A cluster analytic examination of acculturation and health status among Asian Americans in the Washington DC metropolitan area, United States

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ABSTRACT

Previous studies reported mixed findings on the relationship between acculturation and health status among Asian Americans due to different types of acculturation measures used or different Asian subgroups involved in various studies. We aim to fill the gap by applying multiple measures of acculturation in a diverse sample of Asian subgroups.

A cross sectional study was conducted among Chinese, Korean and Vietnamese Americans in Washington D.C. Metropolitan Area to examine the association between health status and acculturation using multiple measures including the Suinn-Lew Asian Self-Identity Acculturation (SL-ASIA) scale, clusters based on responses to SL-ASIA, language preference, length of stay, age at arrival in the United States and self-identity. Three clusters (Asian (31%); Bicultural (47%); and American (22%)) were created by using a two-step hierarchical method and Bayesian Information Criterion values. Across all the measures, more acculturated individuals were significantly more likely to report good health than those who were less acculturated after adjusting for covariates. Specifically, those in the American cluster were 3.8 times (95% Confidence Interval (CI): 2.2, 6.6) more likely and those in the Bicultural cluster were 1.7 times more likely (95% CI: 1.1, 2.4) to report good health as compared to those in the Asian cluster. When the conventional standardized SL-ASIA summary score (range:−1.4 to 1.4) was used, a one point increase was associated with 2.2 times greater odds of reporting good health (95% CI: 1.5, 3.2). However, the interpretation may be challenging due to uncertainty surrounding the meaning of a one point increase in SL-ASIA summary score.

Among all the measures used, acculturation clusters better approximated the acculturation process and provided us with a more accurate test of the association in the population. Variables included in this measure were more relevant for our study sample and may have worked together to capture the multifaceted acculturation process.

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Introduction

Acculturation has been an interest of scholars in the social sciences for several decades and has been broadly defined as "those phenomena which result when groups of individuals having different cultures come into continuous first-hand contact, with subsequent changes in the original cultural patterns of either or both groups" (Redfield, Linton, & Herskovits, 1936). Acculturation

has been referred to as one of the most important individual difference constructs in understanding the experiences of racially and ethnically diverse populations (Zane & Mak, 2003). While the acculturation process occurs on both a societal and individual level (J.W. Berry, 2003), individual acculturation is typically the focus of the majority of social science research and refers to the cultural change of the individual as a result of continuous exposure to a second culture (Graves, 1967).

Perhaps the most frequently cited acculturation theory was proposed by John Berry (Berry, 1979) who asserted that it is possible to identify four possible acculturation strategies by assessing the degree to which an individual adheres to both her or his culture of origin and the second culture. The four acculturation

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strategies include integration, assimilation, separation, and marginalization. Integration is a strategy in which an individual maintains adherence to both their culture of origin and a second culture. Assimilation is the strategy in which an individual adheres to a second culture and no longer adheres to their culture of origin. Separation occurs when an individual maintains adherence to the culture of origin and does not adhere to a second culture. Marginalization results when an individual does not adhere to their culture of origin or the second culture.

There are a number of factors that impact the salience and difficulty of the acculturation process. One primary factor is the degree of cultural distance (i.e., difference) between one's culture of origin and the new culture across domains such as language, family structure, status of women and underrepresented populations, religion, legal systems and forms of government, work norms, competitiveness, individualism and collectivism, masculinity and femininity, and orientation to time (Berry, Poortinga, Segal, & Dasen, 2002; Chirkov, Lynch, & Niwa, 2005; Suanet & Van de Vijver, 2009; Zlobina, Basabe, Paez, & Furham, 2006). The greater the cultural distance, the greater the likelihood that the acculturation process will be salient and difficult; in fact, increased cultural distance is associated with poorer mental health outcomes, higher rates of homesickness, decreased involvement in the new culture, smoking, and higher levels of social adjustment difficulties (Chirkov et al., 2005; Hofstetter et al., 2004; Suanet & Van de Vijver, 2009; Ward & Kennedy, 1999; Zlobina et al., 2006). For example, Asian immigrants to the U.S., who have greater cultural distance (e.g., in terms of language, religion, hierarchical nature of relationships, and collectivism and individualism) between their culture of origin and the U.S. culture, have higher levels of adjustment difficulties as compared to European immigrants to the U.S., who have less cultural distance between cultures (Redmond & Bunyi, 1993; Yeh & Inose, 2003). Other factors that impact the acculturation process include lower levels of education, lower levels of language competence, and socioeconomic status (Williams & Berry, 1991).

The "healthy immigrant effect" – the paradox that recent immigrants who often face sociodemographic (i.e., language) disadvantages have better health profiles than their native-born counterparts – has been observed in various immigrant populations including Asians (Dey & Lucas, 2006; Frisbie, Cho, & Hummer, 2001; Gomez, Kelsey, Glaser, Lee, & Sidney, 2004; Markides & Eschbach, 2005). A higher level of acculturation has been found to be associated with a number of worse health outcomes. For example, those who were more acculturated were found to be more likely to be overweight or obese (Marmot & Syme, 1976; Roshania, Narayan, & Oza-Frank, 2008; Steffen, Smith, Larson, & Butler, 2006; Ziegler et al., 1993), to have breast cancer (Goel, McCarthy, Phillips, & Wee, 2004; John, Phipps, Davis, & Koo, 2005), higher blood pressure (John et al., 2005) and coronary heart disease (Lauderdale & Rathouz, 2000). As individuals spend longer time in the U.S. and acculturate to American culture, the advantage of the healthy immigrant effect seems to wane (Akresh, 2007; Frisbie et al., 2001; Hofstetter et al., 2004; Uretsky & Mathiesen, 2007). One plausible explanation for this reduction in health is the assimilation to American lifestyle such as changes in dietary pattern, smoking and physical activity that result from the acculturation process (Ayala, Baquero, & Klinger, 2008; Lee, Sobal, & Frongillo, 2000; Singh, Yu, Siahpush, & Kogan, 2008).

Self-reported health status is often measured by a single question "How would you rate your overall health" with four or five response categories, ranging from "poor" to "excellent". There are a few studies that have examined acculturation and self-reported health status among Asian Americans, but their results have been somewhat conflicting. Lee et al., used a two-culture matrix model

(e.g., four components of the model includes American structural, American cultural, Korean structural and Korean cultural, where structural components focus on individuals' social participation and social network and cultural components measure one's familiarity to a certain culture) to measure acculturation among Korean Americans and found that those who were less acculturated were more likely to report "poor or fair" health (Lee et al., 2000). Another study involving Chinese, Koreans, Vietnamese and Filipinos also suggested that Asian Americans who had limited English ability (as a measure of acculturation) had worse self-reported health (Kandula, Lauderdale, & Baker, 2007). However, when birth place was used as a measure of acculturation, Huh et al., found that foreign born Asians and U.S. born Asians rated their health similarly, but foreign born Asians had a better health profile when examined by specific disease outcomes such as heart disease and cancer (Huh, Prause, & Dooley, 2008). These studies varied in the measurement of acculturation and involved different Asian subgroups, which may explain the discrepancy among these findings.

To fill the gap identified in the previous research, our study will apply multiple measures of acculturation in a diverse sample of Asian subgroups including creating acculturation clusters tailored to our study sample. This may help clarify the inconsistent relationship between acculturation and health status found in previous studies. The current study applied seven acculturation measures including a shortened version of the Suinn-Lew Asian Self-Identity Acculturation (SL-ASIA) scale and other individual measures to further examine the association between acculturation and health status among a large Asian population recruited from Chinese, Korean and Vietnamese communities in Washington D.C. metropolitan area ($n = 863$). The SL-ASIA was specifically designed to assess acculturation in Asian immigrants including Chinese, Korean, and Vietnamese populations and has been tested on several health outcomes such as mental health service use and seeking professional psychological help with satisfactory internal consistency (Atkinson & Gim, 1989; Lese & Robbins, 1994; Suinn, Suinn, Rickard-Figueroa, Lew, & Vigil, 1987; Tata & Leong, 1994). A shortened version of the SL-ASIA scale was developed by Hoffstetter et al. and was found to have as good internal consistency as the original scale (Cronbach's $\alpha = 0.88–0.90$) (Ayers et al., 2009; Hofstetter et al., 2007, 2004). Although the shortened version of SL-ASIA has been considered as a good measure of acculturation among Asian Americans, interpreting the scores in a meaningful way has proven challenging because the measure provides a range of continuous scores (e.g., -1.37 to 1.41 in our study) without specifying the value that is attached to a one point increase in the score. Previously, Song et al. (2004) performed cluster analysis to create acculturation groups based on the responses to the SL-ASIA continuum. We used cluster analysis by the partitioning the data into meaningful subgroups. Using this method, we created three acculturation clusters: Asian, Bicultural, and American. We hypothesized that acculturated Asian Americans are more likely to report good health compared to less acculturated Asian Americans. We also hypothesized to observe similar trends across the different types of acculturation measures.

Data and methods

Participants

The current study used data from a randomized community trial on liver cancer prevention conducted in Chinese, Korean and Vietnamese communities in Washington D.C. metropolitan area from November 2009 to June 2010. Considering the fact that participants were hard-to-reach population, a non-probability sampling method was employed to recruit participants. They were