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Arlenis A. Santana
Virginia Commonwealth University

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A LONGITUDINAL TEST OF MEXICAN TEEN MOTHERS' CULTURAL
CHARACTERISTICS AND CHILDREN'S LANGUAGE SKILLS VIA MOTHERS'
LANGUAGE

A thesis submitted in partial fulfillment of the requirements for the degree of Master of Science
at Virginia Commonwealth University.

BY: ARLENIS SANTANA

B.A., State University of New York College at Geneseo, May 2018

Director: Chelsea D. Williams, Ph.D.

Assistant Professor of Psychology

Department of Psychology

Virginia Commonwealth University

Richmond, Virginia

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Abstract

The current study includes 204 Mexican teen mothers and their children from a larger study who were interviewed when children were 3 years old (Wave 4; W4), 4 years old (W5), and 5 years old (W6). The current study is guided by the integrative model of developmental competencies (García Coll et al., 1996), which suggests that parents' adaptive cultural characteristics and exchanges with their children inform children's developmental competencies. Thus, the current study examined whether teen mothers' adaptive cultural characteristics (i.e., familism values, language competency pressures, and involvement in Mexican culture and U.S. mainstream culture) at W4 informed mothers' Spanish language use with their children at W5 and, in turn, children's subsequent Spanish language abilities at W6. The current mediation model was tested with path analysis in *Mplus*. Results indicated that five mediational processes were significant, such that mothers' familism values, Spanish competency pressures, and involvement in U.S. mainstream culture at W4 were associated with mothers' *lower* Spanish language use with children at W5 and, in turn, children's Spanish language abilities at W6. Mothers' involvement in Mexican culture and English competency pressures at W4 were associated with mothers' *greater* Spanish language use with children at W5 and, in turn, children's Spanish language abilities at W6. Additionally, mothers' involvement in U.S. mainstream culture at W4 was directly associated with children's lower Spanish language abilities at W6. The discussion centers on the importance of the family context in Mexican children's Spanish language skills over time.

Keywords: Mexican/Latinx; Familism; Maternal Language Use; Acculturation; Enculturation;
Child Language Skills

A Longitudinal Test of Mexican Teen Mothers' Cultural Characteristics and Children's
Language Skills via Mothers' Language

Research on how parents' cultural characteristics and language use inform Mexican children's Spanish language skills remains relatively limited, despite evidence suggesting that language abilities are positively associated with children's academic achievement, cognitive gains, metalinguistic awareness, navigation of social settings, and writing skills (Ahmed & Bidin, 2016; Bybee, 2010; Edyburn et al., 2019; Escobar & Tamis-Lemonda, 2017; Fitch, 2010; Kieffer 2008; Lewis & Carpendale, 2014; Macnamara, 1972; Prior et al., 2015; Thomas and Collier, 2002). Focusing on processes within Mexican families that inform children's language skills are important.

Latinxs are the fastest growing population in the United States (U.S; Census Bureau, 2017), accounting for 17.79 percent of the total population (Census Bureau, 2017). Further, 62% of the U.S. Latinx population is Mexican, making Mexican individuals the largest population of Latinx people in the U.S. (Pew Research Center, 2017). Latinxs also have the largest population of youth (i.e., those under 18 years or younger) when compared to any other racial and ethnic group (Pew Research Center, 2018). Interestingly enough, among children living in non-English language households, Spanish is the most common language used at home (Census, 2018). Specifically, Spanish was the language used at home among 74.8% of students in public schools who were English Language Learners (National Center for Education Statistics, 2019). Thus, a prevalent and growing number of Spanish-speaking Mexican children are entering the U.S. school system.

Given the positive outcomes associated with Spanish language use among children who are entering school, coupled with the fact that Latinxs are the fastest-growing minority group in

the U.S., it is important to focus on underlying family factors that promote Mexican children's Spanish language skills. Further, it is particularly important to understand these processes among at-risk populations, such as children of teen mothers, who are vulnerable for language delays (Gándara & Mordechay, 2017). For example, findings from one study indicated that children of teen mothers had an average delay of 5 months in verbal ability (Morinis et al., 2013).

Interestingly, parental involvement (e.g., reading and singing to child) was found to be protective against delays, and was associated with children's increased verbal ability (Morinis et al., 2013). In other words, despite risk for delays, family factors have been found to be protective among children born to teen mothers.

An area that has received less attention in the literature is how family factors contribute to children's Spanish language development over time. Language is a part of culture, and as discussed, has positive and protective components (Cristofaro & Tamis-LeMonda, 2011; Lewis & Carpendale, 2014). Thus, guided by the integrative model for the study of developmental competencies in minority children (García Coll et al., 1996), the present study examined whether mothers' cultural characteristics (i.e., familism values, Spanish competency pressure, English competency pressure, involvement in Mexican culture, and involvement in U.S. mainstream culture) informed their Spanish language use with their child a year later and, in turn, their child's Spanish language skills a year later.

Theoretical Framework

The integrative model is a useful framework for understanding how mothers' cultural characteristics inform their Spanish language use with their children, and children's subsequent Spanish language ability. The integrative model for the study of developmental competencies in minority children (i.e., the integrative model) conceptualized by García Coll and colleagues

(1996) offers a culturally relevant framework for studying development in minority families and children. The model emphasizes the strength and positive role of the family in ethnically diverse groups. Part of the integrative model (García Coll et al., 1996) suggests that parents' adaptive cultural characteristics and exchanges with their children (e.g., language use) inform the family context and, in turn, children's developmental competencies.

García Coll and colleagues (1996) posit that the adaptive culture (e.g., traditions & legacies, migration & acculturation, economic and political histories) results from social stratification and contextual demands placed on the minority group. In particular, the current study focused on elements of mothers' traditions and cultural legacies in the adaptive culture by assessing familism values, involvement in Mexican culture, involvement in U.S. mainstream culture, and language competency pressures.

Additionally, according to the integrative model (García Coll et al., 1996), the adaptive culture directly influences the nature of specific individual family processes (e.g., the day-to-day interactions and experiences). Specifically, the integrative model states that processes in the family context inform children's developmental competencies. Developmental competencies hold that the environment must be considered when looking at children's developing and emerging skills (i.e., cognitive, social, linguistic, biculturalism). As noted, an important developmental competency among children is language skills (Prior et al., 2011). The current study captured the family context via mother's Spanish language use with her child.

Accordingly, mothers' adaptive cultural characteristics are expected to inform their Spanish language use with their children.

Thus, overall, based on the integrative model (García Coll et al., 1996), we expected that Mexican mothers' cultural characteristics (i.e., aspects of the adaptive culture) would inform

their Spanish language use with their children (i.e., a family process) and, in turn, children's Spanish language skills (i.e., a developmental competency). Given that no studies have examined this full mediation process, prior work that has examined aspects of this model is reviewed below in three sections. Specifically, we review research that has been conducted on (1) mother's familism values predicting mother's Spanish language use, (2) mother's acculturation and enculturation predicting mother's Spanish language use, and (3) mother's Spanish language use predicting children's Spanish language skills.

Mothers' Familism Values Predicting Mothers' Spanish Language Use

Familism is a Latinx cultural value that emphasizes unity, cohesiveness, loyalty, and obedience to elders in the family (Knight et al., 2010; Sabogal et al., 1987; Streit et al., 2018). There are three dimensions of familism values, which include familial obligation, familial support, and family as referents. Familial obligation refers to an individual's obligation to the family and the belief that individuals have a responsibility to one another (Sabogal et al., 1987). Familial support emphasizes the unity and emotional closeness among family members (Sabogal et al., 1987). Family as a referent refers to the belief that one's behaviors should be in line with familial expectations (Sabogal et al., 1987). Within the literature, research has focused on dimensions of familism individually (e.g., Hurwich-Reiss & Gudiño, 2016), as well as used composite measures of overall familism (e.g., Derlan et al., 2016; Streit et al., 2018; Zeiders et al., 2013).

Familism research has focused widely on the protective attributes of this cultural value. For example, numerous studies have suggested that familism is essential for positive development and serves as a buffer for stress, discrimination, problem behavior, and school attachment (Marsiglia et al., 2009; Stein et al., 2015; Umaña-Taylor et al., 2011). Other studies

have established that one's own familism values, as well as parents' familism values are associated with multiple positive outcomes for youth and adolescents (e.g., fewer depressive symptoms, behavior problems, and academic difficulties; McHale et al., 2009; Stein et al., 2015).

Although the literature on familism is diverse in nature (McHale et al., 2009; Stein et al., 2015), limited work has focused on whether mothers' familism is related to mothers' Spanish language use with their young children. In fact, only one study to our knowledge tested this relation, and they examined language preferences instead of mothers' language use, tested it in the opposite direction, and the study was with youth in middle childhood. Specifically, Romero et al. (2004) explored the relation between language preference and household education on maternal and child familism among fourth grade students.

Of interest to the current study, contrary to the expected results, children whose language preference included "both English and Spanish" or "English alone" had higher endorsement of familism values when compared to children who indicated "Spanish" as their language preference. Additionally, contrary to hypotheses, children's endorsement of familism was not associated with the differences in mother and child language preferences. This study offers support as to why research in this area is needed. In fact, authors noted that their study was the first to examine the relation between familism, language preference, and education (Romero et al., 2004). It is possible that this relation may be significant, but in the opposite direction, such that mothers' familism values may predict their language use with their children. In fact, scholars recommended that more work is needed in order to understand the nature of this relation given that the results were not aligned with expected results and theoretical predictions. The present study addresses this gap by testing whether mothers' familism longitudinally predicts mothers' Spanish language use with their children.

Although not focused on mothers' familism values and language use with their children, other related work has demonstrated that familial relationships broadly are important in promoting heritage language use. An ethnographic study examined how Peruvian family ties to their country of origin and to relatives still residing in Peru supported children's Spanish language development and maintenance efforts of the heritage language (Guardado & Becker, 2014). Results indicated that parents actively created activities that promoted Spanish language use (e.g., cooking, watching soap operas, talking with people back home). Moreover, the parents' strategies and the children's ties to their Peruvian family back home helped to maintain and develop close relations. This study supports that close family ties, such as those expressed through mothers' familism values, may promote mothers' Spanish language use with their children.

Mothers' Acculturation and Enculturation Predicting Mothers' Spanish Language Use

In addition to understanding the role of familism values, there is also a need to explore the effects of acculturation and enculturation processes in mothers' Spanish language use with their child (Schwartz et al., 2010). *Acculturation*, also termed *involvement in U.S. mainstream culture*, refers to the changes that occur when an individual encounters a culture that is different from their heritage culture. Acculturative stress refers to the consequences of acculturation to the mainstream culture, such as felt pressure, anxiety, and depression (Berry, 2006a; Rudmin, 2009). Acculturative stress can also result from cultural and language perceptions, such as *English competency pressure*, which refers to stress associated with competency in the English language (e.g., "It bothers me that I speak English with an accent."); Rodriguez et al., 2002).

Enculturation, also termed *involvement in heritage culture* (i.e., *involvement in Mexican culture* in the present study), refers to the process of holding on to one's heritage culture in terms

of beliefs and behaviors (Schwartz et al., 2010). Enculturation processes may also involve enculturative stress, which is felt pressure to preserve or uphold one's heritage culture (Rodriguez, 2002). One form of enculturative stress is *Spanish competency pressure*, which refers to stress associated with competency in Spanish (e.g., "I feel pressure to learn Spanish."); Rodriguez et al., 2002).

Despite an extensive body of work on acculturation, a limitation of previous studies are that a majority have assessed acculturation using a unidimensional model. The unidimensional model proposes that integration with the receiving culture will cause rejection or loss in heritage culture (Schwartz et al., 2010). Researchers have highlighted the problematic nature of this conceptualization by demonstrating that enculturation and acculturation are distinct processes that may vary from person-to-person, and that high acculturation does not necessarily equate to low enculturation (Schwartz et al., 2010). The current study utilized recommendations to bidimensionally assess enculturation and acculturation processes separately.

Prior work on acculturation and enculturation have focused primarily on how mental and physical health are affected by these processes (Rudmin, 2009; Schwartz et al., 2010; Schwartz & Unger, 2017). Surprisingly, limited work has investigated the relation between parents' acculturation/enculturation processes and their language use with their children. In fact, work in this area has tended to focus on how acculturation and enculturation processes impact children's Spanish language skills, rather than mothers' Spanish language use with children. Given the advantages associated with children speaking Spanish (Edyburn et al., 2019; Kieffer 2008; Thomas & Collier, 2002) understanding how language competency pressures and involvement in both mainstream and Mexican culture facilitate or hinder mothers' use of Spanish with their children will allow better interventions and programs that support mothers. Although no work to

our knowledge has tested these specific relations, related work provides support for how acculturative and enculturative processes inform language skills or language development more broadly.

For example, researchers investigated if parental acculturation, parent-child attachment, and teacher-student relationships predicted children's English and Spanish language competence (Oades-sese and Li., 2011). Among other findings, results indicated that children whose parents had lower acculturation or who were bicultural demonstrated lower English language skills and higher Spanish language skills, while children whose parents had higher acculturation tended to have higher English language skills. Although this study focused on children's language skills rather than mothers' language use, findings suggest that parental acculturation and enculturation processes are particularly important to language development broadly.

As another example, Gonzalez and Méndez-Pounds (2018) explored how acculturation processes impacted parenting behaviors. Through qualitative interviews they found that although children began to speak English at home, parents were motivated to continue to speak Spanish. In fact, parents expressed that they would prefer for children to speak Spanish more often because was important for them in order to preserve their culture. This work highlights that the importance of parents' thoughts and feelings related to acculturation and enculturation processes in their language use with children. Specifically, when parents tend to be more involved in the heritage culture and find value in enculturation processes that maintain the heritage culture, they are more likely to use Spanish with their children. More work is needed to test the role of involvement in culture, as well as acculturative and enculturative stress in parents' language use.

Related work also speaks to the notion that parents' acculturation and enculturation processes are influential in language development. In an early qualitative study, Malavé (1997)

examined parental strategies and how they promoted their own and child bilingualism among Latinx, German, and Vietnamese parents and their children 1-3 years of age. Some of these strategies included that parents “provided preschool activities in the first or second language, used television to facilitate second language acquisition, spoke over the telephone with relatives in the heritage language, and listened to the radio to facilitate mainstream language acquisition” (Malavé, 1997). Although not conceptualized as such in the study, one can argue that these behaviors are examples of acculturation strategies (e.g., listening to the radio in the mainstream culture language) and enculturative strategies (e.g., speaking to relatives in the heritage language) that inform language use. At the conclusion of the study three years later there was a decrease in heritage language and increase in English for both parents and children. Interestingly, more parents than children preferred to speak the heritage language.

However, it is possible that findings may vary if both parents' own acculturation and enculturation characteristics (e.g., acculturative and enculturative stress) and their actual heritage language use with their child (rather than solely strategies used) are assessed. For example, parents with less Spanish competency pressure may be more motivated to speak Spanish with their child given that they themselves do not feel stress associated with speaking Spanish, which may then encourage children's Spanish language skills. The current study investigated these relations to more fully understand processes underlying children's language skills.

Mothers' Spanish Language Use Predicting Children's Spanish Language Skills

Extant research demonstrates that mothers' use of Spanish promotes Spanish language development for their children. In particular, Hammer et al. (2009) investigated the effects of mothers' Spanish language on their kindergarten children's Spanish vocabulary and literacy development. Findings indicated that mothers who spoke “more or all” Spanish in the home had

children who learned Spanish at a faster rate when compared to mothers who spoke “more English than Spanish” or “all English” in the home. This indicates that the usage and frequency of mother's Spanish language use directly influences their children's Spanish language skills.

Moreover, another study with second graders and their families explored how language usage and exposure influences children's bilingualism skills in various settings (e.g., school, at-home; Gutiérrez-Clellen & Kreiter, 2003). Findings indicated that Spanish language use at home significantly predicted children's Spanish language skills. Related work on bilingualism also found similar findings for the importance of parents' Spanish language use in the home in impacting children's Spanish language abilities (Schechter & Bayley, 2003; Dolson, 1985; Duursma et al., 2007).

The body of literature in this area highlights the importance of individuals in one's environment (e.g., mothers) in promoting children's language development. Interestingly, the majority of prior work has assessed children's language skills using parent or teacher reports (e.g., Gutiérrez-Clellen & Kreiter, 2003; Marchman & Martínez-Sussmann, 2002; Marchman et al., 2017), which can introduce bias into the measurement, and may or may not accurately capture children's Spanish language skills. Much less work has used formalized tools for assessing vocabulary that are measured by researchers or independent observers. The current study built on this previous work by using a formal test of language skills (i.e., the *Test de Vocabulario en Imágenes*; TVIP), to explore whether similar associations emerge between mothers' language use with children and children's Spanish language skills when self-reports are not used.

Current Study Aims and Hypotheses

Based on the integrative model (García Coll et al., 1996), the current study examined whether aspects of mothers' adaptive culture (i.e., familism values, Spanish competency pressure, English competency pressure, involvement in Mexican culture, and involvement in U.S. mainstream culture) informed a family processes (i.e., mothers' Spanish language use) and, in turn, children's developmental competencies (i.e., children's Spanish language skills) over time. Based on tenets of the integrative model (García Coll et al., 1996) and prior work, we hypothesized that mothers' greater familism values, greater involvement in Mexican culture, greater English competency pressure, less involvement in U.S. mainstream culture, and less Spanish competency pressure when children are 3 years of age would be positively associated with mothers' greater Spanish language use with children when children are 4 years of age. Further, we hypothesized that mothers' Spanish language use with children at 4 years of age would, in turn, be associated with children's greater Spanish language skills when children were 5 years of age. Additionally, given that mothers' nativity (Mexico-born or U.S.-born) affects language use (Almeida et al., 2009), we included mothers' nativity as a covariate. Furthermore, given sex differences in childrearing practices, child sex was included as a covariate (Hammer et al., 2009; Phinney, 1990). Lastly, given the important contributions of grandmothers in parenting and childrearing in Latinx families (Contreras, 2004; East & Felice, 2014), mother and grandmother coresidency status and a measure of the child's primary caregiver (i.e., predominantly the mother or grandmother) were included as covariates.

Method

Participants and Procedure

Participants in the current study were 204 Mexican teen mothers and their children

from a larger longitudinal study called Supporting Mexican-origin Adolescent Mothers and their Infants (MAMI; Umaña-Taylor et al., 2015). The larger study explored the psychosocial and development outcomes of teen mothers, their mothers, and their children from the teen mothers' pregnancy throughout the child's first five years. Data collection occurred when mothers were in their third trimester of pregnancy (Wave 1; W1), when children were 10 months (W2), 2 years (W3), 3 years (W4), 4 years (W5), and 5 years of age (W6). Mothers were between the ages of 15- to 18-years-old when the study began. A high percentage of participants remained across all six waves of the study (i.e., 96% at W2, and 88% at W3, W4, W5, and W6). Most mothers (64%) were born in the U.S., and about half of the children (58%) were male. At W4, which is the first wave of data used in the current study, mothers were 19.94 years of age ($SD = .97$). The average family income was \$23,735 ($SD = \$17,506$), and 51% of mothers lived together with their mothers (i.e., children's grandmothers).

Researchers recruited participants from community agencies and high schools and conducted face-to-face interviews. Each year, mothers were interviewed at home in their preferred language (i.e., Spanish or English), and children were interviewed in their primary language as indicated by mothers. Most children completed their assessment in English (71%). Similarly, most mothers completed their assessment in English (72%). The current study used data from the last three waves given that variables in the mediation model were accessed over time. Specifically, we used W4 data to assess mothers' cultural characteristics (i.e., familism values, language competency pressures, and involvement in culture), W5 data to assess mother's Spanish language use, and W6 data to assess children's Spanish language skills. Mothers were compensated for their participation (i.e., \$40-60) at each wave. Additionally, mothers were

compensated \$25 at each wave for the participation of their child. All procedures were approved by the Institutional Review Board.

Measures

Mother's Familism Values at W4

Mothers' familism values at W4 were measured using a 16-item subscale of the Mexican American Cultural Values Scale (MACVS; Knight et al., 2010). The subscale captures mothers' feelings of support in the family (six items), obligations to the family (five items), and perceptions of their family as the referent (five items). On a 5-point Likert scale ranging from 1 (*strongly disagree*) to 5 (*strongly agree*), participants rated their agreement with each statement. An example of family as the referent includes, "It is important to work hard and do one's best because this work reflects on the family." An example of support in the family includes, "parents should teach their children that the family always comes first." A sample item for obligation to the family includes, "Parents should be willing to make great sacrifices to make sure their children have a better life." Items were averaged to create a composite familism values measure; higher scores indicate higher familism values. This measure has been used in numerous studies and has demonstrated good reliability and good validity with Mexican families (Zeiders et al., 2016; Streit et al., 2019). Cronbach's alpha in the present study was .78.

Mothers' Spanish and English Language Competency Pressure at W4

Mothers' Spanish and English language competency pressure at W4 was measured using the Multidimensional Acculturative Stress Inventory (MASI; Rodriguez, et al., 2002), which is a 36-item assessment of acculturative stress among Mexican individuals living in the U.S. For the purpose of this study, only two subscales were used: Spanish competency pressure (7 items) and English competency pressures (7 items). A sample item for Spanish competency pressure

includes, "I feel pressure to learn Spanish." A sample item for English competency includes, "Since I don't speak English well, people have treated me rudely or unfairly." Items were scored on a 5-point Likert scale ranging from 0 (*not at all stressful*) to 4 (*extremely stressful*). Mean scores for the two subscales were calculated; higher scores indicate greater levels of acculturative stress. Support for the validity and reliability of this measure has been provided by studies conducted with Latinx families (Lorenzo-Blanco et al., 2019; Torres et al., 2012; White et al., 2009). Cronbach's alpha in the present study was .88 for Spanish competency pressure and .90 for English competency pressure.

Mothers' Involvement in Mexican and U.S. Mainstream Culture at W4

Mothers' involvement in Mexican culture and U.S. Mainstream culture were assessed with a revised version of the Acculturation rating scale for Mexican Americans-II (ARSMA-II; Cuéllar et al., 1995), which is a 30-item questionnaire with two subscales (i.e., involvement in Mexican culture and involvement in U.S. mainstream culture). Given the focus of the current study on mothers' language use with children, we reduced overlap in the two measures by excluding 9 items in the ARSMA-II that assessed language use. We excluded 3 items that assessed verbal language (i.e., "I speak Spanish.", "I enjoy speaking Spanish.", "I speak English."), 2 items that assessed writing in a language (i.e., "I write (e.g., letters) in Spanish.", "I write (e.g., letters in English)."), 2 items that assessed reading in a language (i.e., "I enjoy reading (e.g., books) in Spanish.", "I enjoy reading (e.g., books) in English."), and 2 items that assessed thinking in a language ("I think in English.", "I think in Spanish."). In particular, mothers' Spanish language use was highly correlated with the original involvement in Mexican culture subscale ($r = .58^{**}$) and the original involvement in mainstream culture subscale ($r = -.48^{**}$). Removing the 9 aforementioned items reduced the correlation between mothers' Spanish

language use and the involvement in Mexican culture subscale ($r = .48^{**}$) and the involvement in mainstream culture subscale ($r = -.37^{**}$). There were an additional 6 language items that we did not remove that were not specific to language use (e.g., “I enjoy watching TV in Spanish.”). Thus, the Mexican culture subscale in the current study included 12 items (e.g., “I associate with Mexicans and/or Mexican Americans.”) The involvement in U.S. mainstream culture subscale included 9 items (e.g., “I like to identify myself as an American.”). Items were scored on a 5-point Likert scale ranging from 1 (*Not at all*) to 5 (*Very Much*). Means are created for each subscale and higher scores indicate greater involvement in Mexican culture and greater involvement in U.S. mainstream culture, respectively. This measure has been used in numerous studies and has demonstrated good reliability and good validity with Mexican adolescents, mothers, and fathers (Cruz et al., 2019; Delgado et al., 2011). Cronbach's alpha in the present study was .72 for involvement in Mexican culture and .79 for involvement in U.S. mainstream culture.

Mothers' Observed Spanish Language Use at W5

To assess mothers' Spanish language use with their child at W5, two trained research assistants observed and coded a 15-minute mother-child free play task. Research assistants coded the video minute-by-minute and assigned a score of 1 to 7 for how much Spanish and English the mother used with the child. A score of “7” indicates all Spanish (100% in Spanish), “6” indicates predominantly Spanish (90-99% in Spanish), “5” indicates fairly Spanish (51-89% in Spanish), “4” indicates bilingual (40-50% in Spanish), “3” indicates fairly English (11-39% in Spanish), “2” indicates predominantly English (1-10% in Spanish), and “1” indicates all English (0% in Spanish). A mean score across the minutes were created to create a total Spanish language use

score across the 15 minutes. Higher scores indicate mothers' greater Spanish language use with their child.

Children's Spanish Language Skills at W6

To assess children's Spanish language skills at W6, the Test de Vocabulario en imágenes Peabody (TVIP; Dunn, Padilla, Lugo, & Dunn, 1986) was used, which consists of 125 items that measure children's receptive vocabulary in Spanish. The TVIP is considered an indicator of verbal intelligence for children who range in age from 2 years 6 months to 17 years 11 months. During this assessment, the researcher instructs the child to indicate (i.e., pointing or saying) which of the four pictures displayed best matches the word said aloud by the test administrator. The measure provides a raw score and age-based, norm-referenced standard score. The standardized score was used in the current study. Support for the validity and reliability of this measure has been provided by studies with Latinx preschool dual language learners (Limlingan, 2020).

Controls

Participants reported on various demographic characteristics that were used as controls in analyses. Mother's nativity at W1 was coded as 0 = *foreign-born*, 1 = *U.S. born*. Child's sex at W2 was coded as 0 = *male*, 1 = *female*. The coresidency status of mothers and grandmothers at W4 (coded 0 = *No, did not live together*, 1 = *Yes, lived together*). We also controlled for the person who provided the most caregiving for child (grandmother or mother) at W4 using the 6-item primary caregiver scale created for the purposes of the current study that assessed mothers' report of who spent more time engaging in activities with the child (e.g., general care and calming). Responses ranged from 1 = *[My mom or mother figure name] does this much more than I do* to 5 = *I do this much more than [My mom or mother figure name] does*. Higher scores

indicate that teen mothers have greater responsibility for the child's care. Cronbach's alpha for the primary caregiver scale was .85.

Analytic Approach

Analyses were conducted using path analysis in *Mplus* version 7.2 (Muthén & Muthén, 1998-2014). Model fit was examined by using the comparative fit index (CFI), the root-mean-square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). Model fit was considered to be acceptable if the CFI was greater than or equal to .90, the RMSEA was less than or equal to .08, and the SRMR was less than or equal to .08; Hu & Bentler, 1999). Consistent with recommendations for handling missing data in developmental research (Enders, 2013), missing data was handled using full information maximum likelihood (Arbuckle, 1996).

The hypothesized model tested the indirect pathways between mothers' cultural characteristics (i.e., familism values, Spanish competency pressure, English competency pressure, involvement in Mexican culture, and involvement in U.S. mainstream culture) and children's Spanish language skills via mother's Spanish language use (see Figure 1). Additionally, for mediation purposes, the direct relations between mothers' cultural characteristics and children's Spanish language skills were also included in the model. To formally test mediation pathways (i.e., indirect effects), the bias-corrected bootstrap method in *Mplus* with 2000 samples was used (Taylor et al., 2008). In this approach, mediation is significant if the confidence interval does not contain zero.

Results

First, means, standard deviations, and correlations of all the study variables were computed (Table 1). Skewness and kurtosis were examined, which indicated that all measures

were normally distributed (i.e., skewness less than two and kurtosis less than seven; Tabachnick & Fidell, 2006), except for Mothers' English competency pressure, which had skewness of 2.82 ($SE = .19$) and kurtosis of 8.62 ($SE = .38$). However, given the value for each, no transformation was made because transformations can create bias in the estimates and the deviation from normality was not large enough to cause issues with the test statistic (Tabachnick & Fidell, 2007).

The final model had acceptable fit: $\chi^2 (df = 4) = 17.19, p = .00$; CFI = .90; RMSEA = .13 (90% C.I.: .07 - .19); SRMR = .03 (see Figure 2). Results indicated that mothers' W4 familism values, mothers' W4 Spanish competency pressure, and mothers' W4 involvement in U.S. mainstream culture were associated with *lower* maternal W5 Spanish language use. On the other hand, mothers' W4 English competency pressure and mothers' W4 involvement in Mexican culture was associated with *greater* maternal W5 Spanish language use. Additionally, mothers' W5 Spanish language use with children was associated with more child W6 Spanish language abilities. Only one direct path was significant such that mothers' W4 involvement in U.S. mainstream culture was associated with less child W6 Spanish language abilities. None of the covariate paths were significant.

Overall, results indicated that five mediational processes were significant. Specifically, mothers' W4 familism values were negatively associated with W5 mothers' Spanish language use with children, and, in turn, positively associated with children W6 Spanish language abilities (standardized 95% CI for the mediated effect = -0.17, -0.01). Additionally, mothers' Spanish competency pressure was negatively associated with mothers' greater Spanish language use with children and, in turn, children's greater Spanish language skills (standardized 95% CI for the mediated effect = -0.17, -0.03). Moreover, mothers' English competency pressure was positively

associated with mothers' greater Spanish language use with children and, in turn, children's greater Spanish language skills (standardized 95% CI for the mediated effect = 0.03, 0.20). Furthermore, mothers' involvement in Mexican culture was positively associated with mothers' Spanish language use with children and, in turn, children's greater Spanish language skills (standardized 95% CI for the mediated effect = 0.11, 0.32). Finally, mothers' involvement in U.S. mainstream culture was negatively associated with Spanish language use with their children and, in turn, children's Spanish language skills (standardized 95% CI for the mediated effect = -0.32, -0.08).

Discussion

Research on how parents' cultural characteristics and language use inform Mexican children's Spanish language skills remains relatively limited. Given the positive outcomes associated with Spanish language use among children who are entering school (e.g., Ahmed & Bidin, 2016; Escobar & Tamis-Lemonda, 2017), coupled with the fact that Latinxs are the fastest-growing minority group in the U.S. (Census Bureau, 2017), it is important to focus on underlying family factors that promote Mexican children's Spanish language skills.

The current study aimed to understand these relations in the context of teen mother families, whose children are vulnerable for language delays (Gándara & Mordechay, 2017). Specifically, the current study tested whether aspects of mothers' adaptive culture (i.e., familism values, Spanish competency pressure, English competency pressure, involvement in Mexican culture, and involvement in U.S. mainstream culture) informed a family processes (i.e., mothers' Spanish language use) and, in turn, children's developmental competencies (i.e., children's Spanish language skills) over time. Overall, findings were consistent with expectations apart from the role that familism played in Spanish language use, which was contrary to hypotheses.

Findings are discussed in more detail in terms of (a) the mediated process from mothers' familism values predicting children's Spanish language skills through mothers' language use, (b) the mediated processes from mothers' acculturation and enculturation predicting children's Spanish language skills through mothers' language use, and (c) limitations, future directions, and implications.

Mothers' Familism Values Predicting Children's Spanish Language Skills via Mothers' Spanish Language Use

Based on the integrative model (García Coll et al., 1996), Mexican mothers' greater familism values (i.e., aspects of the adaptive culture) were expected to inform their Spanish language use with their children (i.e., a family process) and, in turn, children's Spanish language skills (i.e., a developmental competency). Surprisingly, results indicated that Mothers' W4 familism values were negatively associated with W5 mothers' Spanish language use with children, meaning that mothers' familism values predicted *lower* Spanish language use with children. This finding is inconsistent with previous related literature that suggests that close family ties, such as those expressed through mothers' endorsement of familism values, promotes heritage language use (Guardado & Becker, 2014; Romero et al., 2004).

However, to our knowledge this is the first study to examine this specific mediation process from mothers' familism values to their Spanish language use and children's subsequent language skills over time. Additionally, the current study also focused on families in which mothers became pregnant as adolescents, which may have contributed to the unexpected findings. It is possible that perhaps young mothers with higher familism values are relying more on grandmothers and the broader family unit to use the Spanish language with their children. This notion is consistent with ideals of familism, which involves familial obligation, familial

support, and family as referents (Sabogal et al., 1987). Perhaps teen mothers with high familism are referring to grandmothers and other family members for support in Spanish language socialization of their child, while the focus their own attention on English language socialization, leading to the results of higher familism values predicting less Spanish language use with children (or conversely, more English language use with children).

Contreras et al. (2002) demonstrated that compared to other teen parents, during stressful times Latinx teen mothers count more on their family members and extended family (e.g., grandmothers) for assistance with childrearing and childcare responsibilities. Contreras and colleagues (2002) noted that when compared to European American teen mothers, Mexican American teen mothers spent more time with their mothers (i.e., grandmothers) on a daily basis, reported receiving greater support and help from their mothers, and when employed or at work, grandmothers were responsible of taking care of the child. Thus, the current unexpected results may be interpreted through a cultural lens that speaks to the influential role that grandmothers and elders have within a family unit, and especially within teen mother families (Becerra & de Anda, 1984; Cabrera et al., 2013; Zeiders et al., 2015). Teen mothers with higher familism values may be relying on grandmothers to engage in Spanish language socialization with their child while teen mothers are focusing more on teaching the English language. An important future direction will be to more directly test these possibilities by examining the extent to which grandmothers are responsible for language socialization in families in which mothers have high familism values.

If mothers are not using Spanish with their children, then over time, their children's Spanish skills may not develop. If grandmothers are indeed engaging in Spanish language use instead, it is possible that children may still be gaining Spanish language skills, but this notion

will need to be tested. This will be especially valuable to consider among families in which mothers and grandmothers may not live together. For example, in the present study 49% of grandmothers did not live with mothers at W4 when mothers reported their Spanish language use with children. If mothers with high familism values are relying on grandmothers to socialize their children in Spanish, but grandmothers are not living in the home, children may not be hearing Spanish on a consistent enough basis to gain language proficiency.

In the current study, along with the significant mediation results, the direct path from W4 mothers' familism values to W6 children's Spanish language was insignificant, suggesting that this in fact is a fully mediated process in which the language that mothers are using is mediating the relation between mothers' familism and child language abilities. This has important implications suggesting that over time, mothers' familism values will influence their child's Spanish language skills, however, this is only true when mothers use Spanish language with their children. Overall, the literature in this area is limited and much more research is needed, especially with respect to familism values and the role of grandmothers' Spanish language socialization in children's Spanish language skills.

Mothers' Acculturation and Enculturation Predicting Children's Spanish Language Skills via Mothers' Spanish Language Use

Consistent with expectations based on the integrative model (García Coll et al., 1996), we hypothesized that mothers' involvement in Mexican culture and English competency pressure would be associated with mothers' *greater* Spanish language use, while mothers' involvement in U.S. mainstream culture and Spanish competency pressure would be associated with mothers' *lower* Spanish language use. We further hypothesized that mothers' Spanish language use would,

in turn, be associated with children's greater Spanish language skills. Results were consistent with these expectations.

There has been a long history of research conducted on acculturation and enculturation. However, the majority of this work has assessed these processes from a unidimensional perspective that posited that integration with the receiving culture would cause rejection or loss in one's heritage culture (Schwartz et al., 2010). Consistent with recommendations to move beyond this approach, we assessed acculturation and enculturation separately. Further, to better understand the depth and multidimensionality of these processes, we assessed the unique effects of two acculturation processes (i.e., involvement in U.S. mainstream culture and English competency pressure) and two enculturation processes (i.e., involvement in Mexican culture and Spanish competency pressure). Importantly, all four of these constructs were uniquely predictive of mothers' Spanish language skills, demonstrating the importance of including multiple dimensions of acculturation and enculturation processes in studies that explore language development.

Interestingly, few studies have focused on how parental acculturation and enculturation processes predict mothers' language use with children. In fact, the studies that have been conducted on language have focused on how acculturation and enculturation directly impact children's language skills. For example, previous work has found that children had higher English skills if their parents were more acculturated and higher Spanish skills if their parents were more enculturated (Oades and Li., 2011). However, our findings indicated that when mothers' Spanish language use was considered, the relation between acculturation and enculturation processes were not significant. For example, mothers' involvement in Mexican culture predicted greater Spanish language use and, in turn, children's greater Spanish language

skills, but the relation between mothers' involvement in Mexican culture and children's Spanish language skills was not significant. In fact, mediation was significant for all four indices of acculturation and enculturation processes, demonstrating that mothers' language use is the actionable mechanism that accounts for the relations between parents' acculturation/enculturation and children's language skills.

Interestingly, in the area of acculturation and enculturation research, a great of attention has centered on involvement in the heritage and/or mainstream culture. Our findings emphasize that both of these constructs (i.e., involvement in Mexican culture and involvement in U.S. mainstream culture) are valuable for understanding parents' language use, but results also emphasize that parents' English and Spanish language competency pressure need to be considered. In particular mothers who had more Spanish competency pressure used Spanish less with their children over time. This finding highlights an important focal area for future research because a) few studies focus on enculturative stress in general, and b) our findings indicate that the stress associated with speaking Spanish and/or perceiving that one does not speak it well impedes mothers from using Spanish language with their children, which is concerning because of the positive implications that speaking Spanish has for children's development (Lewis & Carpendale, 2014; Macnamara, 1972; Prior et al., 2015). Results underscore that interventions are needed that increase coping around speaking Spanish so that mothers who experience this stress still feel empowered and motivated to provide this asset of Spanish language to their child.

Relatedly, findings also demonstrated that mothers who had higher English competency pressure used Spanish language more with their child. In terms of interventions, mothers who experience English competency pressure and stress around English language usage also need support. Specifically, even though stress around speaking English led to more Spanish language

use with children, a point of intervention could be to change the motivation underlying their Spanish language use. Instead of feeling pressure and anxiety around English, we could provide interventions that help mothers feel more efficacy about their English language learning process so that their motivation is not from a place of anxiety, but rather a choice to actively facilitate Spanish language use as an asset for their children.

It is important to address these acculturative and enculturative influences on Spanish language use because our findings indicated that this, in turn, affects children's language ability. This is consistent with previous findings suggesting that mothers' use of Spanish promotes Spanish language development for their children (e.g., Gutiérrez-Clellen & Kreiter, 2003; Hammer et al., 2009). Our findings build on this prior cross-sectional work by demonstrating that this relation exists longitudinally in early childhood.

In addition to extending prior empirical work, our findings also build on theory. Specifically, building on the integrative model (García Coll et al., 1996), our findings indicate that Spanish language skills are an important developmental competency for Mexican children that are informed by both parents' adaptive cultural characteristics and exchanges and the family context. Recently, there have been updated versions of the integrative model (García Coll et al., 1996) that apply aspects of the model to a specific population, such as Latinx immigrant populations in rural contexts (Stein et al., 2016). The modified integrative model (Stein et al., 2016) highlights the importance of considering the intersection of minority status, Latinx identity and context in the development of children. Stein and colleagues (2016) emphasize that aspects of the adaptive culture have a protective value as it helps to navigate and build cultural adaptations that facilitate integration into the community. Moreover, the modified integrative model (Stein et al., 2016) emphasizes that when compared to other groups, Latinx families count on extended

family members when navigating aspects of the adaptive culture (e.g., migration) and that this may alter parenting and lead families to explore different responsibilities (e.g., familial roles; Stein et al., 2016). Our study builds on these additions in the modified integrative model (Stein et al., 2016) by also indicating that is important to further explore the role of family in acculturative and enculturative processes, and that immigrant contexts and social positional factors must be considered in order to fully understand how this influences children's development.

Limitations, Future Directions, and Implications

The current study has various limitations that highlight directions for future research. First, the current model only tested mothers' language use with their children, but did not assess other caregivers' language use with children. Given the unexpected findings in which familism values were negatively associated with mothers' Spanish language use, and that previous research highlights the key role that grandmothers have in childrearing in Latinx families in which a pregnancy has occurred during adolescence, it is important to fully understand the extent to which other family members (e.g., grandmothers) may be playing a role in language socialization.

Relatedly, the current study did not include fathers; therefore, their contribution in this process is unclear. Extensive literature describes differences in how fathers and paternal role models interact with children, and how they contribute to children's development. For instance, findings have indicated that fathers and paternal role models partake in more active activities (e.g., dramatic play) when compared to mothers. This can potentially offer a unique opportunity for language development in children (Stockall & Dennis, 2013).

Moreover, the current study focused on Mexican young mothers who had a child during adolescence and were living in the Southwestern U.S. Subsequent studies should investigate if the current findings generalize to other teen mom families across varying Latinx backgrounds.

Finally, our assessment of mothers' language use with their child was coded from a free-play task that occurred during their annual interview. There may be contexts outside of play when mothers use language differently (e.g., more Spanish, more English, or a mixture of both) that were not captured in the current study. Future research is warranted that assesses mothers' language use across multiple contexts to provide a more comprehensive understanding of the effects it has on children's Spanish language development.

Despite limitations, the current study has important strengths, as well as implications. First, the current study assessed processes underlying children's Spanish language use across 3 years, building on the cross-sectional nature of work that has been conducted in this area of work to-date. Second, the constructs in the current study were assessed with a rigorous methodological approach that utilized mothers' reports of adaptive cultural characteristics, observational assessment of mother's Spanish language use with children, and a validated objective assessment of children's Spanish language skills. Using multiple assessment tools moves beyond the parental self-report measures that have traditionally been used to assess these processes, and reduces self-report bias in the results. Third, consistent with recommendations in the field (e.g., Schwartz et al., 2010), we assessed both acculturation and enculturation processes, rather than unidimensional assessments of these constructs. Lastly, the majority of prior work that has focused on families in which an adolescent pregnancy has occurred has tended to center on deficits and comparing children of teen mothers to children who do not have teen mothers. Instead, we used a strengths-based approach to better understand the role of cultural assets of

teen mother families (e.g., mothers' involvement in Mexican culture and mothers' Spanish language use) in children's language development.

Further, considering the implications of the current study, as noted previously, Latinxs are the fastest growing minority group in the U.S, suggesting that more Spanish-speaking children may be entering preschool the upcoming years. Given that children are expected to adopt English as their main language of communication in public settings (e.g., school, daycare) it is important to provide a safe space for children to speak their native language (e.g., Spanish), as it has implications for positive development. Thus, practitioners working with bilingual families should encourage parents to engage in Spanish language use with their children. Further, family-focused practitioners should take into consideration family cultural characteristics (e.g. familism values, enculturation, acculturation), as they have important implications for children's language development. Additionally, results demonstrate that there is a need for interventions that aid mothers in navigating language stress in order to empower and motivate them to continue their language growth journey. Changing the motives and perception of the stress associated with using Spanish language can be beneficial for their children.

Moreover, the current findings can be beneficial for educators for how they facilitate adjustment for children and successfully encourage students' success in various settings. In particular, teachers can assist bilingual and Spanish-speaking families by being inclusive and prioritizing families' cultural background. Children may be entering the school context with varying English and Spanish language skills. If teachers themselves are bilingual, they could connect with children in Spanish and encourage their continued development of this developmental competency. If teachers are not bilingual themselves, they can ensure that they do

not intentionally or unintentionally discourage children's Spanish language use, but rather, encourage it as a skill within the classroom.

In sum, findings from the current study suggest that there is much more work to be done from a research and applied standpoint. Further exploring and implementing findings regarding the important role of mothers' cultural characteristics and language use with children will be important focal areas to encourage children's development in their Spanish language skills.

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Table 1*Means, Standard Deviations, and Correlations among Study Variables and Controls (n = 204)*

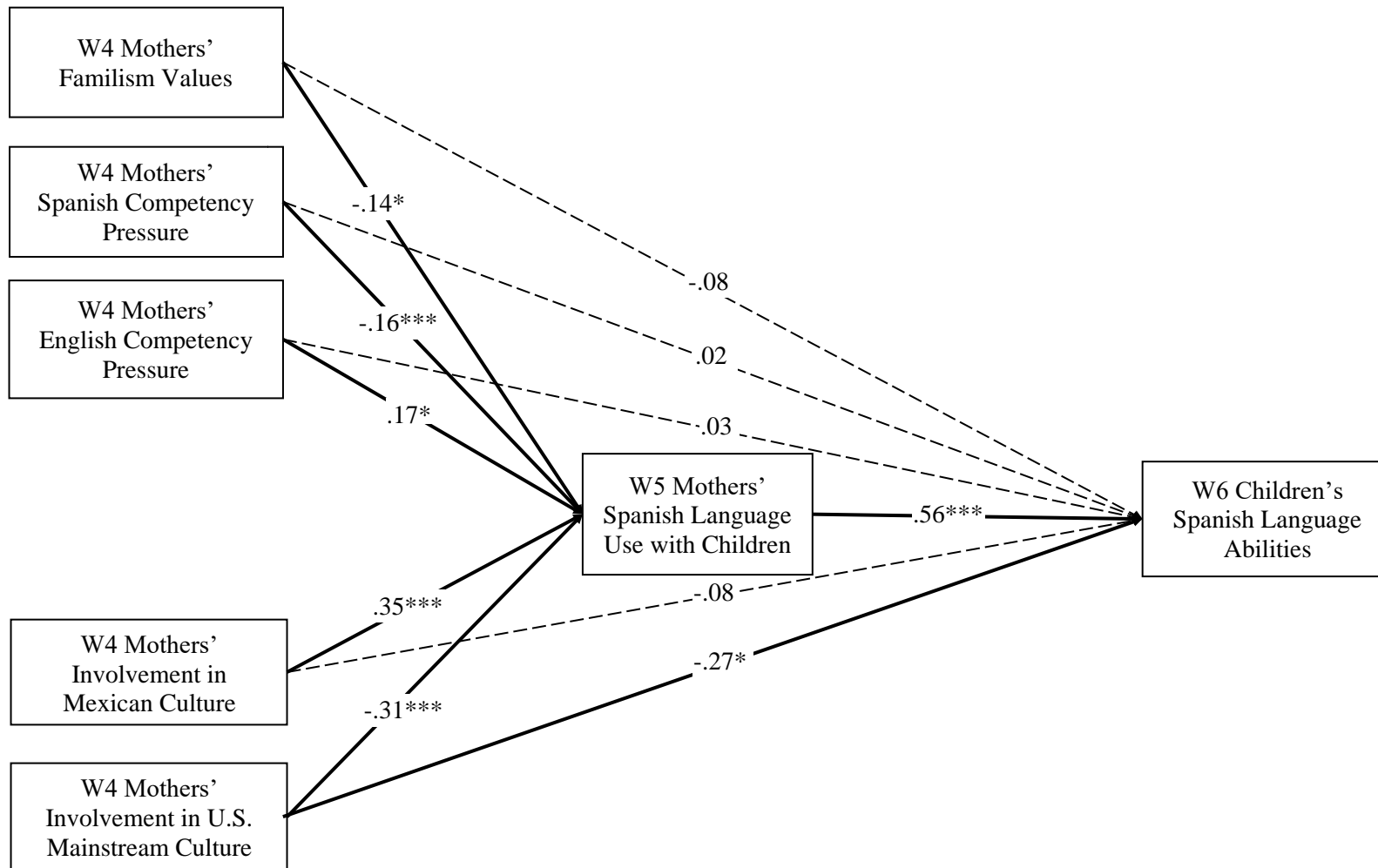
	1	2	3	4	5	6	7	8	9	10	11
1.W1 M Nativity	--										
2.W2 C Sex	-.09	--									
3.W4 Primary Caregiver	.05	-.04	--								
4.W4 MG Coresidency	-.08	.09	-.35***	--							
5.W4 M Familism Values	-.10	-.03	.04	.11	--						
6.W4 M Spa Competency Pressure	.35***	.01	.11	-.01	.03	--					
7.W4 M Eng Competency Pressure	-.23***	.05	-.06	-.01	.05	-.12	--				
8.W4 M Inv in Mexican Culture	-.27***	-.02	-.13	.03	.06	-.49***	.22**	--			
9.W4 M Inv in Mainstream Culture	.42***	-.03	-.08	.10	.00	.23***	-.34***	-.12	--		
10.W5 M Spa Language Use with C	-.48***	.15*	-.03	.02	-.13	-.42***	.36***	.49***	-.43***	--	
11.W6 C Spa Language Abilities	-.32***	.15*	-.16*	.07	-.16*	-.27***	.30***	.24***	-.48***	.65***	--
Mean	.64	.42	4.34	.51	4.39	.61	.43	4.09	3.59	3.35	67.06
SD	.48	.49	.72	.50	.37	.84	.71	.56	.67	2.47	12.59

Note. M = Maternal, G = Grandmother, C = Child, Spa = Spanish, Eng = English, Comp = Competency, Inv = Involvement. Nativity was coded as 0 = Foreign-born, 1 = U.S. born. Child sex was coded as 0 = Male, 1 = Female. Co-residency of Mother and Grandmother was coded as 0 = No, 1 = Yes.

* $p < .05$. ** $p < .01$. *** $p < .001$

Figure 1

Mothers' cultural characteristics predicting children's Spanish language skills via mothers' Spanish language use with children over time.



Note. Waves occurred when children were 3 years old (Wave 4; W4), 4 years old (W5), and 5 years old (W6). Maternal nativity, child sex, mother-grandmother coresidency, and mothers' report of the primary caregiver (i.e., mother or grandmother) were included as covariates predicting outcomes, but are not displayed. Solid lines indicate significant paths and dashed lines indicate non-significant paths. Coefficients are standardized. * $p < .05$. ** $p < .01$. *** $p < .001$