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Measuring Acculturation Among Central American Women with the Use of a Brief Language Scale

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Abstract

The purpose of this study was to test the reliability and validity of a brief language usage scale as a measure of acculturation in 197 Central American immigrant women. This study presents an analysis of cross-sectional survey data collected during face-to-face interviews conducted in Spanish as part of the program evaluation of the Infant Feeding for Hispanic Supplemental Nutrition Program for Women, Infants, and Children (WIC) Populations a Peer Education Model. The Short Acculturation Scale, a four-item language usage scale exploring the participants' language preferences, was used as a measure of acculturation. The participant's age, length of time in the United States, and perceived social support for breastfeeding were used as validation measures. Results demonstrated good internal reliability for the acculturation summary scale. Consistent with previous studies, significant correlations ($p < 0.01$) were found between acculturation and mother's age, perceived social support for breastfeeding, and mother's length of time in the United States. The reliability and validity data from this group of Central American immigrants support the continued use of this brief measure of acculturation in diverse Latino subpopulations when multidimensional measures are neither practical nor feasible.

Keywords

Hispanic; Latino; acculturation

INTRODUCTION

Acculturation is described as the degree to which immigrants from one culture adapt their attitudes and behavior to their perceptions of the norms of the host culture (1). Acculturation plays an important role in the modification of Hispanic values, norms, attitudes, and behaviors, thus becoming a fundamental part of the immigrant's migration induced adaptation to a new sociocultural environment. Despite widespread acknowledgement that

acculturation plays an important role in health behavior outcomes, researchers continue to struggle with how to measure the multidimensional concept of cultural identity (2, 3). The psychometrics of the Short Acculturation Scale (SAS), a four-item Spanish language usage scale, have previously been tested with Puerto Rican and Mexican American adolescents. Results from previous studies support the use of this four-item measure of acculturation as a simple, inexpensive measure that involves minimal respondent burden (4, 5). This study supports the use of the SAS as a measure of acculturation among Central American Latina women.

Research regarding the health behaviors of individuals of Hispanic descent in the United States must consider the general cultural heterogeneity of the population. Some Hispanic immigrants follow patterns of language, values, and behaviors close to their native culture, while others live a lifestyle close to that of the host culture. A large portion of Hispanic immigrants fall somewhere in between these two extremes. Measures of acculturation generally assess where these immigrants are in a psychosocial change process that involves adapting to a new culture (6). Researchers continue to challenge the assumption of mutual exclusivity in the acculturative change process and have suggested that biculturalism may be the stage of acculturation that is least detrimental to Hispanic immigrant health (7, 8). An individual's biculturalism represents a unique pattern of acculturation rather than a halfway point between identification with their native culture and their host culture (6). Measuring biculturalism has become increasingly important as researchers begin to understand acculturation as a complex and multidimensional change process rather than a linear progression from one culture to another. Some may argue that the unidimensional nature of the SAS scale can not measure the more complex process of biculturalism. However, when scores from the SAS are combined with other socioeconomic variables including age, education, length of time in the United States, and social support, a practical method for assessing acculturation emerges. Having an understanding of the target population's level of acculturation allows health care providers to design more meaningful and efficient services for the immigrants they are targeting (6).

BACKGROUND

Although research does not provide clear guidelines with which to understand the effects of acculturation on health behaviors, there is increasing evidence that certain health circumstances worsen as Latino families become more acculturated. Early studies in the area of mental health among Mexican Americans focused on the disadvantage of the immigrant population as a whole and served to link acculturation to protective health behaviors (9, 10).

Contrary to the initial studies which found improved protective behavior with increased acculturation, more recent studies have found that acculturated Mexican immigrants have a higher incidence of lifetime *DSM-III-R* psychiatric disorders than their less acculturated counterparts (11, 12). Research has also linked lower levels of acculturation, as measured by length of stay in the United States and/or language usage, to increased incidence of protective health behaviors such as breastfeeding and better immunization among Mexican Americans (13–18).

It has been two decades since Cuellar and his colleagues explored the development of a 20-item acculturation scale known as the Acculturation Rating Scale for Mexican Americans (ARSMA). The ARSMA questions were based on four dimensions: 1) language familiarity and usage; 2) ethnic identity and generation; 3) reading, writing, and general cultural heritage; and 4) ethnic interaction. Factor analysis of the ARSMA using the varimax rotation method yielded four distinct factors as expected. Of these four factors, the factor for language familiarity and usage accounted for the most variance (64.6%). Item loadings for the language factor were “What language do you prefer?” and “What language do you speak?” (19).

Marin and colleagues later developed a short 12-item acculturation scale exploring three factors: language use, media, and ethnic social relations. Of these three factors, language again appeared to be the most reliable factor with an alpha coefficient of 0.90 (20).

Recent studies have suggested a multidimensional approach for the measurement of cultural identity, which includes assessment of language, attitudes/values, behavior, and familiarity with American and Latino cultures (2). However, Norris *et al.* found that the psychometric properties of a brief four-item language subscale adapted from Marin and colleagues was comparable to other published acculturation scales (4, 17). Norris and colleagues found the shorter four-item language subscale to be reliable, with a Cronbach’s coefficient alpha of 0.80 (4).

Despite the controversy regarding the most accurate and practical method for measuring acculturation among Latino immigrants, acculturation scales that incorporate language preference as a dominant factor continue to provide evidence of reliability and validity in heterogeneous subpopulations (20–24). Research conducted at Los Angeles prenatal clinics ($n = 911$) examined the association between acculturation of first generation Mexican immigrants ($n = 545$) and Mexican American women ($n = 366$) and factors in low birthweight and preterm delivery. Using a 10-item version of the Cuellar (19) acculturation scale, this study found that more acculturated Mexican American mothers reported more prenatal stress, less support from their baby’s fathers, more consumption of alcohol and drugs, and less positive attitudes toward their pregnancies than do the less acculturated Mexican immigrant mothers (21).

Lizarraga and colleagues studied 64 predominately Hispanic ($n = 43$), primiparous adolescent females and found that the Hispanic mothers who primarily spoke Spanish were the most likely to intend to breastfeed. The authors concluded that the use of Spanish language may indicate a close relationship with the Hispanic culture. Although data indicated that the Hispanic mothers who spoke English were also more likely to intend to breastfeed than the non-Hispanic, English speaking mothers, the researchers suggested that degrees of acculturation might exist such that the further the adolescent mother moves from the Latino culture, the less likely she might be to choose breastfeeding (22).

Analyses using structural equation models serve to reinforce the importance of language usage as a measure of acculturation. Cobas and his colleagues found that when they used the Cuellar (19) acculturation scale to reanalyze 1989 Scribner and Dwyer Hispanic negative

birth outcome data, the four language items on the scale loaded higher than ethnic identification for both prediction of smoking and lowbirthweight status (20, 23, 24). This analysis further reinforces the premise that language usage is a dominant factor in measuring levels of Hispanic acculturation.

Another recent sample of 15,938 adolescent students from 18 California counties supports the need to explore language usage in addition to cognitive and social norm variables (25). Unger and her colleagues found that Hispanic adolescents ($n = 4352$) and Asian American adolescents ($n = 3021$) with increased English language usage were associated with an increased risk of lifetime smoking. These studies illustrate the relationship between language usage, and the association between increased levels of acculturation and worsening health behavior outcomes. It is believed that increases in acculturation among Hispanic immigrants may signal alienation from supportive primary groups. Increasing levels of acculturation may also facilitate the internalization of the host society's cultural norms, which may include negative stereotypes and prejudicial attitudes toward Hispanic immigrants (1).

METHODS

Study Design

This study involved the analysis of cross-sectional survey data collected as part of the Infant Feeding for Hispanic Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) Populations a Peer Education Model “Un Bebé Saludable: Un Regalo Muy Especial” (A Healthy Baby: A Very Special Gift) project funded by the Extension Service of the U.S. Department of Agriculture. The data used for this study were collected from April 1995 through November 1996 as part of a baseline survey for the “Un Bebé Saludable” project.

Sample

The initial “Un Bebé Saludable” study population consisted of 231 pregnant Hispanic women enrolled in the Special Supplemental Nutrition Program for WIC in Montgomery ($n = 159$) and Prince George's ($n = 72$) counties of Maryland. These two county WIC programs were selected because of their high number of Hispanic participants. The Hispanic subpopulations most heavily represented in these counties were those from Central and South America. Face-to-face interviews were conducted in Spanish at participants' homes during the end of each mother's third trimester.

Behavioral and social science researchers have emphasized the need to study the heterogeneous subpopulations of the Latino community (26). Gutierrez referred to the issue of Latinos being subdivided into Mexican Americans, Puerto Ricans, Cuban Americans and “other” Latinos. Little is known about this “other” subpopulation, although it is the second largest (22% of Hispanics in the United States do not fall within the Mexican American, Puerto Rican, or Cuban American subgroup) and most rapidly growing Latino subgroup. The “other” grouping is so heterogeneous that it includes both Central American refugees, and white collar, professional workers from South America. Depending on their level of

education, job skills, and mode of entry into the United States, members of this group share the socioeconomic characteristics of either Cubans or the more disadvantaged Latino groups (26). With this rationale in mind, the study population for this analysis was limited to Central American immigrant mothers ($n = 197$) in an effort to form a more homogeneous sample (Table I). Although immigrant mothers from the Dominican Republic and southern rural Mexico may have some variations in cultural practices from the other Central American immigrant mothers, both these countries were included because they represent the growing population mix in the Maryland counties targeted by the “Un Bebé Saludable” intervention. There was one Costa Rican mother who was not included since she represented less than 1% of the total sample.

Language Use Acculturation Subscale

The Infant Feeding Questionnaire for the Un Bebé Saludable study included the SAS, a four-item acculturation scale written in Spanish and based on language usage, similar to the one tested by Norris *et al.* (4):

1. In which language do you feel most comfortable speaking?
2. With friends what language do you prefer to speak?
3. In what language do you think?
4. At home, what language do you speak?

Respondents were asked to answer the four acculturation items on a 5-point scale, indicating 1) if they spoke Spanish 100% of the time; 2) if they spoke Spanish 75% of the time; 3) if they spoke Spanish 50% of the time; 4) if they spoke Spanish 25% of the time; or 5) if they spoke English 100% of the time. Each item was scored from 1 to 5. Values ranging from 1 (respondent speaks Spanish 100% of the time) to 5 (the respondent speaks English 100% of the time) were assigned to each of the four acculturation items. Scores for each item were summed to create an acculturation scale with possible scores ranging from 4 to 20. Thus, the higher the combined score, the more acculturated the respondent.

Perceived social support was operationalized as the cognitive appraisal of being reliably connected to others (27). Participants were asked, “Is there anyone who is encouraging you or supporting you to breastfeed?” Possible answers included 1) no support; 2) partner/spouse; 3) family member (specified); 4) friend; 5) health professional; 6) Extension or WIC staff; and 7) other. The social support score represented the number of people each mother identified as providing her with social support regarding her decision to breastfeed. This score does not reflect the quality nor the quantity of support that each identified supporter provided.

Statistical Analysis

Descriptive statistics were used to assess the distributional characteristics of the SAS instrument in this sample. Bivariate correlations were calculated using Pearson product-moment to examine the construct validity of the measure by assessing the extent to which variables such as social support and length of time in the United States were related to

acculturation. The internal reliability of the acculturation scale was assessed using Cronbach's coefficient alpha.

RESULTS

Demographic Characteristics

The sociodemographic characteristics of the 197 study participants are summarized in Table II. Participants were pregnant, first generation, Hispanic immigrant women from Central America between the ages of 15 and 40. The mean age was 24.6 years with a standard deviation (SD) of ± 5.8 . The mothers' countries of origin included Guatemala, El Salvador, Honduras, Nicaragua, Dominican Republic, and rural southern Mexico (Table I). The length of time these immigrant mothers had lived in the United States ranged from 3 months to 17 years. Mean length of time these immigrant mothers had spent in the United States was 58.1 months, or just short of 5 years ($SD = \pm 41.85$).

Almost half of the respondents (48.7%) were married. There were an additional 20.8% of the women who selected "acompan~ada" under "other" to describe living with, but not legally married to, the baby's father. Because it is common for immigrants to live in multiple or extended family homes, respondents were asked to identify other adults in their households. Of those who responded ($n = 190$) 75.8% had two or more adults (not including themselves) living in their household. The educational attainment of the respondents ranged from no formal education (2.0%) to a college degree (1.0%). The largest numbers were those who had completed some high school but had not graduated (43.1%). Twenty-eight percent had an elementary education or less.

Specific income data were not collected on most (98%) of the respondents because they were low-income WIC participants ($n = 193$) and thus met WIC's income eligibility guidelines (below 185% of the poverty level, which was \$29,693 for a family of four). For the remaining four non-WIC participants, two reported having incomes of \$111–200 a week, one reported having an income of \$0–110, and one respondent did not provide this income information.

The summary scale for the four acculturation items had good internal reliability as measured by Cronbach's coefficient alpha (0.81) (28). These results are similar to those published by Norris and colleagues who found the shorter four-item language subscale to be reliable with a Cronbach's coefficient alpha of 0.80 (4). Figure 1 illustrates the distribution of acculturation scores among 196 of the respondents, with one case missing. Scores ranged from 4 to 16, with a mean score of 4.81 and a standard deviation of 2.02. Seventy-eight percent of the mothers scored a total of 4, indicating they thought and felt most comfortable speaking in Spanish 100% of the time, including with friends and at home. The skewed distribution illustrates that most of these immigrant mothers (92.3%) spoke little or no English. Of the 14 mothers (7.1%) who reported speaking English a relatively small percentage of the time (scoring 6 on the scale), most reported it was while speaking with friends.

Correlations were used to study the strength and direction of relationship between pairs of independent variables. Bivariate correlation coefficients were calculated for all continuous independent variables: mother's age ($n = 197$); mother's time in the United States ($n = 197$); acculturation score ($n = 196$); perceived social support score ($n = 186$); and previous number of children ($n = 195$). These bivariate correlations are summarized in Table III.

The strongest correlation was that of mother's length of time in the United States and her level of acculturation. As in other studies of Hispanic immigrants, there was a significant ($p < 0.01$) positive correlation between a mother's acculturation score and the length of time she had lived in the United States ($r = 0.50$) (4, 27). In other words, the longer the mother had lived in the United States the higher her acculturation score. It should be noted that Norris and colleagues found a similar correlation ($r = 0.56$) when measuring acculturation using the same four-item language subscale (4). The bivariate relationship ($r = 0.33$) between acculturation scores and perceived social support for breastfeeding was also positive and significant ($p < 0.01$). There was a significant ($p < 0.01$) negative relationship between acculturation and parity. In other words, as a mother's level of acculturation increased there was a decrease in her number of children.

DISCUSSION

When one looks at the demographic data an interesting profile emerges of these low-income Central American immigrant mothers. The mothers in this sample fell within a broad range of ages (15–40 years old) with a mean age of 24.6 years ($SD = \pm 5.8$). The average length of residence in the United States was just short of 5 years ($SD = \pm 41.85$). Not surprisingly, bivariate correlations revealed strong positive and significant relationships between age and maternal parity ($p < 0.01$), and between age and mother's length of residence in the United States ($p < 0.01$). Interestingly, there was a strong negative and significant relationship between maternal age and acculturation score ($p < 0.01$). Thus, the older the mother the less acculturated she was. One might speculate that for some of the younger teenage mothers in the study, attendance in English speaking schools may have increased their total acculturation score since the four-item scale was based on language usage; however, future research in this area is needed.

The Central American immigrants in this study spoke virtually no English, which was reflected in their low acculturation scores (mean = 4.81, $SD = \pm 2.02$). Interesting bivariate correlations were found between acculturation scores and other continuous predictor variables. There was a significant ($p < 0.01$) negative relationship between acculturation and parity. In other words, as a mother's level of acculturation increased there was a decrease in her number of children. As mentioned previously, the significant ($p < 0.01$), negative relationship between acculturation and age was not surprising, since many of the younger mothers were currently enrolled in, or had been attending local English-speaking high schools.

There was a significant ($p < 0.01$), positive correlation ($r = 0.50$) between maternal acculturation scores in the present study and the mother's length of residence in the United States. What is most note-worthy is the fact that these findings support previous research

using the same four-item acculturation scale in other diverse Latino subpopulations (4). Norris and his colleagues interviewed Mexican American ($n = 519$) and Puerto Rican ($n = 165$) adolescents and young adults by using a brief four-item acculturation scale proposed by Marin and Marin (4, 28). The correlation results between acculturation and length of residence in the United States of the Norris *et al.* study of Mexican Americans and Puerto Ricans ($r = 0.56$) were very similar to those of the current study of Central American mothers ($r = 0.50$). The alpha co-efficient measuring internal reliability for the present study ($\alpha = 0.81$) was also similar to those in the Norris study where the Mexican American respondents ($\alpha = 0.92$) yielded a slightly higher alpha coefficient than the Puerto Rican respondents (0.80) (4). Clearly, similar results from the use of this four-item scale in a different Hispanic subpopulation provide further empirical evidence as to the reliability and validity of this scale across varied Hispanic subpopulations. It is also interesting to note the mean acculturation score (14.6) and standard deviation (5.1) in the Norris *et al.* study, suggesting a high level of acculturation (4). This contrast between the higher acculturation level for the overall subpopulation studied by Norris and colleagues, from the overall lower level of acculturation in the current study, support the use of this scale in both acculturated and unacculturated Hispanic subpopulations. Despite controversies regarding the measurement of acculturation, the results from the current study suggest the benefits of this four-item scale as a brief measure of acculturation, particularly when this measure is combined with data regarding length of stay in the United States, country of birth, and language use during face-to-face interviews. These results further support Marin *et al.*'s original assertion that language alone can be used as a measure of acculturation, especially when measuring all the dimensions of acculturation is impractical and may prevent other researchers from measuring acculturation at all (4, 20, 29). Future research should include a larger and more evenly distributed sample where multivariate methods such as regression analyses could be used to examine potential predictors of acculturation including age, parity, social support, country of origin, and length of time in the United States.

Measuring the level of acculturation among the participants in a health promotion program such as “Un Bebé Saludable:Un Regalo Muy Especial” provided the project planners with additional guidance regarding the linguistic and cultural content necessary to effectively implement and evaluate the program. Formative research including focus groups and pilot testing in a similar subpopulation had suggested the need for bilingual and culturally relevant materials. The low levels of acculturation illustrated by this study confirmed the decision to hire peer educators (“promotoras”) with similar linguistic and cultural backgrounds to provide health education through written materials and demonstrations at monthly home visits.

As a moderator variable, level of acculturation is essential in matching consumers' level of cultural compatibility with that of health care providers (17). It is not enough to focus solely on their demographic profiles, we must begin to understand the contextual demands placed on these immigrants as they adapt to life in this country. Now is the time to identify population specific risks and relevant health behaviors within specific Latino subpopulations in order to provide integrated health prevention and promotion services that work.

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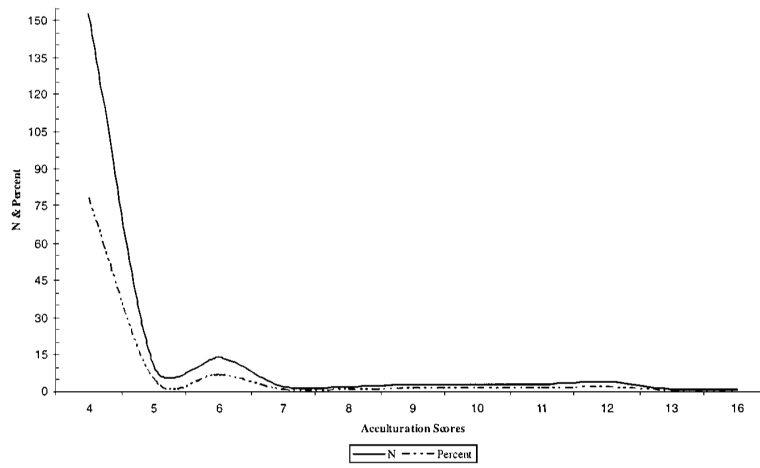


Fig. 1.
Distribution of acculturation scores.

Table I

Mother's Country of Origin

| Country of origin | N (%) |
|--------------------|------------|
| Guatemala | 18 (9.1) |
| Mexico | 27 (13.7) |
| El Salvador | 130 (66.0) |
| Dominican Republic | 8 (4.1) |
| Nicaragua | 8 (4.1) |
| Honduras | 6 (3.0) |
| Total | 197 (100) |

Table II

Demographic Characteristics of the Respondents

| Characteristic | N(%) |
|---|------------|
| Age ^a | |
| <18 | 22 (11.2) |
| 18–25 | 91 (46.2) |
| 26–35 | 75 (38.1) |
| 36–40 | 9 (4.6) |
| Education ^a | |
| Elementary school | 55 (27.9) |
| Some high school | 85 (43.1) |
| High school graduate | 52 (26.4) |
| College graduate | 2 (1.0) |
| Other professional preparation | 3 (1.5) |
| Marital status ^a | |
| Married | 96 (48.7) |
| Single | 48 (24.4) |
| Divorced/separated | 12 (6.1) |
| Other ^b | 41 (20.8) |
| Length of time in United States ^a | |
| <1 year | 13 (6.6) |
| 1–3 years | 70 (35.5) |
| 3–5 years | 37 (18.8) |
| 5–10 years | 63 (32.1) |
| >10 years | 14 (7.1) |
| Number of other adults living in the household ^c | |
| 0 | 1 (0.5) |
| 1 | 45 (23.7) |
| 2–4 | 119 (62.6) |
| >4 | 25 (13.2) |
| Number of children ^d | |
| 0 | 105 (53.9) |
| 1–2 | 72 (36.9) |
| 3 | 18 (9.2) |

Note. Some totals do not equal 100% due to rounding.

^aN = 197.

^bThese respondents described themselves as “acompañada,” a term used to describe living together but not legally married.

^cN = 190.

^dN = 195.

Table III

Bivariate Correlations Among Demographic and Psychosocial Measures

| Variable | Mother's age | Parity | Perceived social support | Mother's length of time in the United States |
|--|--------------|---------|--------------------------|--|
| Parity | 0.44** | | | |
| Perceived social support | -0.09 | -0.15* | | |
| Mother's length of time in the United States | 0.18** | 0.17* | 0.22** | |
| Acculturation score | -0.32** | -0.19** | 0.33** | 0.50** |

* $p < 0.05$;** $p < 0.01$.