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Cultural Appropriateness in Health Communication: A Review and a Revised Framework

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Abstract

A revised framework for cultural appropriateness is offered on the basis of a systematic review of operationalizations in 44 cancer screening interventions for Asian Americans. Studies commonly conveyed the epidemiological bases of the intervention (97.7%) and used the language of the population (95.5%). Less commonly reported were strategies central to health communication: cultural features of the intervention messages (77.3%) and the cultural beliefs and values that the intervention focused on (43.2%). Few used cultural tailoring (4.5%) and none aimed to address acculturation or cultural identity. The theoretical framework most frequently used was the health belief model (27.3%) which does not explain the role of culture. More studies focused on cultural barriers (20.5%) than cultural strengths (9.1%). Our revised framework comprises six cultural appropriateness strategies of cultural identity, linguistic, perceptual features, content, constituent-involving, and socioeconomic context-adaptive. It prioritizes cultural identity to recognize the dynamics within racial ethnic groups and to inform adaptive efforts for cultural appropriateness. It emphasizes examining cultural strengths that can facilitate change, as well as reducing cultural barriers. Future research and action should address the disparities in extant health disparities research in which theory and methods are underdeveloped and underutilized for Asian Americans.

Keywords

cancer; culture; screening; intervention; acculturation; disparities; Asian Americans

Reducing disparities and increasing equity is an important public health goal in the United States (Department of Health and Human Services, 2016). Closely connected to health disparities is racial and ethnic group membership (Egede, 2006). Health communication research has sought to reduce health disparities faced by racial and ethnic minorities by addressing cultural variations in behaviors and their underlying psychological and social causes in preventative interventions. Notable among the theory-based efforts is the cultural appropriateness (CA) framework (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003), which was informed by an earlier framework on cultural sensitivity (Resnicow, Baranowski, Ahluwalia, & Braithwaite, 1999).

Little is known about the theoretical bases that inform the design of preventative interventions for Asian Americans, who have been racialized differentially than other

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minority groups. The historical formulation of racism that Asian Americans have faced is that of exclusion (Lee, 2016; Omi & Winant, 1986). In contemporary U.S., racial positioning for Asian Americans takes two main dimensions: civic ostracism and relative valorization (Kim, 1999; see also Xu & Lee, 2013, Zou & Cheryan, 2017). In the civic ostracism dimension, Asian Americans have persistently been constructed as alien or foreign, more so than other racial ethnic groups. The valorization of Asian Americans relative to other racial ethnic minority groups discounts the distinct discrimination that each of these minority groups has experienced. Reinforcing the centrality of White power, this racial positioning shapes perceptions and practices determining “who should get what” and the possibilities and constraints that Asian Americans and other minority groups must contend with (Kim, 1999, p. 107).

Of importance, cancer is the number one cause of death among Asian Americans (American Cancer Society, 2016). Research reports that rates of cancer screening among Asian Americans lag behind those of other groups (Trinh et al., 2016). Like other racial groups in the U.S., culture may be an integral influence on Asian Americans’ health and risk. This study reviewed extant cancer screening intervention studies for Asian Americans. The goal of this review was to examine their theoretical bases and approaches to achieving CA and to identify opportunities for advancing theory and methods for cultural health communication and for cancer screening interventions for Asian Americans. Based on the review, we offer a revised CA framework that can be used in diverse cultural health communication contexts.

Extant Literature and its Limits

Health communication interventions should be theory-based so that the interventions can target the predictors of behavior and their pathways of influences on the behavior. Frequently used theories across health behaviors include the health belief model (HBM; Becker, 1974), theories of reasoned action (TRA; Fishbein & Ajzen, 1975) and planned behavior (TPB; Ajzen, 1991), social cognitive theory (SCT; Bandura, 1986), and transtheoretical model (TTM; Prochaska, DiClemente, & Norcross, 1992). HBM posits health behavior is a function of beliefs including susceptibility, severity, benefits, and barriers. TRA and TPB explain attitudes and subjective norms lead to behavioral intention, which then predicts behavior. SCT explains that beliefs, behavior, and environment are in mutual causation. TTM delineates the stages that individuals experience to initiate and maintain behavior change. Although these theories have been widely used in health communication interventions, none are specific to culture. As theory is the cornerstone of intervention design, the foundational question of this study is what theories have been used in cancer screening interventions for Asian Americans.

Health communication scholars have provided conceptual frameworks that can be used to develop interventions for cultural groups. These include the frameworks of cultural sensitivity (Resnicow et al., 1999) and cultural appropriateness (Kreuter et al., 2003). Cultural sensitivity refers to the degree to which the experiences, beliefs, and values of a population and their historical and social environments are incorporated into the design of health interventions (Resnicow et al., 1999). Originally developed in health communication interventions for African Americans, the cultural sensitivity framework consists of two

dimensions – surface and deep structure. Surface structure refers to the observable characteristics of a population such as language or dressing. Deep structure refers to cultural values or traditions that may affect the population's health behavior. Extending the cultural sensitivity framework, Kreuter and colleagues (2003) proposed a CA framework including six strategies.

The six CA strategies include linguistic, evidential, constituent-involving, peripheral, sociocultural, and cultural tailoring (Kreuter et al., 2003). Linguistic strategies seek to make the message more accessible. Kreuter et al. (2003) operationalized it as the use of the population's "dominant or native language" (p. 135). We refine this definition to refer to the use of primary or preferred language of the population. Researchers may not know the dominant language of the participants until their cultural identity is ascertained; it may be incorrect to assume that the native language may make the message most accessible for the participants. Evidential strategies present the epidemiological data pertaining to the health issue's impact on the population to indicate issue relevance (e.g., "liver cancer is prevalent among Asian Americans"). Constituent-involving strategies leverage the knowledge and experiences of the population. They are typically methodological in that they include members of population in the planning and implementation of the intervention and the design of messages.

Peripheral strategies are specific message strategies as they focus on the visual features to provide an appearance of CA. To be done correctly, peripheral strategies likely require constituent-involving strategies. Focusing more on the internal content of the message than external features, sociocultural strategies consider the health issue within the sociocultural context (e.g. cultural beliefs, values) that the population is in. This takes into account and addresses deep culture, as conceptualized by Resnicow et al. (1999), in the design of interventions and messages. The sixth strategy for CA is cultural tailoring, in which interventions and messages are designed for individual members of a cultural group rather than the group as a whole (Kreuter et al., 2003). These strategies can be useful, but it is unknown to what extent these strategies have been utilized in interventions for Asian Americans.

Cultural Beliefs and Values

The use of peripheral/surface and sociocultural/deep strategies of cultural health communication requires the knowledge of culture-specific beliefs and values. As some of these beliefs and values can facilitate health behavior, while others may hinder it, interventions can amplify facilitating beliefs or address inhibiting values. For African Americans, cultural values such as collectivism, religiosity, or racial pride have been emphasized to positively affect health outcomes (e.g., Kreuter et al., 2003). Interventions for Latinos often emphasize cultural values such as familialism, *personalismo* (personal contact), or *simpatía* (social engagement) (Bernal & Sáez-Santiago, 2006). Fisher et al.'s review (2007) found that majority of the interventions using values as cultural leverage had been with African American and Latino populations, compared to Native American or Asian American groups. Therefore, we seek to investigate whether and how the beliefs and values of Asian Americans have been utilized.

Cultural Identity and Acculturation

In addition to the strategies offered by Kreuter et al. (2003), we argue that acculturation is important to interventions for Asian Americans. Neither frameworks of cultural sensitivity and appropriateness consider acculturation. Specifically, although the cultural frameworks provide cross-sectional perspectives on between and within group differences, they are limited in that they do not address acculturation, temporal variations within groups and individuals. More importantly, acculturation concerns cultural identity, a higher level construct. The knowledge of cultural identity can inform the rest of the strategies including language choice, perceptual features, and core content of the message. Interventions can choose to use targeted (group-based) or tailored (individual-based) approach to focus on the cultural identity.

Furthermore, the concept of acculturation reflects that culture is dynamic and fluid, rather than static or fixed. It refers to the process in which “groups of individuals having different cultures come into continuous first-hand contact with subsequent changes in the original culture patterns of either or both groups” (Redfield et al., 1936, p. 149; see also Park & Burgess, 1921). Similarly, recent scholarship emphasizes that acculturation is a bidirectional process which influences members of mainstream cultures as well as those in minority cultures (see Alba & Nee, 2003). According to Berry (1997), this acculturation process may produce four outcomes: assimilation, separation, integration, and marginalization. Because acculturation is associated with health and risk factors among Asian Americans (e.g., Chen, Juon, & Lee, 2012; Lee, Chae, Jung, Chen, & Juon, 2018), whether and how interventions addressed it should be investigated.

The preceding discussion leads to the following research questions.

1. What theories have been used in cancer screening interventions for Asian Americans?
2. What approaches have been used for cultural appropriateness in cancer screening interventions for Asian Americans?
3. What cultural beliefs or values have been used in cancer screening interventions for Asian Americans?
4. Has acculturation been addressed and if so how has it been addressed in cancer screening interventions for Asian Americans?

Methods

Overview

To answer the research questions, we performed a systematic review. The review focused on studies reporting cancer screening interventions conducted in the U.S. for Asian Americans. Specific inclusion criteria included the interventions for South, Southeast Asian, and East Asian ethnic groups. Our search terms included the 11 Asian ethnic sub-groups that we had cancer statistics on from Cancer Facts and Figures 2016 (American Cancer Society, 2016). These are also the largest Asian American sub-groups in the U.S. We selected empirical quantitative studies that employed an experimental, quasi-experimental, or natural

experiment design. All cancer types were included as our focus was on the ways in which these interventions treated culture.

Search Strategy

The two primary databases used for search were PsycINFO and MEDLINE. All articles indexed as of December 31, 2017 were searched. We also scanned through the reference lists of all the articles included in our review to find articles that did not turn up in the database searches. In addition, we scanned the reference lists of five published review articles about cancer interventions for Asian Americans or racial ethnic minorities¹ (Han, Lee, Kim, Hedlin, Song, & Kim, 2009; Heo & Braun, 2014; Hou, Sealy, & Kabiru, 2011; Lu, Mortiz, Lorenzetti, Sykes, Straus, & Quan, 2012; Sohl & Moyer, 2007). Each of these articles reviewed interventions ranging from 18 to 30 in number.

The search terms used were generated from the key topics of this review: (1) Asian American population group; (2) related to cancer, cancer screening, or cancer detection; and (3) an intervention or program for this group. Additional variations of search terms were generated by examining MeSH terms (on MEDLINE) and the thesauri in the databases used. We continued the search with variations of the search terms until no more additional relevant articles were retrieved. The following search terms were used in Boolean logic combinations. For Asian Americans: *Asian, Asian Americans, Chinese, Korean, Japanese, Vietnamese, Cambodian, Kampuchean, Lao*, Filipino, Thai, Pakistani, Indian, and Hmong*. For cancer prevention or detection: *cancer, screening, mammogra*, Pap*, Hepatitis B, and HBV*. For interventions: *intervention, program, and cultur**. In PsycINFO, we limited the studies to those using the quantitative method to eliminate any qualitative studies which are not relevant to our review. As MEDLINE only uses the MeSH term “Asian Americans” to index all studies with Asian American sub-groups, we only used this keyword for the population category to ensure that all relevant articles are retrieved. Figure 1 presents PRISM flow chart.

Selection Procedure

We initially obtained a total of 5,290 articles (4,327 from PsycINFO, 963 from MEDLINE) across the databases using broad search terms. Removing duplicates and applying inclusion/exclusion criteria resulted in 35 articles (23 from PsychINFO, 12 from MEDLINE). In addition to the database search, we performed a reference list search. Through the scanning of the reference lists of previous reviews, we retrieved six unique articles for inclusion. Finally, through the reference lists of articles included in the review, we found another three unique articles for inclusion. A total of 44 articles (23 from PsycINFO, 12 from MEDLINE, six from other systematic reviews, and three from reference lists of included articles) were identified for inclusion this study.

¹The present review, focusing on theory and culture, and the previously published reviews have different objectives and variables investigated.

Coding

Two coders independently coded all studies included in this review, after which any discrepancies in the application of the coding scheme were settled through multiple rounds of discussion and recoding until complete agreement was reached. For each research question, we coded for the presence or absence of the CA strategies. Presence of any of the strategies was established by actual mentions included in the articles. In the event that no information was provided or the information was vague (e.g. such as merely reporting the intervention messages as CA) to ascertain the specific strategy used, we coded these as “unknown.” During the coding process, one additional category of CA was created, which we termed “socioeconomic context-adaptive” strategies. As “sociocultural” strategies are very broad in nature, potentially subsuming different subsets including message-focused and non-message focused strategies, we decided to separate them. The “socioeconomic context-adaptive” strategies frequently came up in interventions included in the review.

Results

Descriptive Characteristics

Studies reporting cancer screening interventions for Asian Americans were published beginning 1996 (Kelly et al., 1996; McPhee, Bird, Ha, Jenkins, Fordham, & Le, 1996). The 44 studies focused on four types of cancers (breast, cervical, colorectal, and liver) and were delivered to eight Asian American subgroups (Cambodian, Chinese, Filipino, Hmong, Japanese, Korean, Thai, and Vietnamese).

Research Question 1

RQ1 asked what theories have been used in cancer screening interventions for Asian Americans. The most frequently used theory was the HBM ($n = 12$, 27.3%). This was followed by the TTM ($n = 8$, 18.2%) and SCT ($n = 8$, 18.2%). Interventions also used the health behavior framework (Bastani et al., 2010), which is a synthesis of SCT, HBM, TPB, TTM, and social influence theory ($n = 5$, 11.4%), and the PRECEDE/PROCEED model (Green & Kreuter, 1991) which describes the predisposing, reinforcing, and enabling factors in health education and policy, regulatory, and organizational factors in educational development ($n = 4$, 9.1%). Other theories included the pathways framework (Hiatt et al., 1996; $n = 2$, 4.5%) and cultural explanatory models (Rajaram & Rashidi, 1998; $n = 2$, 4.5%). The pathways framework, which was guided by the PRECEDE/PROCEED model, identifies barriers or opportunities in two pathways that individuals need to navigate, the medical system and sociocultural context, with pathways converging on health maintenance practices (Hiatt et al., 1996). Cultural explanatory models, based on explanatory models of illness by Kleinman (1987), emphasize sociocultural and historical factors as explanatory frameworks for health behaviors and outcomes, based on the cultural meaning and interpretation of illnesses (Rajaram & Rashidi, 1998). Lee et al. (2014) used the explanatory model of illness and the HBM, and Lee et al. (2016) used the behavioral model of persuasive design (Fogg, 2009) and the TTM for their mobile intervention. No study used TRA or TPB. Overall, 70.5% ($n = 31$) of the studies in this review were theory-based, while 31.8% ($n = 14$) used no theoretical framework. The breakdown of theories used by each study is in Table 1.

Research Question 2

RQ2 asked what approaches have been used for CA in cancer screening interventions for Asian Americans. Linguistic strategies ($n = 42$, 95.5%) were used by all interventions reviewed in this study. One study only recruited English speaking participants based on high English speaking proficiency among that ethnic group in the city the study was conducted in (Lau et al., 2013), while another study did not provide information about the language the education sessions were conducted in (Sadler et al., 2002). Evidential strategies ($n = 43$, 97.7%) and constituent-involving strategies ($n = 39$, 88.6%) were also frequently used. Relatively less frequently used were peripheral strategies ($n = 34$, 77.3%) and sociocultural strategies ($n = 19$, 43.2%). Only two studies (4.5%) used cultural tailoring (Lee et al., 2016; Wu & Lin, 2015). Table 2 presents a breakdown of the strategies for each study in this review.

A strategy that was not part of Kreuter et al.'s (2003) CA framework, but appeared in our review, was socioeconomic context-adaptive in nature. In this, interventions provided assistance and support for access to and navigation within cancer screening services ($n = 35$, 79.5% of studies). These included patient navigation and other forms of assistance through lay health workers (e.g., Chen et al., 2013), free or low-cost screening tests (e.g. Kim & Sarna, 2004), and information on where to access these resources (e.g. Moskowitz, Kazinets, Wong, & Tager, 2007). These strategies do not focus on cultural beliefs or values but recognize the socioeconomic contextual conditions that racial ethnic minorities such as Asian Americans navigate in accessing and using screening services.

Research Question 3

RQ3 asked what cultural beliefs and values have been addressed and how have they been addressed in cancer screening interventions for Asian Americans. About a third of the studies ($n = 16$, 36.3%) reported addressing one or more cultural beliefs or values. These beliefs or values include modesty (leading to embarrassment; $n = 7$, 15.9%), fatalism ($n = 6$, 13.6%), collectivism and the importance of family and community ($n = 6$, 13.6%), lack of self-care ($n = 4$, 9.1%), and the culture's lack of preventive health orientation ($n = 2$, 4.5%).

Out of the 16 studies that addressed cultural beliefs or values, nine studies presented these values as barriers towards cancer screening that should be reduced through the intervention. For instance, a peer-group education program for Korean American women addressed issues such as cancer fatalism and the cultural norm for women to focus time and energy on their family's needs, and in the process, sacrificing their own health (Kim & Sarna, 2004). In contrast, four studies presented cultural values as positive and leveraged them in their interventions (Maxwell, Bastani, Vida, & Warda, 2003; McPhee et al., 1996; Nguyen & Belgrave, 2014). Nguyen and Belgrave (2014) hypothesized that collectivism and ethnic identity will be positively associated with increased cancer screening. They proposed that ethnic pride will increase cultural contact, which increases knowledge of cancer risk and access to health information, while collectivism will motivate women to take care of their health for the sake of their family. Kim and Sarna (2004), emphasizing both cultural barriers and strengths, conducted group-based interventions to capitalize on the cultural importance

of community and networks. Four of the studies used a neutral frame or did not specify if it was a cultural barrier or strength.

Research Question 4

RQ4 asked whether acculturation has been addressed and if so how it have been addressed in cancer screening interventions for Asian Americans. Most studies ($n = 42$, 95.5%) measured acculturation and they did so by using proxy measures. The most common proxy measures for acculturation were length of residence in the U.S. ($n = 28$, 63.6%), followed by self-reported English language proficiency ($n = 23$, 52.3%), and nativity or country of birth ($n = 13$, 29.5%). Only three studies (6.8%) used an index of acculturation, the Suinn-Lew Asian Self-Identity Acculturation Scale (Suinn, Rickard-Figueroa, Lew, & Vigil, 1987), a multi-dimensional scale including the items related to the aforementioned proxy measures. Notably, none of the studies used acculturation for designing the intervention.

Discussion

This study investigate how culture has been addressed in cancer screening interventions for Asian Americans and to identify ways in which theoretical bases and operationalizations of CA can be enhanced. Considering the enormous challenges facing research involving racial ethnic minorities, the interventions reviewed in this study index a significant progress in the past 20 years. The findings also reveal a disparity in extant health disparities research, where theory and methods are underdeveloped and underutilized for Asian Americans.

Our first research question concerned theoretical bases. Overall, about 70% of the studies reported using a theory. Frameworks that were more frequently used were the HBM, SCT, and TTM. Although these models have wide applicability in health communication interventions, none detail the role of culture. HBM, the most frequently used framework, does not include culture or other social context variables. Although not specific to culture, SCT and TTM posit social environments as one of the determinants of behavior and the progress through stages of behavior change. Few studies specified how these theories were adapted for the interventions.

The role of culture is more salient in the less frequently used theories. The health behavior framework of Bastani et al. (2010) integrates various theories to posit multiple level facilitators of and barriers to behavior change. Importantly, this framework specifies acculturation or ethnic identity as a factor influencing behavior. Cultural explanatory models of Rajaram and Rashidi (1998) delineate the sociocultural and historical contexts through which illnesses are interpreted. Although 15 of the studies used multiple theories, majority combined behavior change theories (e.g., HBM and SCT) rather than behavior change and cultural theories.

Our second research question examined strategies for CA. We found that studies commonly used linguistic, evidential, and constituent-involving strategies. The linguistic strategies were used by all but two interventions. Evidential strategies were similarly common as these would have been the rationale for conducting the intervention. Constituent-involving strategies were used in two phases of the interventions: formative research and program

implementation. In the formative phase, studies used focus groups or advisory boards to obtain input and feedback for intervention materials (e.g. Juon et al., 2014). In the implementation phase, interventions used lay health workers or peer navigators from the same ethnic group to execute the intervention. These individuals played multiple roles, ranging from conducting home visits, delivering intervention materials, assisting participants in accessing healthcare, and following up with participants on specific questions (e.g. Ma et al., 2009).

Some of the strategies that are central to cultural health communication were least frequently utilized in the interventions. Only two studies used cultural tailoring, an approach to individualize the message per the participant's cultural identity (Lee et al., 2016; Wu & Lin, 2015), and the rest of the strategies used targeted interventions. As a synthesis found that cultural tailoring is persuasive in cancer communication (Huang & Shen, 2016), this strategy could be utilized more frequently in future interventions. Strategies focusing on message features are integral to health communication as they use the specific observable characteristics of the intervention to appeal to the audience's cultural identity. At 77.3% of studies, they were relatively less frequently used than other strategies including linguistic, evidential, and constituent-involving. Seven of the 44 studies (15.9%) stated that the health communication materials were culturally appropriate but provided no details, making it difficult to ascertain which approaches to CA were used.

Following message features, message content is at the crux of cultural health communication strategies as they speak to the beliefs and values of the population, the "deep" dimensions of racial and ethnic minority experience. Under half of the studies used these strategies. Often, these studies addressed cultural beliefs that enact barriers to health behavior. The interventions then situated the message in the context of these aspects of the culture.

Our third research question investigated the cultural values of Asian Americans that the interventions addressed and their approaches. Among the 16 studies that addressed cultural beliefs, modesty, fatalism, and collectivism were the most commonly mentioned. Generally, there were two main ways with which studies addressed the cultural values: intervention design and intervention messages. As an example for intervention design, McPhee et al. (1996) employed a community-based approach because of the Asian American values surrounding collectivism. Similarly, two studies designed the intervention to address the impact of patriarchal family structures. In one of these studies, Kagawa-Singer, Tanjasiri, Valdez, Yu, and Foo (2009) targeted Hmong husbands in the recruitment of female participants, recognizing that men are often seen as the decision-makers in Hmong family culture. In the other study, Lee et al. (2014) designed a couples' intervention to increase spousal support for breast cancer screening among Korean American women.

Other studies addressed cultural values in their messages. The importance of family was considered as having negative implications for self-care among Asian American women. Expectations to put the needs of family members before their own, often at the expense of their own health or ability to self-care, may burden Asian American women (Kim & Sarna, 2004). Four studies sought to address this in their intervention messages (e.g. Fang, Ma, Tan, & Chi, 2007; Kim & Sarna, 2004; Ma et al., 2009; Wang et al., 2012). In one of these, Kim

and Sarna's (2004) peer group intervention presented the idea that cancer screening allows women to maintain their health to take care of the family.

Our final research question focused on the use of acculturation. Remarkably, none of the interventions were designed to address acculturation, either through targeting or tailoring. Acculturation was measured frequently to describe participant characteristics, or less frequently as a control variable. When it was measured, proxy indicators were used such as length of residence in the U.S. and self-reported English language proficiency which may not fully capture the complexities of the process of acculturation and the formation of cultural identity among Asian Americans. Of note, three studies in this review attempted to measure specific cultural values or practices as a proxy of acculturation, which is a step in the right direction (Kim, Menon, Wang, & Szalacha, 2010; Kim & Sarna, 2004; Lee et al., 2014).

Revised Cultural Appropriateness Framework

On the basis of the strengths and limitations of extant approaches obtained from this review and building on Resnicow et al. (1999) and Kreuter et al. (2003), we offer a revised CA framework. Table 3 presents the definitions of the components. Figure 2 shows the relationships between the components. We turn first to the assumptions of the revised framework.

Assumptions

Culture is dynamic and fluid, not static and fixed.—Assumptions about fixed and static characteristics of Asian Americans have persisted. Predominant attempts to address culture along the ethnic subcategorizations assume significant between-group differences and within-group homogeneity across all relevant dimensions which are subject to empirical examination. This review found no intervention designed to address cultural identity or acculturation, and a scarcity of studies were culturally tailored, despite the fact that Asian Americans are as ethnically diverse as any other immigrants to the U.S. Because people selectively choose a subset of attributes that comprise a culture across different times and situations (Davis & Resnicow, 2013), interventions focusing on cultural identity and using cultural tailoring can be more productive in identifying the common humanity and cultural variations, rather than relying on ethnic subcategorizations of Asian Americans.

Culture can facilitate and hinder health.—Culture can be an asset and a resource, as well as a barrier. This review revealed that Asian American culture is more commonly regarded as a barrier, although it is not entirely clear whether the culture itself or the racial ethnic minority status and associated socioeconomic disadvantages are more responsible for barriers to health. Outside the health intervention literature, there are academic and popular press articles about the strengths and boundaries of Asian American cultures. Research should examine how the strengths of the cultures could be capitalized on for health communication interventions.

Components

Cultural identity is central to this revised framework for CA. Knowledge about the cultural identity of the population should determine whether a targeted, tailored, or personalized approach is appropriate and drive the rest of the cultural strategies. Consider linguistic strategies as an example. Although an assumption could be that Asian Americans would prefer Asian-language interventions, one study with young Korean American women found that participants were more comfortable using English-language tailored mobile messages about HPV prevention, compared to messages in Korean (Lee et al., 2016). Consequently, the intervention was designed and delivered in English. This highlights the importance of considering the cultural identity of participants. Similarly, cultural identity of the participants should guide constituent-involving strategies, where researchers seek insight from the community of shared cultural identity for input and feedback. Likewise, cultural identity will inform the surface-level perceptual (audio, visual, and other sensory) features to be used, and the deep-level beliefs and values to be emphasized or countered, as well as epidemiological facts to be included in the message.

Ascertaining cultural identity requires more robust constituent-involving strategies, and this can be especially important for Asian Americans. Writings about cultural health communication have sometimes relied on assumptions about cultural beliefs and values. For example, although it is commonly assumed that ethnic minorities hold more fatalistic beliefs, a study using a national representative sample found that Latinos and African Americans were not more fatalistic than other racial ethnic groups (Shen, Condit, & Wright, 2009). Extant studies have frequently relied on qualitative methods which involves small numbers of participants to obtain deep insight about the culture of ethnic minorities.

The currently predominant methods can be diversified in two ways. In the qualitative domain, they can be diversified to enhance the cultural validity of the premise of the intervention. For example, as focus group research produces group data, it can reproduce the myth of within-ethnic group homogeneity. Moreover, qualitative approaches should be balanced with large representative samples for estimating population distribution of beliefs and values and their associations with health behavior. Asian American health researchers lack access to such data. Ethnic minorities are often hard-to-reach populations as traditions and infrastructures for reaching them are underdeveloped. Out of about 3,700 respondents of the Health Information National Trends Survey (HINTS) of the National Cancer Institute, only about 140 are Asian Americans. This small sample size is prohibitive of a meaningful investigation of Asian Americans' health and communication behavior. Steps should be taken to obtain a more valid understanding of Asian Americans and other ethnic groups.

In addition to robust data obtained via diverse methods, robust reporting of the findings from constituent-involving approaches will also advance knowledge about cultural identity. Due to the limited availability of such research and reporting, we have limited knowledge about how to design messages to appeal to the cultural identities of Asian Americans. Neither do we have comprehensive knowledge about the beliefs or values central to Asian Americans and how to capitalize on or address them in health communication.

The messages in an intervention should consider three primary aspects: perceptual features, content, and language. Perceptual strategies may not be “peripheral” to health communication efforts responsive to cultural identity. Instead, they can be central to effective cultural health communication. Perceptual features, including visuals, can invite attention and increase memorability of the message, which then catalyze subsequent information seeking, interpersonal communication, and behavior. The content strategies in the revised framework are two-pronged: data-based and value-based. In the data-based approach, epidemiological facts pertinent to the racial ethnic group are provided. In the value-based approach, cultural beliefs and values that can promote or prohibit the health behavior are addressed.

Finally, the revised framework decomposes the sociocultural strategies of Kreuter et al. (2003) to message content and socioeconomic context-adaptive strategies. As discussed above, culture may not be synonymous with low socioeconomic status. If so, interventions can focus on the ethnic minority status and the associated socioeconomic disadvantages that impede health. Message-focused efforts to appeal to cultural identity and to address cultural beliefs should be distinguished from context-focused efforts to remove barriers and to facilitate action (e.g., patient navigation). The latter can be more directly related to social, economic, and political contexts than culture. By distinguishing the two, we hope more focused attention and efforts will be devoted to these two complementary routes to improving health.

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Figure 1.
PRISMA flow diagram

Figure 2.
Organization and flow of cultural appropriateness components in health communication interventions

Table 1.**Theoretical Frameworks Used in Cancer Screening Interventions for Asian Americans**

Theory	Studies
Health belief model	Wang et al., 2012; Wu & Lin, 2015
Health belief model, Transtheoretical model	Han et al., 2009; Kim et al., 2010; Lee-Lin et al., 2015
Health belief model, Cultural explanatory models	Koh et al., 2015
Health belief model, Explanatory model of illness	Lee et al., 2014
Transtheoretical model	Juon et al., 2006; Nguyen et al., 2017
Transtheoretical model, Social cognitive theory	Love & Tanjasiri, 2012; Tong et al., 2017
Transtheoretical model, Behavioral model for persuasive design	Lee et al., 2016
Health behavior framework	Chen et al., 2013; Maxwell et al., 2003; Maxwell et al., 2008; Maxwell et al., 2010a Maxwell et al., 2010b;
PRECEDE/PROCEED Model	Juon et al., 2014; Kim & Sarna, 2004; McPhee et al., 1996; Moskowitz et al., 2007
Pathways framework	Nguyen et al., 2010
Cultural explanatory models	Wu et al., 2014
Pathways framework, Diffusion of innovation	Nguyen et al., 2015
Community-based participatory research, Sociocultural health behavior model	Nguyen & Belgrave, 2014

Table 2

Kreuter et al.'s (2003) Cultural Appropriateness Strategies Used

No.	Author, year	Linguistic	Evidential	Constituent-involving	Peripheral	Socio-cultural	Cultural tailoring
1	Chao et al. (2009)	Yes	Yes	No	UK	No	No
2	Chen et al. (2013)	Yes	Yes	Yes	Yes	No	No
3	Fang et al. (2007)	Yes	Yes	Yes	Yes	UK	No
4	Han et al. (2009)	Yes	Yes	Yes	Yes	Yes	No
5	Hsu et al. (2007)	Yes	Yes	Yes	UK	Yes	No
6	Juon et al. (2006)	Yes	Yes	Yes	Yes	No	No
7	Juon et al. (2014)	Yes	Yes	Yes	Yes	UK	No
8	Kagawa-Singer et al. (2009)	Yes	Yes	Yes	Yes	Yes	No
9	Kelly et al. (1996)	Yes	UK	Yes	No	Yes	No
10	Kim & Sarna (2004)	Yes	Yes	Yes	Yes	Yes	No
11	Kim et al. (2010)	Yes	Yes	Yes	Yes	Yes	No
12	Koh et al. (2015)	Yes	Yes	UK	UK	No	No
13	Lau et al. (2013)	No	Yes	No	No	No	No
14	Lee et al. (2014)	Yes	Yes	UK	Yes	Yes	No
15	Lee et al. (2016)	Yes	Yes	Yes	Yes	Yes	Yes
16	Lee-Lin et al. (2015)	Yes	Yes	Yes	Yes	Yes	No
17	Love & Tanjasiri (2012)	Yes	Yes	Yes	Yes	No	No
18	Ma et al. (2009)	Yes	Yes	Yes	UK	Yes	No
19	Ma et al. (2015)	Yes	Yes	Yes	Yes	No	No
20	Ma et al. (2017)	Yes	Yes	Yes	Yes	Yes	No
21	Maxwell et al. (2003)	Yes	Yes	Yes	Yes	Yes	No
22	Maxwell et al. (2008)	Yes	Yes	Yes	Yes	Yes	No
23	Maxwell et al. (2010a) (AJPH)	Yes	Yes	Yes	Yes	No	No
24	Maxwell et al. (2010b) (CCC)	Yes	Yes	Yes	Yes	No	No
25	McPhee et al. (1996)	Yes	Yes	Yes	Yes	Yes	No
26	Moskowitz et al. (2007)	Yes	Yes	Yes	Yes	No	No
27	Nguyen & Belgrave (2014)	Yes	Yes	Yes	Yes	No	No
28	Nguyen et al. (2001)	Yes	Yes	Yes	Yes	No	No
29	Nguyen et al. (2010)	Yes	Yes	Yes	Yes	No	No
30	Nguyen et al. (2015)	Yes	Yes	Yes	Yes	No	No
31	Nguyen et al. (2017)	Yes	Yes	Yes	Yes	No	No
32	Sadler et al. (2012)	UK	Yes	No	No	No	No
33	Taylor et al. (2002)	Yes	Yes	Yes	Yes	No	No
34	Taylor et al. (2009)	Yes	Yes	Yes	Yes	No	No
35	Taylor et al. (2010)	Yes	Yes	Yes	Yes	No	No
36	Taylor et al. (2013)	Yes	Yes	Yes	Yes	No	No
37	Tong et al. (2017)	Yes	Yes	Yes	Yes	No	No
38	Tu et al. (2006)	Yes	Yes	Yes	Yes	UK	No
39	Wang et al. (2010)	Yes	Yes	Yes	Yes	Yes	No

No.	Author, year	Linguistic	Evidential	Constituent-involving	Peripheral	Socio-cultural	Cultural tailoring
40	Wang et al. (2012)	Yes	Yes	Yes	Yes	Yes	No
41	Wu & Lin (2015)	Yes	Yes	Yes	Yes	Yes	Yes
42	Wu et al. (2010)	Yes	Yes	Yes	UK	Yes	No
43	Wu et al. (2014)	Yes	Yes	Yes	UK	Yes	No
44	Yi & Luong (2005)	Yes	Yes	Yes	UK	No	No

Note. UK denotes “unknown” due to insufficient information provided in the article.

Table 3**Revised Cultural Appropriateness Framework for Health Communication: Components and Definitions**

Strategies	Definitions
Cultural identity	Designing the intervention on the basis of the population's dimension and level of acculturation pertinent to the health behavior. This is the anchor of the intervention that can drive the rest of the intervention.
Linguistic	Using preferred or primary language of the population in the intervention and its messages; giving choice for language of intervention.
Perceptual features	Designing the audio, visual, and other sensory structures and components of the message to appeal to the cultural identity of the population.
Content	Content strategies has two dimensions. One is data-based and the other is value-based. The former includes epidemiological data pertinent to the population. The latter identifies and addresses the cultural beliefs or values that promote or prohibit the health behavior in message content or intervention design.
Data-based	
Value-based	
Constituent-involving	Using quantitative and qualitative methods to obtain and incorporate culture-relevant data, input, and feedback in the intervention. Constituent involving strategies can take place at any phase of intervention including problem and solution definition, design, implementation, and evaluation.
Socioeconomic context-adaptive	Ascertaining and addressing associated societal and economic facilitators of or hindrances to the health behavior.