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Measuring Cultural Socialization Attitudes and Behaviors of Mexican-Origin Mothers With Young Children: A Longitudinal Investigation

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Abstract

We describe the development and psychometric testing of the Cultural Socialization Behaviors Measure (CSBM) and the Cultural Socialization Attitudes Measure (CSAM). The CSBM assesses cultural socialization behaviors that parents use with young children, and the CSAM assesses the attitudes that parents have regarding the importance of socializing their young children about their culture. Both measures demonstrated strong reliability, validity, and cross-language equivalence (i.e., Spanish and English) among a sample of 204 Mexican-origin young mothers (M_{age} = 20.94 years, SD = 1.01) with 4-year-old children. In addition, the measures demonstrated longitudinal equivalence when children were 4 and 5 years of age.

Keywords

Attitudes; behaviors; cultural/ethnic/racial socialization; family relations; measurement equivalence

Socialization is a critical part of human development, and developmental theories (e.g., Bronfenbrenner, 1994; Erikson, 1968) have emphasized that families are essential in the process of socializing children. Among ethnic and racial minority families, parents engage in numerous behaviors focused specifically on socializing youth regarding their ethnic-racial heritage that expose them to the customs and history of their group; this process has been referred to as cultural socialization (Hughes et al., 2006). Parents' socialization efforts regarding culture are important because they have been demonstrated to play a key role in

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youths' ethnic-racial identity development and positive adjustment (Hughes et al., 2008; Neblett, Rivas-Drake, & Umaña-Taylor, 2012; Umaña-Taylor, Alfaro, Bámaca, & Guimond, 2009). In the present study, we describe two new measures designed to assess caregivers' cultural socialization behaviors and caregivers' attitudes regarding the importance of cultural socialization (i.e., cultural socialization attitudes) in families with young children. In addition to presenting the general psychometric properties of these measures, we also test the factorial equivalence of items across English- and Spanish-language versions of each measure and test each measure's longitudinal measurement invariance over a one-year period.

Theoretical Background

Ecological theory (Bronfenbrenner, 1994) posits that human development occurs via proximal processes, which include interactions and engagement with others in one's immediate and more distal contexts. A central aspect of human development that is important for positive adjustment is the development of an identity (Erikson, 1968). An important developmental task among ethnic-racial minority youth, in particular, is the development of an ethnic-racial identity—that is, beliefs and attitudes regarding one's ethnic-racial group membership (see Umaña-Taylor et al., 2014, for a review). For this aspect of development, the engagement in proximal processes posited by Bronfenbrenner (1994) can be best understood in terms of the influence of the family context. In particular, cultural socialization within families facilitates identity formation among ethnic-racial minority adolescents (Else-Quest & Morse, 2015; Hughes, Hagelskamp, Way, & Foust, 2009; Umaña-Taylor, Yazedjian, & Bámaca-Gómez, 2004). Further, as young as early childhood, children become aware of ethnicity and race, and experiences in early childhood prime and expose children for developing an ethnic-racial identity during adolescence (Umaña-Taylor et al., 2014). Thus, understanding cultural socialization within ethnic-racial minority families with young children can provide important insight into a process that promotes normative development and adjustment in childhood and beyond.

Cultural Socialization Behaviors

Caregivers' cultural socialization behaviors, which involve exposing children to their culture, may include talking to children about historical figures who share their ethnic-racial background, celebrating cultural holidays, or exposing children to culturally relevant books and music (Hughes et al., 2006). Cultural socialization, relative to other types of socialization (e.g., preparing children for bias and discrimination they may face due to their ethnic-racial group membership), is particularly prevalent among families with young children (Hughes et al., 2008).

Although numerous studies have examined parents' cultural socialization behaviors among families with adolescents (e.g., Hughes et al., 2009; Supple, Ghazarian, Frabutt, Plunkett, & Sands, 2006; Umaña-Taylor, Zeiders, & Updegraff, 2013), much less work has examined parents' cultural socialization behaviors among families with young children. In one exception, Hughes (2003) used a two-factor measure to assess racial socialization among parents with children age 6–17 years that consisted of five cultural socialization items (e.g.,

"Have you ever said or done things to encourage your child to be proud of his or her culture?") and four preparation-for-bias items ("Have you ever told your child that others might treat him/her badly because he/she is [ethnic group]?"). Both factors demonstrated good reliability. However, given that the items for Hughes's measure (developed via focus groups in a previous study; Hughes & DuMont, 1993) were not tailored specifically to caregivers with young children, it is possible that items specific to parents with young children (e.g., buying toys that reflect children's ethnic-racial group) were not captured. In another study of cultural socialization that included a sample of parents with young children, Quintana and Vera (1999) developed a five-item measure that assessed parental ethnic socialization. However, the measure was scored as a composite of the five items that included cultural socialization behaviors (e.g., "Do you teach your child to be proud of being Mexican American?"), preparation for bias (e.g., "How often do you discuss discrimination with your child?"), and cultural socialization attitudes (e.g., "How important is it to you to teach your child about Mexican culture?"). A composite score can be problematic, given that these aspects of cultural socialization capture different constructs (Hughes et al., 2006). Furthermore, information regarding reliability and validity of the measure was not provided. Thus, the literature is limited with respect to the availability of valid and reliable instruments developed specifically to assess cultural socialization behaviors as a distinct construct in families with young children.

Although few studies have examined cultural socialization behaviors among families with young children in recent decades, the work that has been conducted has highlighted the importance of this process among families. For example, one study found that 95% of Puerto Rican parents, 91% of Dominican parents, and 100% of African American parents reported that they had engaged in cultural socialization with their children (6–17 years of age) within the previous year (Hughes, 2003). Frequency of communication about culture was examined by Lesane-Brown, Brown, Tanner-Smith, and Bruce (2010) using a single item with a nationally representative sample of families with kindergarten children, and the modal frequency of socialization was several times per year among Native Hawaiian/Pacific Islander families; several times a month among Black, Latino, Asian, and multiracial families; and several times a week or more among American Indian/Native American families.

Scholars have found links between cultural socialization behaviors and children's adjustment in early and middle childhood. Among African American and Latino families with preschool-aged children, cultural socialization was positively associated with children's preacademic skills and receptive language, and it was also associated with fewer behavior problems (Caughy & Owen, 2015). In another study of 7- to 13-year-old Mexican-origin children, parents' cultural socialization was positively associated with children's knowledge about their ethnic-racial group (Quintana & Vera, 1999). Cultural socialization occurs among families with young children and has been associated with child adjustment, which suggests that the paucity of studies in this area may be attributable to a lack of a developmentally appropriate, valid, and reliable measure that can be used to assess this construct among families with young children.

Cultural Socialization Attitudes

In addition to the need for a measure that assesses caregivers' cultural socialization behaviors with their young children, there also is a need for a measure that assesses caregivers' cultural socialization attitudes, which refer to attitudes that caregivers have about the importance of cultural socialization for their children. As noted earlier, there is some evidence of variability in parents' cultural socialization behaviors with children (Lesane-Brown et al., 2010), which might be partly attributable to differences in parents' attitudes regarding the importance of engaging in this type of socialization. However, to empirically examine this notion, a measure is needed that directly assesses caregivers' cultural socialization attitudes as a distinct construct from cultural socialization behaviors.

To our knowledge, three prior studies have assessed cultural socialization attitudes using measures created by researchers for the purposes of conducting their respective studies (i.e., Banerjee, Harrell, & Johnson, 2011; Hughes et al., 2008; Thomas & Speight, 1999). Banerjee et al. (2011) examined cultural socialization attitudes among African American families with early adolescents using a four-item measure (e.g., "I feel it is important for my child to take pride in his/her ethnic heritage"); findings indicated that cultural socialization attitudes were correlated with parents' openness to exposing their children to other cultures (i.e., cultural exposure), and cultural exposure was associated with early adolescents' cognitive ability and achievement. Hughes et al. (2008) examined cultural socialization attitudes among African American, Latino, Chinese, and White families with adolescents using a three-item measure that asked parents how important they felt it was to teach children about their ethnic-racial group and instill a sense of cultural pride; findings indicated that African American and Latino parents reported greater importance of socializing adolescents than Chinese parents, who in turn felt it was more important than White parents did. Finally, Thomas and Speight (1999) assessed cultural socialization attitudes among African American families (children's age range was not specified) using a 17-item measure that assessed parents' positive attitudes toward teaching children pro-Black messages; findings indicated that parents' racial identity was positively correlated with parents' positive attitudes toward teaching children pro-Black messages. Although the aforementioned work contributes to our knowledge of cultural socialization by assessing caregivers' attitudes, the extent to which these measures apply to parents of young children is unclear, and no studies have examined the cultural socialization attitudes of Latino parents with young children. Therefore, the present study expanded on this prior work by developing and assessing the psychometric properties of a measure of cultural socialization behaviors and a measure of cultural socialization attitudes, both of which were designed to be relevant to parents' attitudes and behaviors during the early to middle childhood developmental period.

The Present Study

Given that families' cultural socialization efforts are an important aspect of youth development (Neblett et al., 2012), particularly for families with ethnic and racial minority children (Hughes et al., 2006), we wanted to create a reliable and valid measure to assess cultural socialization behaviors among families with young children. Also, because the variability that has emerged in cultural socialization behaviors within families may be

partially explained by the attitudes that parents have regarding the importance of cultural socialization, we aimed to develop a separate measure to assess caregivers' attitudes regarding the importance of cultural socialization.

To test whether the cultural socialization attitudes and behaviors measures accurately assessed the constructs they were proposed to assess, we tested convergent and discriminant validity. To test convergent validity (i.e., whether a measure is correlated in theoretically consistent ways with other measures), we used measures of mothers' ethnic-racial identity exploration and resolution. Theoretically, García Coll et al.'s (1996) integrative model for the study of developmental competencies in minority children proposes that ethnic-racial minority families build an adaptive culture consisting of goals, attitudes, and behaviors (e.g., mothers' ethnic-racial identity exploration and resolution) that is positively associated with their cultural socialization behaviors with children; previous work (see Hughes et al., 2006, for a review) has provided empirical support for this association among families with adolescents. Thus, on the basis of this conceptual and empirical work, we hypothesized that mothers' ethnic-racial identity exploration and resolution would be positively associated with cultural socialization attitudes and behaviors. To test discriminant validity (i.e., whether the measure is unrelated to constructs with which there is not a conceptual reason for a relation), we used a measure of mothers' engagement in risky behaviors, given that there is no conceptual reason that this construct should be associated with cultural socialization attitudes or behaviors. Finally, because Latinos represent the largest ethnic-racial minority group in the United States (Ennis, Rios-Vargas, & Albert, 2011), and a majority of Latino children living in the United States have at least one foreign-born parent (Fry & Passel, 2009), we developed a Spanish version of both measures with measurement properties equivalent to the English versions.

Method

Development of the Measures

We created the Cultural Socialization Behaviors Measure (CSBM) by adapting several items from the Familial Ethnic Socialization Measure (FESM; Umaña-Taylor, 2001; Umaña-Taylor et al., 2004)—a measure that has been used extensively with Latino adolescent populations (e.g., Supple et al., 2006; Umaña-Taylor et al., 2009; Umaña-Taylor et al., 2013)—to be applicable to parents with young children. For example, "My family celebrates holidays that are specific to my ethnic/cultural background" (FESM) was revised in the CSBM to "I involve my child in celebrations, holidays, or religious events that are specific to our ethnic/cultural group." As another example, "My family teaches me about the history of my ethnic/cultural background" (FESM) was revised in the CSBM to "I tell my child about famous people from our ethnic/cultural background who have done good things and have represented our culture well." In addition to adapting items from the FESM, some new items relevant to young children were developed specifically for the CSBM, such as "I buy toys for my child that represent our ethnic/cultural background."

Items were developed for the CSBM in consultation with members of our research team, which consisted of an ethnically diverse group of faculty, graduate students, and postdoctoral scholars. Then, as we refined and further developed the items, we consulted

with members of our research staff who were of Mexican origin and had young children who represented our targeted demographic. Finally, a list of items created by the research team was e-mailed to 12 contacts of the research team with children between the ages of 4 and 6 years, and those contacts provided written suggestions about refining or changing items. Although the CSBM was developed specifically for Mexican-origin families (e.g., "I tell my child about famous people from our ethnic/cultural background who have done good things and have represented our culture well [e.g., Cesar Chavez, Hidalgo and Benito Juarez, Selena, El Chicharito, Oscar de la Hoya]"), the measure can be applicable to families from other ethnic-racial backgrounds following minor modifications (see Appendix A).

After the CSBM was developed, we used it as a guide to develop the Cultural Socialization Attitudes Measure (CSAM), which assesses caregivers' attitudes regarding the importance of socializing their child about their culture. Given that the items in the CSAM were more general than items in the CSBM, there was no need to provide examples that were specific to Mexican culture; therefore, the CSAM does not require any modifications to be used with ethnically diverse samples. We used the same process described previously to ensure that items in the CSAM were relevant and appropriate for the population of interest.

After identifying items for each measure, we followed recommendations outlined by Knight, Roosa, and Umaña-Taylor (2009) for translating items into Spanish. Specifically, we translated, back-translated, and followed a process of decentering to arrive at our final English and Spanish items. In the process of decentering, both the original-language version of the measure (i.e., English) and the target-language version (i.e., Spanish) were modified until both versions were semantically equivalent and relevant in the languages in which the measure would be administered. The final translations were reviewed by Mexican-origin individuals to ensure cultural validity (Knight et al., 2009).

Participants, Recruitment, and Procedure

Data were from a larger longitudinal study of 204 Mexican-origin adolescent mothers, their mother figures (e.g., aunt, grandmother), and their children (Umaña-Taylor, Updegraff, Jahromi, & Zeiders, 2015). The majority of families participated in all six waves of the study (i.e., between 88% and 96% of Wave 1 participants participated in each subsequent wave). Participants were recruited from high schools, health centers, and community agencies that served the target population in a metropolitan area of the U.S. Southwest. Specifically, research staff members visited the recruitment sites and distributed brochures that described the study in Spanish and English. Interested adolescents completed a contact card, and bilingual research assistants conducted follow-up screening calls. Contact cards were received for 321 adolescent mothers. We were able to contact and assess eligibility and interest for 305 adolescent mothers (95% of those who returned contact cards); we were unable to contact the remaining 5% ($n = 16$) to complete the screening and recruitment process as a result of disconnected phone numbers or relocations. Of the 305 we contacted and screened, 85% ($n = 260$) were eligible for participation in the longitudinal study. Eligibility criteria at Wave 1 required that adolescents identified as Mexican origin, were 15 to 18 years old, were pregnant, were not legally married, and had a mother figure (e.g., biological mother, grandmother) who was willing to participate. Of those who were eligible,

80% (n = 207) agreed to participate; however, because of the unexpected death (e.g., traffic accident) of a participating family member in three families, the final longitudinal sample consisted of 204 families.

The present study utilized data from Wave 5, when the young mother's child was 4 years of age, and Wave 6, when the child was 5 years of age. Wave 5 was the first wave when young mothers were asked about their cultural socialization attitudes and behaviors. The majority (64%) of mothers reported being born in the United States. At Wave 5, the mean age of mothers was 20.9 years (SD = 1.0, range = 19.0–23.2), and they lived in homes with a mean of 5.0 individuals (SD = 2.6, range = 0–14).

Interviews were conducted in participants' preferred language; 69% of young mothers participated in English at Wave 5. Informed consent was obtained from all participants. Mothers received $50 for their Wave 5 participation and $60 for their Wave 6 participation. All procedures were approved by the institutional review board at Arizona State University.

Measures

Cultural socialization behaviors—The CSBM (see Appendix A) was created to assess parents' cultural socialization behaviors with their young children at Waves 5 and 6. A total of 13 items were initially developed, and items were scored on a five-point scale ranging from *not at all* (1) to *very much* (5). Higher scores indicated higher engagement in cultural socialization behaviors with children.

Cultural socialization attitudes—The CSAM (see Appendix B) was created to assess parents' attitudes regarding the importance of socializing their children about their culture at Waves 5 and 6. Six items were initially developed to assess cultural socialization attitudes, and items were scored on a five-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Higher scores indicated more positive attitudes regarding the importance of culturally socializing children.

Convergent validity measures—Mothers' responses at Waves 5 and 6 on two subscales from the Ethnic Identity Scale (Umaña-Taylor et al., 2004) were utilized to assess ethnic-racial identity exploration (seven items; e.g., "I have attended events that have helped me learn more about my ethnicity") and ethnic-racial identity resolution (four items; e.g., "I am clear about what my ethnicity means to me"). Response options ranged from *does not describe me at all* (1) to *describes me very well* (4), and negatively worded items were reverse scored so that higher scores indicated more ethnic-racial identity exploration and resolution. Previous work has provided support for the reliability and validity of the exploration and resolution subscales among Latino adults (e.g., Chavez-Korell & Torres, 2014). In the present study, Cronbach's alphas for the ethnic-racial identity exploration subscale were .81 (Wave 5) and .85 (Wave 6). Cronbach's alphas for the ethnic-racial identity resolution subscale were .82 (Wave 5) and .84 (Wave 6).

Discriminant validity measure—Mothers' responses to a revised version of Eccles and Barber's (1990) measure of risky behaviors was used to assess mothers' engagement in risky behaviors at Waves 5 and 6 (e.g., "In the past year, how many times have you gotten drunk

or high?"). The measure used in the present study included 17 items that were administered at both Wave 5 and Wave 6. Response options ranged from *never* (1) to *more than 10 times* (5), and higher scores indicated more engagement in risky behaviors. Previous work has provided support for the reliability and validity of this measure among Mexican-origin individuals (e.g., Updegraff, Umaña-Taylor, McHale, Wheeler, & Perez-Brena, 2012). In the present study, Cronbach's alphas were .81 (Wave 5) and .79 (Wave 6).

Analytic Approach

Step 1: Exploratory factor analysis—We used a five-step analytic approach to test the properties of the CSBM and CSAM. Analyses were conducted in Mplus version 7.11 (Muthén & Muthén, 2013). Initially, each measure was tested separately to examine its factor structure (Step 1) and its factorial invariance across languages (Step 2). In Step 1, we conducted an exploratory factor analysis of the items within each measure at Wave 5 using geomin rotation (Browne, 2001) and examined a scree plot and eigenvalues for the emergent factors. The purpose of the exploratory factor analysis was to determine the best-fitting factor structure of the 13 items in the CSBM and of the six items in the CSBM.

Step 2: Testing factorial invariance across languages—In Step 2, we tested the factorial invariance of each measure across language groups, which indicated whether items functioned similarly in the Spanish and the English versions of the items. Factorial invariance was tested with a series of nested multigroup confirmatory factor analyses that included survey language as the grouping variable (i.e., the model is tested separately for individuals who completed the survey in English and individuals who completed the survey in Spanish). At each level of factorial invariance (i.e., configural, loading, intercept), the tenability of adding constraints to each multigroup nested model was tested using a chi-square difference test, in which a nonstatistical change in chi-square indicated that the constraints were tenable (i.e., language versions were equivalent; Little, Preacher, Selig, & Card, 2007). Configural invariance exists if the items within the measure form a similar factor structure across groups (i.e., language version of the measure), which is indicated by all items having statistically significant loadings above .40 across both language versions of the measure; loading invariance exists if factor loadings can be constrained across groups, and intercept invariance exists if the factor loadings and intercepts can be constrained across groups (Little et al., 2007).

Step 3: Test of redundancy—Step 3 involved formally testing our proposition that cultural socialization attitudes and behaviors were unique constructs, using a test of redundancy (Klein, 2010). A test of redundancy uses a chi-square difference test to compare a multifactor model in which the covariance between the two constructs is freely estimated (i.e., no constraints are imposed) to a single-factor nested model in which the covariance between the two constructs is fixed at 1 (Klein, 2010). A statistically significant difference in chi-square indicates that the two constructs are statistically different from each other and, therefore, that the CSAM and CSBM are measuring different constructs. In addition, three primary fit indices were used to examine overall model fit: comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). Model fit was considered good (acceptable) if CFI was greater than or equal to .95

(.90), RMSEA was less than or equal to .05 (.08), and SRMR was less than or equal to .05 (.08; Hu & Bentler, 1999). Further, modification indices were examined to determine whether the addition of any paths that were not initially estimated would improve model fit; in cases where modification indices indicated that a change would improve model fit, each recommended modification was added in a stepwise fashion until acceptable model fit was achieved.

Step 4: Testing longitudinal invariance—Step 4 examined longitudinal invariance by testing whether the factor structure identified for each measure at Wave 5 also existed at Wave 6. We tested the configural, loading, and intercept invariance by assessing the tenability of adding constraints using a chi-square difference test (Little et al., 2007).

Step 5: Testing reliability and validity—Finally, in Step 5 we tested the reliability and validity of the CSBM and CSAM at Wave 5 and again at Wave 6. The reliability of the items for each measure was examined using Cronbach's alpha for all participants, as well as separately by the language version of each measure. To test whether each measure accurately assessed the construct it was proposed to assess, bivariate correlations were examined for convergent and discriminant validity. On the basis of previous work (see Hughes et al., 2006, for a review), mothers' ethnic-racial identity exploration and resolution were used to test convergent validity. In addition, discriminant validity was tested using a measure of mothers' engagement in risky behaviors.

Results

Step 1: Exploratory Factor Analysis

The exploratory factor analysis on the 13 original items from the CSBM indicated that three factors had eigenvalues greater than 1.00 (i.e., ranging from 1.01 to 6.06). However, examination of the scree plot supported a one-factor solution that included all 13 items; all 13 items loaded above .40 on the single factor (see Appendix A), and each loading was statistically significant ($p < .05$). Therefore, a one-factor solution was accepted for the CSBM.

The exploratory factor analysis on the six original items from the CSAM indicated that there was one factor with an eigenvalue greater than 1.00 (i.e., 3.74), and examination of the scree plot also supported a one-factor solution. Moreover, all six items loaded above .40 on the factor (see Appendix B), and all loadings were statistically significant ($p < .05$). Therefore, a one-factor solution was also accepted for the CSAM.

Step 2: Testing Factorial Invariance Across Languages

During the configural invariance testing of the CSBM, one item (i.e., Item 11; "I read books to my child in Spanish") did not statistically load on the CSBM factor ($\lambda = .27$, $p = .08$) for the Spanish version of the measure. This suggested that the item may have been measuring something different in Spanish than it was measuring in English; thus, the item was removed from the scale. The configural invariance test was conducted again without Item 11, and all items had statistically significant loadings above .40 on the factor for both language versions

of the measure. The tests of loading and intercept invariance (i.e., equality constraints) resulted in nonstatistical differences in chi-square values, suggesting that measurement properties did not vary based on language of the 12-item CSBM (Table 1).

Configural invariance of the CSAM indicated that all items had statistically significant loadings above .40 across both language versions of the measure. The chi-square difference test examining loading invariance was not statistically significant ($\Delta\chi^2(\Delta\ df) = 3.0\ (5)$, $p = .70$); however, the chi-square difference test examining intercept invariance was statistically significant ($\Delta\ \chi^2(\Delta\ df) = 13.96\ (5)$, $p = .02$), indicating that the constraints on item intercepts were not tenable. Therefore, we sequentially constrained intercepts across language versions one item at a time and used the chi-square difference test to examine which item intercepts could not be constrained to be equal across language groups. This process indicated that the intercepts for Item 4 (i.e., "It is important to me that my child speaks Spanish.") could not be constrained across languages, and Item 4 was therefore removed then all levels of invariance were retested. Without Item 4, the tests of invariance were not statistically different, suggesting that measurement properties did not vary based on language of the five-item CSAM (Table 2).

Step 3: Test of Redundancy

To test whether cultural socialization attitudes and cultural socialization behaviors were unique constructs, we first tested a model in which the covariance between the 12-item CSBM and five-item CSAM was freely estimated. Modification indices suggested that certain item residuals within constructs should be allowed to covary; therefore, residuals were allowed to correlate between Items 9 and 13 within the CSBM (see Appendix A), and between Items 5 and 6 within the CSAM (see Appendix B), resulting in acceptable model fit: $\chi^2(df = 116) = 240.91$, $p < .001$; CFI = .91; RMSEA = .08, 90% CI (.07, .10); SRMR = .06. This model was then compared to the model that included the two sets of correlated residuals, and in which the covariance between cultural socialization attitudes and behaviors was fixed at 1. The latter model resulted in poor model fit: $\chi^2(df = 117) = 425.978$, $p < .001$; CFI = .79; RMSEA = .13, 90% CI [.12, .14]; SRMR = .08. Furthermore, the value for the change in chi-square comparing the two models was statistically significant ($\Delta\chi^2\ (\Delta\ df) = 185.07\ (1)$, $p < .001$), indicating that the two constructs were statistically different from each other.

Step 4: Testing Longitudinal Invariance

Next, we examined whether each measure demonstrated longitudinal invariance from Wave 5 (i.e., when children were 4 years of age) to Wave 6 (i.e., when children were 5 years of age). The tests of configural, loading, and intercept invariance resulted in nonstatistical differences in chi-square values, providing support for the longitudinal invariance of the 12-item CSBM (see Table 1).

We also tested the longitudinal invariance of the final five-item version of the CSAM from Wave 5 to Wave 6. The configural, loading, and intercept invariance tests resulted in nonstatistical differences in chi-square values, suggesting that longitudinal invariance was

established (see Table 2). Thus, the factor structure of both the CSBM and CSAM remained consistent across waves when children were 4 and 5 years of age.

Step 5: Testing Reliability and Validity

The final 12-item CSBM demonstrated good reliability for the full sample of participants (Cronbach's alpha = .90 at Wave 5 and .91 at Wave 6), the participants who completed the Spanish version of the measure (Cronbach's alpha = .90 at Wave 5 and .86 at Wave 6), and the participants who completed the English version of the measure (Cronbach's alpha = .90 at Wave 5 and .92 at Wave 6). With respect to convergent validity, as expected, the CSBM was statistically and positively correlated with mothers' ethnic-racial identity exploration at Wave 5 ($r = .60$, $p < .001$) and Wave 6 ($r = .62$, $p < .001$), and ethnic-racial identity resolution at Wave 5 ($r = .38$, $p < .001$) and Wave 6 ($r = .44$, $p < .001$). Finally, our analyses provided evidence of discriminant validity, as results indicated that the CSBM was not statistically correlated with engagement in risky behaviors at Wave 5 ($r = .00$, $p = .99$) or Wave 6 ($r = –.13$, $p = .20$).

Turning to the final five-item CSAM, analyses provided support for the internal consistency of the measure with the full sample of participants (Cronbach's alpha = .89 at Wave 5 and .90 at Wave 6), the participants who completed the Spanish version of the measure (Cronbach's alpha = .91 at Wave 5 and .90 at Wave 6), and the participants who completed the English version of the measure (Cronbach's alpha = .88 at Wave 5 and .90 at Wave 6). Tests of convergent validity were consistent with expectations; the CSAM was statistically and positively correlated with mothers' ethnic-racial identity exploration at Wave 5 ($r = .48$, $p < .001$) and Wave 6 ($r = .48$, $p < .001$), and ethnic-racial identity resolution at Wave 5 ($r = .47$, $p < .001$) and Wave 6 ($r = .47$, $p < .001$). Finally, results provided evidence of discriminant validity; the CSAM was not statistically correlated with engagement in risky behaviors at Wave 5 ($r = .02$, $p = .84$) or Wave 6 ($r = –.12$, $p = .25$).

Discussion

Developmental theories suggest that family is an important context for socializing youth (e.g., Bronfenbrenner, 1994), and that cultural socialization, in particular, is a normative process among ethnic-racial minority families with young children (Hughes et al., 2006). Furthermore, in the small body of literature that has examined this aspect of socialization among families with Latino children, cultural socialization from caregivers has been positively associated with children's adjustment (Caughy & Owen, 2015; Quintana & Vera, 1999). Despite the potential benefits to adjustment of cultural socialization behaviors, measurement development in this area has been limited primarily to parents of adolescents and failed to distinguish between cultural socialization attitudes and behaviors. Thus, the present study contributed to this literature by testing the psychometric properties of two newly developed measures for parents of children in early and middle childhood: the Cultural Socialization Behaviors Measure (CSBM) and the Cultural Socialization Attitudes Measure (CSAM). Findings suggest that these new measures can be administered equivalently in Spanish and English, and over a one-year period.

Psychometric Properties and Implications

Findings indicated that the 12-item CSBM and the five-item CSAM reliably assessed the constructs of cultural socialization behaviors and attitudes, respectively. In addition, results provided initial empirical support for the construct validity of both measures. In particular, consistent with prior work on cultural socialization behaviors (see Hughes et al., 2006, for a review), the CSBM and CSAM were both positively correlated with mothers' ethnic-racial identity exploration and resolution. Finally, neither measure was statistically correlated with engagement in risky behaviors. Thus, expectations regarding discriminant and convergent validity were supported. Given the importance of cultural socialization among families with ethnic-racial minority children (Hughes et al., 2006), the present study makes a valuable contribution to the field by introducing a reliable and valid measure that assesses cultural socialization behaviors.

The CSAM also has implications for the field. For example, the CSAM can be used in studies designed to examine predictors of cultural socialization attitudes, as well as to explore the implications those attitudes may have for adjustment. The CSAM also may be used to help researchers better understand the factors that inform caregivers' cultural socialization behaviors. For example, the new measures will enable an empirical examination of whether the differences that have been found in the frequency of parents' cultural socialization behaviors (e.g., Lesane-Brown et al., 2010) are a function of their attitudes regarding the importance of cultural socialization.

As well as demonstrating initial support for reliability and validity of the measures, our results indicated that cultural socialization attitudes and behaviors are distinct constructs. This finding suggests that researchers and practitioners may benefit from administering both the CSAM and CSBM to caregivers to better understand cultural socialization more broadly. Furthermore, the CSBM and CSAM both demonstrated longitudinal invariance across a one-year period, which suggests that each measure captures the same construct when children are both 4 and 5 years of age. These findings support the use of the CSAM and CSBM in longitudinal studies, which is critical given that longitudinal designs will be important for moving the field forward with respect to understanding how families' cultural socialization attitudes and behaviors may change and inform one another across developmental transitions.

Consideration of Language

We also sought to develop Spanish and English versions of the measures that demonstrated equivalent measurement properties. In the process of testing language measurement equivalence of the CSBM and CSAM, results indicated that the single item that needed to be removed from each measure pertained to language (i.e., "I read books to my child in Spanish" and "It is important to me that my child speaks Spanish," respectively). This finding suggests that when developing a measure that can be administered to diverse Latino individuals, it is important to consider that some individuals may not speak Spanish; therefore, they may not themselves engage in socialization behaviors specific to language or think that it is important to do so. This finding is consistent with Phinney's (1992) suggestion that language usage should not be used in general measures because the salience

of language differs across ethnic-racial groups. Given that Latinos living in the United States vary considerably in Spanish language ability and use (Krogstad, Stepler, & Lopez, 2015), this is an important consideration when creating a measure that can be used generally with Latinos. Importantly, after these items were removed, the Spanish and English versions of each measure were statistically equivalent to each other, suggesting that the CSBM and CSAM can be administered to linguistically diverse samples.

Limitations and Future Directions

Although the present study has important strengths (e.g., prospective longitudinal design, inclusion of both Spanish- and English-speaking participants, examination of factorial invariances across both language and time), there are limitations as well. For instance, the CSBM and CSAM were tested only among Mexican-origin families. The psychometric properties of the two measures will need to be examined with members of other ethnic-racial groups, including Latino populations from other national-origin groups, to determine generalizability. On a related note, the CSBM included items that were specific to Mexican-origin families; although we have noted how slight modifications to these items can make them relevant to other ethnic-racial groups, these ideas will need to be empirically examined with other populations. Finally, we tested these measures with mothers when their children were both 4 and 5 years of age. The utility of the measures for assessing behaviors and attitudes among other caregivers (e.g., fathers, grandparents raising grandchildren), as well as with parents of school-age children, needs to be examined to assess their generalizability to other reporters and later periods of development in childhood.

Despite these limitations, the present study contributes to the field by providing two measures that can be used in research and practice to assess the cultural socialization attitudes and behaviors of mothers with preschool- and kindergarten-aged children. For example, in clinical settings, the CSBM and CSAM could be administered as part of an initial assessment to better understand mothers' attitudes and behaviors concerning socializing their children about their ethnic-racial culture, a process that has been linked with children's positive outcomes (e.g., Caughy & Owen, 2015). Further, both measurement tools could be useful as pre- and posttests for family-focused intervention programs with mothers and their children that are designed to bolster children's positive youth development via family engagement in cultural socialization, which has been demonstrated to promote youth adjustment.

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Appendix A

Exploratory Factor Analysis for the Cultural Socialization Behaviors Measure (CSBM) (*N* = 161)

Items	Factor Loadings
1. I involve my child in activities that are specific to our ethnic/cultural group (e.g., playing traditional games like "Lotería," cooking traditional foods like "tamales").[a]	.73
2. I involve my child in celebrations, holidays, or religious events that are specific to our ethnic/cultural group.	.76
3. I take my child to concerts, plays, festivals, or other events where our ethnic/cultural background is represented.	.77
4. I show my child television programs or videos that are in Spanish or that include people from our ethnic/cultural background.[b]	.67
5. I read books to my child in which people from our ethnic/cultural background are represented.	.66
6. I buy toys for my child that represent our ethnic/cultural background.	.67

Items	Factor Loadings
7. I teach my child about the values and beliefs of our ethnic/cultural background (e.g., respecting grandparents, having good manners).[a]	.45
8. I teach my child about our ethnic/cultural group.	.73
9. I tell my child about famous people from our ethnic/cultural background who have done good things and have represented our culture well (e.g., Cesar Chavez, Hidalgo and Benito Juarez, Selena, el Chicharito, Oscar de la Hoya).[a]	.55
10. I take my child to parties or family gatherings where there are people from our ethnic/cultural background.	.64
11. I listen to music in Spanish when my child is around.[c]	.52
12. My home is decorated with things that reflect our ethnic/cultural background.	.64
13. I tell my child about the history of our ancestors (e.g., when they came to the U.S., what their life was like in Mexico).[a]	.59
Eigenvalue	6.03
Percentage variance explained	46.40

Note. Caregivers were asked: "Now I would like you to think about things you may have done in the *past year* to teach your child about his/her ethnic/cultural background. Please tell me how much each of the following statements applies to you." Response options: *Not at all* (1), *A little* (2), *Sometimes* (3), *A lot* (4), and *Very much* (5). Scale should be scored such that higher scores indicate caregivers' greater engagement in cultural socialization behaviors with their children.

[a] Examples provided in parentheses are specific to Mexican-origin culture and can be omitted for the measure to be applicable to other ethnic-racial groups.

[b] Item can be revised by omitting the clause "that are in Spanish or" to make the item applicable to non-Latino ethnic-racial groups.

[c] Item 11 was removed from the final version of the measure based on language measurement invariance results.

Appendix B

Exploratory Factor Analysis (EFA) for the Cultural Socialization Attitudes Measure (CSAM) ($N = 161$)

Items	Factor Loadings
1. It is important to me that my child learns about our ethnic/cultural background.	.82
2. It is important to me that my child feels a strong attachment to our ethnic/cultural background.	.86
3. It is important to me that my child feels proud of our ethnic/cultural background.	.85
4. It is important to me that my child speaks Spanish.[a]	.45
5. It is important to me that my child spends time with people who share our same ethnic/cultural background.	.60
6. It is important to me that my child learns about the values and beliefs of our ethnic/cultural background.	.79
Eigenvalue	3.75
Percentage variance explained	62.50

Note. Caregivers were asked: "Now I would like to know how important certain things are for you. Please think about the *past year* and tell me how much you agree or disagree with each of the following statements." Response options: *Strongly disagree* (1), *Disagree* (2), *Neither disagree or agree* (3), *Agree* (4), and *Strongly agree* (5). Higher scores indicate greater endorsement of positive attitudes regarding the importance of cultural socialization for children.

[a] Item 4 was removed from the final measure.

Table 1

Factorial Invariance Across Language at Wave 5 (English vs. Spanish) and Across Time (Wave 5 vs. Wave 6) for the Cultural Socialization Behaviors Measure (CSBM)

Model	$\chi^2(df)$	$\Delta\chi^2(\Delta df)$	*p*	Constraint Tenable
Invariance across language at Wave 5				
Configural invariance	286.78 (108)	—	—	—
Loading invariance	296.46 (119)	9.68 (11)	.56	Yes
Intercept invariance	307.29 (130)	10.83 (11)	.46	Yes
Invariance across time (Wave 5 vs. Wave 6)				
Configural invariance	464.70 (239)	—	—	—
Loading invariance	472.49 (250)	7.79 (11)	.73	Yes
Intercept invariance	480.89 (261)	8.41 (11)	.68	Yes

Note. The configural invariance model placed no constraints across groups, the loading invariance model constrained the factor loadings across groups to be equal, and the intercept invariance model constrained the intercepts across groups to be equal (Little et al., 2007).

Table 2

Factorial Invariance Across Language at Wave 5 (English vs. Spanish) and Across Time (Wave 5 vs. Wave 6) for the Cultural Socialization Attitudes Measure (CSAM)

Model	$\chi^2(df)$	$\Delta\chi^2(\Delta df)$	*p*	Constraint Tenable
Invariance across language at Wave 5				
Configural invariance	69.35 (10)	—	—	—
Loading invariance	72.99 (14)	3.64 (4)	46	Yes
Intercept invariance	77.76 (18)	4.77 (4)	.31	Yes
Invariance across time (Wave 5 vs. Wave 6)				
Configural invariance	79.67 (29)	—	—	—
Loading invariance	80.66 (33)	.99 (4)	.91	Yes
Intercept invariance	81.50 (37)	.84 (4)	.93	Yes

Note. The configural invariance model placed no constraints across groups, the loading invariance model constrained the factor loadings across groups to be equal, and the intercept invariance model constrained the intercepts across groups to be equal (Little et al., 2007).