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HBV-Related Health Behaviors in a Socio-Cultural Context: Perspectives from Khmers and Koreans

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Abstract

Purpose—To explore factors influencing health and health care within the sociocultural context of Cambodian Americans (CAs or Khmers) and Korean Americans (KA) and to examine intergroup similarities and differences between CAs and KAs, focusing on hepatitis B virus (HBV) and liver cancer prevention behaviors.

Methods—The study used a qualitative design guided by the revised Network Episode Model (NEM) and informed by ethnographic analysis. Focus group interviews with key informants among CA community health leaders (CHLs, n=14) and individual interviews with key informants of KA CHLs (n=9) were audiotaped and transcribed.

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Results—Three categories that influenced HBV and liver cancer prevention emerged from both CAs and KAs: the socio-cultural, individual, and behavioral. Four additional sub-categories (sub-themes) of sociocultural were identified as socio-history, socio-medicine, socio-linguistic, and socio-health resources. Both CAs and KAs, however, have low levels of knowledge and significant misunderstandings about HBV infection.

Conclusions—The study identifies and compares the social-cultural determinant for HBV and liver cancer and highlights the factors of education, intercultural communication, and interactions within socio-cultural contexts of CA and KA subgroups. In general, conceptual overlaps are apparent between Khmers (from now on, the terms, CA and Khmer, will be used interchangeably) and Koreans except for the sub-theme of socio-history. However, differences in concept-specific attributes point to the need to account for differing conceptualizations and implications of specific ethnic groups' sociocultural contexts, and to design contextually-relevant outreach and educational interventions for targeted AAPI subgroups.

Introduction

Despite a decrease in acute Hepatitis B virus (HBV) infections, the prevalence of chronic HBV infection remains high in the U.S.: an estimated 1.4 to 2 million people currently have chronic HBV (Centers for Disease Control and Prevention [CDC], 2008; Cohen et al., 2008; Institute of Medicine [IOM], 2010). Of those, 47% to 70% were born in other countries and approximately 50% are Asian American Pacific Islanders (AAPIs), though they comprise less than 5% of the U.S. population (Census Bureau, 2010; Pew Research Center [PRC], 2013).

The continued disparities of HBV infection among AAPIs are evident as both old and new references have shown the consistently high incidence of HBV infection among AAPIs despite implementation of universal vaccination programs for children since 1984 (CDC, 1995; Cohen et al., 2008; Kowdley, Wang, Welch, Roberts, & Brosgart, 2012). Kowdley and colleagues (2012) provided evidence of HBV infection based on systemic review of reports of HBsAg rates from 1,373 articles which showed that nearly 3.5% or 1.32 million foreign-born residents in the U.S. were living with HBV infection in 2009, a rate more than 33-times higher than the prevalence of 0.11% of non-Hispanic whites (Ioannou, 2011) and with disparities that far exceed those of any of the 10 greatest health disparities based on the Healthy People 2010 (Keppel, 2007).

HBV infection can result in cirrhosis, liver cancer, and death (CDC, 2008). The incidence of liver cancer is disproportionately highest among AAPIs, with almost 4 to 12 times the incidence rates for non-Hispanic Whites (American Cancer Society [ACS], 2010; CDC, 2008; IOM, 2010; Kowdley et al., 2012). Given this high rate of HBV infection and liver cancer, mortality among AAPIs due to liver cancer will increase substantially in the near future without intervention.

Despite remarkable progress in recognizing the social, behavioral, and genetic components of health and disease (IOM, 2006), little research has been devoted to advancing understanding of behaviors related to prevention of HBV and liver cancer from the standpoint of assessing the associations and interactions between individuals and

sociocultural factors among AAPIs with HBV infection or who are at risk for HBV infection. Understanding key factors of HBV infection prevention in a culturally relevant social context is essential to inform the development and implementation of interventions to improve HBV prevention and liver cancer prevention behavior (Lee, Fawcett, Yang, & Hann, 2012).

U.S. census data show wide diversity among AAPIs: they are among both the most highly and poorly educated and both the highest and lowest income wage earners. Although the median AAPI income is higher than the national median, the poverty rates of some Southeast Asian groups, including Laotians (35%), Cambodians (43%), and Hmong (65%), are far above the national poverty rate of 13% (PRC, 2013).

Some data suggest that there are disparities in health and health-related behaviors among AAPI subgroups, such as earlier cohorts of immigrants from East Asia and their descendants, including Japanese Americans, Chinese Americans, and Korean Americans, compared with more recently settled Southeast Asians who came to the U.S. as refugees following traumatic experiences of war and forced migration (Asian American Legal Center [AALC], 2011; PRC, 2013). Thus, disease-specific as well as ethnic-specific studies are necessary to capture the sociocultural experiences of individual ethnic groups and to explore the similarities and differences in factors that influence the health and health-related behaviors of AAPI subgroups. Therefore, the purpose of this article is to explore factors influencing health and health behavior within the sociocultural context of CAs and KAs, and to examine intergroup similarities and differences, focusing on HBV and liver cancer prevention behaviors.

Conceptual Framework

The revised Network Episode Model (NEM) was used to guide these studies. The NEM explains how individuals come to recognize and respond to health problems and use healthcare services (Pescosolido, 1992). The revised NEM conceptualizes that health care decisions are made within social context of interactive social process that is influenced by the factors of sociocultural and individual level factors rather than by a deterministic response (Lee, et al., 2012).

Literature Review

Our interest in the ethnic specific social contexts of two AAPI subgroups—CAs and KAs—was catalyzed due to the high prevalence of HBV infection and liver cancer and the diversity of the socio-demographic characteristics of these two groups. In keeping with the NEM, our study began with a review of literature about CA and KA sociocultural contexts.

Sociocultural Contexts of Cambodian Americans

The 2010 US census counted 241,520 CAs, more than 90% of whom came to the U.S. during the past three decades (Table 1). CAs began arriving in the U.S. as refugees after surviving the brutal rule of the Khmer Rouge in Cambodia from 1975 to 1979 when 1.7 million people—close to 30% of the country's population—died from starvation, execution,

torture, forced labor, and illness. Many Cambodians lived in refugee camps in Thailand and other countries for several years before resettling in the U.S. Many suffered starvation, witnessed killings, and experienced torture and sexual assault during the Khmer Rouge era; those who escaped to refugee campus often faced further starvation, diseases, and violence (Berthold, 2000; Chan, 2003; Wright, 2010). These experiences led to a high rate of post-traumatic stress disorder and depression that continue to influence current CA health and health behaviors (Marshall, Schell, Elliott, Berthold, & Chun, 2005).

The 2000 U.S. Census indicated that CAs had the highest poverty rate of all AAPIs and the highest proportion of those who were linguistically isolated, with over 90% speaking Khmer at home (Tang, 2008). A majority of CAs lives in three locales—Long Beach, California; Lowell and Lynn, Massachusetts; and Seattle, Washington. CAs are relatively more socioeconomically and socioculturally homogeneous than other AAPIs (Chan, 2003; PRC, 2013; Marshall et al., 2005).

A report about the Racial and Ethnic Approaches to Community Health (REACH) 2010 program revealed that CAs were three times more likely than other Asians not to visit a doctor in the past year due to financial reasons (CDC, 2004). Compared with other AAPIs, CAs experience greater poverty, have more limited education, and experience more health disparities in HBV and liver cancer-related risk factors and mental health (PRC, 2013).

Sociocultural Contexts of Korean Americans

The history and socio-demographic characteristics of Korean immigration frames the sociocultural context of KAs, the majority of whom were not born in the U.S (Min, 2011). This profile differs from Japanese and Chinese Americans who have longer histories of immigration, settlement, and multi-generational acculturation.

According to the 2010 Census, KAs increased from 11,000 in 1960 to 1,076,872 in 2000 and to over 1.4 million in 2010, an increase of 78% since 1990. Immigration to the U.S. peaked in 1987, but has steadily fallen as improvements in economics, politics, and the social system in South Korea have made emigration less attractive. Nonetheless, many Koreans continue to immigrate to the U.S. (AALC, 2011; Min, 2011; PRC, 2013). Roughly 10% of AAPIS are KAs.

There are two major paths for Korean immigration to the U.S.: to reunite with other family members already here or to offer professional and technical skills in demand in the U.S. The majority of Korean immigrants arrived after 1965 with the liberalization of the U.S. quota system (Min, 2011). Family sponsorship was a dominant reason initially, while education and business investments were primary reasons for later arrivals.

Although there are concentrations of KAs in California and on the East Coast, KAs are widely scattered throughout the U.S. (Min, 2011; PRC, 2013). The majority of KAs rated their English level as “minimum” and do not speak English at home regardless of length of residence in this country (AALC, 2011; Lee, H., Lee, O., Kim, Hontz, & Warner, 2007). KAs reported relatively high levels of education, but not comparable levels of professional jobs. Studies of KAs have revealed that 30% to 40% are self-employed (Lee et al., 2007;

Lee et al., 2012; Min, 2011) which explains their relatively low rate of health insurance between 42% and 51% (Brown, Ojeda, Wyn, & Levan, 2000; Lee et al., 2007).

Methods

Two community-based participatory studies were conducted: 1) a study with KAs was conducted in 2010 with findings already published elsewhere (Lee, Hann, Yang, & Fawcett, 2011) and 2) the method used in the study with KAs was replicated with CAs in 2012. Both studies utilized a descriptive qualitative approach informed by ethnography and guided by the revised NEM. Approvals were obtained from the Institutional Review Boards of the university and an academic medical center.

An individual interview method with KAs and focus groups with CAs was employed. In consultation with the third author and CHLs, it was agreed to use focus groups because CAs are not familiar with the medical terminology of HBV infection and might be reluctant to reveal their lack of knowledge or to share sensitive issues with non-Khmers in individual interviews. Also, in order to include key informants (KIs) who are not fluent English speakers, the third and fourth authors and two bilingual Khmer research assistants attended the focus groups to provide simultaneous translation and facilitate the process of engaging participants in discussion.

Sample

A community-based purposive sampling method was used in both studies. Participants were identified via community-based organizations, snow-ball sampling, and the authors' social networks. KIs from both studies were health professionals or CHLs who were recognized by community members as reliable sources of advice, help, and referrals. CA and KA KIs were selected using maximum variation sampling for age, gender, education, type of CHLs, and length of stay in the U.S. Expert knowledge was sought from KIs during focus groups about sociocultural influences on health beliefs, health seeking behaviors, and perceived health problems in their community, as well as health care seeking barriers and facilitators.

Data Collection

For KAs, nine individual interviews of 20-60 minutes were conducted in Korean by the first author, who is bilingual in Korean and English. For CAs, two initial and one follow-up focus groups were conducted in English in a community health center by the first author with groups of six to eight participants. These focus groups took approximately two hours.

Each individual interview and each focus group began with a general question about health and health behavior in the community, followed by specific questions and additional structural and comparison questions about the participants' own, their family's, or their community's HBV and liver cancer experience, knowledge and health beliefs about HBV and liver cancer, and use of the health care system. The interviews were audiotaped, and field notes, including informal communications, reflections, and ideas of the interviewers, were written during and following each interview.

Data Analysis

The individual audiotaped interviews with KAs were transcribed in Korean, whereas the focus group interviews with CAs were conducted in English by the first author and the audiotaped focus group interviews were transcribed by bilingual (English/Khmer) research assistants. All transcripts were edited for accuracy. Using content analysis, sections of the transcripts were identified as related to the topic of interest and coded with descriptive titles. Codes from KAs were translated into English. The two authors, bilingual in Korean and English (HL, JY) for KAs and the four authors, bilinguals in Asian languages and English for CAs (HL, PK, ST, PC) independently reviewed each transcript and assigned initial codes (Table 2). The authors then compared their codes, developed categories, and integrated intra-group themes. Intragroup coding analyses were then followed by intergroup comparative analysis between CAs and KAs.

Validity of findings was ensured using several steps. After multiple readings, the transcripts were coded using recurring words or phrases reflecting meanings; codes assigned by different authors were compared for interpreter reliability. Member-checking with four KA CHL participants was used to check the accuracy of transcript contents and provide feedback on the preliminary findings. For CAs, a follow-up focus group comprised of six KIs was held to clarify discrepancies between KIs' views and the investigators' interpretations after coding.

Results

Demographic characteristics of the CHL key informants are shown in Table 3. The majority were first-generation Korean or Khmer immigrants, spoke English fluently, and had completed at least a high school education. Two physicians and registered nurses participated in each subgroup; [there are only two Khmer physicians practicing in New England]. There were more women in both groups but CAs were younger and less formally educated than KAs. Three categories that influenced HBV and liver cancer prevention emerged from both CAs and KAs: socio-cultural, individual, and behavioral. Four additional subcategories (sub-themes) of sociocultural were identified as socio-history, socio-medicine, socio-linguistic, and socio-health resources. Conceptual similarities are evident between Khmers and Koreans, except for socio-history, and differences in concept-specific attributes are also found.

Sociocultural Factors

Four aspects of sociocultural factors were identified: socio-history, socio-medicine, socio-linguistics, and socio-health resources.

Socio-Historical Aspect—The aspect of socio-history was found primarily in data provided by CAs; KA participants said little about past immigration history and its relationship to health or HBV and liver cancer. The socio-history of CAs is marked by profoundly traumatic experiences both in Cambodia under the Khmer Rouge and later in refugee camps. Although questions about past history were not part of the focus group protocols, CA participants associated their experiences and social contexts under the Khmer

Rouge and in refugee camps with their current health and health behavior, in general, and HBV infection and vaccination practice, in particular. Various informants noted the effects of such experiences:

“During Khmer Rouge, the way we lived, no water and not food... no water to drink and wash...” “The intelligence killed all the educated influential and moved everyone out of city. So most survivors are from the agricultural Khmer; that explains some illiteracy of Khmer.” “When we came to the U.S, we brought with us a lot of trauma... they use alcohol as a way to calm their pain, sleep better, so we see people use it more.”

CA participants also referred to refugee camp medicine in response to questions about HBV vaccination. One participant explained: “We are immune to it already during the war, unless how we could survive... most us got shots [vaccination] in the camps. Before coming to the U.S, they all examined us. They gave all kinds of shots, all kinds of medications.”

CAs also shared positive experiences from the refugee camps, citing their bonding relationships with other Khmers who helped them to survive the ordeals. These relationships replaced or added to existing family networks disrupted by genocide and forced migration.

Socio-Medical Aspect—Despite their increased risk for chronic HBV infection and liver cancer, many AAPIs remain uninformed, untested, and unprotected (IOM, 2010; Lee et al., 2013). Likewise, most KA and CA participants did not consider HBV a serious disease. When asked about health problems in their communities, both groups identified diabetes, hypercholesterolemia, and hypertension, but not HBV or liver cancer. For example, one CA participant who worked as a cultural navigator stated, “Back in the middle 80s, we do not see that much diabetics, no chronic disease. Now more people, if you are in a group of 100 people asking raised a hand if they have diabetics, high cholesterol or blood pressure, say 80 or so people.”

Most CA participants stated that community members did not have much concern or knowledge about hepatitis, but knew about HIV because they had heard about it here and in refugee camps. One CA participant explained, “There is no community program about hepatitis B, though we have several programs about cholesterol, hypertension, and blood sugar. Strangely, when someone dies, people found out that they died from something related to liver.” Similarly, a KA who participated in a church-based, free HBV blood screening project with the first author stated, “we offered a free blood screening for HBV infection, but some of them said, ‘I do not need it because I had blood test and doctor said I am normal.’” This person continued, “I think American doctors do not include HBV blood tests in routine check-ups when they see Asian patients, I have not seen any doctors who do. But doctor always checks cholesterol, blood pressure and blood sugar. That is why Korean thinks these things are important.”

The data suggest that CAs and KAs recognized diabetes and hypertension as serious health problems. They believed that higher numbers for cholesterol, blood sugar, and blood pressure reflected symptoms in organs they could not see but that should be managed.

However, neither CA nor KA participants indicated that HBV was a serious community health problem.

Socio-Linguistic Aspect—There are no Khmer and Korean words for most Western medical terms based on the anatomy of different organs in the body. However, the findings suggest that KAs have adopted medical terms in English or phonetic Korean for English medical terms more so than CAs. Furthermore, most participants knew that HBV is a medical term and that the virus is found in blood, but some were not able to differentiate between different types of hepatitis. Both CA and KA participants expressed difficulty in understanding medical terminology and the meaning of medical diagnoses that require Western medical knowledge. One CA KI, for example, described the challenge of communicating with CA patients: “This is a western terminology. In Khmer, we do not have words for hepatitis or AIDS. But not just language, they do not know hepatitis has A, B, and C, but just say, ‘I have liver problem.’ And they take it as liver disease as a whole, no difference between liver disease and hepatitis B. I drew pictures and tried to explain it. You have to bring it to their level.”

Socio-Resource Aspect—Both CAs and KAs identified specific barriers to health care, including difficulties in making appointments with doctors, language, health care providers’ attitudes, and the health care system. CAs also noted transportation and co-payment, while KAs identified lack of health insurance as major concerns. For example, KAs indicated that they were more likely to utilize private, ethnic bilingual health care professionals, though payment was a major concern because most worked within their own ethnic small businesses and could not afford health insurance. One KA reported, “After using the emergency room in U.S., I got so many bills and it was very expensive. I decided to use the hospital as little as possible. My son broke a leg during basketball play. I applied ice pack on the area but the swelling did not go away, so I took him to an acupuncturist. But it was not treated. I became afraid, so I took him to a chiropractor and he took an x-ray. But he still had a swollen leg with pain. Finally, I took him to the hospital and ended up paying more.”

In contrast, CA informants in urban settings identified community health resources, but specifically pointed to the scarcity of CA ethnic health professionals. For example, one CA explained: “This is the second largest Cambodian community in America, only second to Long Beach, but how many doctors do we have?” Another CA participant who was older added: “It is progressing, I mean 20, 15 or even 10 years ago, there were no Khmer doctors.” CAs’ concerns about lack of bilingual community resources, including Khmer speaking health professionals may reflect their Socio-Historical differences with KAs in terms of length of time in the U.S. as well as critical differences in their conditions of migration and in the underlying resource structures and socioeconomic status of their respective communities.

Individual Factors

For both CAs and KAs, good health reflects a balance of one's whole being, and they communicate their balanced or unbalanced status through stories and examples rather than using formal medical diagnoses. One CA stated: “For many Cambodians, it is just general

whole body rather than a specific organ of liver... but when they moved here, they are being told all these things that are outside of their world view, and it is difficult for them to understand.” Another CA added, “Back in Cambodia, we did not have a good health care, in terms of equipment and everything, so when people have cancer, they usually die, so that is why they do not want to know it... Screening and knowing ahead of time is like making them become miserable.”

The findings suggest that both CAs and KAs lack knowledge and understanding about the transmission of HBV and perceive the disease as a “contagious” or “contaminant.” Even some CHLs believed that HBV infection was transmitted by sharing utensils, coughing, and using public toilets. KAs tend to emphasize sanguinity and family history, whereas CAs blame the unhealthy environment during the Khmer Rouge era and in refugee camps for causing infectious diseases such as hepatitis as one CA woman recalled, “during the war when there was just blood and people dying everywhere. It is not clean, all dirty water, no clean water to wash.”

Health-related Behavioral Factors—When asked, “When people are sick, what do they do,” KAs and CAs each indicated that they relied on both Western medicine and traditional or home remedies to relieve symptoms or treat disease. One CA female participant said, “They would try home remedies, herbal medicine, wine, fermented whatever... they try that first. When those fail, they seek the monks or traditional healers. They also do coining and cupping. If all these are not working, then they come to see the doctor. Or they would wait longer until the symptoms get worse.”

Typically, both CAs and KAs made lay diagnoses of illness or unbalanced health based on symptoms, and only sought health care when they were acutely sick. Without tangible signs or symptoms of health problems, CAs and KAs were less likely to seek professional help. A CA noted, “If they have stomach ache or high cholesterol, or high sugars, then they go.” Similarly, a KA stated, “Unless having serious symptoms or boiling fever, we think, I am OK, I am healthy.”

Both CAs and KAs did not know the recommended guidelines for HBV screening, vaccination, and liver cancer screening. Both identified absence of symptoms of HBV infection, lack of education, lack of preventive programs, and lack of access as major problems for vaccination or HBV and liver cancer screening behavior. In addition, CAs pointed to the fact that the principle of *Karma* is central to the health beliefs of most adult Khmers in the U.S. and that *Karma* is an additional important factor that deters CAs from being vaccinated or screened.

Both KAs and CAs identified and pursued multiple stops within family and community networks before seeking Western medicine and Western health services. Pre-shopping before going to the hospital and self-management of symptoms and illness occur in both groups, though the pathways taken are distinct. CA participants discussed their use of Khmer healing modalities, including coining (*Kos Kyal*), pinching (*Chap Kyal*), and cupping (*Chubb Kyal*), whereas KA participants described their use of alternative medicine before seeking Western medicine.

Discussion

To our knowledge, this study is one of the first to examine sociocultural determinants for HBV and liver cancer prevention within the AAPI subgroups of CAs and KAs. Findings from this study suggest the importance of interactions by individuals in their social contexts, and also reveal dynamic interactions between AAPI immigrant individuals and the sociocultural contexts of both their pasts and their current daily life. Three main categories: *Sociocultural*, *Individual*, and *Health Behavior* emerged from our data. Three additional subcategories (sub-themes) of socio-cultural —socio-medicine, socio-linguistics, and socio-health resources—were found to be important for both CAs and KAs, and a fourth sub-theme of socio-history emerged only for CAs.

At a high level of abstraction, both socio-cultural and individual factors in the two groups were found to be associated with HBV prevention behavior. With closer analysis, however, specific concrete indicators or subthemes were identified, but were not identical for the two groups. Hence, we recognize that abstract sociocultural generalizations cannot be assumed to apply categorically for all AAPI populations. Such generalizations are misleading, inaccurate, and ill-advised when considering the experiences and needs of specific AAPI ethnic subgroups, as our study shows.

HBV is one of the most common, life-threatening diseases for AAPIs, even though the prevalence of HBV infection is very low in the general U.S. population (CDC, 2008; Cohen, et al., 2007; Ioannou, 2011; Kowdley et al., 2012). Since it is not a prioritized disease by the U.S. health care system, knowledge about HBV infection within the AAPI community might be unnecessarily low for community members, health care providers and policy-makers. If national priority criteria regarding the seriousness of disease burden are based simply on the dominant population's profile, then not only the allocation of public funds, but also the awareness and mobilization of resources within the KA and CA communities themselves may be misguided. Indeed, our key informants' inaccurate perceptions suggest that this is the case.

The findings additionally suggest that health communication problems between patients and health care providers are not only due to language barriers but also affected by different cultures of language. Western medical terminology and physician practice are socially constructed norms that are not typically understood or engaged by either CAs or KAs. Intercultural communication barriers between Asian American patients and health care providers are well-documented and commonly reported, particularly among both old and new generations of Asian American refugees and immigrants (Lee et al., 2012; Stewart & Bennett, 1991, Wright, 2010). The findings point to the fact that problems of intercultural health communication within the health care system can lead to unequal access to health information as well as inadequate participation in health care decision making among AAPIs, particularly among refugee and immigrant generations. It is, therefore, important to explore the role that cultural communication plays in providing information to CAs and KAs on health related education topics, including risk behaviors, HBV vaccination and liver cancer preventions. Beyond language barriers, the issue of intercultural communication barriers is particularly salient in settings where patients and health care providers do not

share common cultural frameworks and beliefs, as is often the case for many immigrant patients in the U.S.

Moreover, it is important to recognize that the ethnic group differences found here in socio-history and related subthemes should be interpreted in the light of the circumstances and timing of their migrations to the U.S. (AALC, 2011; Min, 2011; Wright, 2010). In the 1980s and 1990s, CAs fled their native land following conditions of war and genocide (Chen, 2003; Wright, 2010). In contrast, KAs of the same period came overwhelmingly as immigrants or international students to join family members and to seek better educational and economic opportunities in the U.S. (KAC, 2011; Min, 2011). CA refugees have faced far greater challenges in terms of poverty, low educational attainment, and the after-effects of surviving the Khmer Rouge genocide. Census data from 2010 show that while more than 50% of KAs have a bachelor's degree—almost double the percentage of the general population—only 13.3% of CAs had completed a college education (Table 1). Such differences in socioeconomic status and educational attainment between AAPI subgroups may help to explain disparities in health care and health outcomes for them as well (Berthold, 2000; Brown et al., 2000; CDC, 2004; Kwong et al., 2010; Tang, 2008).

This study has shown that health behavior is influenced by multiple factors: individuals make decisions to seek health care and embody health practices based on interactions with their past socio-historical experiences and current social contexts as well as individual factors. Both CAs and KAs believe that illness happens when the balance of one's bodily elements becomes too cold or too hot. However, these cultural concepts of hot and cold are not based on thermal designations but rather, on symptomatic constructions concerning the balance of the whole mind, body, and energy flow. Hence, seeking a physician or a clinic is often not the first choice for health-seeking treatment, and disease prevention is not central to their health belief frame.

Conclusion

The study identifies and compares social-cultural determinants for HBV and liver cancer and highlights the factors of education, intercultural communication, and interactions within socio-cultural contexts of CA and KA subgroups. The revised NEM and CBPR approaches of this study enabled us to account for the diverse, distinct sociocultural contexts of CAs and KAs, and, thereby, to identify factors that are specific in shaping HBV and liver cancer prevention behavior within the social contexts of CAs and KAs. Conceptual overlaps are apparent between these two AAPI subgroups; differences in concept-specific attributes, however, point to the need to contextualize concepts within their specific sociocultural contexts. Differences between these two AAPI subgroups may reflect the consequences of historical patterns of immigration and socioeconomic factors at individual as well as group levels. CAs within clustered community contexts have access to significant cultural resources in their communities, but they face limitations in terms of poverty and access to transportation while also lacking health education and the capacity of a critical mass of CA bilingual and bicultural ethnic health professionals. These findings help to explain not only the sociocultural differences between KAs and CAs, but also within-group differences between early migrants who fled Cambodia through refugee campus and those who

voluntary moved to the U.S. in more recent years. Health care professionals should consider the need for targeted and individualized health education and health interventions with these findings in mind.

Finally, this study suggests that CAs and KAs have a low level of knowledge as well as significant misunderstandings specifically about HBV infection. These findings point to the critical need for targeted educational interventions with both AAPI subgroups. Furthermore, given that communication difficulties with health care providers and researchers involve not just language barriers but also sociocultural and socio-linguistic differences, targeted educational interventions are also needed for health care service providers, educators, and other relevant professionals who may interact with these populations.

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Table 1

Socio-Cultural Characteristics of Cambodian, Korean, and AAPIs, 1980-2010

Variables	Cambodians	Koreans	AAPIs	U.S. Total
Population				
1980	16,044	357,393	3,726,440	226,545,805
1990	149,047	797,304	7,226,986	248,709,873
2000	206,052	1,228,428	11,898,828	281,421,906
2010	264,080	1,456,076	17,242,278	309,349,689
Median age				
1980	22.4	25.9	28.4	30.0
1990	19.4	29.1	30.1	33
2000	23	32	31.1	35.3
2010	29.3	36.7	33.3	37.2
Education				
College completed				
1990	2.6%	37.1%	37.9%	20.3%
2000	9.2%	43.8%	42.7%	24.4%
2010	15.7%	52.9%	48.9%	28.2%
Income:				
Median household income				
1980	\$ 9,306	\$18,145	\$14,400	\$17,710
1990	\$18,837	\$30,184	\$41,251	\$30,056
2000	\$36,155	\$40,037	\$51,045	\$41,994
2010	\$48,585	\$50,316	\$66,201	\$50,046
Foreign Born				
1980	93.9%	81.9%	58.6%	6.2%
1990	79.1%	72.7%	63.1%	7.9%
2000	68.1%	77.4%	62.7%	11.1%
2010	59.4%	74.4%	59.3%	12.9%

Source: Barnes, J.S., & Bennett, C.E. (2002); Census Bureau (1993); Census Bureau (2010)

In 1990 census data, Asian or Pacific Islander group was included as a category. However, beginning in 2000 census, the Asian and Pacific Islander group was divided and created Pacific Islander group as a separate category.

Table 2

Comparison of Data Collection Process between CAs and KAs

Variables	CA Focus Groups	KA Individual Interview
Investigators' Ethnicity	All Asians but only one Khmer	All Koreans
Investigators' Language	English & Asians	Korean & English
Interviewees' Language	English and Khmer	Korean
Interviewer	Non-Khmer	Korean
Translation process	English interviews were transcribed.	Korean interviews were transcribed. Codes were translated into English

Table 3

Characteristics of CA and KA Participants (Community Health Leaders)

Variables	CA CHLs (n=14)	KA CHLS (n=9)
Female	9 (64%)	5 (56%)
Age		
<40	8 (57%)	0 (0%)
40-60	6 (43%)	5 (56%)
>60	0 (0%)	4 (44%)
Education		
High School in Cambodia or Korea	2 (14%)	0 (0%)
High School in U.S.	2 (14%)	0 (0%)
College in Cambodia or Korea	2 (14%)	3 (33%)
College & Professional Education in the U.S.	8 (57%)	6 (67%)
Age moved to the U.S. < 20 years old	9 (64%)	2 (22%)
Length of Stay in the U.S. > 20 years	13 (93%)	8 (78%)
Health Insurance	14 (100%)	6 (67%)