# Assessment of the Short Acculturation Scale for Hispanics (SASH) Among Low-Income, Immigrant Hispanics

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## Abstract

The present analysis sought to determine the usefulness and validity of the Short Acculturation Scale for Hispanics (SASH) in assessment of acculturation among Hispanics participating in a colorectal cancer screening study. Primary data was collected from 2008 to 2009 through surveys in East Harlem community-based sites and health clinics among Hispanics. Bivariate correlations and independent samples *t* tests assessed SASH correlation with acculturation proxies and relationships between proxies, SASH, and sociodemographics. SASH was highly correlated with commonly used acculturation proxies; inter-scale correlations and alpha scores were high. Sociodemographics associated with proxy variables were associated with SASH. In conclusion, SASH is useful and valid for assessing acculturation among Hispanics; however, a shortened version or acculturation proxy variables could also be utilized.

## Keywords

Acculturation; Hispanics; Scale

## Background

As of 2009, there are 38.5 million foreign-born residents (excluding Puerto Ricans) in the USA, making up 12.5% of the total USA population [1]. Hispanics (including Puerto Ricans) are the largest minority group in the USA, and around 40% of Hispanics (excluding Puerto Ricans) are foreign-born [2]. Culture and language are believed to "affect health care beliefs, choices, and treatment" [3], and differences in culture and language can result in varying health needs and/or disparities between groups. In order to serve the health needs specific to the foreign-born population, it is necessary to develop culturally appropriate health promotion programs.

While further evaluation of cultural competency in health services is needed, research has shown that its implementation has the potential to reduce health disparities among linguistic, ethnic, and cultural minorities [3]. In order to culturally target interventions, health professionals need to understand each population's culture and its relationship to health outcomes, beliefs, and behaviors [4]. The process by which foreign-born individuals adopt

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the attitudes, values, customs, beliefs, and behaviors of another culture is called *acculturation* [5].

In general, the trend across the literature shows that acculturation has a negative effect on health outcomes/ behaviors and a positive effect on self-reported health and health care usage [6]. Among Hispanics, acculturation has been associated with many health outcomes/ behaviors, including depression, sexual risk behavior, substance abuse, and chronic conditions [6]. For example, higher acculturation has been associated with low birthweight [6]. In terms of self-report, Hispanics with lower acculturation levels report lower levels of self-rated health than those with higher levels [7]. Arcia and colleagues (2001) report that consistent throughout the literature, low acculturation levels have been associated with below average levels of health service use. Given the association between acculturation and health behaviors/outcomes, a better understanding of Hispanic acculturation levels can serve to create more tailored health promotion programs and interventions. For example, as low acculturation levels have been associated with low health service use [7], programs tailored to low acculturated Hispanics could include encouragement to utilize health services and assistance in gaining access to medical care.

There is a need for more acculturation research, specifically among Hispanics [5]. Currently, there is no universally accepted definition of acculturation in the literature, nor are there agreed upon methods in which to measure acculturation. This can be attributed to the nebulous nature of acculturation itself, how it varies among groups and over time, as well as its cultural, linguistic, and behavioral manifestations. A lack of consensus on the elements of acculturation has not prevented researchers from trying to define and measure acculturation in a multitude of ways. Common measures of acculturation throughout the literature are proxy variables, or individual factors that have been deemed adequate substitutes for acculturation in lieu of a direct and apparent measure. Language used is the most common proxy employed by researchers [7]. Other popular measures include number of years residing in the USA, proportion of life lived in the USA, or generational status [7], as well as country of birth [5, 8].

The validity and value of using proxy variables for acculturation is much disputed in the literature. One common critique is the issue of content validity, namely, the extent to which the proxy variable is actually measuring acculturation [9]. For example, in describing length of time proxy variables, Cabassa (2003) questions whether acculturation can be measured simply from quantity of exposure to the mainstream culture [10]. However, there is evidence to prove that proxy variables for acculturation do predict health outcomes [8] and therefore could still have some assessment value.

Beyond proxy variables, several models have been developed to measure acculturation, most falling into one of two categories. The first views acculturation as a unidimensional or linear trait, with total assimilation of the new culture at one end of the spectrum, and total rejection of the new culture at the other [10]. Acculturation models that ascribe to this unidimensional viewpoint force measurements into a linear scale, with a small acceptance of the new culture necessitating a small step away from the native culture. The main critique of these unidimensional models is its failure to capture an individual's capability of accepting the

new culture, while retaining aspects of native culture [10]. While unidimensional models have limitations, they go beyond the use of proxy variables in assessing different aspects of the acculturation process such as language, media, food, social contacts, and social affiliation [5]. The second model views acculturation as a bidimensional trait, with assimilation of a new culture on one linear scale and retention of the old culture on a separate linear scale. The bidimensional model allows for simultaneous retention and assimilation. As noted by Cabassa and colleagues (2003), this viewpoint has been espoused by various researchers. Critiques of the bidimensional model include low intercorrelation between high scores on one scale and low scores on the other [11].

The study of acculturation is warranted for cancer outcomes and screening behaviors. Colorectal cancer (CRC) is the second leading cause of cancer death in the USA [12, 13] and there exist disparities in CRC screenings rates. Screening can detect CRC at earlier, more treatable stages and therefore reduce CRC incidence. Regrettably, Hispanics in the USA have lower CRC screening [14] and less screening awareness than do non-Hispanic whites [15]. In a study on barriers and facilitators to CRC screening among low-income Hispanics, age, having a primary care provider, and provider recommendation were found to be correlates of CRC screening [16]. In this study, researchers surveyed participant responses to cultural constructs including acculturation, using the Short Acculturation Scale for Hispanics (SASH) by Marin and colleagues (1987). SASH is commonly used and, as exhibited in previous studies, has high validity and reliability levels [17, 18]. It does not use sociodemographic variables as proxies for acculturation, but rather measures behavioral factors previously found to be identified with acculturation [17].

To strengthen the validity of any acculturation measure, comparisons need to be made between different assessments of acculturation. Acculturation data were gathered directly with the SASH, and indirectly through proxy variables in the present study, affording an opportunity to examine the correlation between these two areas of measurement. This paper will investigate the existence of correlations between the SASH acculturation model and proxies for acculturation to determine the extent to which SASH is useful and valid for assessing acculturation to a greater or lesser degree than acculturation proxy variables.

## Methods

Four-hundred self-identifying Hispanic men and women were administered a survey face-to-face in East Harlem, New York City community-based sites and health clinics for the larger, parent study. The parent study gathered information on patient, health care, and cultural factors in order to determine the barriers and facilitators of colorectal cancer screening among low-income Hispanics. The sub-sample used for the present analysis was 355 immigrant participants (89% non-USA born, including Puerto Rican). Complete methods of data collection are found in a separate paper [16]. The survey included the 12-item SASH, with subscales assessing participants' language use (e.g., language they speak, think: 5 items), media preference (e.g., language of T.V programs watched: 3 items), and ethnic social relations (e.g., ethnicity of close friends, visitor: 4 items). Participants rated their acculturation level (e.g., "In which language(s) do you usually read?") from "Only Spanish" (1) to "Only English" (5) [17]. The original analysis of the SASH yielded reliabilities (alpha

coefficients) of 0.92 (overall), 0.90 (language use), 0.86 (media preference), and 0.78 (ethnic and social relations) [17]. Other survey variables were acculturation proxy variables, including years lived in the USA, language preference (language preferred by the participant for survey), years of USA education, proportion of life lived in the USA, and age at immigration to the USA.

## Analysis

SPSS was used to analyze the continuous and categorical variables. Bivariate correlations were used to determine inter-scale correlation, as well as the scale's correlation with proxy variables. Independent samples $t$ tests assessed the significance of relationships between selected socio-demographics and SASH items compared with proxy variables. Age was dichotomized into two groups based on age of public insurance eligibility (50 to 64; 65 and older), and education was dichotomized based on a median split (0 to ninth grade; tenth grade and above).

## Results

### Sample

Selected sociodemographic variables for the study sample are shown in Table 1. The vast majority of the sample were female (72%), lived alone (72%), and preferred to be interviewed in Spanish (91%). The education levels were low, with 57% not having attended higher than ninth grade. Most participants were on public insurance (92%) and had a regular doctor or provider (91%).

### SASH vs. Proxy Variables

Commonly used proxy variables for acculturation include proportion of life in the USA, years of education in the USA, age at immigration, the number of years lived in the USA, and language preference. The correlations between these proxy variables and SASH (overall and its subscales) are found in Table 2 and were all significant ($p$ 0.05). The overall SASH and the subscales of language use and media preference were positively correlated with proportion of life in the USA, years of education in the USA, years lived in the USA, and language preference ($r>0.3$; $p=0.01$). The subscale of language use had stronger correlations with each proxy variable than either the overall SASH or the subscale of media preference, with the strongest correlation existing between the subscale of language use and language preference of the participants ($r=0.745$; $p=0.1$). The proxies of language preference and years of USA education were the most highly correlated with the SASH scale and its subscales. Age at immigration was negatively correlated with the overall SASH, plus its subscales, with the strongest correlation of $r=0.500$ for language use. The subscale of ethnic and social relations was correlated with all proxies; however, the strength of the correlations was weak ($r<0.3$; $p$ 0.05).

### Sociodemographics by SASH and Acculturation Proxies

$T$ tests were completed for the sociodemographic variables of age, gender, education level (highest level achieved), and insurance status against SASH and its subscales, as well as the

proxy variables (Table 3). Age was significantly associated with SASH ($p$=0.030), media preference ($p$=0.021), years in the USA ($p$=0.000), and years of USA education ($p$=0.039). The only acculturation variable that was significantly related to gender was media preference with men having higher acculturation scores in the media preference subscale ($p$=0.001; men, 6.73 (SD 3.54); women, 5.41 (SD 3.01)). All scale and proxy variables were significantly related to education.

### SASH vs. Subscales

For our sample of non-USA born, East Harlem Hispanics, the Cronbach's alpha reliabilities were 0.893 for the overall SASH scale, 0.891 for language use, 0.876 for media preference, and 0.708 for ethnic and social relations; these values are similar to those obtained by Marin and colleagues (1987). All inter-scale relationships were significant at the $p$=0.01 level and all correlations were positively correlated with $r$ values at or above 0.299. The majority were strongly correlated ($r$>0.05). The strongest correlation existed between the overall SASH and the language use subscale ($r$=0.881; $p$=0.01).

### SASH vs. CRC Screening

Participants were asked to report whether they had ever had a colonoscopy or FOBT. Of the participants, 53.3% reported having a colonscopy, 59.0% reported having a FOBT test, 73.5% reported having a FOBT and/or colonscopy, and 26.5% reported never having either test. There was no association between acculturation and CRC screening as measured by whether the participants reported ever having a FOBT and/or colonoscopy.

## Discussion

Acculturation levels have been shown to be associated with health behaviors and outcomes among Hispanics [7, 19], and SASH is one of many scales attempting to measure acculturation for this population. This paper examined the acculturation levels of urban, immigrant Hispanics gathered through the SASH scale developed by Marin and colleagues [17]. We analyzed the relationships between the scale and several common acculturation proxy variables to determine the extent of correlation. Among this sample, the SASH scale was highly correlated with variables commonly used as proxies for acculturation. The SASH inter-scale correlations and Cronbach's alpha reliability scores suggest unidimensionality throughout the scale. The extent of correlation found between an acculturation scale and individual proxy variables strengthens the validity of the SASH as it shows the scale's ability to capture social and historical characteristics of respondents. When looking at the sociodemographic variables and their relationship with both the SASH and the proxy variables, there was consistency among the significance of the relationships. In general, sociodemographic variables, which were associated with proxy variables, were associated with SASH; sociodemographics which were not associated with proxy variables were also not associated with the SASH.

When gathering data through the use of surveys, shorter surveys can potentially lower research costs, improve response rates, and improve data quality. If survey scales can be shortened, without diminishing their ability to gather complete variable information, they

could be used more frequently in research and therefore expand our knowledge base. A shortened version of the SASH scale using only four items has been accepted as an adequate substitute for the full SASH scale [20].

This analysis shows that there exists another possibility to shorten the SASH scale. The correlation between language use and the overall SASH scale ($r$=0.881; $p$=0.01), as well as its similarity in its associations between proxy variables with the overall SASH suggest that the subscale of language use could adequately substitute for the entire SASH scale. Furthermore, the relationship between the subscale of language use with the participant's language preference for the survey is high ($p$<0.01), possibly due to item overlap. Thus, if no acculturation scale could be used in a survey, identification of language preference would be a good representation of acculturation levels; having a proxy variable such as language preference is beneficial to health planners and practitioners [6].

Health researchers have not been consistent in the definition or measurement of acculturation, and the effect of acculturation among Hispanics is mixed according to health behavior and outcome [6]. However, Lara and colleagues (2005) suggest that the current information on acculturation's effect on health is enough in certain areas to move forward in using acculturation (whether through proxy variables or scales) to better tailor health promotion programs. Community public health professionals should include some measure of acculturation in their community assessments in order to better tailor their health programs (e.g., interventions to increase CRC screening) to fit the specific needs of their foreign-born population. In this study, there was no noted effect of acculturation on the health behavior (CRC screening). This may be due to the particular composition of our sample population (see Limitations). Therefore, further research is needed to determine the value of acculturation in predicting health care outcomes and behaviors, such as CRC screening.

## Limitations

There are several limitations intrinsic in this analysis. First, all of the respondents' data were self-report, although possibilities for response bias were limited by the linguistically and culturally matched interviewers. Secondly, all of our sample were urban adults (aged 50 years or older), most were women, and over 90% were covered by some form of health insurance and had a regular doctor or provider. These characteristics may be associated with a higher level of acculturation in this population than most immigrant Hispanics in the USA. Also, Puerto Ricans were included as immigrants in this sample, a group which may not be representative of the immigrant experience. Therefore, this sample may not generalize to all Hispanic groups or to Hispanics in different regions of the country, and the suggested use of the shorter scale (language use) may only be suitable for a similar population composition. A significant limitation of this analysis is its' lack of ability to compare the SASH scale with other acculturation scales, as a determination of the validity of acculturation scales would require simultaneous comparisons between scales. Despite these limitations, the study supports the use of SASH among Hispanics participating in a study of colorectal cancer screening and potentially in health promotion research more generally.

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**Table 1**

Sociodemographic characteristics of foreign-born sample

| Total *N*=355 | Number (%) |
|---|---|
| Gender | 100 (28) |
| Male | 255 (72) |
| Age | |
| 50–64 years | 194 (55) |
| 65+years | 161 (45) |
| Marital status | |
| Lives alone | 257 (72) |
| Lives with partner/married | 98 (28) |
| Income | |
| Less than $10,000 | 238 (69) |
| More than $10,000 | 105 (31) |
| Country of origin | |
| Puerto Rico | 232 (65) |
| Dominican Republic | 62 (18) |
| Cuba | 8 (2) |
| Central America | 29 (8) |
| South America | 24 (7) |
| Years in the USA | |
| 0–40 | 199 (56) |
| 41+ | 155 (44) |
| Proportion of life in the USA | |
| 0–0.50 | 121 (34) |
| >0.50 | 234 (66) |
| Age at immigration | |
| 0–18 | 108 (31) |
| 19+ | 246 (69) |
| Years of US education | |
| 0–9 years | 324 (91) |
| 10+ | 31 (9) |
| Highest education level achieved | |
| 0–9th grade | 202 (57) |
| 10th+ | 153 (43) |
| Language preference | |
| Spanish | 324 (91) |
| English | 31 (9) |
| Insurance status | |
| Public insurance | 304 (86) |
| Other/none/don't know | 51 (14) |
| Primary care provider | |

| Total *N*=355 | Number (%) |
|---|---|
| Yes | 325 (91) |
| No | 30 (9) |

**Table 2**

SASH *vs.* acculturation proxy variables

| Correlation values | Proportion of life in the USA | Years of USA education | Age at immigration | Years in the USA | Language preference |
|---|---|---|---|---|---|
| SASH overall | 0.472 [*] | 0.598 [*] | −0.495 [*] | 0.379 [*] | 0.627 [*] |
| Language use subscale | 0.489 [*] | 0.679 [*] | −0.500 [*] | 0.393 [*] | 0.745 [*] |
| Media preference subscale | 0.414 [*] | 0.444 [*] | −0.438 [*] | 0.332 [*] | 0.460 [*] |
| Ethnic & social relations subscale | 0.167 [*] | 0.225 [*] | −0.188 [*] | 0.135 [**] | 0.191 [*] |

[*]
*p*=0.01

[**]
*p*=0.05

**Table 3**

Sociodemographics by SASH and acculturation proxy variables

| Correlation values | SASH overall | Language use | Media preference | Ethnic and social relations | Age at immigration | Years in the USA | Proportion of life in the USA | Years of USA education | Language preference |
|---|---|---|---|---|---|---|---|---|---|
| Age | 0.03 | 0.174 | 0.021 | 0.11 | [a] | 0.000 | [a] | 0.039 | 0.049 |
| Gender | 0.234 | 0.559 | 0.001 | 0.056 | 0.264 | 0.392 | 0.256 | 0.127 | 0.253 |
| Education | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.005 | 0.000 | 0.000 | 0.000 |
| Insurance status | 0.903 | 0.442 | 0.868 | 0.562 | 0.096 | 0.000 | 0.010 | 0.429 | 0.355 |

[a] Variables were computed using the continuous age and years in the USA (not shown) variables