteristics than their US counterparts. The findings suggest that weight loss is deemed a universal topic, but its online health promotion strategies can be bound to culture. Given that cultural values are still a key factor for understanding the practice of health promotion strategies on the Internet, the findings from this study could support culturally tailored approaches in e-health communications.

On the other hand, advertising appeals in weight-loss websites appear to differ between the USA and South Korea. Clearly, testimonial appeals were the most dominant shared by the two countries. The results implicitly suggest that actual dieters' testimonials may play a major role in encouraging individual weight loss in both countries. However, South Korean weight-loss websites used significantly more caricature/animation characters and sex appeals and employed significantly fewer comparison, threat, and demonstration appeals than their US counterparts. With the rapid expansion of the Internet, the use of caricature/animation has become one of

the most widely implemented features on South Korean websites (Yu, 2004). Another interesting finding was a considerable proportion of sex appeals reflected in South Korean weight-loss websites. Contrary to previous findings, in which South Korea tended to be more conservative than the US with respect to sexuality (Nelson & Paek, 2005), this result could be explained by the concept of the cultural value paradox reflected in advertising appeals, including the 'desired' value related to individual choices and the 'desirable' values related to social norms (De Mooij, 2005; Moon & Chan, 2003). That is, the notion of the value paradox would suggest that advertising appeals using desirable values (e.g., influence of Confucianism and patriarchal norms) might not be prevalent, whereas advertising appeals using desired values (e.g., an individual wish to look sexy and slim) might be more dominant in South Korea.

Another possible explanation is that South Koreans, especially women, are considerably more obsessed with their skinny appearance and sexual attractiveness. Although dieting for physical appearance would be a common behavior in the USA, there is also the cultural and social pressure to lose weight for appearance's sake in South Korea. With the globalization of the Western ideal of thinness and the social pressure of 'looking good,' many South Korean women with normal weight or even lower weight have engaged in dieting to be physically and sexually attractive rather than to gain health benefits (Kim & Lennon, 2006). Their most important concern of body weight would not be obesity-related health problems, but the perceptions of how others look at them because thinness is a standard of beauty in South Korean society. Therefore, South Korean women's desire to be thin and sexually attractive might influence the use of sexual appeals in South Korean weight-loss websites.

Practical implications

The findings of this study have important practical implications for health communication practitioners and international advertisers in developing weight-loss interventions or messages. Since health behavior theories can help develop effective communication interventions to change or reinforce health-related behaviors by identifying critical predictors of a certain behavior (Fishbein & Cappella, 2006), understanding the application of behavior change theories to the practice of online health promotion strategies may be especially important for health communication practitioners. By adopting 20 theory-based intervention strategies developed by Doshi et al. (2003), this study yields a more comprehensive assessment of how differently behavior change theories are applied to the practice of online health promotion strategies in cross-cultural settings. Hence, the present study would contribute to the development of a culturally-specific online health promotion approach, which has been criticized for a lack of theoretical basis. Furthermore, the results from this study provide additional support for previous works on culture and health-related behaviors. Given that health-related behaviors are aligned to cultural norms and values (e.g., Kreuter et al., 2003), this implies that online health promotion strategies congruent with 'cultural appropriateness' may play a prominent role in health-related behavior changes. Therefore, health communication practitioners relying on our findings should be mindful of understanding the values of cultures or subcultures when tailoring online health promotion messages for target audiences because health-related behaviors are culture or subculture-bound.

On the other hand, a recent media report indicates that more than 50 US weight-loss companies are conducting marketing efforts targeting South Korean consumers. Among diverse media outlets for advertising, websites are one of the most popular media. Yu, King, and Yoon (in press) found through their content analysis of South Korean diet websites that there are several American companies using numerous items applied from the original English-based websites after a simple translation process. The results from the present study could be an important rationale for why these US marketers think about the question: 'How much do we need to change the content on the web sites based upon the local consumers' characteristics?'

There have been several studies that showed that major approaches in weight loss advertising in the USA are changing from appearance-related appeals to health-related appeals. Since obesity has been considered a critical factor causing diverse preventable diseases, many weight-loss companies have changed their advertising content by emphasizing weight management as one of the most important ways to keep healthy for life. However, as we confirmed from the results in this study, it seems that South Korean consumers still prefer appearance appeals rather than health-related appeals. Therefore, especially for the international advertisers who plan to persuade South Korean dieters, it will be a better idea to consider advertising appeals dealing with outward attractiveness, instead of with health-related approaches.

Limitations and directions for future research

Although the findings of this study yield valuable insights into the use of health promotion strategies and appeals cross-culturally, there are several limitations to the current study. First, this study relied on a relatively small set of weight-loss websites, which may result in a lack of sufficient statistical power. Even though this study employed a more rigorous statistical test (Fisher's Exact Test) that is relatively insensitive to sample size, it may still cause an imbalance problem for the data analysis (i.e., chi-square analysis) due to the small sample size. Therefore, further research is necessary to retest whether the results of this study hold true with a larger sample size.

Another limitation of the study is that the findings of this study do not provide answers regarding the effects of online health promotion strategies and appeals in different cultures. It would be interesting to conduct subsequent experimental research examining how the impacts of theory-based intervention strategies and appeals on weight-loss behavior are moderated by different cultural dimensions. Hence, future research is needed to explore the effects of theory-based intervention strategies and appeals in cross-cultural settings.

Lastly, this study addressed only one cultural dimension (i.e., individualism/collectivism) to demonstrate differences in culture-bound health promotion strategies used by weight-loss websites. Although subjective norm, perceived social norm, self-monitoring, social support, and modeling are more associated with collectivistic cultures, some health promotion strategies (e.g., perceived risk-based strategy) might be related to specific cultural dimensions (e.g., uncertainty avoidance). Therefore, further research is needed to determine whether health promotion strategies appropriately capture the unique cultural factors of different nations.

Acknowledgements

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