

Research Article

Acculturation and changes in body mass index, waist circumference, and waist–hip ratio among Filipino Americans with hypertension



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Abstract

The purpose of this research study was to examine whether level of acculturation is a predictor of body mass index, waist circumference, and waist–hip ratio in Filipino Americans with hypertension in the United States. The Filipino Americans ($N = 108$) were recruited from a primary care clinic in the United States. Two instruments were used to collect and operationalize the variables, specifically: (1) Socioeconomic/Demographic Questionnaire and (2) A Short Acculturation Scale for Filipino Americans. Descriptive statistics and partial least squares were used to calculate the results. The partial least square path model identified acculturation as a predictor of body mass index, waist circumference, and waist–hip ratio among Filipino Americans. The positive path coefficient ($\beta = 0.384$) was statistically significant ($t = 5.92, P < .001$). Health care providers need to stress the importance of the degree of acculturation when developing culturally appropriate lifestyle and health promotion interventions among immigrant patients with hypertension. *J Am Soc Hypertens* 2016;10(9):733–740. © 2016 American Society of Hypertension. All rights reserved.

Keywords: Bicultural; blood pressure; immigrants; weight gain.

Introduction

Acculturation is a multidimensional process describing the overall adaptation of groups and individuals to a new society, and it involves cultural, psychological, social, economic, and political change.^{1,2} Several studies have revealed that migration of Asian immigrants to Western countries is highly correlated with unhealthy weight gain and obesity risk,^{1–3} which can contribute substantially to the development of other chronic conditions such as type 2 diabetes, hyperlipidemia, and hypertension (HTN).^{2,4,5} Increases in body mass index (BMI) and the prevalence of being overweight are of special concern for Filipino

Americans because comorbidities tend to occur at a lower BMI in Asian Americans.⁶ One study revealed that regardless of BMI classification, Filipinos had the highest overweight prevalence (35%–47%, compared with 20%–38% in Chinese, $P < .05$) in relation to cardiovascular and diabetes risk.^{7,8} Moreover, recent studies investigating blood pressure (BP) indicated that Filipinos also have a higher prevalence of HTN among Asian groups.^{3,9} Studies have found that Filipino Americans in the United States (U.S.) have increased rates of high BP (a reading of 130/85 or current HTN medication use) compared to other Asian groups, Hispanics, and non-Hispanic whites.^{2,10} These high BP rates ranged from 59.9% to 79.2%.^{10–12}

Numerous studies have revealed that BMI, waist circumference (WC), waist–hip ratio (WHR) are likely to increase as an individual's degree of acculturation increases, which is indicated by individual income, gender, marital status, and age of arrival at the new host country. For example, one study reported significant associations between level of education, marital status, and age at immigration and increased BMI among women of Mexican origin.¹³ It has also been reported that immigrants living in poorer neighborhoods experience higher risks of cardiovascular disease

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and higher BMI.¹⁴ Furthermore, immigrants younger than 20 years at arrival in the U.S. may have a higher risk of becoming overweight/obese the longer they reside in the U.S. than individuals who arrive at later ages.¹⁵ All of the studies reviewed above, however, are influenced by the fact that BMI, WC, and WHR are dependent on sociodemographic variables such as income, gender, and age at immigration.^{13–16} An important question is does the level of acculturation alone represents an absolute risk factor for BMI, WC, and WHR in a specific target population?

In this context, little data are available for describing how BMI, WC, and WHR among Filipino Americans with HTN are affected by their acculturation. In addition, the burden of HTN among Filipino Americans in the U.S. merits research attention given the rapid expansion of the Filipino population in recent years. According to 2010 Census, approximately 3.4 million Filipinos currently reside in the U.S. and form the second largest Asian group in America.¹⁷ More research is also needed to support education of health care providers and health educators in understanding Filipino acculturation status and how it affects the overall health status of Filipinos in the U.S. This research will also assist in identifying trends in weight gain for Filipino Americans as they acculturate to the U.S. HTN can be prevented and self-managed more effectively with lifestyle changes during the acculturation process to promote optimal BMI, WC, and WHR. Proper diet and regular physical activity are part of healthy weight management.¹⁸ Considering these factors may help to guide the development of culturally appropriate interventions that are tailored to Filipino Americans with different acculturation levels.

The specific aim of this research study was to examine whether the level of acculturation is a predictor of BMI, WC, and WHR in Filipino Americans with HTN. The research question adopted to for this study was the following: Is the level of acculturation a predictor of BMI, WC, and WHR in Filipino Americans with HTN after controlling for age, gender, education, and income level?

Methodology

Approval was secured from the Institutional Review Board of the University of Nevada, Las Vegas, prior to data collection. A sample of Filipino American adults with HTN (N = 108) was recruited during appointments at a primary clinic. The primary clinic receives approximately 80 Filipino American patients per day. The inclusion criteria for the sample population were as follows: Filipino immigrants over the age of 21 years who could speak, read, and understand English and/or Tagalog and/or who are currently diagnosed with HTN. The exclusion criteria were as follows: (1) respondents who could not speak, read, or understand English and/or Tagalog; (2) respondents who were pregnant and/or had a medical condition that required following a prescribed therapeutic diet;

(3) Filipino immigrants with less than 1 year of residency in the U.S. who might not have had enough experience to identify dietary changes that have occurred since their immigration to the U.S.; and (4) respondents who were not diagnosed with HTN. Flyers containing specific information about this research study were posted in the clinic lobby and examination rooms. The principal investigator and his research team visited the clinic on various days of the week to recruit participants. The participants' biometric measurements were recorded at the clinic, and the participants were provided with US\$10 in cash as an incentive and as compensation for their time.

Two instruments were used to collect and operationalize the variables: (1) A Socioeconomic/Demographic Questionnaire and (2) A Short Acculturation Scale for Filipino Americans (ASASFA). The level of acculturation was measured by ASASFA.⁴ The ASASFA questionnaire is a validated cross-cultural measure that determines a Filipino American's level of acculturation. The ASASFA was adapted from A Short Acculturation Scale for Hispanics, which was developed by Marin et al. (1987). ASASFA is similar to the original A Short Acculturation Scale for Hispanics, which was comprised of 12 items. The scale is based on cultural awareness and ethnic loyalty and specifically measures three factors or dimensions on a five-point Likert-type scale, including (1) use and preference for a specific language in a number of settings and activities, (2) use of and preference for media language (TV and radio programs), and (3) ethnic preference in social relations.¹⁹ The response choices to the items ranged from 1 to 5 on a Likert-type scale. For the first eight items, which focused on language use and preference, the responses were as follows: 1 = only Philippine language(s), 2 = more Philippine language(s) than English, 3 = both equally, and 4 = more English than Philippine language(s), to 5 = only English. For items 9 through 12, which investigate ethnic preferences in social relations, the responses are as follows: 1 = all Filipinos, 2 = more Filipinos than Americans, 3 = about half and half, and 4 = more Americans than Filipinos and 5 = all Americans. Each item was scored according to the value assigned to the response. Therefore, the lowest possible total score was 12, and the highest possible total score was 60. The possible mean scores for the total scale and subscales ranged from 1 to 5 with higher mean scores indicating a higher level of acculturation toward American culture. The scale also permits a "bicultural" classification that indicates a person has adapted both Filipino and American preferences. The scale has been used in several studies involving Filipino immigrants.^{1,4,20,21}

The height and weight of each participant were measured according to the Center for Disease Control and Prevention Guidelines. The waist and the hip circumference of the participants were measured twice, and the means were used in the analyses. BMI was calculated. In addition, the

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