

Psychometrics of a Brief Acculturation Scale for Hispanics in a Probability Sample of Urban Hispanic Adolescents and Young Adults

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This article presents data in support of the reliability and validity of a four-item measure of acculturation for Hispanics. The study has three strengths. First, this brief measure is evaluated with a probability sample of Hispanic adolescents and young adults (ages 15-24 years) living in urban, low-income households. Second, the sample contains both second- and third-generation Puerto Rican and Mexican American adolescents and young adults. Third, the acculturation measure was administered as part of a face-to-face interview. The four-item acculturation scale correlated highly with generation, length of time in the United States, subjective evaluation of acculturation, country of birth, and language chosen for the interview. The psychometric properties of this brief scale are comparable to those obtained for other published scales. Results support the use of this four-item measure of acculturation as a simple, inexpensive measure that involves minimal respondent burden.

Measurement of acculturation has occupied a central place in research on the Hispanic American experience (Negy & Woods, 1992). Marin and Marin (1991) underscore the importance of acculturation in research on a variety of topics (e.g., smoking, social support) and argue that acculturation should be

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used to differentiate among subgroups of Hispanics. However, considerable discrepancies exist on how to measure acculturation. For example, recent approaches have varied from simply measuring language used for the interview (e.g., Epstein, Dusenbury, Botvin, & Diaz, 1994) to using more comprehensive multidimensional measures (e.g., Felix-Ortiz, Newcomb, & Myers, 1994). Recently, Marin and Marin (1991) recommended that a brief (four-item) measure of acculturation be used. The purpose of this article is to provide support for the reliability and validity of this brief measure of acculturation and to argue for its widespread adoption as a simple, inexpensive measure that involves minimal respondent burden. A strength of this article is the representation of second- and third-generation Puerto Rican as well as Mexican American adolescents and young adults in the study sample.

A number of acculturation measures have been developed in response to increasing numbers of Hispanic Americans and heightened interest in measuring acculturation in relation to behavioral and attitudinal variables.

Marin, Sabogal, Marin, Otero-Sabogal, and Perez-Stable's (1987) measure of acculturation treats language use and preference as an important indicator of level of acculturation. These authors have suggested that language is the most reliable indicator of the process of cultural change occurring as Hispanics become exposed to American culture. However, data are not available regarding the scale's reliability and validity for Hispanic adolescents or Hispanic subgroups other than Mexican Americans.

Barona and Miller (1994) adapted Marin et al.'s (1987) scale for use with Hispanic schoolchildren, ages 10-16 years, to create the Short Acculturation Scale for Hispanic Youth (SASH-Y). Barona and Miller found support for the reliability and validity of the SASH-Y in their urban sample as a whole but did not explore the psychometrics of the SASH-Y in different Hispanic subgroups within their sample. In sum, the present study contributes to the growing body of literature regarding the measurement of acculturation by evaluating the psychometrics of a short measure derived from the Language Use subscale of Marin et al.'s measure of acculturation.

Methods

Sample

The data for this study were from a household probability sample of Hispanic and Black adolescents and young adults, ages 15-24, from low-income areas of Detroit. The sample design and the fieldwork were conducted by the Survey Research Center of the Institute for Social Research of the University

Table 1. Demographics for Mexican American and Puerto Rican Adolescents and Young Adults Who Completed the Brief Acculturation Scale (percentages, except *ns*)

	Mexican Americans	Puerto Ricans
Gender		
<i>n</i>	519	165
Female	50.9	55.8
Male	49.1	44.2
Age		
<i>n</i>	519	165
15-17 years	35.4	33.9
18-21 years	38.0	41.8
22-24 years	26.6	24.3
Language of interview		
<i>n</i>	519	165
Spanish	17.1	9.1
English	82.9	90.9
Education		
<i>n</i>	519	165
12 years or less	63.9	73.3
High school graduate/general equivalency diploma	24.9	19.4
Beyond high school	11.2	7.3
Time in United States		
<i>n</i>	117	56
Born in United States	77.5	66.1
More than 10 years	8.4	16.2
5-10 years	5.0	9.3
Less than 5 years	9.1	8.4
Generation		
<i>n</i>	514	165
First	23.2	35.2
Second	35.4	61.2
Third	41.4	3.6
Acculturation index		
<i>n</i>	518	162
1.0 to 3.0 (low)	31.3	30.9
3.25 to 5.0 (high)	68.7	69.1

of Michigan. The fieldwork period was from February through July 1991, and a total of 1,435 interviews were completed. The response rate for the study averaged 85% (86% for Hispanics). Written consent was obtained from all respondents and from parents of persons under age 18. More than 95% of parents of persons contacted about the study agreed to let their adolescents participate. Respondents were paid \$10 for their participation.

The majority of the Hispanic respondents interviewed (total $N = 706$) were Mexican American ($n = 519$). The next largest Hispanic subgroup was Puerto Ricans ($n = 165$). Analyses presented later are based on only the Mexican American and Puerto Rican portions of the Hispanic sample (i.e., $n = 684$). The demographic characteristics of these two groups are shown in Table 1.

Survey Interview

The survey interview was designed in English and in Spanish (a conceptually equivalent translation of the English version). The interview contained directions to the interviewers and to the respondents that were designed to improve respondents' accuracy of recall, willingness to participate wholeheartedly in reporting accurately, and motivation to perform the respondent role adequately. These directions were based on techniques recommended by Cannell, Miller, and Oskenberg (1981).

The survey contained items pertaining to demographic characteristics, acculturation, AIDS risk behaviors, and a variety of psychological variables potentially related to condom use. Only those items pertinent to the analyses presented in this article are described in what follows. (A more detailed description of the survey questionnaire is available from the authors.)

Acculturation. Acculturation was measured using four items from Marin et al.'s (1987) Language Use subscale in their acculturation measure. These items consisted of the following.

- a. In general, in what language do you read and speak?
- b. What language do you usually speak at home?
- c. In what language do you usually think?
- d. What language do you usually speak with your friends?

The following response format was used for each question: Would you say only Spanish, more Spanish than English, both equally, more English than Spanish, or only English?

Generation. The generation variable was created by asking respondents to indicate their places of birth together with those of their parents. Information was not available about grandparents' places of birth. The following categories of Hispanic respondents were formed.

- a. First Generation = those respondents born outside the United States (refers to mainland United States);
- b. Second Generation = those respondents born in the United States but whose natural mothers and/or fathers were born outside the United States; and

- c. Third Generation (or greater) = those respondents who, along with both natural parents, were born in the United States.

Subjective measure of acculturation. Respondents were asked to answer the question, "How close do you feel in your feelings and ideas to (1) Hispanics in (a) Mexico, (b) Puerto Rico, (c) other countries; (2) to Black or African Americans living in the United States; and (3) to White people living in the United States?" A 4-point Likert-type scale, anchored as *very close* (1) and *not close at all* (4), was used. A limitation of this measure is that respondents were not asked how close they feel to Hispanic Americans living in the United States.

Demographics. Demographic measures of respondents included gender, years of age, years of education completed, years of parental education, self-defined ethnicity, place of birth, and parents' place of birth.

Interviewers and Interviewer Training

A total of 45 women and 18 men worked as interviewers. All but 2 were African American or Hispanic, and all lived in or near the area in which the study was conducted. Interviewers ranged in age from 20 to 60 years, and 50% had worked as interviewers in the 1990 U.S. Census. All interviewers were specially trained for the household survey in general interviewing techniques and in taking sexual and drug histories. Potential bias due to respondent concerns over social desirability (Ford & Norris, 1991) was minimized by training interviewers to be nonjudgmental, by assessing interviewer perceptions of respondent truthfulness, and by matching interviewers and respondents on ethnicity as much as possible.

Procedure

Respondents were interviewed face-to-face in their home or in a neutral setting (e.g., interviewer's car, public library) if privacy could not be ensured in the home. Hispanic respondents were offered the option of doing the interview in Spanish, and 108 asked to do the interview in Spanish. At the end of the interview, each respondent was given a pamphlet about AIDS from the Centers for Disease Control and a card with phone numbers to call for more information about AIDS and its prevention.

Results

The range in acculturation scores was 4 to 20. The overall mean for the four-item acculturation scale was 14.6 ($SD = 5.1$), suggesting a fairly high level of acculturation. This range and mean are not surprising given that 74.1% of the respondents were born in the continental United States. When the average score is computed (total divided by number of items) as recommended by Marin et al. (1987), 68.7% of the sample is categorized as high in acculturation and 31.3% is categorized as low in acculturation. The two groups did differ significantly in years of education after controlling for the effects of age: Respondents categorized as low in acculturation (adjusted mean = 9.81) had slightly less education than did those categorized as high in acculturation (adjusted mean = 10.49), $F = 18.25$, $df = 1$, $p < .0001$.

Reliability

The alpha coefficient for the total sample was .90. The reliability estimate was slightly higher for Mexican American respondents (alpha = .92) than it was for Puerto Rican respondents (alpha = .80). When reliability coefficients were calculated separately for each age group, language version of the interview, gender, and level of education, only the reliability estimates for Puerto Rican males ($n = 71$, alpha = .74) failed to reach an alpha value $\geq .80$.

Validity

The various approaches to investigating the validity of this brief four-item acculturation scale each provided support for the scale's validity.

Generation. The sample included 177 (26.1%) first-generation, 283 (41.7%) second-generation, and 219 (32.2%) third-generation Hispanic Americans. The correlation between the respondents' total score on the brief scale and generation level was stronger for Mexican American respondents ($r = .74$) than it was for Puerto Rican respondents ($r = .40$). The correlation for the entire sample was .67, indicating that generation status was positively related to acculturation score. Consistent with this, a Kruskal-Wallis analysis of variance (ANOVA) (used because the variances were not homogeneous) showed that first-generation respondents scored significantly lower (mean rank = 141.8) on the four-item measure than did second-generation (mean rank = 345.4) and third-generation (mean rank = 486.6) Hispanics, chi-square = 309.2, $df = 2$, $p < .0001$.

Length of time in the United States. The total score of the brief acculturation scale was highly correlated with length of time in the United States ($r = .56$). This correlation was slightly stronger for Mexican American respondents ($r = .59$) than it was for Puerto Rican respondents ($r = .46$). In addition, Marin et al.'s (1987) residence index (length of time in the United States divided by age) was calculated for non-U.S.-born respondents ($n = 173$) and was also found to correlate highly ($r = .61$) with acculturation scores. Note that only Hispanic respondents not born in the continental United States are included in these analyses.

Subjective measure of acculturation. Analyses revealed that both Mexican American ($r = -.43$) and Puerto Rican ($r = -.18$) respondents' acculturation scores were negatively related to the subjective measure of acculturation; that is, the more acculturated the respondent, the less close he or she felt to Hispanics living in his or her country of origin. Despite the apparent differences in the magnitude of the correlation in each group, there was no significant difference between Puerto Ricans and Mexican Americans in perceived closeness to Hispanics living in their respective countries of origin, $t = .64$, $df = 301.3$, $p = .52$. A positive correlation was found between the acculturation score and overall rating of closeness to African Americans ($r = .25$) and U.S. Whites ($r = .24$), suggesting that the more acculturated the respondent, the closer he or she feels to other ethnic groups living in the United States. Similar correlations were found when these analyses were repeated separately for Mexican American Hispanics and Puerto Rican Hispanics. Both Mexican American ($r = .30$) and Puerto Rican ($r = .14$) respondents' acculturation scores were positively related to perceived closeness to African Americans living in the United States. Similarly, Mexican American ($r = .25$) and Puerto Rican ($r = .19$) respondents' acculturation scores were positively related to perceived closeness to U.S. Whites.

Place of birth and language used for the interview. It was expected that respondents born in the United States, as well as those choosing the English version of the questionnaire, would have higher acculturation scores. Consistent with this, respondents born in the mainland United States ($M = 16.55$, $n = 507$) had significantly higher mean acculturation scores than did those born outside the mainland United States ($M = 9.03$, $n = 177$), $t = -20.4$, $df = 275$, $p < .0001$. Additionally, respondents choosing the English version of the questionnaire ($M = 16.00$, $n = 580$) had significantly higher mean acculturation scores than did those choosing the Spanish version ($M = 6.85$, $n = 104$), $t = 22.8$, $df = 149.9$, $p < .0001$.

Discussion

This article examined the reliability and validity of a brief measure of acculturation in a probability sample of low-income, urban, Hispanic adolescents and young adults. This brief measure produced coefficient alpha levels similar to those obtained by Marin et al. (1987), in whose study a longer version of this measure was used. However, alpha coefficients were somewhat lower (.80 for total and .74 for males) for Puerto Rican respondents. Nevertheless, these coefficients met the criterion for respectable to very good scale reliability (DeVellis, 1991; Nunnally, 1978).

Consistent support for the validity of this brief measure was found using five different criteria. As would be expected for a valid measure, persons whose responses indicated a high level of acculturation also tended to be a second- or third-generation Hispanic American, to have lived in the United States a longer period of time, and to perceive themselves as more similar to U.S. Whites and African Americans than to Hispanic persons currently living in their country of origin. Significant first-, second-, and third-generation differences in acculturation are especially important because Marin et al. (1987) were unable to evaluate the discriminatory ability of the original scale for third-generation Hispanics due to sample size constraints.

The similarity of results across studies is striking given that Marin et al.'s (1987) sample was predominantly non-U.S. born and their measure was longer and self-administered. For example, the correlation between acculturation score and generation obtained here ($r = .67$) is almost identical to that obtained by Marin et al. ($r = .65$). In addition, the correlation between acculturation score and length of time in the mainland United States in the present study ($r = .56$) compares favorably with that found by Marin et al. ($r = .70$). These similarities, despite differences in the sample and mode of administration, provide strong support for the reliability and validity of this brief measure.

According to Marin et al. (1987), a criterion often used in validation of acculturation scales is the correlation between the subjects' own evaluations of their levels of acculturation and their responses to the actual scales. Although Marin et al.'s subjective measure of acculturation (i.e., Indicate how you would describe yourself: very Latino/Hispanic = 1, more Latino than American = 2, almost 50/50 = 3, more American than Latino = 4, very American = 5) was different from that used in this study, we essentially replicated their results by finding significant correlations between the respondents' own evaluations of their levels of acculturation and their responses to the scales.

In this study, Puerto Ricans were not significantly different from Mexican American respondents in their closeness to those from their country of origin.

This suggests that Puerto Rico's status as a U.S. commonwealth did not affect the subjective evaluation of acculturation.

The results of this study support Marin et al.'s (1987) assertion that the language factor alone can be used as a valid and reliable acculturation scale. Although we understand that acculturation is a multidimensional concept, measuring the concept in all its dimensions may be impractical for some researchers and unnecessarily preclude them from measuring acculturation altogether. Given the importance of acculturation to our understanding of a variety of health and psychosocial issues affecting the welfare of Hispanic Americans, we urge researchers to consider including this brief four-item measure of acculturation in lieu of a more lengthy measure when respondent burden is an issue.

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