Influence of Cultural Values on Asian Women's Perceptions about Gynecological Exams and the Effects of Message-Culture Congruency in Message Framing of PSA Promoting Gynecological Exams

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Abstract

This study (1) examined the differences in cultural values and gynecological health-related perceptions, beliefs, and behaviors between Asian and Anglo American groups; and (2) tested the effects of message-culture congruency in a health advertising campaign targeting Asians, by comparing the recipients' responses to culturally-congruent message framing vs. culturally-incongruent message framing. An experiment was conducted with a group of Asian women and a group of Anglo American women, using three different advertising messages promoting gynecological exams: (1) a message focused on preventing a disease that does not carry strong social stigma for Asian women (i.e., cervical cancer) was considered a culturally-congruent message; (2) a message focused on preventing a disease that carries great social stigma and is considered a taboo for Asian women (i.e., STDs) was considered a culturally-incongruent message; and (3) a message focused on preventing common gynecological problems without mentioning any particular symptoms or diseases was considered a culturally-neutral message, and served as the control condition.

The findings suggest that Asians, compared to Anglo Americans, held stronger cultural values emphasizing collectivism, women's traditional roles, and chastity, showed lower levels of perceived susceptibility to STDs, exhibited greater social stigma and barrier to getting gynecological exams, and had lower prior gynecological exam rates. Additionally, culturally more sensitive or congruent message framing tends to generate better communication outcomes among Asian women. In particular, the culturally-congruent message, compared to the culturally-incongruent message, was more effective

in generating more message-related cognitive responses, more positive attitudes toward getting gynecological exams, and higher behavioral intention to get gynecological exams for the Asian group. However, such message-culture congruency effects were not observed for the Anglo American group.

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Chapter 1. Introduction

According to a recent report of the American Cancer Society (ACS) (2005), Asian women living in the United States have the highest incidence and mortality rates of cervical cancer among all racial/ethnic groups in the country. Despite the disproportionately high rates of cervical cancer and other types of gynecological cancer among Asian women living in the U.S., their rate of getting regular preventive gynecological exams, such as Papanicolaou (Pap) tests and pelvic exams, is the lowest among all racial/ethnic groups in the U.S. (Chaudhry, Fink, Gelberg, & Brook, 2003; Keppel, 2007). In particular, Asian women's rate of ever getting a Pap test is approximately 70%, whereas non-Hispanic White and Black women's rates are over 90% (Yu, Chou, Johnson, & Ward, 2010).

It has been suggested that Asian women's unique cultural values might play a critical role in inhibiting them from getting necessary gynecological exams and treatments. In particular, research (e.g., Ho & Dinh, 2011; Landrine & Klonoff, 1992; Okazaki, 2002) implies that Asian cultural values emphasizing women's traditional roles and responsibilities in family and society have much to do with Asian women's gynecological preventive healthcare-related perceptions, beliefs, and behaviors. However, the relationship between Asian women's unique cultural values and their gynecological health perceptions, beliefs, and behaviors has not received full empirical research attention.

Although several studies have examined the relationship, previous studies have rarely measured core Asian cultural values. Rather, they often assumed that Asian women

are more likely to place an emphasis on family honor and women's chastity and sexual purity (e.g., Ho & Dinh, 2011; Landrine & Klonoff, 1992; Okazaki, 2002). Furthermore, Asian women's distinctive gynecological health-related perceptions, beliefs, and behaviors have seldom been considered culturally-bound unique characteristics. Specifically, Asian women, compared to Anglo American women, may exhibit different levels of perceived susceptibility to different gynecological diseases, such as cervical cancer and sexually transmitted diseases (STDs) and perceive stronger social stigma regarding gynecological health issues and barriers to getting gynecological exams. Therefore, these differences in perceptions and beliefs between Asian women and Anglo American women deserve close attention with respect to their cultural value differences (e.g., Hahm, Lee, Ozonoff, & Amodeo, 2007; S. E. Kim et al., 2008; Schuster, Bell, Nakajima, & Kanouse, 1998; V. Taylor et al., 2002; Wong, Wong, Low, Khoo, & Shuib, 2008).

Although some qualitative studies and surveys have explored certain aspects of the aforementioned relationship between Asian cultural values and women's gynecological health-related perceptions, beliefs, and behaviors (e.g., Gor, Chilton, Camingue, & Hajek, 2011; M. C. Lee, 2000; Lee et al., 2010; Tang, Solomon, Yeh, & Worden, 1999; Woo, Brotto, & Gorzalka, 2009), there has been scant empirical investigation offering evidence-based suggestions to help develop more effective health communication campaigns addressing the health disparities in the Asian women population. Thus, there is a great need for further research to better understand the relationship between cultural values and gynecological health perceptions, beliefs, and

behaviors among women with different cultural backgrounds and to develop more effective health campaigns specifically targeting underserved racial/ethnic groups with unique cultural values (Kreuter, Farrell, Olevitch, & Brennan, 2000; Kreuter & McClure, 2004; Kreuter & Wray, 2003).

One of the most effective ways to engage and encourage racial/ethnic minority populations to receive necessary preventive health exams and treatments is creating culturally-congruent health advertising campaigns (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003; Rimer & Kreuter, 2006). Although product advertising with culturally-congruent message appeals has been found to be more persuasive and effective for changing target consumers' attitudes and behaviors (e.g., Aaker & Maheswaran, 1997; Chang, 2006; Han & Shavitt, 1994; Taylor, Miracle, & Wilson, 1997), research on message-culture congruency effects in the health communication context has been limited (e.g., Uskul, Sherman, & Fitzgibbon, 2009; Uskul & Oyserman, 2010). Furthermore, comparative studies examining relative influence of message-culture congruency effects on Asians/Asian Americans in comparison to the effects on Anglo Americans have rarely been conducted.

Purpose of Research

To address the gap in the literature and to help guide future advertising campaigns targeting Asians to promote women's health, this study focuses on two specific objectives: (1) to examine Asian women's cultural values that are likely to influence their perceptions, beliefs, and behaviors regarding gynecological health issues, in comparison to those of Anglo American women; and (2) to test the effects of message-culture

congruency in an advertising message promoting preventive gynecological exams on the cognitive, affective, and conative responses. Anglo American women are defined as non-Hispanic Caucasians in the U.S. and Asian women as individuals from Asian countries who are living in the U.S.

Framing theory (Entman, 1993; Scheufele, 1999) is applied to explain message-culture congruency effects caused by different socio-cultural connotations attached to different gynecological diseases. For example, considering Asian cultural values, getting sexually transmitted disease (STD) screening may carry a stronger social stigma than cancer screening and would be more likely to be considered a taboo. Given that existing research on the effects of message-culture congruency has mainly incorporated the difference in social relations between Eastern and Western cultures into message construction—for example, a self-focused message vs. a group-focused message—as a proxy for cultural differences (e.g., Han & Jo, 2011; Han & Shavitt, 1994; Lee & Park, 2012; Zhang & Gelb, 1996; Uskul & Oyserman, 2010), associating different socio-cultural connotations attached to those diseases with health advertising messages may expand this existing research on message-culture congruency effects. Therefore, this study tests the effects of message-culture congruency in advertising messages promoting preventive gynecological exams, with particular focus on the different cultural connotations and perceptions regarding different types of women's health issues (e.g., cervical cancer vs. STDs).

The starting point of this study's investigation is the assumption often found in the literature that Asian women, whose unique cultural values are strongly related to

traditional women's role and women's chastity, tend to perceive greater social stigma and cultural barriers to gynecological healthcare. This notion will be further discussed in the Literature Review section. If this assumption is proven true, how messages are framed in advertising campaigns promoting gynecological health is likely to have a significant impact on the ad effectiveness. Applying framing theory, this study empirically tests the effect of message framing—more specifically, culturally-congruent message framing vs. culturally-incongruent message framing—on the cognitive, attitudinal, and behavioral responses to an ad message promoting preventive gynecological exams.

Chapter 2. Literature Review

Cultural Values: Comparing Asian and Western Cultural Values

Although the concept of culture is too broad and complicated to define in a single sentence, Hofstede and colleagues (2010) defined culture as a mental programming that is shared by a group of people. That is, culture denotes the collective mental program that differentiates one cultural group from another. Regardless of which cultural groups individuals belong to, they acquire the group's cultural values beginning in their early childhood, and various social groups, such as family, schools, and local communities, reinforce their cultural values. Individuals' beliefs, attitudes, and behaviors are considered unique cultural artifacts that distinguish people of one cultural group from those of other cultural groups.

According to Schwartz and Bilsky (1987, 1990), values exist in the form of universal requirements that fulfill the needs of individuals and groups and coordinate positive social interactions. Through learning processes, people are universally socialized to fulfill those requirements. For example, people across cultures want to be successful by acquiring good outcomes. That is, people tend to be motivated to fulfill the achievement value, which is one universal requirement, by accomplishing goals set by themselves, other people, or society. However, individuals from different cultures tend to differ in how they define and determine success or in what type of goals ought to be prioritized. For example, Asians tend to define achievement in a more collectivistic sense, but Anglo Americans tend to more strongly attribute achievement to personal

recognition (Yang & Yue, 1988). Therefore, the designation of interests involved with the attainment of values reflects cultural differences.

Asians and Anglo Americans exhibit distinctively different cultural values that reflect each group's "universal statements about what we think is desirable or attractive" (Smith & Bond, 1994, p. 52). Several scholars have offered theoretical and conceptual frameworks to explain various aspects of Asian cultural values (Hofstede, 2001; Hofstede et al., 2010; Markus & Kitayama, 1991; Triandis, 1989). In particular, the cultural value dimension of individualism and collectivism proposed by Hofstede (Hofstede, 2001; Hofstede et al., 2010) and the concept of independent vs. interdependent self-construal (Markus & Kitayama, 1991; Triandis, 1989) have been most extensively applied to distinguishing Asian cultural values from Western cultural values.

Given that independent and interdependent self-construal are self-concepts that are inherently shaped by individualistic or collectivistic cultural values held by members of different cultures (Triandis, 1989), the present study discusses these two interconnected cultural value dimensions together as the overarching theoretical framework explaining specific cultural traits relevant to women's health. This section discusses individualism-collectivism as the main conceptual framework explaining cultural differences between Asian and Anglo American, followed by literature review and discussion on three specific Asian cultural traits most relevant to this study, including (1) family as the main source of self identity; (2) emphasis on women's chastity; and (3) shame and the loss of face.

Individualism (Independence) vs. Collectivism (Interdependence)

Individualism-collectivism is one of the most widely applied conceptual frameworks in cross-cultural studies, especially when comparing Asian and Western cultures (Gudykunst, 2001). Individualism-collectivism refers to the extent to which individuals prioritize pursuing self-interest or collective interests, leading to weak or strong social ties (Hofstede et al., 2010). Members of the individualistic culture tend to display weak social ties with other members of the society, because they tend to put more emphasis on themselves than on other people. On the contrary, individuals from the collectivistic culture exhibit strong social ties to their in-group members, because they are motivated to accomplish their groups' goals together.

While the U.S. is ranked as one of the most individualistic countries in the world, most Asian countries, particularly Eastern Asian countries, such as China, Japan, and Korea, are considered strongly collectivistic cultures (Hofstede et al., 2010). Thus, keeping harmony and balance with other people within the society and with the environment is more strongly valued by Asians than by Westerners (Kim, Sherman, Ko, & Taylor, 2006).

Those from individualistic cultures tend to form an independent self-construal, to consider themselves independent beings in the society by defining themselves in a self-contained manner, and to pay less attention to other people or their surroundings. On the other hand, those from collectivistic cultures tend to form an interdependent self-construal, to consider themselves interdependent beings by defining themselves in terms

of group affiliations, and to think in a more holistic way (Chua, Boland, & Nisbett, 2005; Nisbett, 2003; Nisbett & Masuda, 2003; Kim & Markus, 1999).

Previous studies have demonstrated that individuals from Asian countries tend to attribute the cause of their achievement to luck and context (i.e., external factors), whereas those from Western countries are more likely to attribute it to their own ability and effort (i.e., internal factors) (Chandler, Shama, Wolf, & Planchard, 1981; Yan & Gaier, 1994). According to Markus and Kitayama (1991), the Asian culture places an emphasis on one's interdependent relationships with others and external factors affecting one's life, such as luck, fate, destiny, and context, as opposed to the individual's independence, which characterizes the Western culture. Although individuals with Western cultural values also consider relationships with others and their surroundings important, they tend to believe that their lives can be solely managed by their own personal control rather than determined by other people or external factors.

The cultural value differences stemming from the individualism-collectivism distinction between Asians and Anglos Americans are observed in many different contexts and forms. The most relevant to the present study are Asians' unique cultural values regarding the position of women in the family and society and women's sexual norms. As mentioned earlier, the objectives of the present study are to examine different cultural values held by Asian and Anglo American women, and to investigate the influence of those cultural values on gynecological health issues as well as on women's responses to health advertising messages promoting preventive gynecological exams. Given that Asian women's cultural values regarding women's roles and responsibilities

in the family and society and women's restrictive sexual norms are likely to play an important role in shaping their perceptions, beliefs, and behaviors regarding gynecological health care (Ho & Dinh, 2011; Landrine & Klonoff, 1992; Lee et al., 2010; Okazaki, 2002), the following subsections focus on three main cultural traits of Asians: (1) family as the main source of self identity; (2) emphasis on women's chastity; and (3) shame and the loss of face.

Family as the Main Source of One's Identity. Cultural values exist within the minds of individuals, and these values become important parts of defining their identity. Among various social groups to which people belong, family is one of the most important in-groups for individuals with strong Asian cultural values (Hofstede, 2001). For example, individuals in the Asian culture are more likely to define themselves based on their traditional gender-specific roles in the family, such as daughter/son, wife/husband, or mother/father, rather than defining themselves as unique individuals (e.g., Bem, 1993). Based on these traditional gender-specific roles, a woman in a collectivistic Asian family is usually expected to take care of domestic duties and become the caretaker of her husband and children, while a man is considered the head of the household and the primary breadwinner (M. K. Ho, 1987; Uba, 1994). Thus, the position of the individual in a collectivistic Asian family is likely to determine his/her identity, social roles, and responsibilities much more strongly than in the case of individualistic cultures.

Emphasis on Women's Chastity. Asian cultural values that tend to emphasize individuals' traditional gender-based roles within the family and society have placed more importance on the fulfillment of those roles than on the achievement of personal

goals and wants. It has been suggested that the cultural emphasis on women's traditional roles in the family, such as daughter, wife, or mother, might explain Asian women's more conservative sexual attitudes and behaviors (Duley & Edwards, 1986; Ng & Lau, 1990). Several studies have provided empirical evidence supporting this proposition by demonstrating that one's level of individualism was negatively correlated with the perceived importance of women's chastity (Bond, 1988; Buss et al., 1989, 1990; Chinese Culture Connection, 1987).

The reason why complying with prescribed gender-specific roles and maintaining chastity and sexual purity are often considered more important in the collectivistic Asian culture (Ayyub, 2000) is because of the thinking that "the honor of the family goes through the female" (Vandello & Cohen, 2003, p. 998). In other words, in the Asian cultures, family honor has been strongly connected to women's cultural duties, such as being chaste and holding sexually conservative attitudes (Lindisfarne, 1998). Therefore, sexual promiscuity or premarital sexual activities on the part of women are viewed not only as personally shameful misdeeds, but also as severe threats to family honor and family face in the Asian culture (Lindisfarne, 1998; Okazaki, 2002).

Shame and the Loss of Face. The collectivistic Asian society is often characterized as a shame culture, while the individualistic Western society is characterized as a guilt culture (Benedict, 1974; Wong & Tsai, 2007). Shame reflects an other-oriented characteristic, in that when one behaves poorly, others' negative evaluations of the behavior is much more important than one's own feeling of guilt. On the other hand, guilt is associated with a self-oriented characteristic, in that one's own

negative evaluation of bad behavior and the feeling of guilt are stressed more than what other people think (Benedict, 1946, 1974).

Several empirical studies have indicated that individuals of the Asian culture have a tendency to try to avoid shame, and this tendency becomes a strong motivation to control their behaviors (Earley, 1997; Hsu, 1953; Hu, 1944). Defaulting on socially prescribed duties and obligations, failing to achieve academic and occupational goals, and seeking help from others are examples that can cause the feeling of shame (Kim, 2007; Kim, Atkinson, & Umemoto, 2001). However, the source of shame is often not the behavior itself, but the fact that the behavior is known to others and negatively evaluated by them. This is the main characteristic of the Asian "shame" culture, as distinguished from the Western "guilt" culture that has more to do with one's internalized conviction of the behavior (Hofstede, 2001).

The feeling of shame is related to the concept of "face," found pervasively in the Asian culture that the importance of avoiding shame and keeping face is characterized as "the consequences of living in a society that is very conscious of social contexts" (Hofstede 2001, p. 230). As the concept of face is defined as "the respectability and/or deference which a person can claim . . . by virtue of [his/her] relative position" in the proper fulfillment of his/her social roles (Ho, 1976, p. 883), losing face results in the sense of being humiliated. Research indicates (e.g., Zane & Yeh, 2002) that Asian Americans, compared to Anglo Americans, have relatively strong concerns about losing face, and they perceive the loss of face as a significant threat to their social integrity. Taken together, compared to individuals from the Western culture, individuals from the

Asian culture are more motivated to restrict any actions that can be negatively evaluated by others and to fulfill their social roles to avoid loss of face and shame (Hamamura, Meijer, Heine, Kamaya, & Hori, 2009; Ho, Fu, & Ng, 2004).

In sum, individuals with Asian cultural values tend to have a stronger sense of collectivism and, thus, are likely to put more emphasis on maintaining harmony with in-group members and collective goals. In contrast, individuals with Western cultural values tend to have a stronger sense of individualism and are likely to pursue their own preferences and wants by considering themselves unique entities rather than members of a group. Similarly, individuals from the collectivistic culture tend to view themselves as interdependent beings, to think holistically, and to more willingly acknowledge external influences (e.g., luck and fate) on their lives, while individuals from the individualistic culture tend to define themselves as independent beings, to think in a self-centered way, and to believe in personal controllability to manage their lives.

Stemming from these cultural differences are distinctive cultural traits that are likely to influence women's gynecological health care perceptions and behaviors. In the Asian culture, an individual's roles in a family and a society, rather than one's unique individuality, tend to dictate who they are and what they are supposed to do. Particularly, the family and society assign women gender-specific roles and responsibilities. Furthermore, other-oriented Asian cultural values are likely to lead Asian women to be strongly motivated to fulfill these roles and responsibilities in order to avoid the feeling of shame and the loss of face. As a result, Asian women, who are expected to prioritize the traditional roles in their family over their personal wants and desires and to have

restrictive attitudes and behaviors that will be positively evaluated by other people, are likely to hold more conservative and restrained sexual attitudes.

With this general discussion of the Asian core cultural values as a backdrop, the next section will discuss in detail how these Asian cultural values are likely to influence Asians' perceptions, beliefs, and behaviors related to their health issues in general, and gynecological health issues in particular.

Health Perceptions, Beliefs, and Behaviors Influenced by Asian Cultural Values

Health-related cultural beliefs refer to the ways in which people perceive illnesses and how they deal with them based on their cultural backgrounds (Lim, Gonzalez, Wang-Letzkus, & Ashing-Giwa, 2008). Previous empirical studies indicate that Asians tend to have unique beliefs regarding health screening, medical symptoms, and treatments. For example, although getting medical exams and treatments is considered necessary for those who have clear symptoms and diagnosed diseases, Asians tend to think that any cancer screenings in the absence of symptoms are unnecessary (Jo, Maxwell, Rick, Cha, & Bastani, 2009; M. C. Lee, 2000; Wang et al., 2006). Research indicates that such a belief regarding health screening when there are no symptoms tends to play a significant role in inhibiting Asians from utilizing preventive health care (e.g., Jo et al., 2009; Maxwell, Crespi, Antonio, & Lu, 2010).

Another health-related cultural belief uniquely found in the Asian culture is that many Asians place great emphasis on their own traditional ways of preventing diseases rather than following preventive care guidelines suggested by physicians. For instance, one study revealed that Chinese women showed a high level of trust in the benefits of

having a hot-cold balanced diet and maintaining a balanced emotional state over regular medical checkups (Liang, Yuan, Mandelblatt, & Pasick, 2004). In another study, Korean-American women were found to prefer the use of traditional healers to medical screening, and their beliefs emphasizing their own traditional ways of preventing diseases were found to be associated with Korean-American women's low levels of receiving preventive health screenings (Maxwell, Bastani, & Warda, 1998). Research also indicates that some Asians even distrust Western medical care and view Western biomedicine as having negative side effects on Asians' bodies, resulting in a preference for traditional Asian methods of preventing and treating diseases (e.g., Facione, Giancarlo, & Chan, 2000; Ma, 1999).

In addition, several previous studies have reported that Asians tend to have fatalistic beliefs regarding severe diseases, such as cancer. The core idea of the fatalistic beliefs is that the occurrence of serious diseases is mainly predetermined by one's fate, and an individual's fate or destiny will determine his/her probability of getting cancer (Chen, 1996). It has been found that Chinese women tend to hold fatalistic beliefs regarding breast cancer, and this belief seems to lead to their low rate of getting mammography (e.g., Liang et al., 2004; Straughan & Seow, 2000). Fatalistic beliefs regarding cervical cancer have also been found in the Korean American population (M. C. Lee, 2000) and the Cambodian American population (Taylor et al., 1999), and these beliefs seem to inhibit Korean American and Cambodian American women from seeking preventive gynecological health care.

The aforementioned unique health beliefs held by a majority of Asians might be explained by the collectivistic cultural values shared among them. Collectivism seems to influence Asians' general philosophy of the human body and health. Specifically, Asians tend to believe that physical health is determined by keeping emotional harmony and by maintaining "chi" balance in their bodies (Hwu, Coates, & Boore, 2001). Chi is a Chinese concept of the flow of life energy and includes two opposite characters, "yin-chi" and "yang-chi." Given that yin denotes cold and dark, whereas yang denotes hot and light (Mo, 1992), keeping a balance between yin and yang is considered essential for staying healthy.

Based on this philosophy of the human body and health, many Asians tend to believe that health can be achieved through a yin-yang balanced diet and balanced emotional state (Liang et al., 2004), and illnesses are traditionally viewed in the Asian culture as a manifestation of the imbalance of "chi" (Pang, 1989). Consequently, Asians may not feel a strong need to seek health care until they experience symptoms indicating the presence of illnesses (M. C. Lee, 2000; Wang et al., 2006). Additionally, given that Asians are more willing to admit the influence of their surroundings on their lives (Chandler et al., 1981; Yan & Gaier, 1994), the notion of having control over one's health to reduce the risk of developing cancer may not be considered realistic for them. Thus, many Asians seem to believe that one is diagnosed with cancer because he/she is predestined to have such a serious illness by personal luck or fate (e.g., Straughan & Seow, 2000).

Connected to these unique health beliefs, Asians have been found to show distinctively low levels of perceived risk of getting serious diseases such as cancer. For instance, Chinese women tend to perceive a significantly lower risk of developing breast cancer than do White and Latina women (Haas et al., 2005; Wang et al., 2008). The same pattern is also found in Asians' subjective risk perceptions regarding cervical cancer and colon cancer (S. E. Kim et al., 2008). Perhaps due to the fatalistic health belief and the notion that no symptom indicates no illness, Asians seem to have a false sense of being healthy and significantly lower levels of perceived disease susceptibility compared to other racial/ethnic groups (e.g., M. C. Lee, 2000; Liang et al., 2004).

In sum, the literature suggests that Asians have distinctively different perceptions, beliefs, and behaviors regarding health care. In particular, fatalistic health beliefs and low levels of subjective risk perception are considered to function as barriers to utilizing preventive health care services by the Asian population. Several previous studies provide empirical evidence supporting the relationship between Asians' culturally-influenced health perceptions and beliefs and the frequency of cancer screening. For example, Asian women are reluctant to participate in cervical cancer screening (M. C. Lee, 2000) and colon cancer screening (Wang et al., 2006; Maxwell et al., 2010), based on the belief that medical screenings and treatments are needed only for those who already have manifested symptoms. Research also reports that the preference of Asian traditional ways of preventing illnesses keeps some Asians from getting necessary medical screenings and treatments (e.g., Maxwell et al., 1998; Ma, 1999). Moreover, fatalistic beliefs seem to hinder Asians' utilization of preventive health care services (M. C. Lee, 2000; Straughan

& Seow, 2000; Taylor et al., 1999). Finally, Asians' low level of perceived susceptibility to severe diseases is considered one of the most important barriers to receiving preventive health care (e.g., mammography and colon cancer screening) (Juon, Kim, Shankar, & Han, 2004; S. E. Kim et al., 2008).

Building upon the discussion of Asians' unique health beliefs and behaviors, which are connected to their core cultural values, the next section will provide more in-depth discussion and literature review on how Asian cultural values and health beliefs likely affect Asian women's gynecological health care perceptions and behaviors.

Asians' Gynecological Health Perceptions, Beliefs, and Behaviors

As discussed earlier, Asian cultural values, which tend to emphasize traditional gender-based roles within the family and society (e.g., Bem, 1993) and the importance of the evaluations of other people (Benedict, 1946, 1974; Hofstede, 2001; Wong & Tsai, 2007), are likely to lead to the high expectations of women's chastity and sexual purity (Buss et al., 1989, 1990). Stemming from these cultural characteristics are Asian women's distinctive perceptions, beliefs, and behaviors regarding gynecological health (Ho & Dinh, 2011). When it comes to gynecological health care behaviors, Tang and colleagues (1999) reported that young Asian American women holding strong Western cultural values were more likely to get regular Pap tests than those holding strong Asian cultural values. Similarly, Woo and colleagues (2009) found that Chinese Canadian women with strong Western cultural values showed a significantly higher likelihood of getting Pap tests than those with strong Asian cultural values.

The way Asian cultural values might influence Asian women's distinctive gynecological health care behaviors can be explained by Asian-culture-influenced gynecological health care-related perceptions and beliefs, which can be summarized in three main themes: (1) low level of perceived gynecological disease susceptibility; (2) socially stigmatized beliefs regarding gynecological health issues; and (3) perceived barriers to preventive gynecological health care.

Low Level of Perceived Gynecological Disease Susceptibility. Perceived disease susceptibility refers to one's subjective perception of the risk of developing a disease. Perceived susceptibility to gynecological diseases, such as cervical cancer and STDs, are perceptions that are likely to be influenced by different cultural values held by Asians and Anglo Americans (Rogers & Prentice-Dunn, 1997). As mentioned before, previous studies have suggested that Asians tend to show significantly lower levels of perceived susceptibility to cervical cancer and STDs than any other racial group (Hahm et al., 2007; S. E. Kim et al., 2008). Similarly, Asian and Pacific Islander adolescents reported that their likelihood of contracting STDs is lower compared to that of White adolescents (Schuster et al., 1998).

Asian cultural values, which strongly stress the importance of women's chastity and sexual purity and the avoidance of shame and the loss of face, are likely to explain these findings. Due to Asian cultural characteristics, Asian women are less likely to engage in promiscuous behaviors or premarital sexual activities than women of other racial/ethnic groups (Huang & Uba, 1992; Kuo & St. Lawrence, 2006; Okazaki, 2002; Schuster et al., 1998), and the relatively lower rates of sexual activities seem to contribute

to Asian women's lower perceived susceptibility to gynecological diseases such as cervical cancer and STDs (Hahm et al., 2007).

Social Stigma Beliefs about Gynecological Exams. In the health communication literature, social stigma refers to an "expectation of isolation and adverse social judgment" that may be associated with certain health issues or diseases such as STDs or mental illnesses (Fortenberry et al., 2002, p. 379; Komiya, Good, & Sherrod, 2000). Previous studies have suggested that Asian and Asian American women tend to have stigmatized beliefs about gynecological health issues, and that these stigmatized beliefs are likely to be one of the main causes of the low level of participation in gynecological exams among Asians. In particular, Ho and Dinh (2011) pointed out "the cultural and gendered stigma associated with Pap test" (p. 56) as a significant cultural-level factor inhibiting Asian women from getting gynecological exams. A study by Wong et al. (2008) also demonstrated that the stigmatization of Pap tests and pelvic exams deterred Malaysian women from getting gynecological exams.

Some studies have examined the link between Asian cultural values emphasizing women's chastity and sexual purity and Asian women's stigmatized beliefs about gynecological exams (e.g., Hunjan & Towson, 2007). Specifically, it has been suggested that one of the main reasons for Asian women's not getting gynecological exams is their concern that this might be viewed by other people as an indication of inappropriate sexual activities (V. Taylor et al., 2002).

Perceived Barriers to Preventive Gynecological Health Care. Perceived barriers to getting necessary health exams or treatments are often connected to the social

stigma attached to certain health problems. Perceived barriers are characterized as the perceived obstacles to performing positive health behaviors (Janz & Becker, 1984; Rosenstock, 1974). V. Taylor et al. (2002) found that perceived embarrassment about gynecological exams is one of the most powerful negative predictors of Chinese-American women's participation in gynecological exams. A study exploring this issue by comparing women from the Asian culture with those from the Western culture also reported that Asian women living in Canada had more sexually conservative attitudes and stronger feelings of embarrassment about gynecological exams than Euro-Canadian women, and that Asian women's strong perceived embarrassment seemed to deter them from getting gynecological exams (Woo et al., 2009).

Considering the suggested connection between Asian core cultural values and unique health-related perceptions, beliefs, and behaviors, health advertising campaigns that are designed to appeal to the unique cultural values held by different racial/ethnic groups are likely to be more effective than non-culture-specific messages or culturally-incongruent messages. The next section will discuss the effects of culturally-congruent advertising in both product advertising and health communication contexts, review relevant literature, and present framing theory as a useful theoretical framework for explaining the effects of culturally-congruent advertising messages.

Research on Message-Culture Congruency Effects

Several scholars have suggested that one of the most effective ways of encouraging racial/ethnic minority populations to utilize necessary preventive health care services is to create culturally-targeted and culturally-congruent health campaigns

(Campbell & Quintiliani, 2006; Kreuter et al., 2003; Kreuter & McClure, 2004; Rimer & Kreuter, 2006). As with product advertising, an effective health campaign message requires careful audience segmentation and targeting in order to reach a specific segment of the population, and culturally-congruent message strategies to appeal to the specific target audience (Huhman et al., 2008). Therefore, the research literature on the effects and effectiveness of culturally-congruent product advertising can lend support to the idea that culturally-congruent health messages can be effective in decreasing health disparities between racial/ethnic subgroups.

Given that cultural values are one of the important factors shaping consumer behaviors (Carman, 1978; Kim & Kang, 2001; Munson & McIntyre, 1979), they have often been incorporated into advertising message appeals. Previous content analysis research indicates that advertising appeals emphasizing individuality, independence, or self-focus tend to be more prevalent in individualistic cultures, while message appeals reflecting interdependence, family integrity, and group-oriented goals tend to be more common in collectivistic cultures (Cho, Kwon, Gentry, Jun, & Kropp, 1999; Hong, Muderrisoghi, & Zinkhan, 1987; Miracle, Chang, & Taylor, 1992).

A great deal of research on product advertising has demonstrated that culturally-congruent advertising messages are more effective than non-culture-specific standardized messages (Chang, 2006; de Mooij, 2010; Lepkowska-White, Brashear, & Weinberger, 2003; Mueller, 1994). Pollay and Gallagher (1990) argued that cultural characteristics are one of the most important elements in advertising messages. Hornikx and O'Keefe's (2009) meta-analysis on the effects of cultural value appeals on advertising effectiveness

(i.e., persuasiveness and ad liking) also supports the notion that advertising with culturally-congruent value appeals is more persuasive (i.e., more positive attitudes toward the product and the brand, and greater purchase intention) (r = .073) and better liked (r = .082) than advertising with culturally-incongruent value appeals.

Message-Culture Congruency Effects in Product Advertising. Many empirical studies on advertising have examined the effects of culturally-congruent product advertising messages on persuasion. These studies have found that advertising messages are more persuasive when there is congruence between the message and the target audiences' cultural values (e.g., Aaker & Maheswaran 1997; Aaker & Schmitt, 2001; Han & Shavitt, 1994; Lau-Gesk, 2003; Zhang & Gelb, 1996) or communication style (e.g., Choi & Miracle, 2004; Lyi, 1988; Taylor, Miracle & Wilson, 1997).

For example, Lau-Gesk (2003) conducted an experiment to examine the effects of culturally-congruent advertising on generating self-thoughts (as the proxy for persuasion) (see Higgins, Bargh, & Lombardi, 1985). The results revealed that an interpersonal-focused advertising appeal generated more cognitive responses regarding the collective self for East Asian consumers, whereas an individual-focused advertising appeal generated more cognitive responses regarding the private self for Western consumers.

Han and Shavitt (1994) reported that an advertising message emphasizing group benefits was preferred by Korean consumers who generally have strong collectivistic values. On the other hand, an advertising message emphasizing individual benefits was preferred by American consumers with their strong individualistic values. Zhang and Gelb (1996) also found that a group-oriented and conformity-focused appeal generated

higher purchase intention for collectivistic Chinese consumers, whereas a self-directed and hedonism-focused appeal was more effective for individualistic American consumers. In another study comparing Chinese and American consumers, Chinese consumers exhibited a higher preference toward the brand when the ad used an assimilation-focused appeal (emphasizing similarity and harmony), while American consumers preferred a brand that was advertised with a differentiation-focused appeal (emphasizing difference and uniqueness) (Aaker & Schmitt, 2001).

Another line of related research has demonstrated that the cultural value differences between individualism and collectivism tend to influence culture-specific communication contexts and individuals' preferred communication styles (Hall, 1976, 1987; Kim, 1994). Specifically, the individualistic culture is characterized as a low-context culture (Hall, 1976, 1987), and individuals of a low-context culture are more likely to prefer a clear and direct communication style (Kim, 1994). This communication style does not necessarily rely on a relevant context but involves explicit and straightforward messages. By way of contrast, the collectivistic culture is characterized as a high-context culture (Hall, 1976, 1987). Individuals of a high-context culture are more likely to value an indirect communication style, which emphasizes the importance of a relevant context and involves implicit and indirect messages (Kim, 1994; Kim & Wilson, 1994).

Advertising messages that reflect the target audience's culture-specific communication context and style have been found to be more persuasive than advertising messages that do not reflect them. For example, Taylor, Miracle, and Wilson (1997)

reported that advertising messages with low levels of explicit information produced more positive attitudes toward the advertising and the promoted brand among Korean consumers of a high-context culture than among American consumers of a low-context culture.

Choi and Miracle (2004) and Lyi (1988) examined the relative advantage of incorporating the communication style differences between individualistic and collectivistic cultures into comparative advertising. Comparative advertising is considered a good example of individualistic and low-context communication. Individuals of an individualistic culture are likely to evaluate comparative advertising more positively (e.g., informative and persuasive), while individuals of a collectivistic culture evaluate it more negatively (e.g., pushy and aggressive) (Rossman, 1994). Their studies found that U.S. consumers felt more comfortable with comparative advertising (Lyi, 1988) and showed more positive attitudes toward the advertising and the brand than their Korean counterparts (Choi & Miracle, 2004).

In addition to the cultural values and culture-specific communication styles, racial/ethnic congruence between the target audience and the endorser has been suggested as another important message factor in culturally-congruent advertising (e.g., Brumbaugh & Grier, 2006; Lee, Fernandez, & Martin, 2002; Martin, Lee, & Yang, 2004; Morimoto & La Ferle, 2006). Several studies have examined this factor and offered empirical evidence supporting the effectiveness of using endorsers who are racially/ethnically congruent with the target audience.

For example, Brumbaugh and Grier (2006) found that Anglo American consumers showed more favorable attitudes toward advertising when the ad used White models, compared to other racial/ethnic groups of models (e.g., Asians or African Americans). Another study revealed that Asian American female consumers viewed an ad using Asian models as more credible than an ad using White models (Morimoto & La Ferle, 2006). Similarly, Lee, Fernandez, and Martin (2002) and Martin, Lee, and Yang (2004) demonstrated that Asian consumers were more likely to identify with Asian models than with White models. Furthermore, they found that Asian consumers had more positive attitudes toward the model, the ad, and the brand, and higher purchase intentions, when the ad used Asian rather than White models.

In sum, advertising messages that adapt to the target audience's cultural characteristics in terms of cultural values and communication style are likely to generate better persuasion outcomes. Additionally, advertising messages using endorsers who are racially/ethnically congruent with the target audiences can be more effective.

Health communication researchers and practitioners have also suggested the importance of incorporating cultural values in the creation of health promotion messages, especially for campaigns targeting racial/ethnic minority groups (e.g., Brugge et al., 2002; Kreuter et al., 2003; Kreuter & McClure, 2004). For example, compared to other racial and ethnic groups, Asian Americans suffer from disproportionately high levels of or mortality from various types of cancer, including breast cancer and cervical cancer (ACS, 1999, 2005). The culturally-congruent advertising campaigns that promote specific cancer screening exams are likely to be more effective than standardized campaigns when

targeting this group. This is because culturally-congruent campaigns would likely generate higher personal relevance and a higher willingness to adopt the suggested behavior (Kreuter et al., 2003; Kreuter, Strecher, & Glassman, 1999; Rimer & Kreuter, 2006). The next section reviews research in health communication that tested the effects of culturally-congruent health messages.

Message-Culture Congruency Effects in Health Communication. Relatively limited scholarly attention has been paid to the effects and effectiveness of message-culture congruency in the context of health communication. Previous empirical studies have mainly focused on the role of individualistic vs. collectivistic cultural values incorporated in health campaign messages in producing better communication outcomes, such as higher risk perception (e.g., Murray-Johnson, Witte, Liu, & Hubbell, 2001), more positive attitudes toward the ad (e.g., Han & Jo, 2010), more positive attitudes toward the recommended behavior, and behavioral changes (e.g., Lee & Park, 2012; Uskul et al., 2009; Uskul & Oyserman, 2010).

Murray-Johnson et al. (2001) demonstrated that fear appeals used in an AIDS prevention advertising campaign generated different effects depending on the cultural congruency between the message strategy and the audiences' cultural values. Mexican Americans, who tend to have relatively more collectivistic cultural values, perceived the ad as more frightening when the message focused on the family-related negative consequences of AIDS, whereas African Americans, who have more individualistic values, were more influenced by the message focusing on the self-related negative consequences of AIDS.

In another study on a women's cancer screening campaign, Han and Jo (2012) found that American women with more individualistic cultural values had more favorable attitudes toward the ad with an individualistic appeal, whereas Japanese women with more collectivistic values had more favorable attitudes toward the ad with a collectivistic appeal. Similarly, a study on the effects of cultural value appeals in an anti-smoking campaign (Lee & Park, 2012) revealed that a group-focused fear appeal was more effective among individuals with more collectivistic values in forming positive attitudes and greater behavioral intentions regarding quitting or not starting smoking. In contrast, a self-focused fear appeal was more effective for individuals with stronger individualistic values.

Uskul and colleagues (Uskul et al., 2009; Uskul & Oyserman, 2010), who adopted the framing approach, also reported the effects of message-culture congruency framing in health information articles. Specifically, Uskul and Oyserman (2010) found that a relation-focused article was more effective for Asian/Asian American participants in reducing their caffeine consumption, whereas a self-focused article was more effective for European Americans. Uskul et al. (2009) also found that both White British and East-Asian participants had more positive attitudes toward flossing behavior and stronger behavioral intentions to floss when they received health education messages focusing on their own culture-specific motivational characteristics.

In sum, the effects of culturally-congruent messages have been widely tested and supported in product advertising, while research on this topic in the health communication context has been limited. The existing literature on the effects of

culturally-congruent messages has demonstrated that, with cultural segmentation and targeting, a message incorporating or appealing to the target audiences' cultural values can be more effective in changing perceptions, attitudes, and behaviors. Although research on the effects of culturally-congruent health messages on cognitive outcomes (e.g., message recall and message-related cognitive responses) is rare, there is increasing empirical evidence supporting message-culture congruency effects on attitudinal and behavioral outcomes.

What is the psychological mechanism behind the effects of message-culture congruency? While some of the previous studies have applied the involvement concept (e.g., Agrawal & Maheswaran, 2005), motivational orientation (e.g., Uskul et al., 2009), and dual information processing models, such as the elaboration likelihood model (ELM) (e.g., Rimer & Kreuter, 2006), to explain their findings, theoretical discussion and theory development has been rather limited. In an attempt to provide a theoretical explanation for the proposed message-culture congruency effects in a gynecological health promotion campaign targeting Asian women, this study brings in framing theory. The next section will briefly discuss this theory and its application to the present investigation.

Framing Theory

One of the most common message strategies suggested and tested in the mass communication field to improve the effects of persuasive communication on audiences' perceptions, attitudes, and behaviors is framing (Chong & Druckman, 2007; Price & Tewksbury, 1997). Framing is to "select some aspects of perceived reality and make them more salient in a communicating context," and it is likely to influence how

audiences perceive, understand, and interpret a particular issue (Entman, 1993, p. 52; Kinder & Sanders, 1990). Entman (1993) argued that culture can function as a frame, which can differentiate individuals in one social group from those in another social group. Thus, when individuals from different cultural groups face messages emphasizing different attributes, a framing process is likely to occur, which would influence the perception, understanding, interpretation, and evaluation of the messages by different individuals (Price & Tewksbury, 1997).

Scheufele (1999) distinguished between a macro-level framing (i.e., a media frame) and a micro-level framing (i.e., an individual frame). As a macro-level construct, framing refers to a media frame, which is characterized by how media present and relay information through the selection of some aspects of an issue and make them salient (e.g., different message framing). On the other hand, as a micro-level construct, framing refers to an individual frame, characterized by an individual's mental structure (e.g., one's cultural values), that guides his/her message processing.

Scheufele and Tewksbury (2007) argued that, when the media frame selects two concepts and makes them salient, (a) audiences should be able to acknowledge the fact that the two concepts are connected, and (b) one concept should be applicable to another after exposure to the message. As a media frame is assumed to function as a door or window of a building to enable audiences to experience the interior (Bock & Loebell, 1990), Shah, McLeod, Gotlieb, and Lee (2009) suggested that the message-induced connection and applicability between two concepts can interact with an individual frame, and this interaction guides audiences' subsequent reactions to the media frame.

There has been extensive research on the effects of interaction between the media frame and individual frame on audiences' reactions in the political communication context. Specifically, such effects have been demonstrated in terms of (a) cognitive outcomes, including message recall (e.g., Valkenburg, Semetko, & de Vreese, 1999) and message-relevant cognition (e.g., Price, Tewksbury, & Powers, 1997; Shen, 2004a; Shen & Edwards, 2005), (b) attitudinal outcomes (e.g., Brewer, 2003; Price et al., 1997; Shen, 2004b), and (c) behavioral outcomes (e.g., Barker, 2005; Domke, Shah, & Wackman, 1998; Valentino, Beckmann, & Buhr, 2001). In addition, some studies have focused on the message framing effects of generating specific emotions, such as anger and disgust (e.g., Gross & Brewer, 2007; Nabi, 2003).

For example, Shen (2004a) found that an issue-focused political ad generated more message-related thoughts for the message recipients who tend to evaluate political candidates based on the candidates' stance on several political issues (e.g., abortion), while a character-focused political ad generated more message-related thoughts for the message recipients who tend to evaluate political candidates based on the candidates' character-related qualities (e.g., honesty). Shen and Edwards (2005), who examined the cognitive and attitudinal effects of news message framing about welfare reform, also found that a "public aid" news framing (emphasizing the necessity of aid for the disadvantaged) generated more thoughts and more positive attitudes toward public aid for the message recipients who scored high on the value of humanitarianism than those who scored low on humanitarianism. In contrast, a "work requirement" news framing (emphasizing the importance of self-reliance and economic independence) generated

more thoughts and more positive attitudes toward strict work requirements for the message recipients who scored high on the value of economic individualism.

As existing research on the framing effects demonstrates that a media frame congruent with an individual frame (e.g., values) generates better communication outcomes than an incongruent message frame, framing theory can be a useful theoretical framework to explain the message strategy of culturally-congruent media messages. Particularly, a culturally-congruent health communication message can be characterized as a message emphasizing a particular health benefit or health risk factor that is more culturally acceptable and does not carry strong social stigma. A culturally-congruent message that establishes a salient relationship between a health benefit and a recommended health behavior or between a health risk and a disease allows message recipients to acknowledge the message-induced connection, such that the health benefit or disease acquisition is not particularly linked to social stigma. Finally, message recipients exposed to a culturally-congruent health message are expected to generate better communication outcomes, including cognitive, attitudinal, and behavioral responses, than those exposed to a culturally-incongruent health message.

Summary of Chapter

Individuals from the Asian population have consistently shown lower rates of utilizing preventive health care in general and getting gynecological exams in particular than individuals from the Anglo American group. Several empirical studies have demonstrated that differences in cultural values between Asians and Anglo Americans and culture-specific health-related perceptions and beliefs play a critical role in

influencing their utilization of preventive health care, including gynecological exams. In particular, Asians of the collectivistic culture possess distinctive cultural values, which are characterized by the importance of gender-specific roles and prescribed responsibilities in a family and a society, women's chastity and sexual purity, and an emphasis on avoiding shame and loss of face. In contrast, Anglo Americans of the individualistic culture tend to have cultural values that are characterized by the importance of individuality, women's non-restrictive sexual norms, and the tendency to avoid guilt.

Asians' distinctive cultural values are likely to shape their unique health-related perceptions and beliefs. Specifically, individuals of the Asian culture are likely to view utilizing preventive health care as unnecessary if they do not have clear symptoms or pain, and tend to possess fatalistic beliefs regarding severe diseases, such as cancer, and evaluate their risks of getting diseases as low. In relation to gynecological health issues in particular, Asian women tend to show low levels of perceived susceptibility to gynecological diseases, perceive stronger social stigma regarding gynecological exams, and exhibit a high level of perceived barriers to getting gynecological exams. Cultural values and their influences on health-related perceptions and beliefs seem to explain Asians' low levels of preventive health care and gynecological exams.

A culturally-congruent health communication message that reflects the target audiences' individual and socio-cultural characteristics has the potential to be effective in changing the perceptions, beliefs, attitudes, and health behaviors of different racial/ethnic groups. Previous research on message-culture congruency effects in advertising has

found better advertising outcomes in terms of attitudes toward the ad and the brand, and purchase intention, when the advertising adapted to the target audiences' cultural values, reflected the audiences' culture-specific communication style, or used racially/ethnically-congruent endorsers.

Some health communication studies have also suggested that the message-culture congruency effect is not limited to product advertising but can be applied to health-related campaigns targeting specific cultural groups. The message-culture congruency effect in health communication has been found in various health contexts, including AIDS prevention, cancer screening, anti-smoking, reduction of caffeine consumption, and dental flossing. The empirical studies have demonstrated that Asians, Hispanics, and African Americans tend to respond more favorably to health campaign messages incorporating or appealing to their own cultural values.

Framing theory provides a theoretical explanation for the message-culture congruency effects and guidance for the culturally-congruent message design. Applying the framing principle, a culturally-congruent health communication message can emphasize a certain health benefit that is more culturally acceptable, or make a certain risk factor that is culturally sensitive more salient, or suggest a link between a certain health behavior and cultural norms. If such message-culture congruency framing strategies are successfully implemented, the message recipients should be able to form a salient link between a particular benefit and the recommended health behavior, or a particular risk and the disease.

Based on this theory and the literature review, the following section poses two research questions and seven hypotheses to examine the influence of cultural values on Asian women's health-related perceptions, beliefs, and behaviors, and to test message-culture congruency effects.

Chapter 3. Research Questions and Hypotheses

By adopting the cultural difference frameworks and framing theory, and based on the empirical findings from the previous studies, the present study poses two research questions and seven hypotheses to examine differences in cultural values and health-related perceptions, beliefs, and behaviors between Asian and Anglo American groups, and to test the effects of message-culture congruency in a health advertising campaign promoting preventive gynecological exams.

Differences in Cultural Values and Gynecological Health-Related Perceptions, Beliefs, and Behaviors between Asian and Anglo American Women

Asian and Anglo American women are socialized to hold different cultural values. Since core cultural values are internalized in cultural group members' minds through social learning processes, core cultural values tend to affect individuals' ways of perceiving, understanding, and interpreting diverse issues (Hofstede, 2001). Regarding the influence of cultural values on public health issues in particular, it has been suggested that individuals' health-related perceptions, beliefs, and behaviors may be influenced by one's cultural surroundings (Kreuter et al., 2003; Kreuter & McClure, 2004). The cultural dimension of individualism-collectivism (Hofstede et al., 2010) provides a useful theoretical framework for describing differences in cultural values between Asian and Anglo American women, and for explaining the influences of these cultural values on their health perceptions, beliefs, and behaviors.

Differences in Core Cultural Values. Individuals of the collectivistic Asian culture tend to define themselves as interdependent beings and members of various social

groups, whereas individuals of the individualistic Western culture tend to view themselves as unique entities (Markus & Kitayama, 1991). Among the many social groups to which Asians may belong to, family is one of the most significant social groups that provide them with identities (Hofstede, 2001). Within the family, individuals of the Asian culture are often assigned to traditional gender-specific roles that entail necessary responsibilities (Bem, 1993; Ho, 1987; Uba, 1994). Additionally, individuals of the collectivistic culture are likely to be restricted in their behaviors more by external factors than internal factors, and thus, they will act in ways that fulfill socially prescribed duties and obligations or in ways that achieve academic and occupational goals (Kim, 2007; Kim et al., 2001) in order to avoid shame in front of other people in the society or losing face (Benedict, 1974; Ho, 1976).

Asian culture's emphasis on women's traditional roles in the family is likely to be related to high expectations for women's chastity (Bond, 1988; Buss et al., 1989, 1990; Chinese Culture Connection, 1987). Furthermore, given that women's promiscuity or premarital sexual activities can be viewed not only as personally shameful misdeeds but also as severe threats to family honor and family face (Lindisfarne, 1998; Okazaki, 2002), the Asian cultural values emphasizing women's chastity are likely to promote women's stronger self-restriction in sexual attitudes and behaviors (Ting-Toomey, 2005). Thus, the first hypothesis is posed as follows.

> **H1**: Asian and Anglo American women will have different cultural values regarding the position of an individual within a family and the larger society, and regarding women's sexual norms.

Asian Women's Distinctive Gynecological Health-Related Perceptions, Beliefs, and Behaviors. Health-related perceptions, beliefs, and behaviors can be considered cultural artifacts. First, certain cultural values and beliefs can influence individuals' perceived disease susceptibility. Asians' fatalistic beliefs in general and health-related beliefs that no visible symptoms mean no illness are likely to lead Asians to have low levels of perceived susceptibility to cancer (M. C. Lee, 2000; Liang et al., 2004). Thus, Asian women, who may be influenced by these traditional health-related cultural beliefs, are expected to show lower levels of perceived susceptibility to cervical cancer than Anglo American women. Additionally, previous studies have suggested that Asian women of the collectivistic culture tend to exhibit lower levels of perceived susceptibility to STDs than other racial/ethnic groups (Hahm et al., 2007; Schuster et al., 1998). Therefore, the second hypothesis is posed to compare the perceived susceptibility to cervical cancer and STDs between Asian and Anglo American women.

> **H2:** Asian women will exhibit lower levels of perceived susceptibility to cervical cancer and STDs than Anglo American women.

Second, although some women from the Western culture may perceive social stigma and barriers associated with getting gynecological exams (Friedman & Shepeard, 2006; Kahn et al., 2007), many more Asian women are likely to have stronger stigmatized beliefs regarding gynecological health issues (Ho & Dinh, 2011; Wong et al., 2008). Previous studies have also suggested that Asian women are more likely to perceive stronger cultural barriers to getting gynecological exams, especially embarrassment, than the women of an individualistic culture (V. Taylor et al., 2002; Woo et al., 2009). Thus, the third hypothesis is posed to compare the perceived social stigma

and perceived barriers to getting gynecological exams between Asian and Anglo American women.

> **H3**: While women in general will perceive a certain level of social stigma and barrier regarding getting gynecological exams, the perceived level of social stigma and barrier will be stronger among Asian women than Anglo American women.

Third, previous studies have suggested that Asian women tend to have the lowest rate of getting gynecological exams among all racial/ethnic groups in the U.S. (Chaudhry et al., 2003; Tang et al., 1999; Yu et al., 2010). Therefore, the fourth hypothesis is posed to further test this prior finding and to compare prior experience of getting gynecological exams between Asian and Anglo American women.

> **H4**: Asian women will be less likely to have gotten gynecological exams than Anglo American women.

Message-Culture Congruency Effects

As a way to address Asian women's disproportionately low rates of getting gynecological exams (Chaudhry et al., 2003; Keppel, 2007; Yu et al., 2010), the present study investigates the effects of a culturally-congruent health advertising campaign on altering women's thoughts, attitudes, and behavioral intentions regarding preventive gynecological exams. On the basis of the literature from the fields of advertising and health communication suggesting the relative advantage of a culturally-congruent advertising message over a culturally-incongruent advertising message (e.g., Aaker & Schmitt, 2001; Han & Jo, 2011; Han & Shavitt, 1994; Lee & Park, 2012; Uskul et al., 2009; Uskul & Oyserman, 2010; Zhang & Gelb, 1996), this study tests the message-

culture congruency effects of a health message promoting gynecological exams on Asian women's cognitive, affective, and conative responses.

Applying framing theory (Entman, 1993; Scheufele, 1999; Scheufele & Tewksbury, 2007; Shah et al., 2009), the present study tests interaction between a media frame (the way messages frame the benefits of getting gynecological exams—preventing cervical cancer or STDs) and an individual frame (cultural values held by women—Asian cultural values or Western cultural values). Considering the different socio-cultural connotations attached to cervical cancer and to STDs, the type of disease prevention that is mentioned as the primary benefit of getting gynecological exams would function as different media frames leading to either a culturally-congruent or culturally-incongruent message. For individuals whose cultural values tend to lean toward collectivism and restrictive sexual norms, a message focused on preventing a disease that does not carry strong social stigma (i.e., cervical cancer) would be culturally more congruent. On the other hand, a message focused on preventing a disease that carries great social stigma and is considered a social taboo (i.e., STDs) would be culturally incongruent. Thus, this study predicts that the cancer-focused message framing would generate better communication outcomes than the STD-focused message framing among Asian women.

Two research questions and three hypotheses are posed to test the effects of message-culture congruency on the target audience's cognitive, attitudinal, and behavioral responses. Each research question or hypothesis is composed of testing the effects of different benefit framing by comparing the participants' responses to differently framed messages within the Asian group (i.e., the culturally-targeted group)

and the Anglo American group (i.e., the reference group for interpreting the findings from the Asian group).

Message-Culture Congruency Effects on Cognitive Responses. Empirical research on the effects of message-culture congruency on cognitive responses, such as message recall and message-related cognitive responses, has been extremely limited, but at least one study demonstrated that culturally-congruent product advertising tended to generate more cognitive responses regarding culture-specific self-perception (Lau-Gesk, 2003). However, little research in the context of health communication has been conducted to examine the effects of culturally-congruent health messages on cognitive responses. Due to the scarcity of previous empirical research and a lack of clear theoretical justification regarding the cognitive effect of message-culture congruency, the following research questions are posed.

> **RQ1:** What is the effect of message-culture congruency on message recall? Will the culturally-congruent message (i.e., cancer-focused framing) and the culturally-incongruent message (i.e., STD-focused framing) generate different levels of message recall?
>
> **RQ2:** What is the effect of message-culture congruency on message-related cognitive responses? Will the culturally-congruent message (i.e., cancer-focused framing) and the culturally-incongruent message (i.e., STD-focused framing) generate different levels of message-related cognitive responses?

Message-Culture Congruency Effects on Attitudinal and Behavioral Responses. Compared to the limited research on the message-culture congruency effect on cognitive responses, a much more substantial body of literature exists on the attitudinal and behavioral responses. Previous studies in health communication have demonstrated that culturally-congruent health messages are more effective in producing

positive attitudes toward the message (e.g., Han & Jo, 2011), positive attitudes toward the recommended behavior (e.g., Lee & Park, 2012; Uskul et al., 2009), and ultimately changing behaviors (e.g., Uskul et al., 2009; Uskul & Oyserman, 2010). Based on the previous empirical findings, the following three hypotheses are posed.

H5: A culturally more congruent message promoting gynecological exams (i.e., cancer-focused framing) would generate more positive attitude toward the ad than a culturally-incongruent message (i.e., STD-focused framing) among Asian women. However, this message-culture congruency effect will not be observed among Anglo American women.

H6: A culturally more congruent message promoting gynecological exams (i.e., cancer-focused framing) would generate more positive attitude toward getting gynecological exams than a culturally-incongruent message (i.e., STD-focused framing) among Asian women. However, this message-culture congruency effect will not be observed among Anglo American women.

H7: A culturally more congruent message promoting gynecological exams (i.e., cancer-focused framing) would generate higher behavioral intention to get gynecological exams than a culturally-incongruent message (i.e., STD-focused framing) among Asian women. However, this message-culture congruency effect will not be observed among Anglo American women.

Chapter 4. Research Method

To address the research questions and test the hypotheses, an experiment was conducted with two different cultural groups (Asian and Anglo American women) and three different message framing conditions, each focusing on different benefits of getting preventive gynecological exams: (1) cancer-focused framing (the culturally-congruent ad message for Asian women in particular), (2) STD-focused framing (the culturally-incongruent ad message for Asian women), and (3) no-disease-specific framing (the culturally-neutral ad message for Asian women).

Sample

Female undergraduate and graduate students satisfying the following inclusion criteria were recruited from the University of Minnesota-Twin Cities campus: (1) being either Asian or Anglo American; and (2) aged between 18 and 30. The Asian participants were recruited through the university's International Student & Scholar Services. An invitation email was sent to all Asian students who were enrolled at the university and subscribing to the international students email listserv. A total of 135 Asian students responded to the study invitation and participated in this study. Anglo American participants were recruited through a university-wide subject pool system and contacted via email. A total of 109 Anglo American female students responded to the invitation email and participated in the study.

Stimuli

For the experimental stimuli, three different versions of print advertisements were created, which promoted regular gynecological exams to prevent common women's

health problems. The name and logo associated with the Centers for Disease Control and Prevention (CDC) were prominently featured as the sponsor of the ad in order to create the appearance of an authentic public service announcement. The visual element of the ads featured a female physician examining a female patient, and this same visual format was used for all three conditions. To avoid priming racial stereotypes, a grayscale illustration absent of racial cues was used. The only difference across the three ad conditions was the headline and body copy describing the risks of common gynecological health problems and the benefits associated with receiving regular gynecological exams.

As described earlier, the conceptualization of the message-culture congruency in this study's context was defined as the match between what a message depicted concerning health benefits gained from gynecological exams and what the message recipients considered culturally acceptable and well-aligned with their cultural values. Based on this conceptualization, the independent variable (message-culture congruency) was operationalized by designing two different ad messages: (1) the culturally-congruent ad framed the prevention of cervical cancer (culturally more acceptable and less stigmatized) as a key benefit of getting gynecological exams and (2) the culturally-incongruent ad framed the prevention of STDs (culturally less acceptable and more stigmatized) as a key benefit. The third ad, serving as the control condition, included a headline and body copy depicting the benefit of getting gynecological exams in preventing common health problems faced by women and did not mention any particular symptoms or diseases (see Appendix A).

Pilot Test

A pilot test of experimental stimuli was conducted online with 72 participants who were recruited from the subject pool run by the School of Journalism and Mass Communication at the University of Minnesota. Participants were asked to view a print ad (either the cancer- or STD-focused ad) and complete a questionnaire online. Participants were randomly assigned to the two experimental conditions, resulting in 35 participants exposed to the cancer-focused framing message and 37 participants exposed to the STD-focused framing message. All participants received extra credit in exchange for their voluntary participation.

The average age of the pilot test participants was 20. Most of the participants were non-Hispanic White Americans (87%), followed by Asians/Asian Americans (7%), African Americans (1%), and others (5%). Freshmen and sophomores outnumbered juniors and seniors (78% to 22%), and all participants were unmarried single.

The main purpose of this pilot test was to test whether the ads were successful in communicating cervical cancer as a salient benefit connected to gynecological exams in the cancer-focused ad and STDs in the STD-focused ad. The questionnaire included measurements of the participants' perceptions about the key benefits of getting gynecological exams using a series of 7-point Likert scales. The results verified that the two treatment ads generated significantly different perceived benefits of gynecological exams in accordance with the conceptualization. Specifically, participants in the cancer-focused framing condition showed a significantly stronger perception of prevention of cervical cancer as the key benefit of gynecological exams ($M = 6.06$) than did those

exposed to the STD-focused framing message ($M = 4.67$) (F (1, 69) = 49.44, $p < .01$, $\eta^2 = .42$). Similarly, participants in the STD-focused framing condition showed a significantly stronger perception of prevention of STDs as the key benefit of gynecological exams ($M = 6.54$) than those who were exposed to the cancer-focused framing message ($M = 5.11$) (F (1, 70) = 39.57, $p < .01$, $\eta^2 = .36$).

Data Collection Procedure of the Main Study

The main study participants were contacted via email, and data collection was done online between February and March 2012 (roughly three total weeks of data collection). In the initial invitation message, participants were informed that they would be participating in an online study for evaluating an advertising message promoting regular gynecological exams and asked to view a print ad and fill out a questionnaire online. Participants from each cultural group were randomly assigned to the three ad conditions, and the invitation email to each participant included a customized link to an online survey site with the randomly assigned ad. A total of 135 Asian participants and 109 Anglo American participants were randomly assigned to one of the three ad conditions, resulting in: (1) the cancer-focused framing – 45 Asians and 39 Anglo Americans, (2) the STD-focused framing – 43 Asians and 35 Anglo Americans, and (3) the no-disease-specific framing – 47 Asians and 35 Anglo Americans.

The online questionnaire first asked a series of questions about the participants' perceived susceptibility to various gynecological health problems and social stigma and barriers regarding getting gynecological exams or treatments. Next, the participants were instructed to click the provided link to view a print ad. The instructions specifically

asked, “Please view the ad for about 30 seconds or just as you would normally do if you received an advertising leaflet.” After viewing the ad, the participants returned to the questionnaire and completed the remaining portion of the study, which included questions about responses to the ad, cultural values, and demographics. Upon completion of the tasks, all participants received a $5 e-gift card.

Measurements

The questionnaire consisted of 63 questions including: (1) cultural values, (2) gynecological health-related perceptions, beliefs, and behaviors—perceived susceptibility to cervical cancer and STDs, perceived social stigma and barrier to getting gynecological exams, and prior experience of getting gynecological exams, (3) unaided and aided message recall, (4) message-related cognitive responses, (5) attitudes toward the ad and toward the behavior (i.e., getting gynecological exams), (6) behavioral intention to get gynecological exams, (7) perceived benefits of gynecological exams (manipulation check), and (8) demographics.

Cultural Values. In order to more precisely distinguish differences in cultural values between the Asian and Anglo American groups on multiple cultural dimensions, two types of cultural value measurements were adopted from relevant research literature: (1) Kim and Hong’s (2004) Asian Value Scale (AVS-R) and (2) Hong, Kim, and Wolfe’s (2005) European American Value Scale (EAVS-R). The AVS-R included twenty-five items focusing on Asian core cultural values, such as collectivism, preservation of harmony, avoidance of shame and loss of face, and obedience of rules and respect for authority (Kim & Hong, 2004). The EAVS-R included eighteen items focusing on

Western core cultural values that often contrast with Asian core cultural values included in the AVS-R (Hong et al., 2005). For measurement efficiency and reduction of the participants' workload, ten items from the EAVS-R were selected for this study by eliminating eight items that conceptually overlapped with items measured in the AVS-R. The ten EAVS-R items were related to women's roles in romantic relationships and sexual issues. The twenty-five AVS-R items and ten EAVS-R items are presented in Exhibit 1. All items were measured using 7-point Likert scales.

Exhibit 1. Cultural Value Measurements

AVS-R

(1) One should not question a person in an authority position.
(2) One needs to minimize or depreciate one's own achievements.
(3) Younger persons should not confront their elders.
(4) One needs to remain reserved and tranquil.
(5) One needs to focus all energies on one's studies.
(6) One needs to be able to resolve psychological problems on one's own.
(7) One should not make waves, but maintain the status quo.
(8) One should be discouraged from talking about their accomplishments.
(9) One needs to follow the role expectations (gender, family hierarchy) of one's family.
(10) One needs to achieve academically in order to make one's parents proud.
(11) The family's reputation is the primary social concern.
(12) One should not deviate from family and social norms.
(13) The worst thing one can do is to bring disgrace to one's family reputation.
(14) One should think about one's social group before oneself.
(15) Occupational failure does bring shame to the family.
(16) One's achievements should be viewed as the family's achievements.
(17) Educational and career achievements need to be one's top priority.
(18) One should refrain from expressing emotions.
(19) When one receives a gift, one should reciprocate with a gift of equal or greater value.
(20) One should consider the needs of others before considering one's own needs.
(21) Modesty is an important quality for a person.
(22) One should have sufficient inner strengths to resolve emotional problems.
(23) One should avoid bringing displeasure to one's older relatives.
(24) Children should not place their parents in retirement homes.
(25) One should be humble and modest.

EAVS-R

(1) It is not OK to allow others to restrict one's sexual freedom.
(2) It is OK for a woman to have a child without being in a permanent relationship.
(3) I can approve of abortion if the mother's health is at risk.
(4) Cheating on one's partner makes a marriage unsuccessful.
(5) A woman can have a child if she is in a long-term relationship.
(6) Partners need to have similar values in order to have a successful marriage.
(7) It is OK for single women to have children and raise them alone.
(8) Faithfulness is very important for a successful marriage.
(9) Everyone is entitled to sexual freedom without restriction.
(10) I think it is fine for an unmarried woman to have a child.

Gynecological Health-Related Perceptions, Beliefs, and Behaviors.

Perceived susceptibility to cervical cancer and to STDs was measured using a modified version of the disease susceptibility scale from Lwin, Stanaland, and Chan (2010). The scale included the following two items: "How do you feel about the possibility that you will get cervical cancer at some point in your life?" and "How do you feel about the possibility that you will get a STD at some point in your life?" The response options ranged from 1 ("completely impossible") to 7 ("highly possible").

Perceived social stigma regarding gynecological exams was measured by five 7-point Likert scales adopted from Komiya et al.'s (2000) stigma scale. Minor wording changes were made because the original measurement was developed for measuring social stigma attached to receiving psychological help. The modified measurement items included: (1) For women my age, getting a gynecological exam seems just normal (reverse-coded); (2) For women my age, going to an OB/GYN clinic carries social stigma; (3) People will see someone seeking a gynecological exam in a less favorable way; (4) It is advisable for a woman to hide the fact that she has seen an OB/GYN; and (5) People will think of someone seeking a gynecological exam as a responsible person who takes a good care of her health (reverse-coded).

Perceived barrier (i.e., embarrassment) to getting gynecological exams was measured using a single scale developed by Seow, Wong, Smith, and Lee (1995). The question asked participants to what extent they agree with the statement, "Getting gynecological exams is embarrassing," on a 7-point Likert scale.

Prior experience of getting gynecological exams was measured using a single yes/no question that asked, “Have you ever had gynecological exams, such as Pap tests and/or pelvic exams?”

Unaided and Aided Recall. For unaided recall, participants were asked to type in all things they could remember about the ad they just saw. For aided recall, several measures were included to assess the extent to which specific message content elements were recalled. Participants exposed to messages with the cancer-focused framing and STD-focused framing were asked to respond to four aided recall questions, and those exposed to the message with the no-disease-specific framing were asked to respond to three aided recall questions. The aided recall questions are listed in Exhibit 2.

Exhibit 2. Aided Recall Questions

"I would like to ask you some true/false questions about the ad you just viewed. For each statement, if you believe it is a true statement about the ad, please select "true," but if you believe it is an inaccurate statement please select "false." If you are not sure or don't know, please select "don't know" (click one response for each item)."	
The cancer-focused message framing	(1) The advertisement stated that cervical cancer is the second most commonly reported cancer in the United States after breast cancer. (2) The advertisement stated that more than 100,000 American women die from cervical cancer every year. (3) The advertisement stated that abnormal cells resulting from a persistent infection with human papilloma viruses could cause cervical cancer. (4) The advertisement stated that the Centers for Disease Control and Prevention recommend that teenage girls should get regular gynecological exams. (1 = "true," 2 = "false," 3 = "don't know")
The STD-focused message framing	(1) The advertisement stated that sexually transmitted diseases (STDs) are the most commonly reported infectious diseases in the United States. (2) The advertisement said that women in their thirties are most vulnerable to STDs. (3) The advertisement said that sexually risky and unsafe activities increase the risk of STDs. (4) The advertisement said that the Centers for Disease Control and Prevention recommend that teenage girls have regular gynecological exams. (1 = "true," 2 = "false," 3 = "don't know")
No-disease-specific message framing	(1) The advertisement stated that gynecological problems are one of the most commonly reported women's health problems in the United States. (2) The advertisement stated that teenage girls are the most vulnerable age group to gynecological problems. (3) The advertisement stated that the Centers for Disease Control and Prevention recommend that teenage girls should get regular gynecological exams. (1 = "true," 2 = "false," 3 = "don't know")

Message-Related Cognitive Responses. Participants were asked to type in the thoughts that crossed their mind as they viewed the ad message. The message-related cognitive responses included three types of evaluations on three categories: positive, negative, and neutral evaluations of (1) the behavior (i.e., getting gynecological exams) or behavioral intention to get gynecological exams, (2) the claim made in the ad message, and (3) the ad itself (e.g., ad quality, creative style, image, colors, etc.) (Reichert, Heckler, & Jackson, 2001; Severn, Belch, & Belch, 1990).

Attitudes toward the Ad and toward the Behavior. Participants were asked to indicate their attitude toward the ad and attitude toward getting preventive gynecological exams on 7-point semantic differential scales (Fishbein & Ajzen, 1972). For each attitude measurement, five items were used to measure global affective attitudes ("favorable-unfavorable," "pleasant-unpleasant," "good-bad," "valuable-worthless," and "comfortable-uncomfortable").

Behavioral intention. Participants were asked to rate the likelihood, possibility, and probability of their getting preventive gynecological exams in the near future on three 7-point scales ("highly likely-highly unlikely," "highly possible-completely impossible," and "highly probable-not probably at all") (Lutz, 1977).

Perceived Benefits. Perceived benefits of getting gynecological exams were measured using a modified version of Champion's (1984) scales, and this measurement set served as manipulation check items. The modified measurement items included: "Women who want to live a cancer free life have a lot to gain by getting gynecological exams" and "Women who are susceptible to STDs have a lot to gain by getting

gynecological exams." The response options ranged from 1 ("strongly disagree") to 7 ("strongly agree").

Demographics. The last section of the questionnaire included three demographic questions: age, marital status, and current educational level. To measure age, participants were asked to write in their year of birth. Marital status was measured using three answer options: 1 = "single," 2 = "married," and 3= "other – widowed, divorced, or separated." For the current educational level, participants were asked to select one from the following five options: 1 = "freshman," 2 = "sophomore," 3 = "junior," 4 = "senior," and 5 = "graduate student".

The questionnaire was pretested with three female undergraduate students. The pretest results showed that question wordings were clear and easy to understand. Based on feedback from the pretest participants, minor wording and editing changes were made.

Chapter 5. Results

Variable Construction and Reliability Tests

Cultural Values. The Asian cultural values were measured by twenty-five items of AVS-R (Kim & Hong, 2004). To create a summated score for the Asian cultural values by averaging the twenty-five AVS-R scores, the measurement reliability was checked using a Cronbach's alpha test. The results indicated that the measurement for Asian cultural values has good reliability (Cronbach's $\alpha = .92$). The Western cultural values regarding women's sexuality were measured by ten items of EAVS-R (Hong et al., 2005). By averaging the ten EAVS-R scores, another summated score representing Western cultural values was created. The Cronbach's alpha test revealed that the measurement for the Western cultural values has acceptable reliability (Cronbach's $\alpha = .78$).

Perceived Social Stigma. The perceived social stigma score was constructed by averaging the five measurement items. A Cronbach's alpha test demonstrated acceptable measurement reliability (Cronbach's $\alpha = .83$).

Unaided and Aided Recall. The unaided recall score was computed by the sum of all unaided recall responses (i.e., text and image recall) by each participant.

For aided recall, all of the true/false aided recall items were recoded into either "0" indicating "incorrect" or "don't know" responses, or "1" indicating "correct" responses. The percentage of correct responses was computed by dividing the number of correct aided recalls by the highest possible score, and this percentage score serves as the aided recall variable.

Message-Related Cognitive Responses. Two types of scores were created from the message-related cognitive response measurement, total cognitive response score and positive message-related cognitive response score. The total cognitive response score was computed by the sum of participants' positive, negative, and neutral evaluations of (a) the behavior (i.e., getting gynecological exams) or behavioral intention to get gynecological exams, (b) the claim made in the ad message, and (c) the ad itself (e.g., ad quality, creative style, image, colors, etc). The positive cognitive response score was computed by the sum of participants' positive evaluations of these three categories.

Attitudes toward the Ad and toward the Behavior. Two summated attitude scores, attitude toward the ad (A_{ad}) and attitude toward getting gynecological exams (A_b), were created by averaging the five measurement items for each attitude type. Both attitude toward the ad and attitude toward getting gynecological exams had acceptable reliability (A_{ad}: Cronbach's $\alpha = .86$; A_b: Cronbach's $\alpha = .78$).

Behavioral Intention. A behavioral intention score was computed by averaging the three measurement items (Cronbach's $\alpha = .97$).

Demographic Characteristics of the Participants

Table 1 summarizes the demographic characteristics of the total sample and subgroups. The average age of the overall sample including Asian and Anglo American participants was 22. Undergraduate participants outnumbered graduate participants (69 percent to 31 percent) and the sample was predominantly unmarried single (94 percent).

Table 1. Demographic Characteristics of the Participants

	Total (N=244)		Asians (N=135)		Anglo Americans (N=109)	
Age (mean)	22 (SD=3.2)		23.2 (SD=3.3)		20.6 (SD=2.3)	
	n	%	n	%	n	%
Education						
Undergraduate	168	68.9	68	50.4	100	91.7
Freshmen	35	14.3	15	11.1	20	18.3
Sophomore	45	18.4	13	9.7	32	29.4
Junior	40	16.4	20	14.8	20	18.3
Senior	48	19.8	20	14.8	28	25.7
Graduate	76	31.1	67	49.6	9	8.3
Marital status						
Single	229	93.9	121	89.6	108	99.1
Married	13	5.3	12	8.9	1	.9
Other	1	.4	1	.7	-	-
No response	1	.4	1	.7	-	-

Differences in Demographic Characteristics between Asians and Anglo Americans. A chi-square test and an ANOVA were performed to examine differences in demographic characteristics between the Asian and Anglo American participants. The variable of educational level was converted to a dummy variable, where 1 = "graduate" and 0 = "undergraduate." The two groups were found to be similar in terms of marital status, but significantly different in age and educational level. In terms of marital status, 90 percent of the Asian sample and 99 percent of the Anglo American sample were unmarried single. The mean age of the Asian sample was significantly higher than that of the Anglo American sample (F (1, 242) = 47.74, $p < .01$, $\eta^2 = .17$). In terms of educational level, while the Asian sample was evenly distributed between undergraduate

and graduate students (50 percent each), the Anglo American sample included predominantly more undergraduate students (92 percent vs. 8 percent) (χ^2 (1) = 48.13, p < .01). Thus, age and educational level were entered as covariates in all analyses comparing the Asian and Anglo American participants.

Manipulation Check

A manipulation check verified that the three stimulus ads generated significantly different responses in terms of perceived key benefits of gynecological exams. As presented in Table 2, the results demonstrated that participants exposed to the message with the cancer-focused framing (M = 5.67) reported significantly higher perceived benefits regarding cancer prevention than those exposed to the STD-focused framing (M = 5.05).

In addition, participants exposed to the message with the STD-focused framing (M = 5.80) reported significantly higher perceived benefits of gynecological exams in preventing STDs than those exposed to the cancer-focused framing (M = 4.78). Thus, the message framing manipulation was found to be successful.

Table 2. Manipulation Check (N = 243)

	Message framing	n	Mean	*f*	*p*
Perceived benefits regarding the prevention of cervical cancer	Cancer-focused framing	84	5.67[a]	5.77	.00**
	STD-focused framing	77	5.05[b]		
	No-disease-specific framing	82	5.49		
Perceived benefits regarding the prevention of STDs	Cancer-focused framing	83	4.78[a]	10.15	.00**
	STD-focused framing	75	5.80[b]		
	No-disease-specific framing	79	5.48		

**p < .01; Different superscripts denote significant pairwise comparison at p < .01

Results by Hypotheses and Research Questions

H1: Cultural Value Differences between Asians and Anglo Americans

A series of ANCOVAs was conducted to examine whether the Asian cultural values and Western cultural values significantly differ between Asian and Anglo American participants, after controlling for age and educational level (see Table 3). As hypothesized, Asians ($M = 3.93$) held significantly stronger Asian cultural values than Anglo Americans ($M = 3.22$) (F (1, 239) = 50.71, $p < .01$, $\eta^2 = .18$). Likewise, Anglo Americans ($M = 5.36$) were found to hold significantly stronger Western cultural values than Asians ($M = 4.94$) (F (1, 239) = 23.85, $p < .01$, $\eta^2 = .09$).

Table 3. Cultural Value Differences between Asians and Anglo Americans

Dependent variables		Mean	*f*	*p*
Asian cultural values	Asians	3.93	50.71	.00**
	Anglo Americans	3.22		
	Age		.01	.91
	Educational level (graduate coded high)		3.01	.08
Western cultural values	Asians	4.94	23.85	.00**
	Anglo Americans	5.36		
	Age		3.54	.06
	Educational level (graduate coded high)		.38	.54

** $p < .01$

The results indicate that significant cultural value differences exist between Asian and Anglo American participants. As expected, Asian women participating in this study showed a relatively stronger sense of collectivistic values, more strongly valued keeping harmony in a society, and perceived higher importance of women's chastity and sexual purity than did Anglo American women. Therefore, H1 was supported.

H2: Differences in Perceived Susceptibility to Cervical Cancer and STDs between Asians and Anglo Americans

A series of ANCOVAs was conducted to examine whether Asians show lower levels of perceived susceptibility to cervical cancer and STDs than Anglo Americans, after controlling for age and educational level (see Table 4). While age positively influenced women's perceived susceptibility to cervical cancer (F (1, 223) = 5.78, p < .05), no significant difference was found between Asians (M = 3.40) and Anglo Americans (M = 3.30) (F (1, 223) = .10, p = .75). When it comes to perceived susceptibility to STDs, however, Asians (M = 2.58) showed a significantly lower level of perceived susceptibility to STDs than Anglo Americans (M = 3.10) (F (1, 234) = 4.14, p < .05).

Table 4. Differences in Perceived Susceptibility to Cervical Cancer and STDs between Asians and Anglo Americans

Dependent variables		Mean	*f*	*p*
Perceived susceptibility to cervical cancer	Asians	3.40	.10	.75
	Anglo Americans	3.30		
	Age		5.78	.02*
	Educational level (graduate coded high)		1.09	.30
Perceived susceptibility to STDs	Asians	2.58	4.14	.04*
	Anglo Americans	3.10		
	Age		1.54	.22
	Educational level (graduate coded high)		2.43	.12

* p < .05

The results suggest that Asians and Anglo Americans exhibit different levels of perceived susceptibility to different types of gynecological diseases. As predicted, Asian women showed significantly lower levels of perceived susceptibility to STDs than Anglo

American women. However, perceived susceptibility to cervical cancer was found to be similar for both Asian and Anglo American women and varied only by individuals' age. Therefore, H2 was partially supported only for the perceived susceptibility to STDs.

H3: Differences in Social Stigma and Barriers between Asians and Anglo Americans

The third hypothesis predicted that, while women in general would perceive social stigma and barriers to gynecological exams, these beliefs would be stronger among Asian women than Anglo American women. The first part of the hypothesis was tested using one-sample t-tests by setting the test value at 4, the middle point of the 7-point scale measurement. The results indicate that mean scores for both perceived social stigma ($M = 2.77$, $SD = 1.28$, $t = -15.03$, $df = 243$, $p < .01$) and barriers to getting gynecological exams ($M = 3.74$, $SD = 1.65$, $t = -2.49$, $df = 242$, $p < .05$) fell significantly below the middle point. Thus, it appears that the women participating in this study did not perceive much social stigma regarding gynecological exams nor any significant barrier to getting the exams, regardless of their cultural group affiliation.

The second part of the hypothesis addressing the question of group differences was tested using ANCOVA, controlling for age and educational level (see Table 5). As hypothesized, the level of perceived social stigma toward gynecological exams was significantly higher among Asians ($M = 3.23$) than among Anglo Americans ($M = 2.19$) (F (1, 240) = 101.48, $p < .01$, $\eta^2 = .30$). In addition, the covariate, age, was found to be negatively related to women's perceived social stigma toward gynecological exams (F (1, 240) = 15.43, $p < .01$, $\eta^2 = .06$).

Table 5. Differences in Perceived Social Stigma and Barriers Regarding Gynecological Exams between Asians and Anglo Americans

Dependent variables		Mean	*f*	*P*
Perceived social stigma	Asians	3.23	101.48	.00**
	Anglo Americans	2.19		
	Age		15.43	.00**
	Educational level (graduate coded high)		1.15	.28
Perceived barriers	Asians	3.97	9.11	.00**
	Anglo Americans	3.45		
	Age		3.94	.04*
	Educational level (graduate coded high)		.45	.50

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

Similarly, Asians ($M = 3.97$) were more likely to perceive barriers to getting gynecological exams than Anglo Americans ($M = 3.45$) (F (1, 239) = 9.11, $p < .01$, $\eta^2 = .04$). Age was also found to be negatively related to perceived barriers to getting gynecological exams (F (1, 239) = 3.94, $p < .05$, $\eta^2 = .06$). The between-group comparisons show that Asians and Anglo Americans indeed have different levels of perceived social stigma and barriers regarding gynecological exams. As predicted, Asian women perceived significantly stronger social stigma and barriers attached to gynecological exams than Anglo American women. Thus, although women in general do not seem to perceive much social stigma or barriers to getting gynecological exams, the significant group difference provides support for H3.

H4: Differences in Prior Experience of Getting Gynecological Exams between Asians and Anglo Americans

A chi-square analysis was conducted to compare the prior experience of getting gynecological exams between the Asian and Anglo American groups. The results show

that the percentage of women who received gynecological exams in the past was significantly different between the two groups (χ^2 (1) = 10.13, $p < .01$): the percentage was significantly lower among Asian women (32.1%) than among Anglo Americans (41.2%). Thus, H4 was supported.

RQ1: Message-Culture Congruency Effect on Message Recall

RQ1 explores whether a culturally more congruent message (i.e., cancer-focused framing for Asian women) would generate higher message recall than a culturally incongruent message (i.e., STD-focused framing). To address this question, a comparison of message recall among the three message framing conditions was performed separately for the Asian and Anglo American groups. Since the message manipulation was conducted to create different levels of message-culture congruency particularly for the Asian group, testing with the Anglo American group was used as a comparison point for interpreting the results from the Asian group. A series of ANCOVAs was conducted with the message condition as the independent variable, the unaided and aided recall measures as dependent variables, and age and educational level as covariates. The results are presented in Tables 6 and 7.

Table 6. Differences in Message Recall among Three Message-Framing Conditions – Asians

Dependent variables		n	Mean	*f*	*p*
Unaided recall	Cancer-focused framing	37	2.73		
(N = 111)	STD-focused framing	36	2.56	2.52	.09
	No-disease-specific framing	38	2.03		
	Age			.01	.92
	Educational level (graduate coded high)			1.30	.26
Aided recall	Cancer-focused framing	45	53.89		
(N = 135)	STD-focused framing	43	62.21	.91	.41
	No-disease-specific framing	47	56.03		
	Age			.73	.40
	Educational level (graduate coded high)			3.40	.07

Table 7. Differences in Message Recall among Three Message-Framing Conditions – Anglo Americans

Dependent variables		n	Mean	*f*	*p*
Unaided recall	Cancer-focused framing	36	3.31		
(N = 101)	STD-focused framing	32	3.31	.84	.43
	No-disease-specific framing	33	2.91		
	Age			2.96	.09
	Educational level (graduate coded high)			.62	.43
Aided recall	Cancer-focused framing	39	57.69[a]		
(N = 109)	STD-focused framing	35	59.29[a]	6.21	.00*
	No-disease-specific framing	35	77.14[b]		
	Age			1.26	.26
	Educational level (graduate coded high)			.41	.52

* $p < .01$; Different superscripts denote significant pairwise comparison at *p*s between $p < .01$ and $p < .05$

Within the Asian group, neither unaided recall (F (2, 106) = .2.52, p = .09) nor aided recall (F (2, 130) = .91, p = .41) showed any significant difference among the three message conditions. For the Anglo American group, unaided recall was not significantly different across the three message conditions (F (2, 96) = .84, p = .43), but aided recall

showed some significant differences (F (2, 104) = 6.21, $p < .01$). Post hoc Bonferroni's pairwise comparisons indicate that Anglo American participants exposed to the message with no-disease-specific framing showed significantly better aided recall than did those exposed to the cancer-focused framing (*mean difference* = 19.34, SE = 5.94, $p < .01$) or the STD-focused framing (*mean difference* = 17.36, SE = 6.15, $p < .05$).

Overall, the findings seem to suggest that message-culture congruency does not lead to significantly higher message recall. However, the somewhat unexpected finding that Anglo Americans exposed to the no-disease-specific framing condition showed significantly higher recall than those exposed to the other two conditions calls for further testing the message-culture congruency effects on message recall.

RQ2: Message-Culture Congruency Effect on Message-Related Cognitive Responses

RQ2 examines whether a culturally more congruent message (i.e., cancer-focused framing for Asian women) and a culturally incongruent message (i.e., STD-focused framing) would generate different levels of message-related cognitive responses. To address this question, a comparison of message-related cognitive response scores among the three message framing conditions was performed separately for the Asian and Anglo American groups.

A series of ANCOVAs was conducted separately for the Asian and Anglo American groups, with age and educational level entered as control variables, to test whether the mean scores of total and positive message-related cognitive responses were

different across the different message conditions. The results are presented in Tables 8 and 9.

Table 8. Differences in Message-Related Cognitive Responses among Three Message-Framing Conditions – Asians

Dependent variables		n	Mean	*f*	*p*
Total message-related cognitive responses (N = 129)	Cancer-focused framing	42	1.55[a]		
	STD-focused framing	43	.70[b]	17.13	.00*
	No-disease-specific framing	44	1.02[b']		
	Age			.17	.68
	Educational level (graduate coded high)			.82	.37
Positive message-related cognitive responses (N = 129)	Cancer-focused framing	42	.83[a]		
	STD-focused framing	43	.30[b]	6.66	.00*
	No-disease-specific framing	44	.61		
	Age			.06	.81
	Educational level (graduate coded high)			.09	.93

* $p < .01$; Different superscripts denote significant pairwise comparison at $p < .01$, except b and b' superscripts do not significantly differ.

Table 9. Differences in Message-Related Cognitive Responses among Three Message-Framing Conditions – Anglo Americans

Dependent variables	Message framing	n	Mean	*f*	*p*
Total message-related cognitive responses (N = 109)	Cancer-focused framing	39	1.18		
	STD-focused framing	35	1.49	1.47	.23
	No-disease-specific framing	35	1.29		
	Age			.38	.54
	Educational level (graduate coded high)			.01	.94
Positive message-related cognitive responses (N = 109)	Cancer-focused framing	39	.46		
	STD-focused framing	35	.60	.43	.65
	No-disease-specific framing	35	.51		
	Age			.29	.59
	Educational level (graduate coded high)			.05	.82

In the Asian group, both total cognitive response and positive cognitive response showed significant differences among the three message framing conditions (total: F (2,

124) = 17.13, $p < .01$, $\eta^2 = .32$; positive: F (2, 124) = 6.66, $p < .01$, $\eta^2 = .09$). For the total message-related cognitive responses, the STD-focused framing condition showed the lowest mean score ($M = .70$) and the cancer-focused framing condition showed the highest score ($M = 1.55$). Post hoc Bonferroni's pairwise comparisons indicate that the mean score of total message-related cognitive responses of the cancer-focused framing was significantly higher than that of the STD-focused framing (*mean difference* = .85, *SE* = .15, $p < .01$) and no-disease-specific framing condition ($M = 1.02$) (*mean difference* = .54, *SE* = .15, $p < .01$).

The comparison of the positive message-related cognitive response scores showed a similar pattern, with the STD-focused framing condition showing the lowest mean score ($M = .30$) and the cancer-focused framing condition showing the highest score ($M = .83$). Post hoc Bonferroni's pairwise comparisons indicate that the mean score of positive message-related cognitive responses of the cancer-focused framing was significantly higher than that of the STD-focused framing (*mean difference* = .54, *SE* = .15, $p < .01$).

In the Anglo American group, however, no significant difference was observed for either total cognitive responses (F (2, 104) = 1.47, $p = .23$) or positive cognitive responses (F (2, 104) = .43, $p = .65$). In sum, Asians exposed to the cancer-focused framing were found to generate a greater amount of total and positive message-related cognitive responses than those exposed to the STD-focused framing and no-disease-specific framing. The results suggest that culturally more sensitive or congruent message framing tends to contribute to more extensive message-related cognitive responses among the targeted group of message recipients.

H5: Message-Culture Congruency Effect on Attitude toward the Ad

It was hypothesized that a more culturally congruent ad message would produce more positive attitude toward the ad for the Asian group. To test this hypothesis, a series of ANCOVAs was conducted separately for the Asian and Anglo American groups, by entering age and educational level as control variables. As presented in Table 10, attitude toward the ad was not significantly different across the three experimental conditions both for Asians (F (2, 130) = .02, p = .98) and for Anglo Americans (F (2, 104) = .06, p = .94). Thus, H5 was not supported.

Table 10. Differences in Attitude toward the Ad among Three Message-Framing Conditions

Cultural groups		n	Mean	*f*	*p*
Asians	Cancer-focused framing	45	4.68		
(N = 135)	STD-focused framing	43	4.69	.02	.98
	No-disease-specific framing	47	4.71		
	Age			.39	.54
	Educational level (graduate coded high)			.03	.86
Anglo	Cancer-focused framing	39	4.57		
Americans	STD-focused framing	35	4.50	.06	.94
(N = 109)	No-disease-specific framing	35	4.58		
	Age			.41	.52
	Educational level (graduate coded high)			.82	.37

H6: Message-Culture Congruency Effect on Attitude toward the Promoted Behavior

H6 predicted that, for the Asian group, a more culturally congruent ad message would produce more positive attitude toward getting gynecological exams, which is the behavioral outcome that the ad message is promoting. However, such difference may not be observed in the Anglo American group. This hypothesis was tested by a series of

ANCOVAs separately for the Asian and Anglo American groups, entering age and educational level as covariates (see Table 11).

Table 11. Differences in Attitude toward Getting Gynecological Exams among Three Message-Framing Conditions

Cultural groups		n	Mean	*f*	*p*
Asians	Cancer-focused framing	45	4.95		
(N = 134)	STD-focused framing	42	4.62[a]	4.39	.01*
	No-disease-specific framing	47	5.31[b]		
	Age			1.47	.23
	Educational level (graduate coded high)			.27	.61
Anglo	Cancer-focused framing	39	4.91		
Americans	STD-focused framing	35	4.89	.14	.87
(N = 109)	No-disease-specific framing	35	5.04		
	Age			1.43	.23
	Educational level (graduate coded high)			.13	.72

* $p < .05$; Different superscripts denote significant pairwise comparison at $p < .05$.

As predicted, the results show that attitude toward getting gynecological exams was significantly different in the Asian group (F (2, 129) = 4.39, $p < .05$, $\eta^2 = .06$), while a significant difference was not found for the Anglo American group (F (2, 104) = .14, p = .87). Post hoc Bonferroni's pairwise comparisons within the Asian sample indicate that the STD-focused framing (M = 4.62) generated significantly less positive attitude toward the behavior than the no-disease-specific framing (M = 5.31) (*mean difference* = .71, *SE* = .24, $p < .05$). Although the mean attitude score for the cancer-focused framing (M = 4.95) was higher than that of the STD-focused framing condition, the difference was statistically non-significant.

Therefore, H6 was partially supported. The results suggest that, among Asians, culturally more neutral or congruent message framing tends to generate more positive attitude toward the promoted behavior, getting gynecological exams.

H7: Message-Culture Congruency Effect on Behavioral Intention

H7 predicted that a more culturally congruent ad message would produce better behavioral intention to get gynecological exams within the Asian group in particular. This hypothesis was tested using the same ANCOVA analysis separately for the Asian group and the Anglo American group, entering age and educational level as control variables. The results are presented in Table 12.

Table 12. Differences in Behavioral Intention among Three Message-Framing Conditions

Cultural groups		n	Mean	*f*	*p*
Asians	Cancer-focused framing	45	5.44[a]		
(N = 135)	STD-focused framing	43	4.43[b]	8.49	.00**
	No-disease-specific framing	47	5.10[a]		
	Age			6.34	.01*
	Educational level (graduate coded high)			6.02	.02*
Anglo	Cancer-focused framing	39	5.25		
Americans	STD-focused framing	35	5.56	.79	.46
(N = 109)	No-disease-specific framing	35	5.60		
	Age			3.18	.08
	Educational level (graduate coded high)			.02	.90

* $p < .05$; ** $p < .01$; Different superscripts denote significant pairwise comparison at *p*s between $p < .05$ and $p < .01$

As predicted, significant between-message-condition differences were found for the Asian group's behavioral intention (F (2, 130) = 8.49, $p < .01$, $\eta^2 = .12$), but no significant difference was found in the Anglo American group (F (2, 104) = .79, $p = .46$).

In the Asian sample, the mean scores of behavioral intention from the three message conditions drew a continuum in line with the hypothesis, with the STD-focused framing condition showing the lowest score ($M = 4.43$) and the cancer-focused framing condition showing the highest score ($M = 5.44$). Post hoc Bonferroni's pairwise comparisons indicate that although the difference between the cancer-focused framing and the no-disease-specific framing ($M = 5.10$) was not significant, the mean score of the STD-focused framing was significantly lower than that of the cancer-focused framing (*mean difference* = 1.09, $SE = .27$, $p < .01$) and no-disease-specific framing condition (*mean difference* = .72, $SE = .26$, $p < .05$).

In addition to the main effect of message framing in the Asian group, two control variables were also found to significantly influence Asians' behavioral intention to get gynecological exams. Age was positively related to behavioral intentions of Asian women (F (1, 130) = 6.34, $p < .05$, $\eta^2 = .05$), whereas educational level was negatively related to behavioral intentions (F (1, 130) = 6.02, $p < .05$, $\eta^2 = .04$).

Therefore, H7 was supported. Overall, the results suggest that while age and educational level were significantly related to Asian women's intention to get gynecological exams, culturally more sensitive or congruent message framing tends to generate significantly higher behavioral intention among Asian women.

Chapter 6. Summary and Discussion

To help reduce disparities in gynecological health between Asians and Anglo Americans, this study empirically examined the assumed relationships between Asian women's cultural values and their preventive healthcare-related perceptions, beliefs, and behaviors. This study also tested the message-culture congruency effects of a culturally-congruent health promotion campaign message on cognitive, attitudinal, and behavioral responses of the target audience of Asian women. As the first empirical study examining the effects of message-culture congruency in an advertising message targeting Asian women regarding gynecological health issues, this study advances knowledge of the effects of culturally-congruent message framing and contributes to the development of more effective health communication campaigns targeting relatively underserved racial/ethnic groups to promote preventive health behaviors.

This study focused on differences in cultural values, perceived susceptibility to cervical cancer and STDs, perceived social stigma and barriers regarding gynecological exams, and prior experience of getting gynecological exams between Asians and Anglo Americans. This study also tested the relative benefits of culturally-congruent advertising message over culturally-incongruent advertising message in promoting gynecological exams on message recall, message-related cognitive responses, attitude toward the ad, attitude toward getting gynecological exams, and behavioral intention to get gynecological exams within the Asian group (i.e., the culturally-targeted group) and the Anglo American group (i.e., the reference group for interpreting the findings from the Asian group). This chapter summarizes and discusses the key findings of this study and

presents theoretical and practical implications of the findings, limitations, and suggestions for future research.

Summary of Findings and Discussion

One of the objectives of this study was to examine differences in cultural values and gynecological health-related perceptions, beliefs, and behaviors between Asian and Anglo American women. As hypothesized, compared to the Anglo American participants, the Asian participants of this study were found to hold relatively stronger Asian cultural values, such as collectivism, women's traditional roles within the family and society, and women's chastity.

Although the findings regarding cultural difference are not generalizable to the general population because of the non-representative nature of this study's sample, these findings are largely consistent with previous studies (e.g., Hofstede, 2001; Hofstede et al., 2010), demonstrating that Asians tend to adhere to collectivistic cultural values, whereas Anglo Americans tend to adhere to individualistic cultural values.

With regard to health-related perceptions and beliefs, Asians exhibited a significantly lower level of perceived susceptibility to STDs than Anglo Americans, whereas there was no significant difference in perceived susceptibility to cervical cancer between the two groups. Additionally, Asians showed higher levels of perceived social stigma and barriers regarding gynecological exams.

The findings for perceived susceptibility to STDs are consistent with the previous empirical evidence indicating that Asians whose cultural values stress collectivism and in-group harmony are less likely than Anglo Americans to perceive susceptibility to

STDs (e.g., Hahm et al., 2007; Schuster et al., 1998). As Spini (2003) and Resnicow, Baranowski, Ahluwalia, and Braithwaite (1999) argued, cultural values, which can be considered deep-rooted structures in the minds of individuals, seem to play significant roles in determining individuals' perceptions regarding health and illnesses. The fact that there was no significant difference in perceived susceptibility to cervical cancer between Asians and Anglo Americans might be explained by the universally low perceived susceptibility found across the participants due to the generally young ages of this study's participants.

The tendency of Asian women to perceive significantly higher levels of social stigma toward and barriers to gynecological exams than Anglo American women seems connected to differences in their cultural values. These findings are consistent with previous qualitative studies (e.g., Gor et al., 2011; M. C. Lee, 2000), which suggested that Asians whose cultural values emphasize collectivism, women's chastity, and sexual purity are likely to perceive stronger social stigma and barriers to gynecological health exams and treatments than Anglo Americans do.

Although the differences in perceived social stigma and barriers to gynecological exams between the cultural groups supported the study's hypotheses, the mean scores of perceived social stigma and barriers to gynecological exams were below the middle point of the scale (4) in both groups. These low scores for perceived social stigma and barriers do not support the initial prediction that women in general would perceive some social stigma and barriers to preventive gynecological exams. However, this may be explained by the changes in sexual perceptions and behaviors in Asian countries and the U.S., as

well as impression management, which refers to the psychological process by which people are concerned about and control how they are perceived by others (Goffman, 1959; Schlenker, 1980).

Recent research indicates that Asian countries have been undergoing significant changes in female sexuality from traditional conservative sexual norms to more sexual openness (e.g., Yingying, Smith, & Suiming, 2011). Given that the Asian participants of this study are relatively young, well educated, and somewhat Westernized international students, the results may reflect ongoing Asian cultural changes in female sexuality, as well as the unique characteristics of this study's sample. Such cultural changes may have affected the responses of the Asian participants regarding perceived social stigma and barriers, since the participants might not have wanted to be perceived as individuals with old-fashioned values regarding women's sexuality and gynecological health issues.

Another objective of this study was to test the effects of message-culture congruency in an advertising message promoting preventive gynecological exams on cognitive, attitudinal, and behavioral responses. The Asian group generated a greater amount of total and positive message-related cognitive responses, showed more positive attitude toward getting gynecological exams, and reported higher levels of behavioral intention in response to a more culturally-congruent ad message (i.e., cancer-focused framing) as opposed to a culturally-incongruent ad message (i.e., STD-focused framing). In contrast, such message-culture congruency effects were not observed within the Anglo American group.

These findings provide empirical support for Hornikx and O'Keefe's (2009) meta-analysis, which suggested that advertising strategies that adapt to the target audience's cultural values could be more persuasive than non-adapted advertising. The findings are also consistent with Noar, Benac, and Harris et al.'s (2007) meta-analysis, which suggested the relative advantages of tailored health communication over non-tailored health communication on attitudes toward the behavior and behavioral changes.

The ELM might explain the effects of message-culture congruency. According to Petty and Cacioppo (1981, 1986) and Eagly and Chaiken (1993), when an individual perceives an attitude object or message as personally relevant, he/she is likely to be motivated to pay more attention to and think about the object or message. Hence, the culturally-congruent ad message is likely to be perceived as more personally relevant by the target audience, generating a higher motivation for the message recipients to process the message.

Among the tested dependent variables, attitude toward the ad did not show any significant difference between the message conditions. This finding might be explained by the universally negative attitudes among women toward gynecological health-related topics and messages regardless of cultural group affiliation and message content features (Chan, 1986; Friedman, & Shepeard, 2007; Gor et al., 2011; Kahn et al., 2007). Another plausible explanation is the lack of sufficient variability in the attitude-toward-the-ad scores, possibly stemming from the characteristics of the stimuli ads used in this study. According to the written feedback from the research participants about the stimuli used in

this study, they were aesthetically unappealing and most participants did not like the visual illustration explicitly depicting the gynecological exam procedure.

Of particular interest is the rather unexpected finding of no significant difference between the cancer-focused framing message (culturally-congruent) and the no-disease-specific framing message (culturally-neutral) in attitude toward the behavior. This result might be explained by the subjective nature of perceived message-culture congruency (or cultural acceptance). The no-disease-specific framing message was initially designed to be "neutral" in terms of message-culture congruency to function as the control condition. However, the results seem to suggest that the study participants viewed the no-disease-specific framing message as culturally-acceptable or culturally-congruent rather than neutral. This is most likely because the no-disease-specific framing message does not explicitly mention sexual issues, which are considered a highly taboo subject in the Asian culture (Chan, 1986).

Implications

All in all, Asian and Anglo American participants in this study showed differences in terms of cultural values, perceived susceptibility to STDs, perceived social stigma and barriers regarding gynecological exams, and prior experience of getting gynecological exams. Furthermore, the Asian group was more likely to produce more message-related cognitive responses, more positive attitude toward getting gynecological exams, and higher behavioral intention to get gynecological exams when they viewed the culturally-congruent ad message as opposed to the culturally-incongruent ad message. In contrast, such findings were not true for the Anglo American group.

This study's findings empirically proved, rather than just assuming or speculating (e.g., Okazaki, 2002; Uskul et al., 2009), that Asian and Anglo American women hold different cultural values that likely have significant implications for women's preventive healthcare-related perceptions, beliefs, and behaviors. Furthermore, this study extends the stream of cultural difference research by comparing cultural values of Asian women with those of Anglo American women based on two distinctive cultural value scales (the Asian and Western cultural value scales). Thus, this study demonstrated cultural differences between Asians and Anglo Americans in multiple dimensions of cultural values.

As Lim et al. (2008) noted, this study empirically tested the notion that culture is likely to characterize the ways in which women perceive preventive health care issues and respond to health advertising messages, demonstrating that cultures function as the "shapers of medical practices" (Casper & Koenig, 1996, p. 529). Furthermore, this study is consistent with Waller, Fam, and Erdogan's (2005) findings that promoting culturally sensitive products and services (e.g., birth control pills and mental or OB/GYN health care programs) requires closer attention to the cultural characteristics of target consumers than promoting non-sensitive products and services does. Therefore, this study has useful implications for developing effective message strategies for health advertising in order to better promote culturally sensitive health behaviors (based on the norms of Asian cultural values) to the Asian population.

This study advances knowledge on framing research in three ways. First, previous research on the effects of message framing has been conducted mainly in the context of

political communication, in that political news articles or advertisements that are framed to be congruent with the message recipients' individual frames (e.g., values) result in greater persuasion than incongruent ones (e.g., Shen, 2004a; Shen & Edwards, 2005). This study, however, addresses the gap in the research on the effects of message framing by extending the applicability of framing research to the context of health communication.

Furthermore, existing studies on culturally-congruent health messages have seldom focused on the different cultural connotations attached to different but medically-related diseases (e.g., cervical cancer and STDs). Rather, previous studies on the cultural framing of health messages have focused mainly on motivational orientations (e.g., Han & Jo, 2011; Uskul et al., 2009) and social relations (e.g., Lee & Park, 2012; Uskul & Oyserman, 2010) as proxies for cultural differences. The present study is the first empirical investigation to not only incorporate the different cultural connotations attached to gynecological diseases into message framing but also test the effectiveness of differently-framed health campaign messages that directly address cultural connotations among different sub-cultural groups.

Additionally, in terms of outcome, previous research on framing effects did not comprehensively focus on cognitive, attitudinal, and behavioral outcomes in a single study. This study, however, tested the effects of health message framing on several communication outcomes, including message recall, message-related cognitive responses, attitudes toward the ad and toward the behavior, and behavioral intention. Although framing theory neither justifies the research questions and hypotheses posed in this study

nor offers explanations for the findings, this study contributes to extending research on framing effects by focusing on several communication outcomes in the context of health communication.

This study offers empirical evidence for the effects of culturally-congruent health campaigns, demonstrating that culturally-congruent health campaigns can be an effective way for changing racial/ethnic minority groups' preventive gynecological healthcare-related perceptions, beliefs, attitudes, and behaviors (Kreuter & McClure, 2004; Rimer & Kreuter, 2006). Given that individuals often do not pay attention to health messages that are not targeted (Kreuter et al., 2000; Kreuter & Wray, 2003), this study is useful for public health campaign practitioners and public health organizations to build appropriate strategies and to implement effective health interventions for underserved racial/ethnic groups in the U.S.

Limitations

Despite the evidence regarding the relative advantages of a health advertising message that is designed to be congruent with the message recipients' cultural values, this study does not offer theoretical or empirical explanations of why culturally-congruent health messages are more effective. The enhanced personal relevance of Asians resulting from the exposure to the culturally-congruent advertising message might serve as an explanatory mechanism for the effects of message-culture congruency (Petty & Caccioppo, 1981, 1986). However, this study did not measure the personal relevance of the Asian participants regarding gynecological exams in response to the exposure to different message-culture congruency conditions. Thus, this study could not empirically

examine the role of perceived personal relevance in influencing the effects of message-culture congruency.

This study also has several methodological limitations calling for the readers' caution. Based on the literature on Asian core cultural values, this study operationalized the message-culture congruency by using two different diseases: the cancer-focused framing as a culturally more congruent message because cervical cancer was presumed to be a culturally less stigmatized and more acceptable disease, and the STD-focused framing as a culturally incongruent message because STDs were considered culturally more stigmatized and less acceptable. However, this study did not measure the participants' perceived social stigma or cultural acceptance of the two different gynecological diseases. Due to the lack of measurements for perceived social stigma and cultural acceptance, this study was not able to empirically prove that Asian women indeed perceived less social stigma toward cervical cancer than STDs and higher message-culture congruency with the cancer-focused framing than with the STD-focused framing.

It is difficult to conclude that media messages would affect the actual gynecological exam behaviors of participants, since this study measured behavioral intentions, not actual behavior changes. Baumeister, Vohs, and Funder (2007) raised doubts about self-reports indicating behavioral intention, because "people's predictions are inaccurate and that hypothetical decisions do not reliably match actual ones" (p. 400). However, given that participants' self-report of their behavioral intention can be considered a proximal predictor of actual behavioral change (Fishbein & Ajzen, 1975),

this study still offers some implications for the effects of message-culture congruency on behavioral responses.

According to the respondents' feedback, the stimuli ads were visually unappealing and did not have the same professional appearance as real ads created by advertising professionals. As such, although this study achieved higher internal validity by using controlled message variations, strictly keeping all other message elements the same, the ecological validity of the stimuli ads was relatively lower compared to other experimental studies using actual ads as their stimuli (Jackson, 1992). As mentioned earlier, the generally negative evaluation of the overall aesthetics of the stimuli ads might have also contributed to the lack of sufficient variance in attitude toward the ad.

Another limitation of this study is related to the college student sample. Fiske (2002) suggested that college student samples across different racial/ethnic groups tend to be more Westernized and individualistic than non-college student samples from the same cultural group. This study's Asian sample seems to show this tendency. Since this study used international students enrolled in the University of Minnesota, the findings might not be generalizable to the general population of Asians living in the U.S.

Despite these limitations, this study provides empirical evidence that message framing that carefully considers audiences' cultural values can be an effective strategy for improving message-related cognitive responses, attitudes and behavioral intentions, and thus, for addressing the disparities in health care among racial/ethnic minorities. This study also contributes to expanding the stream of research on the effects of cross-cultural advertising by testing message-culture congruency effects in a health campaign context.

Suggestions for Future Research

With regard to cultural difference frameworks, future research on the effects of culturally-congruent advertising messages should not be limited to the cultural dimension of individualism and collectivism. In fact, according to Hornikx and O'Keefe's (2009) meta-analysis, the majority of previous studies have adopted the cultural dimension of individualism and collectivism, whereas studies applying Hofstede's other cultural dimensions, such as masculinity vs. femininity and uncertainty avoidance, are extremely limited. In addition to Hofstede's cultural dimensions, other cultural value frameworks, such as relation to other people (individualistic vs. hierarchical) and motive for behaving (achievement – doing vs. being), also deserve more research (Kluckhohn & Strodtbeck, 1960).

In addition, more theory-based research is needed to offer broader theoretical explanations for the empirical findings on message-culture congruency effects. Although ELM has been suggested as a relevant theoretical framework for explaining why culturally-congruent messages are more persuasive than culturally-incongruent messages (Rimer & Kreuter, 2006), there has been little empirical research that tests ELM-driven hypotheses to examine relative benefits of culturally-congruent messages. According to the ELM account of the message-culture congruency effect, when message recipients are exposed to a culturally-congruent message, they are likely to perceive a high level of personal relevance and have a strong motivation to process the message with greater cognitive elaboration (Johnson & Eagly, 1989). Therefore, greater cognitive elaboration can serve as a significant mediator between the stimulus (e.g., media messages) and the

response (e.g., attitudinal and behavioral changes) (see Markus & Zajonc, 1985). Future research should test this notion and the proposed psychological mechanism explaining why and how culturally-congruent messages targeting racial/ethnic minority populations achieve better attitudinal and behavioral outcomes than culturally-incongruent messages.

Building on this study's findings, future researchers are encouraged to further test this study's results, which show no significant difference between the cancer-focused framing and no-disease-specific framing. In experimental designs that test the effects of message-culture congruency in health campaign contexts, different social/cultural connotations attached to different diseases should be carefully considered for developing culturally-congruent and culturally-incongruent message framing. For example, future researchers may be interested in testing message-culture congruency effects in the context of mental health, which is a socio-culturally sensitive disease category. Additionally, considering the higher level of social stigma attached to obesity of African Americans compared to White Americans (Crandall, 1994; Neumark-Sztainer, Story, & Faibisch, 1998), research on different effects of obesity-framing vs. non-obesity-specific framing promoting regular exercise or vegetable consumptions among White and African Americans would be an interesting future research topic.

Finally, in order to overcome the external validity threats inherent in most experimental studies, future research should try a variety of different ad stimuli, including real ad examples using various media channels (e.g., print, television, and the Internet)

and employ different research methods, to replicate the findings of this study as well as similar lab experiments.

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Appendix A: Stimuli

The cancer-focused framing

Get gynecological exams to protect yourself against cervical cancer

Cervical cancer is the second most commonly reported cancer in the United States after breast cancer. Young women aged 20-44 are the most vulnerable to cervical cancer. In fact, more than 4,000 American women die from cervical cancer every year. If you have abnormal cells because of a persistent infection with Human Papillomaviruses, you are at high risk for cervical cancer. However, if you follow the recommendations of the Centers for Disease Control and Prevention for regular gynecological exams, including a Pap test and pelvic exam, you can protect yourself from cervical cancer. Don't wait until you have cervical cancer – you may regret not getting gynecological exams.

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People. Saving Money Through Prevention.

The STD-focused framing

Get gynecological exams to protect yourself against STDs

Sexually transmitted diseases (STDs) are the most commonly reported type of infectious diseases in the United States. Young women aged 20-24 are the most vulnerable to STDs. If you have multiple sex partners or engage in unprotected sex, you are at high risk for STDs. However, if you follow the recommendations of the Centers for Disease Control and Prevention for regular gynecological exams, including a Pap test and pelvic exam, you can protect yourself from STDs. Don't wait until you have STDs – you may regret not getting gynecological exams.

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People. Saving Money Through Prevention.

The no-disease-specific framing

Get gynecological exams to protect yourself against gynecological problems

Gynecological problems are one of the most commonly reported women's health problems in the United States. Young women aged 20-44 are the most vulnerable to gynecological problems. However, if you follow the recommendations of the Centers for Disease Control and Prevention for regular gynecological exams, including a Pap test and pelvic exam, you can protect yourself from gynecological problems. Don't wait until you have serious gynecological health problems – you may regret not getting gynecological exams.

Centers for Disease Control and Prevention
CDC 24/7: Saving Lives. Protecting People. Saving Money Through Prevention.

Appendix B: Questionnaire

[Informed consent form]

Thank you for participating in this study. Please click the number that corresponds to the answer closest to your thoughts, opinions, or feelings. All individual responses will be kept confidential.

First, the following questions ask your perceptions about gynecological health issues and about getting preventive gynecological exams.

Preventive gynecological exams refer to a Pap test and pelvic exam, which are examining procedures that improve women's health by preventing gynecological diseases.

The following four questions ask you about your feelings about your chances of getting a sexually transmitted diseases (STD) and cervical cancer. Please place a check mark between the left-end attribute (e.g., completely impossible) and the right-end attribute (e.g., highly possible) in the circle that best describes how you feel about the possibility and probability of getting a STD or cervical cancer at some point in your life. If you don't know or are not sure, you should check "Don't Know" (click one response for each item).

Q1. How do you feel about the possibility that you will get a sexually transmitted disease at some point in your life?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___							
1	2	3	4	5	6	7	9
Completely impossible			Neutral			Highly possible	DK

Q2. How do you feel about the possibility that you will get cervical cancer at some point in your life?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___							
1	2	3	4	5	6	7	9
Completely impossible			Neutral			Highly possible	DK

Q3. How would you describe the probability that you might get a sexually transmitted disease at some point in your life?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___							
1	2	3	4	5	6	7	9
Not probable at all			Neutral			Highly probable	DK

Q4. How would you describe the probability that you might get cervical cancer at some point in your life?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___							
1	2	3	4	5	6	7	9
Not probable at all			Neutral			Highly probable	DK

Q5. Suppose you have recently heard from one of your girl friends that she is going to see an OB/GYN to get a gynecological exam. The following statements describe how you might feel about your friend's getting the gynecological exam. Please indicate the degree to which you agree or disagree with each statement (click one response for each item).

	Strongly Disagree			Neutral			Strongly Agree
1. For women my age, getting a gynecological exam seems just normal.	1	2	3	4	5	6	7
2. For women my age, going to an OB/GYN clinic carries social stigma.	1	2	3	4	5	6	7
3. People will see her in a less favorable way if they come to know that she has seen an OB/GYN.	1	2	3	4	5	6	7
4. It is advisable for her to hide the fact that she has seen an OB/GYN.	1	2	3	4	5	6	7
5. People will like her less if they come to know that she has seen an OB/GYN.	1	2	3	4	5	6	7

Please click on the "Next" below to view an advertisement. Please view the ad for about 30 seconds or just as you would normally do if you received an advertising leaflet. After viewing the ad, click the "Next" button again. Then, you will see a set of questions to complete.

[Random assignment: Participants were exposed to one of the following three ads]

The following four sets of questions ask you about your thoughts, opinions, or feelings about the advertisement you just viewed.

Q6. What do you remember about the ad you just viewed? Please type in all things (e.g., text, image, objects) you recall from the ad.

Q7. Please type in the thoughts that crossed your mind as you viewed the ad message.

Q8a. (For participants who were exposed to the cancer-focused framing condition) I would like to ask you some true/false questions about the advertisement you just viewed. For each statement, if you believe it is a true statement about the ad, please select "true," but if you believe it is an inaccurate statement please select "false." If you are not sure or don't know, please select "DK (Don't know)" (click one response for each item).

	True	False	DK
1. The advertisement stated that cervical cancer is the second most commonly reported cancer in the United States after breast cancer.	1	2	9
2. The advertisement stated that more than 100,000 American women die from cervical cancer every year.	1	2	9
3. The advertisement stated that abnormal cells resulting from a persistent infection with human papillomaviruses could cause cervical cancer.	1	2	9
4. The advertisement stated that the Centers for Disease Control and Prevention recommend that teenage girls should get regular gynecological exams.	1	2	9

Q8b. (For participants who were exposed to the STD-focused framing condition) I would like to ask you some true/false questions about the advertisement you just viewed. For each statement, if you believe it is a true statement about the ad, please select "true," but if you believe it is an inaccurate statement please select "false." If you are not sure or don't know, please select "DK (Don't know)" (click one response for each item).

	True	False	DK
1. The advertisement stated that sexually transmitted diseases (STDs) are the most commonly reported infectious diseases in the United States.	1	2	9
2. The advertisement said that women in their thirties are most vulnerable to STDs.	1	2	9
3. The advertisement said that sexually risky and unsafe activities increase the risk of STDs.	1	2	9
4. The advertisement said that the Centers for Disease Control and Prevention recommend that teenage girls have regular gynecological examinations.	1	2	9

Q8c. (For participants who were exposed to the no-disease-specific framing condition) I would like to ask you some true/false questions about the advertisement you just viewed. For each statement, if you believe it is a true statement about the ad, please select "true," but if you believe it is an inaccurate statement please select "false." If you are not sure or don't know, please select "DK (Don't know)" (click one response for each item).

	True	False	DK
1. The advertisement stated that gynecological problems are one of the most commonly reported women's health problems in the United States	1	2	3
2. The advertisement stated that teenage girls are the most vulnerable age group to gynecological problems.	1	2	3
3. The advertisement stated that the Centers for Disease Control and Prevention recommend that teenage girls should get regular gynecological exams.	1	2	3

Q9. The following statements describe the roles of preventive gynecological exams that the ad stated. Please indicate the degree to which you agree with each statement by placing a check mark between "Very untrue" and "Very true" in the circle that is closest to your thoughts. If you are not sure, please select the "Don't Know" option.

	Very untrue			Neutral			Very true	DK
1. The consequences of not getting preventive gynecological exams could be life-threatening illnesses.	1	2	3	4	5	6	7	9
2. The consequences of not getting preventive gynecological exams could be socially embarrassing diseases.	1	2	3	4	5	6	7	9
3. Not getting preventive gynecological exams could result in fatal illnesses.	1	2	3	4	5	6	7	9
4. Not getting preventive gynecological exams could result in fatal social risks in my relationships with other people.	1	2	3	4	5	6	7	9

Please rate how you feel about the ad you just viewed according to the following attributes. Specifically, please place a check mark between the left-end adjective (e.g.,bad) and the right-end adjective (e.g., good) in the circle that best describes your feelings about the ad you just viewed. If you don't know or are not sure, you should check "Don't Know."

Q10. To what extent do you feel the ad you just viewed favorable/unfavorable?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Unfavorable Neutral Favorable DK

Q11. To what extent do you feel the ad you just viewed pleasant/unpleasant?

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Unpleasant Neutral Pleasant DK

Q12. To what extent do you feel the ad you just viewed good/bad?

___ :	___ :	___ :	___ :	___ :	___ :	___ :	___
1	2	3	4	5	6	7	9
Bad			Neutral			Good	DK

Q13. To what extent do you feel the ad valuable/worthless?

___ :	___ :	___ :	___ :	___ :	___ :	___ :	___
1	2	3	4	5	6	7	9
Worthless			Neutral			Valuable	DK

Q14. To what extent do you feel the ad comfortable/uncomfortable?

___ :	___ :	___ :	___ :	___ :	___ :	___ :	___
1	2	3	4	5	6	7	9
Uncomfortable			Neutral			Comfortable	DK

The following five sets of questions ask you about your thoughts, opinions, feelings about having preventive gynecological exams.

Please place a check mark between the left-end attribute (e.g., unlikely) and the right-end attribute (e.g., likely) in the circle that best describes the likelihood/possibility/probability that you will get a preventive gynecological exam in the near future.

Q15. Please indicate the likelihood that you will get a preventive gynecological exam in the near future.

___ :	___ :	___ :	___ :	___ :	___ :	___
1	2	3	4	5	6	7
Highly unlikely						Highly likely

Q16. Please indicate the possibility that you will get a preventive gynecological exam in the near future.

___ :	___ :	___ :	___ :	___ :	___ :	___
1	2	3	4	5	6	7
Completely impossible						Highly possible

Q17. Please indicate the probability that you will get a preventive gynecological exam in the near future.

___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7
Not probable at all — Highly probable

Q18. Please indicate the degree to which you feel favorable/unfavorable about getting preventive gynecological exams.

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Unfavorable — Neutral — Favorable — DK

Q19. Please indicate the degree to which you feel that getting preventive gynecological exams is pleasant/unpleasant.

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Unpleasant — Neutral — Pleasant — DK

Q20. Please indicate the degree to which you feel that getting preventive gynecological exams is good/bad.

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Bad — Neutral — Good — DK

Q21. Please indicate the degree to which you feel that getting preventive gynecological exams is valuable/worthless.

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___
1 2 3 4 5 6 7 9
Worthless — Neutral — Valuable — DK

Q22. Please indicate the degree to which you feel comfortable/uncomfortable getting preventive gynecological exams.

___ : ___ : ___ : ___ : ___ : ___ : ___ : ___							
1	2	3	4	5	6	7	9
Uncomfortable			Neutral		Comfortable		DK

Q23. Some people believe that preventive gynecological exams are beneficial because they can prevent gynecological health problems. However, others doubt the benefits of exams because they can cause you to have negative feelings. Please rate the following statements about the benefits and disadvantages of preventive gynecological exams by indicating the degree to which you agree or disagree with each statement (click one response for each item).

	Strongly Disagree			Neutral			Strongly Agree
1. Getting gynecological exams ensures early diagnosis of gynecological health problems.	1	2	3	4	5	6	7
2. Getting gynecological exams reassures me that I am safe from gynecological health problems.	1	2	3	4	5	6	7
3. Getting gynecological exams is important for every woman to prevent life-threatening illnesses.	1	2	3	4	5	6	7
4. Getting gynecological exams is important for every woman to prevent socially embarrassing problems.	1	2	3	4	5	6	7
5. Women who want to live a cancer free life have a lot to gain by getting gynecological exams.	1	2	3	4	5	6	7
6. Women who are susceptible to STDs have a lot to gain by getting gynecological exams.	1	2	3	4	5	6	7
7. Getting gynecological exams is embarrassing.	1	2	3	4	5	6	7
8. Getting gynecological exams makes me feel ashamed.	1	2	3	4	5	6	7

Q24. Some people believe that there are few barriers against getting preventive gynecological exams, whereas others believe that there are significant barriers against getting them. Please rate the following statements about your perceived ability to get preventive gynecological exams on a regular basis by indicating the degree to which you agree or disagree with each statement (click one response for each item).

	Strongly Disagree			Neutral			Strongly Agree
1. It is easy for me to get gynecological exams on a regular basis, if I really want to.	1	2	3	4	5	6	7
2. I am able to get gynecological exams on a regular basis, if I really want to.	1	2	3	4	5	6	7

Q25. I would like to ask some questions about your personal values you may hold. Please indicate the degree to which you agree or disagree with each statement (click one response for each item).

	Strongly Disagree			Neutral			Strongly Agree
1. One should not question a person in an authority position.	1	2	3	4	5	6	7
2. One needs to minimize or depreciate one's own achievements.	1	2	3	4	5	6	7
3. Younger persons should not confront their elders.	1	2	3	4	5	6	7
4. One needs to remain reserved and tranquil.	1	2	3	4	5	6	7
5. One needs to focus all energies on one's studies.	1	2	3	4	5	6	7
6. One needs to be able to resolve psychological problems on one's own.	1	2	3	4	5	6	7
7. One should not make waves, but maintain the status quo.	1	2	3	4	5	6	7
8. One should be discouraged from talking about their accomplishments.	1	2	3	4	5	6	7
9. One needs to follow the role expectations (gender, family hierarchy) of one's family.	1	2	3	4	5	6	7
10. One needs to achieve academically in order to make one's parents proud.	1	2	3	4	5	6	7

11. The family's reputation is the primary social concern.	1	2	3	4	5	6	7
12. One should not deviate from family and social norms.	1	2	3	4	5	6	7
13. The worst thing one can do is to bring disgrace to one's family reputation.	1	2	3	4	5	6	7
14. One should think about one's social group before oneself.	1	2	3	4	5	6	7
15. Occupational failure does bring shame to the family.	1	2	3	4	5	6	7
16. One's achievements should be viewed as the family's achievements.	1	2	3	4	5	6	7
17. Educational and career achievements need to be one's top priority.	1	2	3	4	5	6	7
18. One should refrain from expressing emotions.	1	2	3	4	5	6	7
19. When one receives a gift, one should reciprocate with a gift of equal or greater value.	1	2	3	4	5	6	7
20. One should consider the needs of others before considering one's own needs.	1	2	3	4	5	6	7
21. Modesty is an important quality for a person.	1	2	3	4	5	6	7
22. One should have sufficient inner strengths to resolve emotional problems.	1	2	3	4	5	6	7
23. One should avoid bringing displeasure to one's older relatives.	1	2	3	4	5	6	7
24. Children should not place their parents in retirement homes.	1	2	3	4	5	6	7
25. One should be humble and modest.	1	2	3	4	5	6	7
26. It is not OK to allow others to restrict one's sexual freedom.	1	2	3	4	5	6	7
27. It is OK for a woman to have a child without being in a permanent relationship.	1	2	3	4	5	6	7
28. I can approve of abortion if the mother's health is at risk.	1	2	3	4	5	6	7
29. Cheating on one's partner makes a marriage unsuccessful.	1	2	3	4	5	6	7
30. A woman can have a child if she is in a long-term relationship.	1	2	3	4	5	6	7

31. Partners need to have similar values in order to have a successful marriage.	1	2	3	4	5	6	7
32. It is OK for single women to have children and raise them alone.	1	2	3	4	5	6	7
33. Faithfulness is very important for a successful marriage.	1	2	3	4	5	6	7
34. Everyone is entitled to sexual freedom without restriction.	1	2	3	4	5	6	7
35. I think it is fine for an unmarried woman to have a child.	1	2	3	4	5	6	7

Please answer the following information about yourself. The information will be used only for classification purposes. It will not be used to identify you in any way.

Q26. In what year were you born? (Please type in)

1 9 ____ ____

Q27. Are you:

1. Freshman
2. Sophomore
3. Junior
4. Senior
5. Graduate student

Q28. Please type in your major (e.g., management).

Q29. (For the Asian participants only) What is your nationality?

1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

Q30. (For the Asian participants only) What language can you speak?

1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

Q31. (For the Asian participants only) What language do you prefer to use?

1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

Q32. (For the Asian participants only) What language do you read?

1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

Q33. (For the Asian participants only) What language do you write?

1. Asian only (for example, Chinese, Japanese, Korean, Vietnamese, etc.)
2. Mostly Asian, some English
3. Asian and English about equally well (bilingual)
4. Mostly English, some Asian
5. Only English

Q34. (For the Asian participants only) Whom do you now associate with in the community?

1. Almost exclusively Asians, Asian-Americans
2. Mostly Asians, Asian-Americans
3. About equally Asian groups and Anglo groups
4. Mostly Anglos, Blacks, Hispanics, or other non-Asian ethnic groups
5. Almost exclusively Anglos, Blacks, Hispanics, or other non-Asian ethnic groups.

Q35. (For the Asian participants only) What is your food preference at home?

1. Exclusively Asian food
2. Mostly Asian food, some American
3. About equally Asian and American
4. Mostly American food
5. Exclusively American food

Q36. (For the Asian participants only) Do you participate in Asian occasions, holidays, traditions, etc.?

1. Nearly all
2. Most of them
3. Some of them
4. A few of them
5. None at all

Q37. (For the Asian participants only) Rate yourself on how much you believe in...

	Do not believe		Neutral		Strongly believe
1. Asian values (e.g., about marriage, families, education, work)	1	2	3	4	5
2. American (Western) values	1	2	3	4	5

Q37. (For the Asian participants only) Rate yourself on how well you fit when with other...

	Do not believe		Neutral		Strongly believe
1. Asians of the same ethnicity	1	2	3	4	5
2. Americans who are non-Asians (Westerners)	1	2	3	4	5

Q38. What is your current marital status? (check one)

1. Single
2. Married
3. Other (widowed, divorced, or separated)

Q39. Have you ever had gynecological examinations, such as Pap smears and/or pelvic examinations?

1. Yes → Skip to Q40
2. No → Skip to Q41

Q40. Do you usually have gynecological examinations, such as Pap smears and/or pelvic examinations, on a regular basis (e.g., every year, every 2 years and so on)?

1. Yes
2. No

Q41. Please type in your x. 500 ID to receive the $5 Starbucks e-gift card (e.g., smith001).

This is the end of this study. Thank you very much for your time and participation!