EFFECTS OF EPALS ON LATINO/HISPANIC MOTHER-CHILD INTERACTIONS AND SHARED BOOK READING

by

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DISSERTATION ABSTRACT

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The study examined Latino/Hispanic mother-child interactions and shared book reading behaviors before and after participation in a random-assignment Spanish web-based responsive parenting intervention called Play and Learning Strategies (ePALS), as compared with a Spanish web-based developmental assessment intervention (DAS). The efficacy of PALS was previously demonstrated for improving mother and child behaviors within play contexts, everyday activities, and standardized measures of child language. We did not observe statistical changes in mother-child interactions as measured by the *Bilingual Child-Mother Coder Impression*; but changes were observed in shared reading interactions as measured by the *Adult-Child Interactive Reading Inventory*. Mothers enrolled in ePALS slightly increased some reading interactive behaviors, while mothers enrolled in DAS decreased on the use of interactive reading skills. Children enrolled in ePALS significantly increased in their use of interactive reading behaviors, while children's interactive reading skills in the DAS conditions decreased. These results add to the dual language learners' literature base, but also add to the supporting importance of targeting responsive behaviors in everyday activities such as shared-reading to facilitate children's development. Limitations and future directions are discussed.

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CHAPTER 1

INTRODUCTION

The overall well-being of young children is inextricably linked to their early experiences with primary caregivers. Research has documented that experiences in the first years of life constitute a period of both great opportunity and vulnerability for developing a strong foundation for healthy developmental trajectories (e.g. Barton & Fettig, 2013; Phillips & Shonkoff, 2000).

Vulnerable Children and Families

From an ecological model, risk factors are those conditions or attributes of individuals, families and communities (such as low parental education, residential mobility, non-employed parent and economic hardship) that increase the probability of onset, exacerbation or maintenance of a problematic condition. Within this model, protective factors are conditions or attributes of individuals, families, communities (such as higher parental education, access to social support and high-quality health and educational services) that mitigate or eliminate risk. All families are exposed to diverse protective and risk factors. Both of these conditions exist in family environments; however, distal factors such as exist in neighborhoods and schools are mediated through family processes that occur closer to the child. Consequently, there is an important and complex set of interactions among risk and protective factors within families. Consequently, there is an important and complex set of interactions among risk and protective factors within families. Context, timing of onset during development, and the light or duration of each factor are variables that affect impact (Smokowski, Mann, Reynolds, & Fraser, 2004). Whereas significant cumulative adversity impairs

development in the first years of life, research has shown that the more significant adversity a child faces, the smaller the odds of achieving positive developmental trajectories. Indeed, the additive effect of risk factors such as poverty, caregiver mental illness, child maltreatment, unemployment, lack of social support and low parental education have a cumulative impact on children's developmental trajectories with lifelong consequences (Barth, Scarborough, Lloyd, Losby, Casanueva, & Mann, 2008). By contrast, an extensive body of knowledge has documented that the presence of protective factors increases the probability of positive, adaptive and healthy outcomes, even in the face of risk and adversity (Center for the Study for Social Policy, 2013).

Prevalence. Across the U.S., large numbers of young children and their families are exposed to one or more risk factors that could be linked to academic failure and poor health outcomes, family economic hardships, consistently associated with negative outcomes in both domains. Other risk factors, such as living in a single-parent family or with parents with low education levels, especially when combined with poverty, can markedly increase children's chances of adverse outcomes. Children affected by multiple risks factors (three or more) are most likely to experience negative outcomes, including maladaptive behavior (Robbins, Stagman, & Smith, 2012).

Growing up poor in the U.S. The percentage of infants and toddlers (i.e., children under age 3 years) living in low-income families (both poor and near poverty) has been on the rise, increasing from 44% in 2007 to 47% in 2013. This age group is more likely to live in low-income and poor families than older children, and is as likely as adults 65 years and older to live in poor families. Forty-seven percent of these young children are affected by poverty in combination with another risk factor, including

parents lacking a high school degree (1.2 million), residential mobility of at least twice in the last year (2.5 million) and living in a household without English speakers (0.7 million). Nearly 43% (4.8 million) of young children are affected by 1-2 risk factors, and 18 % (1.9 million) of young children are affected by three or more risk factors (National Center for Children in Poverty, 2015), which makes them exceptionally vulnerable.

The U.S. ranks near the bottom (36^{th} out of 41^{th}) when compared to other high-income nations on measures of child poverty. In the richest nation in the world, one in three children lives in poverty (e.g. household earning 60% less of the median income). While 32.2% of children are living below the poverty line in the U.S., by contrast only 5.3% of Norwegian kids currently meet this definition (United Nations Children's Fund, UNICEF, 2014). Poverty--as one of the most powerful risk factors--leads to exposure to many other risk factors, such as health risks and poor cognitive, social and economic outcomes. Nationally, children living in poor households in the U.S. are more likely to face food insecurity. Over 3.5 million of children ages 5 and under are being served by Feeding America, and more than one in four Latino/Hispanic and Black children lives in food insecure households (Feeding America, 2015). Seventy-one percent (3.7 million) live with families who rent their homes; 7% (0.4 million) are uninsured, and 54% (1.5 million) of infants and toddlers with immigrant parents live in poverty. Consequently, young children and infants growing in a low-income family in the U.S. are more likely to face considerable daily obstacles that can threaten their opportunities to thrive (Jiang, Ekono, & Skinner, 2015).

Historically, the intersections of experiencing risk factors and race and ethnicity are disproportionably elevated in the U.S. For example, Black, American Indian, and

Hispanic infants and toddlers are disproportionally more likely to live in low-income families than any other racial/ethnic group and in homes experiencing a greater number of risk factors (Costello, Keeler, & Angold, 2000; Jiang et al., 2015).

Latino/Hispanic Families Living At-Risk

Latino/Hispanic is an evolving umbrella term used to refer to people who have their origins in Mexico, Central or South America, and the Spanish-speaking Caribbean. They are the nation's largest minority, and one of its fastest growing, comprising 17.1% of the total U.S. population (Pew Research Center, 2015). For better understanding the Latino/Hispanic literature, it is important to define key terms regarding immigration, language use and childrearing values.

Terms such as "*First-generation*" and "*immigrant"* refers to people who are foreign-born; "*second-generation*" refers to people born in the U.S. with at least one first-generation parent; and "*third-generation*" refers to people born in the U.S., with both parents born in the U.S. (Pew Research Center, 2009). "*Language dominance*" is described as Spanish-dominant for persons that are more proficient in Spanish than in English. "*Bilingual*" refers to persons who are proficient in both English and Spanish, and "*English-dominan*t" refers to persons who are more proficient in English than Spanish. These constructs are regularly used when measuring acculturation levels. It is important to mention that there is little consensus on a definite way to measure acculturation, and the complex and interactive nature of such a construct within individuals and families makes it difficult to define (Martinez, 2006).

Approximately 66% of Hispanics/Latinos infants and toddlers (1.8 million) live in or near poverty (National Center for Children in Poverty, 2015). Therefore, many

Hispanic/Latino families may experience some risk factors mediated through social economic status (SES) as a product of high birth rates and declining economic opportunities. It is well known that experiencing poverty at any period during a child's developmental years increases their risks of mental health problems, such as depression and antisocial behavior (McLeod & Shanahan, 1996; Samaan, 2000). An increase in the likelihood of social and emotional problems may also increase with a child's exposure to family risk factors such as stress and neglect (e.g. Phillips & Shonkoff, 2000; Slack et al., 2011).

Longitudinal data demonstrate an achievement gap between many immigrant groups and their native peers begins even prior to kindergarten enrollment (Park & McHugh, 2014). Studies examining parenting behavior in Latino/Hispanic families have yielded mixed results. Some research indicates that Latino/Hispanic parents are more likely to rely on harsh, physical discipline (e.g. Fontes, 2002; Garcia-Preto, 1996), whereas other studies suggest that Latino/Hispanic parents are more permissive (e.g. Cauce & Domenech-Rodriguez, 2002; Weiss & Toolis, 2010). However, some studies suggest that Latino/Hispanic families performed better than other minority groups on self-efficacy and child management behavior (Breitenstein et al., 2012). These wide-ranging findings may reflect the heterogeneity of the Hispanic/Latino samples that have been studied.

As children's first social partners, parents play a critical role in children's social-emotional development, including the formation of attachment relationships and the transmission of cultural, linguistic, and social norms through specific parenting practices. As culture plays an important role in both children's social and cognitive development

(Rogoff, 2003), it highlights parenting variability regarding the linguistic, cognitive, and social talents of young children raised within Latino/Hispanic families, who are developing capacities in more than one language. The data-based research on working with parents and families of English-language learners and/or dual-language learners has revealed that their parents have the desire and often the ability to help their children succeed academically (Espinosa, 2015). Given that a 66% of Latino/Hispanic children under age 6 years live in low-income families (Jiang et al., 2015), there is a high need for better understanding how to better provide services and supports to this at-risk population. In addition, families at-risk are often viewed from a 'deficit model" rather than a strength based model, in which family expertise is appreciated, valued, and acknowledged. A strength-based model may help providers and researchers to tap into families talents, and by extension, their cultural communities (Espinosa, 2015).

Latino/Hispanic children living at-risk. Young learners who are acquiring two languages (or more) simultaneously or who are developing their primary language as they learn a second during the early childhood years (ages birth to five) are better understood as dual-language learners (DDLs) (Espinosa, 2015). A significant number of Hispanic/Latino families grow up in bilingual environments, with an estimated 76% of individuals age 5 and older speaking a language other than English at home (Pew Research Center, 2014). DDLs are one of the fastest growing student populations in the United States, enrolled in prekindergarten to grade 3 (Gutierrez, Zepeda, & Castro, 2010). However, young DDLs remain largely understudied, and when included, these children often are subsumed under a broader "at-risk" category, making it difficult to understand underlying learning processes (Gutiérrez et al., 2010).

Research that focuses on younger DLLs is needed to understand how their learning unfolds. In addition, the often-ignored topic is the relationship between socio-emotional development and dual-language and literacy development (Gutiérrez et al., 2010). According to multiple measures of family risk factors (e.g. poverty, immigrant status and access to health services), there is a greater risk regarding the academic achievement gap for young Latino/Hispanic DLLs at kindergarten entry and this gap tends to persist throughout the school years. These children also appear to be at greater risk than their non-Hispanic/Latino peers for poor mental health (Espinosa, 2015). This situation is of great concern because limited proficiency in basic skills has far-reaching consequences that impact children's academic success, and also their overall well-being and their ability to compete in society (Hammer, Miccio, & Wagstaff, 2003).

Literacy experiences in dual language learners. Literacy development is considered a major prerequisite for academic success, with far-reaching consequences that impact children's overall well-being and their participation in modern society (Hammer et al., 2003; Snow, Burns, & Griffin, 1998; Van Steensel, McElvany, Kurvers, & Herppich, 2011). At such a young age, the home and family literacy environment has large effects on language outcomes and general cognitive abilities related to receptive and expressive language as well as academics. It is believed that young children who are read to regularly by caregivers experience multiple benefits (i.e. higher levels of phonological, letter name, and sound awareness). These include boosts in their literacy development, as well as social-emotional gains, and increased likelihood of later overall school success (Kuo, Franke, Regalado, & Halfon, 2004).

The effects are cumulative and persist throughout the child's school career (Hammer et al., 2003). Many young children living in at-risk households (i.e., low parental education, little/no shared reading at home, food insecurity, and poor parental health), place children at high risk for poor developmental and behavioral outcomes by school entry (Nelson et al., 2016). Therefore, DLLs children living in impoverished households are doubly at risk for poor developmental and behavioral outcomes. Several researchers have found advantages for bilingual children on executive control tasks when comparing lower SES Spanish-English DLLs children with middle-class monolingual English-speaking children (National Early Literacy Panel, NELP, 2008). Nevertheless, NELP (2008), reported that in their examination of early literacy practices regarding specific groups of children (e.g. from different SES background, different ethnicities, home languages) is not yet sufficient to allow for an adequate analysis of how shared-reading interventions may impact these populations, therefore research on better understanding how early literacy activities, such as shared reading for DLLS can be effectively implemented in their bilingual acquisition (Lonigan & Whitehurst, 1998; Winsler et al., 2014).

There is enormous variability in DLLs children and their home environment related to reading and literacy. A variety of research studies are needed that examine how children exposed to two languages from an early age develop in relation to their specific individual differences and sociocultural context. Research outcomes would assist with a better understanding of protective and risk factors (e.g. family practices and values, socioeconomic status, health and educational access) affecting DLLs and how these impact their learning and developmental trajectories.

Parenting practices and histories of involvement with parent training differ widely for young bilingual children (Gutiérrez et al., 2010). For better understanding how parental support services are provided and received, it is vital to define and characterize these services, as well as understand the quality of interactions and fit between the needs and expectation of parents and the services available. Understanding these services and outcomes has direct implications on the way policies, institutions and professional practices are developed and implemented for non-dominant racial and ethnic groups. For example, McLoyd and Shanahan (1996) posited that poverty increases parenting stress, which diminishes parents' ability to provide sensitive caregiving, consequently leading to children's impaired social-emotional functioning. However, if parents are able to engage in positive parenting practices despite the risks they face, this can buffer the negative effects of family risk on children's social-emotional functioning (Halle, Zaslow, Wessel, Moodie, & Darling-Churchill, 2014). Other findings suggest that for Latino families, parents' literacy involvement was positively related to children's social functioning as reported by teachers, whereas parental stress was negatively related to children's social-emotional competence (Fabes et al., 2006; Halle et al., 2014).

Understanding how to better serve Latino families and their young children in the US is a critical issue for the academic and social success of the growing Hispanic/Latino population. Families and children can benefit from well-designed parent interventions and strength-based supports that enhance parenting experiences, thereby having a direct impact on children's developmental trajectories. Further study of parenting programs that provide positive supports to Latino families and improve children's outcomes is needed.

Supporting Families At-Risk Through Parent-mediated Interventions

Parent-mediated interventions using a variety of modalities are designed to enhance parents' capacity to promote their children's development and learning. This is especially true for families at-risk. Supporting parenting skills is associated with healthy child development, family well-being and parent/child mental health positive outcomes (Baggett et al., 2010). However, research outcomes on how to effectively intervene with parents is emerging (Barton & Fettig, 2013; Dunst & Trivette, 2012).

Most traditional parenting training is offered face-to-face in a variety of formats, including one-to-one, group-based, and home-based with an expert-level trainer physically present to provide direct feedback. These delivery formats may be time consuming, costly to operate, and not effective for everyone (Feil et al., 2008). High-risk and hard-to-reach parents are less likely to participate, and more likely to drop out of these parent training services due to multiple barriers such as a lack of adequate medical coverage, absence of efficient public transportation, lack of child care support, and the lack of flexible parental work options, with these factors disproportionately affecting women, minorities and the poor (Boisvert, Lang, Andrianopoulos & Boscardin, 2010; Metzler, Sanders, Rusby, & Crowley, 2012). Hence, alternate forms of reaching parents with evidence-based (EB) parenting interventions are needed.

Telehealth practices provide a promising approach for delivering effective parenting programs (Metzler et al., 2013). Telehealth has been used to deliver several EB practices to diverse families (i.e., low income, non-dominant groups) (Baggett et al., 2010; Carta, Lefever, Bigelow, Borkowski, & Warren, 2013; Taylor et al., 2008)., Additional research developing and evaluating effective, culturally competent telehealth

parenting program for Latino/Hispanic families will substantially contribute to the current evidence base. Telehealth may provide opportunities for families that have previously been unable or unwilling to commit to traditional parenting programs. Effective parenting support for Latino/Hispanic families is critical for improving child outcomes in school environments as well as in improving later employment and other opportunities.

CHAPTER 2

REVIEW OF LITERATURE

Early experiences and relationships with parents and/or primary caregivers are the most influential factors on children's developmental trajectories. Decades of research in the behavioral and social sciences have produced substantial evidence that children who prosper despite serious hardship had at least one stable and committed relationship with a supportive and caring parent, or primary caregiver, laying the foundation for later positive developmental outcomes (Center on the Developing Child, 2015). The science of early childhood development has demonstrated the importance of parenting, and regular and consistent high-quality caregiving relationships beginning in infancy and continuing throughout the child's lifespan will make a profound difference in children's developmental outcomes, resulting in long-term savings on human and social capital (Sameroff, 2009; Phillips & Shonkoff, 2000).

Determining what constitutes the best way to engage families in effective parent training is one large issue for early intervention and early childhood researchers (e.g., Barton & Fettig, 2013; Dunst & Trivette, 2012). The definition of best practices in parent training and what aspects of parent implemented practices most impact children outcomes constitute critical research issues (e.g. Kaminski, Valle, Filene, & Boyle, 2008; Kemp & Turnbull, 2014; Phillips & Shonkoff, 2000; Rush & Shelden, 2011; Webster-Stratton, Reid, & Hammond, 2001). Defining best practices in parent training is further complicated when even the most well-established interventions for behavioral problems are effective for only about two-thirds of participating children (Barton & Fettig, 2013; Phaneuf & McIntyre, 2007). Furthermore, not all families benefit from parent-centered

interventions (Reyno & McGrath, 2006). In great demand are efficient mechanisms for the delivery of effective high quality parent training interventions for promoting healthier developmental trajectories for young children, and maximizing treatment outcomes while increasing efficiency.

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What Are Parenting Programs?

Parenting has been a focus of developmental inquiry from the beginning of the behavioral and social sciences, reflecting a transactional model of development (Phillips & Shonkoff, 2000). The role that parents and families play in supporting children's developmental trajectories, particularly in the early years, is gaining increases attention and is gradually becoming better understood, with parents being recognized as key determinants of children's outcomes (Park & McHugh, 2014). Parent training can be defined as activities in which parents actively acquire parenting skills through mechanisms such as coaching, homework, modeling, and practicing skills, either online or via traditional educational means, or passively in which parents are provided with information that presume to change parents' behavior but do not utilize an active skills acquisition mechanism (Kaminski et al., 2008).

Evidence-based parenting programs. Given the well documented importance of families in the growth and development of all children (Mahoney et al., 1999; Dunst & Trivette, 2012; Phillips & Shonkoff, 2000), researchers have developed a series of approaches to intervention, includes promoting evidence-based practices (EBP), to improve the quality and quantity of interventions available to families and providers. EBPs are based on research outcomes to inform choices for effective courses of treatment in order to improve outcomes based on families' characteristics, circumstances and culture. Parent-mediated evidence-based interventions have proliferated emphasizing content such as knowledge of child development, behavior management, and communication skills (e.g. Cicchetti, Rogosch, & Toth, 2000; Sanders, Markie-Dadds, Tully, & Bor, 2000). Differing utilizing well research delivery techniques including self-administered, group-based, home-based, therapist-directed, and individually administered either via face-to-face or telehealth format (e.g. Phaneuf & McIntyre, 2007; Taylor et al., 2008; Webster-Stratton, Reid, & Hammond, 2001). Serving specific types of parents has also been highlighted such as low-income, teenager and incarcerated (e.g. Letourneau, 2001; Shortt, Eddy, Sheeber, & Davis, 2014). Supporting parents with differing children's characteristics has been described including parents of young children with autism, or developmental delays, and with behavioral challenges (e.g. Ingersoll & Gergans, 2007; Matson, Mahan, & Matson, 2009). Finally, programs supporting specific non-dominant ethnic/racial families such as African American, Hispanic/Latino and Native American (e.g., Breitenstein et al., 2012; Walkup et al., 2009) have been studied. Fortunately, research outcomes have resulted in a robust and solid scientific foundation

from which to create interventions that will assist in helping young people arrive at adulthood with the skills, interests, assets, and health habits needed to succeed.

Evidence-based parenting programs for at-risk families. Several parent training programs for young children aged 6 and younger have been developed and are considered EBPs, such as the Nurse-family Partnership, Parent Management Training (Oregon model), Family Foundations, Highscope Preschool, The Incredible Years, and the Triple P System (Blueprints for Healthy Youth Development, 2015).

Advantages. Substantial empirical evidence indicates that parent training has significant effects in changing parent behavior, such as with child behavioral problems (e.g. Kaminski et al., 2008; Lundah, Risser, & Lovejoy, 2006). It is well documented that supporting parenting skills is associated with healthy child development, overall family well-being and positive parent/child mental health outcomes (e.g. Baggett et al., 2010; McIntyre, 2008; Sameroff, 2009; Webster-Stratton et al., 2001), while helping to decrease parent stress (Ingersoll & Gergans, 2007). Researchers have found that parent-implemented interventions lead to better generalization and maintenance of skills than therapist-implemented interventions (Kaminski et al., 2008), especially when implemented in natural daily situations (McDuffie et al., 2013), which may diminish professional costs (Ingersoll & Gergans, 2007). Moreover, parent training can increase parent's self-efficacy and competence (Kemp & Turnbull, 2014; McIntyre, 2008).

Several researchers have reported that families can effectively use intervention strategies to modify their parenting behavior (e.g. Ingersoll & Gergans, 2007; Kemp & Turnbull, 2014; Taylor et al., 2008). A large body of research focused on parent training and/or coaching with parents suggests that parents: (a) learned and increased use of target

strategies (e.g. Antonini et al., 2014; Ingersoll & Gergans, 2007), (b) maintained some strategies and skills after the intervention, (Enebrink, Högström, Forster, & Ghaderi, 2012;), and (c) embedded intervention strategies into their daily routines and environments (Baharav & Reisler, 2010; McDuffie et al., 2013), while improving the quality of life for their children and for themselves.

Parent-child interaction outcomes. Specific characteristics have been associated with various types of parent-child outcomes. On the positive side, early caregiving characterized as sensitive, responsive and involved has been associated with positive cognitive, social-emotional, physical, and language gains, as well as successive risk alleviation (Feil et al., 2014; Landry, Smith, Swank, & Guttentag, 2008). Findings from experimental research, in which interventions targeted parent responsiveness, resulting in increases in higher levels of independent problem solving, language, and socio-emotional skills (Landry, Smith, & Swank, 2006; Landry et al., 2012). Conversely, parenting characterized as neglectful, harsh, distant, punitive and intrusive has been associated with adverse parent-child interactions and various types of maladjustment (Shaw, 2014; Warren & Simmens, 2005). The quality of the parent-child relationship can moderate the risk for poor developmental and adverse behavioral outcomes independent of poverty status (e.g. Guttentag et al., 2014; Phillips & Shonkoff, 2000). Programs including a focus on enhancing the parent-child relationship to be sensitive and responsive have shown promising results (Guttentag et al., 2014). Sensitive and responsive caregiving encourages infant/adult attachment and positive interactions (Bowlby, 1978; Dunst & Kassow, 2008). Therefore, promoting parent sensitivity and responsiveness are crucial

outcomes of parenting interventions designed to lay foundations for positive mental health and academic outcomes (Feil et al., 2014).

Behavior and socioemotional outcomes. Given the role of parents as agents of change for children's behavior problems, several parent intervention programs have focused on parenting and child outcomes (e.g. Cicchetti et al., 2000; Sanders et al., 2000; Taylor, Schmidt, Pepler, & Hodgins, 1998; Webster-Stratton et al., 2001). Positive child outcomes have also been associated with behavioral management interventions for parents including learning about behavior management, (e.g. attending, positive reinforcement, provide clear instruction, and the use of time-out), teaching positive interactions, teaching emotional communication skills (e.g. both predictors enhance the quality of parent-child relationship), and practicing with one's own child, all of which were consistently linked with better parent and child outcomes (e.g. Kaminski et al., 2008; Reyno & McGrath, 2006). The literature suggests that DLLs have at least equal (if not better) social-emotional outcomes compared to native English speakers (Halle et al., 2014).

Shared book reading outcomes. Shared book reading can be defined as experiences in which there is a transmission of literacy knowledge from the adult to the child involving a social and interactive context. Shared book reading provides one window into responsive parenting practices by enhancing the child's emotional attachment with the parent and strengthening the parent and child interactions with each other. While not a direct measure of parent-child interactions, shared book reading can be considered a metric of parent responsivity and sensitivity as it provides opportunities for emotional development beyond supporting language and cognitive development.

However, few experimental studies have evaluated the effectiveness of book-reading interventions in infants and toddlers (Fuligni & Brooks-Gunn, 2004; Reese, Sparks, & Leyva, 2010). There have been fewer with Latino/Hispanic DLLs; one study found that among Latino families, parents' literacy involvement was positively related to children's social functioning as reported by teachers (Farver et al., 2006), while another study demonstrated the effectiveness of a shared book reading intervention delivered by preschool teachers on children's vocabulary knowledge (Pollard-Durodola et al., 2016).

It is well documented that shared book reading programs are effective ways to improve child outcomes such as the language and emergent literacy skills of preschool children (Reese, et al., 2010). One area of young children's development that has not been thoroughly examined is in relation to enhancing responsive parenting skills during shared book reading activities. Landry and colleagues (2012) found moderate effects in a shared-reading activity between child-mother dyads using the Play and Learning Strategies (PALS) program. Mothers used higher levels of responsiveness behavior during shared-reading, increasing the use of verbal support and prompts; while children verbal responses and engagement in activity increased. A research conducted by Bojczyk and colleagues (2016) found that maternal book reading beliefs and behaviors was moderated by their beliefs of child readiness to learn to read, so mothers' book reading behaviors mediated the link between beliefs and children's expressive vocabularies. This initial research fills a significant gap in our understanding of the potential influences of responsive parenting, as shared book reading between parents and young children is an important activity for promoting oral language and emergent literacy skills and is associated with later reading achievement and recreational reading (NELP, 2008).

Whereas we have substantial research supporting parent training and modifying parent/child interactions, we have less information on what which interventions are most effective for serving families and their young children. This is especially true for bilingual Hispanic/Latino children who live in economically disadvantaged homes, and whose first language is Spanish and may be at-risk for poor literacy outcomes in U.S. schools (Halle et al., 2014; Hammer et al., 2003). Research on improving literacy is an area of strong interest for researchers, educators, and policy-makers alike, because it has the potential to yield improvements in children's educational opportunities, address inequalities in children's academic outcomes, and promote long-term successes for children (Bojczyk et al., 2016); which is especially true for Latino/Hispanic DLL living in low-income households.

Limitations. Given the natural composition of families and parenting practices, not surprisingly, not all children or families respond positively to parent training. Even the most well-established interventions for behavioral problems are effective for only about two-thirds of the participating children (Barton & Fettig, 2013; Phaneuf & McIntyre, 2007; Reyno & McGrath, 2006), due to several variables such as demographic characteristic, parent characteristics, participation variables, and systemic opportunities and barriers. Therefore, many well established parent training programs are often not adopted in applied settings, and consequently not all families have access to such practices. This is especially worrisome for the families most at-risk, who could benefit the most from simple home-based interventions. Consequently, many families who could benefit from these programs receive no parenting support. Several reasons for this

includes low program availability and inadequate program reach (Glasgow, Vogt, & Boles, 1999; Metzler et al., 2013).

Hence, alternate forms of reaching parents with scientifically valid parenting information are needed in order to reach and serve struggling parents (Metzler et al., 2013). Some researchers have begun to explore alternatives to traditional parent training formats as an alternative way to deliver parenting support that overcome documented barriers such as transportation and time constraints. Researchers are attempting to identify mechanisms for addressing and responding to the increasing numbers of families that need services, by implementing EB parenting programs in a variety of settings and with a variety of modalities.

For high risk and diverse families, parent training efficacy is even more challenging due several factors. First, most were originally developed for White middle class families. Although some have been adapted for ethnic minority families (e.g. Feil et al., 2008; Lundahl et al., 2006; Martinez & Eddy, 2005), basic tenets of the programs are based on assumptions of the dominant culture (Davis, Dionne, & Fortin, 2014). This speaks to the need to adapt program content or delivery to address specific diverse characteristic of families being served, which may have direct implications for supporting healthy parenting and for promoting children's positive developmental trajectories.

A Potential Solution: Parent-Mediated Interventions Delivered Via Telehealth

The rise of Internet use constitutes one potential powerful solution. The Internet is rapidly crossing key demographic thresholds, and paired with the many advances in media technology, has created new avenues for intervention delivery (Baggett et al., 2010; Feil et al., 2008). As of January 2014, estimates indicated that 87% of American

adults use the Internet, with similar rates of use reported between men and women (e.g. 87% and 86% respectively). The wide penetration of Internet is shrinking the usual divisions across: (a) income (e.g. less than $30,000/yr = 77% and between $30,000-$49,999 = 85%); (b) non-dominant status (e.g. white 85% and Hispanic 83% respectively); (c) education level (e.g. high school grad or less 76%, some college 91%, college and more 97%); (d) community type (e.g. urban 88%, rural 83%) (Pew Research Center, 2016). By its very nature, Internet implementation lends itself to the provision of family-centered intervention services. Exploring the use of telepractices for intervention and assessments -including those that are delivered in part or entirely online may provide new promising opportunities for overcoming traditional barriers for reaching and supporting families.

Telehealth encompasses a broad variety of technologies and mechanisms to deliver virtual medical, health and education services. Telehealth includes four distinct applications. First, live (synchronous) includes a live two-way interaction between a person and a provider using audiovisual telecommunication. Second, store-and-forward (asynchronous) provides one mechanism that enables individuals to receive professional services and support at a distance; third, remote patient monitoring (RPM) includes remote personal health and medical data collection from an individual in one location via electronic communication technologies which is transmitted to a provider for use in care and related support. Finally, mobile health (mHealth): includes health care and public health practice and education supported by mobile communication devices such as cell phones, tablet computers and personal digital assistant (PDA) (Center for Connected Health Policy, 2015).

Telehealth services can be delivered either completely online or in a hybrid format, using a variety of technology (e.g., cell phones, smartphones, tablets, and computers) combining different modalities such as using face-to-face with computer and web-based training. Through the use of remote technology used in telehealth practices, parents can be served in their home or a preferred natural setting. They can interact with their child under the remote guidance, supervision and coaching of a trained professional who can support them to become an effective intervener for their child (Baharav & Reisler, 2010).

Advantage. A large body of evidence reports positive effects of traditional parental support delivery (e.g. Kaminski et al., 2008; Reyno & McGrath, 2006). However, less is known about the effects of parent-implemented interventions using telehealth technologies. In fact, several authors have described online parenting support as a young field with little known of the effects of technology-driven services for parents and their families (Nieuwboer, Fukkink, & Hermanns, 2013). Research in the application of telehealth for interactive parenting support and information has been conducted across disciplines related to supporting diverse child-parent outcomes using different research approaches. Telehealth holds some promise for adapting EBPs skills-training evidence-based interventions and reaching underserved families (Taylor et al., 2008).

To ensure the delivery of effective services using telehealth methods; however, significant attention must be paid to the core features and premises of what is being delivered. Clearly the adaptation and transfer to online modalities delivery must be made only when the effectiveness of the original program has been demonstrated (Feil et al., 2008). Telehealth practices also allow for better monitoring of intervention integrity,

helping to ensure a higher implementation and intervention delivery allowing better assessment of adherence to intervention protocols (Baggett et al., 2010). An emerging body of literature supports the use of telepractice in educational and health related fields for delivering educational and/or health care services to populations in need of specialized services such as at-risk families (Boisvert et al., 2010; Monnier, Knapp, & Fruech, 2003). In a study conducted by Metzler and colleagues (2013), parents reported a stronger preference for self-administered delivery formats such as television, online programs, and written materials, disliking home-visits and face-to-face weekly sessions. This is consistent with what is reported about higher completion rates when using self-directed telehealth formats due to the ease for overcoming documented barriers of attendance and participation (Baggett et al., 2010) while increasing accessibility of EBPs for underserved populations (Wacker et al., 2013).

Limitations. Telehealth-delivered interventions offer great potential as a method for enhancing parental skills with ease, flexibility, and timely comprehensive services, buffering barriers to access. Still, telehealth may pose a new set of barriers for delivering parent training. Telehealth may not provide sufficient support for all parents to implement intervention techniques effectively. Some parents may need the traditional face-to-face training in order to maximize the effectiveness of the intervention, and some others may benefit from a hybrid model, including face-to-face and telehealth activities (Vismara et al., 2012; Vismara et al., 2013).

A primary barrier is that telehealth practices may be hindered by transmission procedures and system broadband connection. For instance, videoconferencing over Internet protocol (IP) has major disadvantages when the available bandwidth is shared

with other users, decreasing the sound or video quality (Boisvert et al., 2010). Second, technical support personnel may be required as part of telehealth training formats, as well as pre-established troubleshooting plans and back-up means for communication needs (Boisvert et al., 2010). Third, telehealth-delivered intervention and services need to assure that the client's privacy, confidentiality and security are maintained, regulated by The Health Insurance Portability and Accountability (HIPAA) enacted in 1996 (Public Law 104-191), and The Family Educational Rights and Privacy Act (FERPA) (20 U.S.C. § 1232g; 34 CFR Part 99), federal laws governing sharing education and health data. The American Telemedicine Association has developed a series of standards of confidentiality guidelines which are tailored for clinical/medical healthcare practices, but not specific for social/behavioral sciences.

Taken as a whole, the preliminary research on the delivery of effective parent training is encouraging. Studies have demonstrated that telehealth is a promissory method of delivery that can be an integral component used by practitioners to better reach families when implementing EBPs. Some promising practices are starting to arise; however, further research is needed for many emerging interventions that are being adapted to be used via telehealth, such as the ones seen in Table 1.

Well established EB parent training programs have been adapted to be delivered via telehealth, such as *The Incredible Years* developed in 1980 by Webster-Straton et al., adapted in a hybrid format by Taylor et al., (2008) as part of a randomized control trial study, using a computer and web-based delivery intervention, combined with support from a professional coach. The authors (Taylor et al., 2008) reported it was successful in achieving high participation rates and self-report of goal achievement, but no effect sizes

were reported. Additionally, the coaches reported that a number of the families who were served by their hybrid adaptation of *The Incredible Years* may not have been as successful in regular group-based formats, with certain groups of parents with chronic illness and/or difficult life situations in which the flexibility of the intervention format made it possible for families to participate and complete the intervention. Similarly, the well-established intervention Pivotal Response Treatment (PRT) was adapted to be used as self-directed learning modules by Nefdt, Koegel, Singer and Gerber (2009). Twenty-seven parents of children with autism participated as part of a randomized control study. These authors reported large effect sizes in all their measured variables for participants enrolled in the self-directed group when compared to the control group, showing high gains in language opportunities provided by parents and also in the amount of functional verbal utterances made by children, including a large impact on fidelity of implementation measures.

These preliminary results suggest that the use of telehealth practices holds promise for serving diverse populations, such as at-risk parents and caregivers (Baharav & Reisler, 2010). Telehealth practices also allows for better monitoring intervention integrity, helping to ensure a higher implementation and intervention delivery, allowing better adherence to intervention protocols (Baggett et al., 2010). A large body of literature supports the use of telepractice in educational and health related fields for delivering educational and/or health care services to populations in need of specialized services (Boisvert et al., 2010; Monnier et al., 2003).

Infant-Net and ePALS: Promising Web-Based Practices

Infant-Net and ePALS are a web-based adapted intervention (Feil et al., 2008; Baggett et al., 2010) of PALS, originally developed by Landry and Smith in 1996, identified as one of the home visiting EB models by the Department of Health and Human Services (2015). PALS is a home visiting intervention for parents of infants and toddlers that targets parenting skills designed to strengthen the parent-child relationship and promote early language, cognitive and socioemotional development, available in two different levels. PALS I is geared towards parents with infants ages 1-12 months, whereas PALS II is geared towards toddlers ages 18-36 months. Efficacy of PALS I and II, based on attachment and socio-cultural learning frameworks, has been extensively documented through a series of randomized, experimental studies (e.g. Dieterich, Landry, Smith, Swank, & Hebert, 2006; Guttentag, Pedrosa-Josic, Landry, Smith, & Swank, 2006; Landry et al., 2006; Landry et al., 2008; Landry et al., 2012; Smith, Landry, & Swank, 2005). Results showed greater gains in maternal interactive behaviors and child developmental outcomes for those parent/infants dyads. PALS was originally developed in two languages, English and Spanish at a third grade reading level, reviewed by bilingual staff familiar with the PALS and the developers.

Infant-Net corresponds to PALS I, and consists of 10-12 sessions focused on maternal expectations and beliefs that promote development, reading infant signals, and responding with warm and sensitive behaviors. Both English and Spanish versions were validated for usability with English and Spanish speaking users, based on PALS materials already developed in both languages. Feil and colleagues (2008) conducted a small set of case studies to test the feasibility of the adapted Infant-Net training program, in which they found it to be feasible and effective for targeting child and parental outcomes.

Baggett et al., (2010) conducted a small randomized control trial with 40 participants assigned to either computer-control condition or the Infant-Net condition in English. These authors found preliminary support for their telehealth intervention, with higher rates of completion than the typically found in home-visiting programs, while parents showed significantly more social engagement and interactional behavior. Overall these authors demonstrated medium to high *F* effect sizes (.22 - .35) in increased infant positive behaviors and parent positive behaviors. Feil et al., (2014) conducted a larger randomized controlled trial, in both English and Spanish, with 164 participants from low-income families, reporting moderate to high *F* effect sizes (.43 - .64) in increased positive child-mother interactions and use of positive interactions in book reading. These authors also found that these families were interested in using an Internet-based program.

While ePALS, corresponds to PALS II, and consists of 15 sessions that also target responsive parenting skills to support child's social-emotional, cognitive and language development. The process for adapting and validating ePALS was exactly the same as the one described and published about Infant-Net (Feil et al., 2008; Baggett et al., 2010). This is a first trial on testing ePALS.

In great demand are efficient mechanisms for serving families at-risk from diverse racial/ethnical affiliations such as Latino/Hispanic families, currently one of the most underserved groups in the U.S. It is, therefore, critically important that empirically promising interventions such as ePALS, are studied with diverse samples, given that Internet-based parent-education interventions have shown promising results for promoting adaptive parent-infant interactions, particularly within high-risk and hard to reach families.

Study Purpose

This study examined relative to a comparison group, the extent to which Hispanic/Latino mother-child dyads receiving ePALS coaching increased positive child-mother interactions, and the extent to which the intervention affected mothers' responsive behaviors in everyday activities such as shared book reading. Participants' engagement in the Internet-delivered intervention and their perceptions of ease of use, relevance, and satisfaction were measured.

This study provided valuable and timely information, given first, the need for providing high quality and well-designed parental support to all families, and the importance of implementing interventions and supports that promote positive parent-child interactions under a strength-based model. The costs associated with effectively reaching families to implement parent-mediated interventions are critical to examine together with the importance of evaluating evidence-based interventions with Latino/Hispanic mothers and their young dual language learners, such as increasing responsive parenting behaviors in didactic activities such as shared-reading.

While there is a significant literature base documenting the effectiveness of traditional parent trainings, a paucity of research is focused on the effects of parent-mediated interventions delivered via telehealth. Current research suggests that interventions delivered via telehealth hold some promise for adapting evidence-based (EB) skills-training interventions and reaching underserved families (Taylor et al., 2008). Investigating the effectiveness of ePALS in improving positive interactions between Latino/Hispanic mothers and children is a critical next step towards establishing EB strategies that work with a variety of diverse families.

CHAPTER III

METHODS

The application of ePALS on child-mother social interactions was investigated, as well as the effects of these skills on shared book reading, using a randomized design.

Participants

A sample of 24 Latino/Hispanic mothers with an 18 to 36-month child were enrolled in the current study. Families met the following criteria: (a) child was 18-36 months old at enrollment; (b) mothers self-identified as Latino/Hispanics; (c) mothers spoke Spanish as their main language at home; (d) mothers were income-eligible for Early Head Start (EHS), Head Start (HS) and the Women Infants and Children program (WIC) as defined by an annual gross income at or below the Oregon Poverty Income Guidelines; (e) mother and child were living in Oregon during the study. Participant mothers and their children constituted the mother-child dyads.

Seven of the 24 mother-child dyads dropped out of the study, and differential attrition information is provided for the families who dropped out. Overall, all mothers (*n* = 17) were born in Mexico. Fourteen children were Mexican-American; only 3 children were born in Mexico. Ten children were male; 7 children were female. On average, at intervention baseline, mothers were 32-year-old (ranging from 25 – 43 years); children were on average 25 months old (ranging from 18 – 35 months). On average, participant families had lived for 10 years (*SD* = 6.20) in the U.S.; of those, families had lived for 8 years (*SD* = 4.59) in Oregon. Regarding children's developmental skills, all children were above or near the ASQ-3 cutoff scores. Only one child was below the cutoff score for fine and gross motor skills.

Regarding Spanish language use at home, 12 mothers spoke and read only Spanish (71%), four mothers (24%) spoke and read more Spanish than English, and one mother (5%) was equally fluent in both languages. Thirteen children (76%) spoke only English at home; four children (24%) spoke both English and Spanish. The average number of adults living in the household was 2.24 (*SD* = 0.66), ranging from one to four. There was an average of 2.43 (*SD* = 1.12) children under the age of 18 living in the participating households, with a range of one to four. Eight mothers (47%) were married, six mothers (35%) were living together with their partners, and three (18%) were single moms. Twelve mothers (71%) had high school or less than high school education; five mothers (29%) had an associate or bachelor's degree. Sixty-five percent of mothers were unemployed (*n* = 11); 35% were employed (*n* = 6). Regarding income, the Oregon federal poverty level (FPL) by family size was used as the poverty index (Oregon Center for Public Policy, 2015). Eleven families (65%) lived below the poverty line, three (18%) at poverty line, and three (18%) near the poverty line.

Regarding language acculturation characteristics, the BASH (Norris et al., 1996) was used that has 4 items asking about language use: (1) while reading and speaking, (2) at home, (3) while thinking, and (4) with friends. Responses were given on a five-point scale: 1 = *only Spanish*, 2 = *more Spanish than English*, 3 = *both equally*, 4 = *more English than Spanish* and 5 = *only English*. Scores range from 4 to 20, with higher scores indicating greater levels of acculturation, and vice versa. Overall, for participant mothers, language-based acculturation levels were considered in the low spectrum of the construct (*M* = 5.00, *SD* = 1.87), the higher acculturation profiles were from English-dominant mothers but scores did not exceed 8 points.

In terms of technology use, participants' responses were given on a four-point scale, 1 = very poor, 2 = poor, 3 = good, 4 = very good, for the following three questions: (1) ease to use computers (M = 2.94, SD = 0.93), (2) ease to use tablets (M = 2.75, SD = 0.86), and (3) ease to learn new technology (i.e., apps) (M = 2.88, SD = 0.89). The other three questions gathered information about owning a computer at home (Yes = 4, No =13), owning a smartphone (Yes = 14, No = 3), and access to Internet at home (Yes = 11, No = 6). For participants with Internet access, access was mostly through a home-Internet provider, and/or via a cellphone data plan. Six families reported having access through *Lifeline*, a broadband federal assistance program. Table 1 provides the demographic characteristics of mother-child dyads assigned to the intervention and comparison conditions.

Regarding residence, families lived in six counties in Oregon (Multnomah, Clackamas, Marion, Lane, Washington, and Deschutes), and on average, lived 56 miles away from the research site (Min = 2.1, Max = 138, SD = 58). Internet speed provided by this study (Sprint cellular) varied by participants' residence location even when the data plan was equal for all participants; in four cases, participants needed to travel out of home in order to get better signal for uploading videos (i.e., local library, coffee shop). In one case, a mother dropped off her tablet and swapped it for another tablet once a week, in order to comply with her weekly recorded videos, due to Internet connectivity issues. Overall, 96% of the coaching sessions were held via Internet, 4% were held via telephone due to Internet connectivity issues.

Table 1

Family Demographic Characteristics by Intervention or Control Group

Variable	Intervention (n = 8)		Comparison(n = 9)		t or χ^2	
	Mother	Child	Mother	Child	Mother	Child
Mean Age in Years (*SD)*	32.62 (3.81)	2.19 (0.39)	33.11 (5.71)	2.00 (0.52)	t = -0.20	t = 0.81
Gender - %Female (*N*)	100.00 (8)	37.50 (3)	100.00 (9)	44.44 (4)		χ^2 = 0.08
Self-identity						χ^2 = 4.10*
%Mexican	100.00 (8)	37.50 (3)	100.00 (9)	0.00 (0)		
%Mexican-American	0.00 (0)	62.50 (5)	0.00 (0)	100.00 (9)		
English and Spanish language use at home					χ^2 = 3.23	χ^2 = 0.02
%Only Spanish	100.00 (8)	75.00 (6)	66.66 (6)	77.80 (7)		
%More Spanish than English	0.00 (0)	0.00 (0)	33.33 (3)	0.00 (0)		
%Both equally	0.00 (0)	25.00 (2)	0.00 (0)	22.20 (2)		
Federal poverty level by family size					χ^2 = 0.71	
%Below poverty line	62.50 (5)		66.66 (6)			
%At poverty line	25.00 (2)		11.11 (1)			
%Near poverty line	12.50 (1)		22.22 (2)			

* $p < .05$

Procedure

Recruitment. Study procedures received approval from the Institutional Review Board (IRB) at the University of Oregon (Appendix A for IRB approval documentation). Participants were recruited through local organizations serving Latino/Hispanic families in Oregon. These organizations were contacted via email or phone calls by the principal investigator (PI) of the study (Batz). Interested organizations were sent flyers for recruitment online or printed (Appendix B for bilingual flyers). Prior to start, thirty-five mothers communicated with the PI about participating in the project (Appendix D for phone screening); of those, 26 participants met inclusionary criteria (see Table 3) and were sent a package (Package # 1) via U.S. mail, with consent forms and baseline questionnaires containing demographic and outcome measures prior to beginning the intervention. Each mailed envelope contained a pre-paid return shipping label for families to return their package. Twenty five mothers returned their packages, filled out their consent forms (Appendices C and E), and baseline demographic questionnaires (Appendix F). Prior to randomization one mother dropped out because of a major life change event (illness). Twenty-four dyads provided informed consent and were randomized to ePALS (n = 12) or DAS (n = 12). Participants were not aware of their group assignment.

After random assignment, families were sent a second package (package # 2) that included equipment and manuals. When participants received their equipment and manuals, participants were instructed to either text or call the PI for arranging an initial call. The initial call consisted of giving detailed instructions about participation in the program (by condition), as well as instructions for recording and uploading videos. (See

Appendix I for the script guide for the call). If mothers needed technical support for using their tablets, it was offered and provided as needed. A total of 86 hours were spent by the PI during the study for supporting mothers in troubleshooting equipment, and apps.

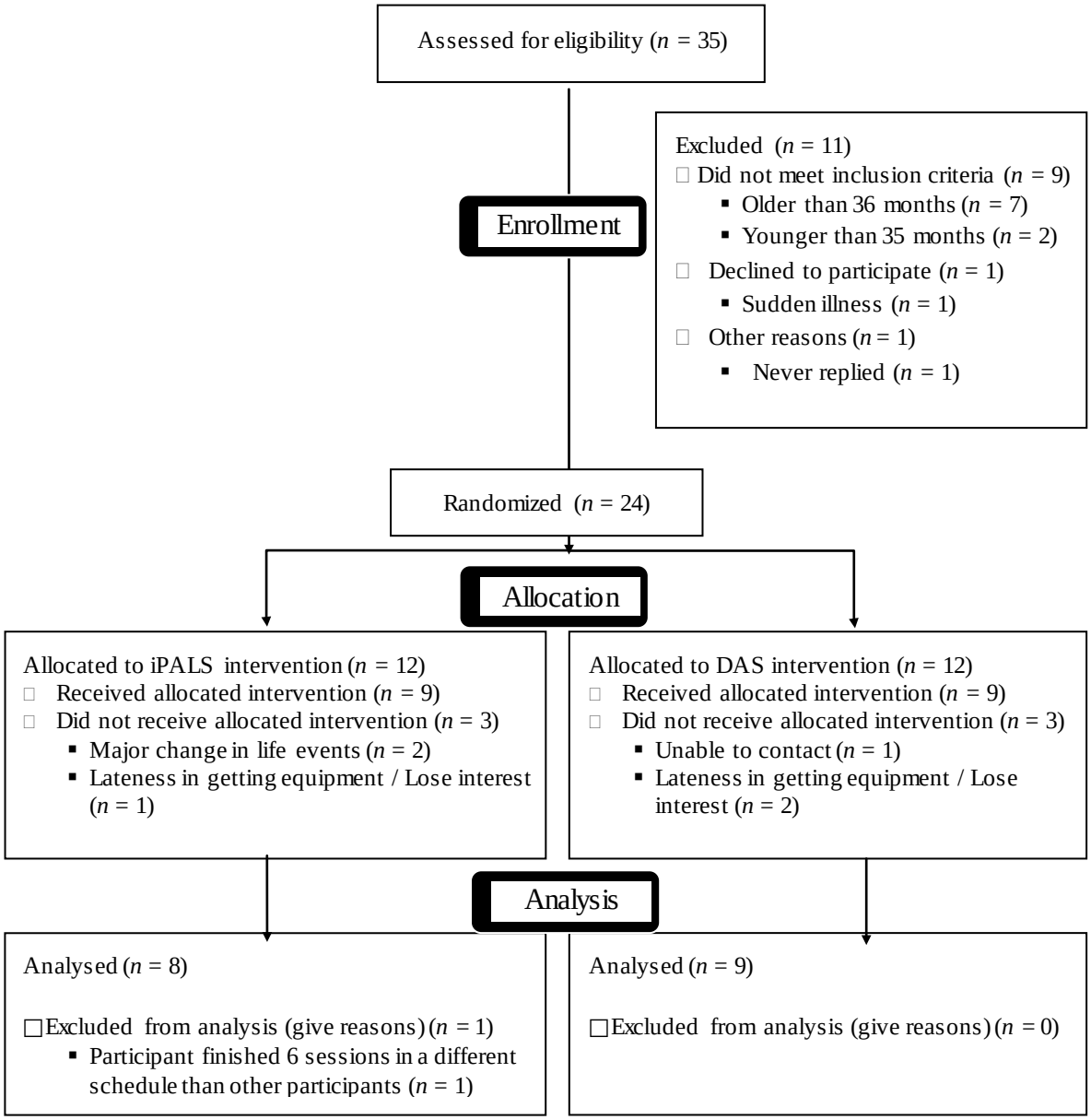


Figure 1. Randomized controlled trial CONSORT flow diagram. Note: ePALS = Internet-based play and learning strategies; DAS = developmentally appropriate strategies also via Internet.

Setting and materials. All participants were given a Samsung Tab 4 7" with pre-paid connection to LTE Internet for the duration of the program. Packages (package # 2)

sent via U.S. mail included a user guidebook (Appendix G) to use their tablets, and an accompanying printed manual for the intervention program according to their assigned condition. Participants could keep tablets at the conclusion of the program. All sessions were held at their participants' homes or preferred location (such as at their work or in their cars).

Delivery platform. The self-directed portion of the telehealth parenting program was delivered via a secured app developed specifically by designers and programmers from the Oregon Research Institute and IEQ Technology, under PALS developers' directions from the Children's Learning Institute at the University of Texas Health Science Center. The app ePALS allowed each participant to record and/or upload their videos in a secure format. In cases when the Internet connectivity did not allow recording and/or uploading videos, a secured transfer site was set up using Citrux Sharefile housed and managed at the Oregon Research Institute. Upon enrollment in the study, participants were given a unique username and password for access their accounts. Only the principal investigator had access to their unique names and passwords. The video conference portion of the program was conducted on an Internet-based, password-protected video-conferencing program app called Zoom in which families were given a unique code number to join a meeting with their coach for videoconferences.

Intervention and Study Procedures

An IRB-approved randomized control trial (RCT) design was conducted. After completing baseline assessments and demographics interviews, participants were randomized to either the experimental (ePALS) or comparison (DAS) condition.

Intervention condition. Mother-child dyads randomized to this condition received access to ePALS, a self-directed web-based interactive platform which included 14 self-directed sessions, a weekly call with a coach lasting approximately 40-60 minutes each, to co-review mother-child interactions, session content and provide individualized support in skill practice and acquisition. ePALS procedures included the following: (a) video modeling of mothers demonstrating the target skills to be observed and discussed each week; (b) check-in questions dispersed throughout each session, with answers recorded to a database for review by both parent and coach after each session's self-directed learning period; (c) a summary of key session concepts; (d) daily activities (homework) based on skills taught in each session; (e) the creation of a 5-minute video of mother-child interaction during a play activity at baseline and one at post-intervention; (f) the creation of a 5-minute shared-reading computer-collected video of child-mother dyad interaction at baseline and one at post-intervention; (g) the creation of two weekly 5-minute computer-collected videos (play and routine) of mother-child interactions implementing targeted session skills for review by both parent and coach; (g) feedback about program recorded to the database; and (h) a weekly telephone coach call to review mother-infant computer-administered video and session topics and skills. The psycho-educational content was provided via the ePALS app through video and text (with audio to minimize reading and literacy skills). The program was designed to be completed in a linear fashion; that is, before a participant could go on to a new area of the program she had to complete the previous lesson. Participants could, however, go back and review previously viewed material in a non-linear format.

Weekly video recorded observation. The camera function embedded within the ePALS app automatically saved and compressed participants' two 5-minute videos and audio files for transfer. A delivery task was scheduled using an automated application via a secure Internet connection and sent to both the coach and the ePALS app center server at ORI. When the app experienced issues with accepting video uploads, parents were sent a Citrux Share-file link for uploading their videos. In that way, videos resided only on the secure servers and each participant's tablet. Videos were reviewed on a weekly basis with mothers in order to generate parent reflection, provide concrete reinforcement, and build motivation for explicit behavioral practice and homework contracting.

Weekly practice and video coaching. The program made use of a coach as a key element in supporting the program with parents. The coach was the PI, certified as a facilitator for the original parenting program PALS by the Children's Learning Institute at the University of Texas. The coach held weekly scheduled sessions over the Internet using the app Zoom with each participant. Coach guide calls were used to systematize the intervention sessions across participants. If the Internet connection was weak, a phone call was conducted instead. During this weekly videoconference call, the parent and the coach reviewed the past week's material and co-viewed the parent-child practice video in order to provide both positive and corrective feedback. The coach followed a scripted guide for reviewing and assessing each participant's weekly learning and activities. If during the session parents seemed to struggle with the content, a review was immediately conducted as part of the weekly videoconference call.

Because home practice is an important component of treatment, parents were encouraged to describe and model skills practiced during the week and were reinforced

for concrete descriptions. When parents reported that they did not practice the skills taught or their statements and behavior suggested that they were not able to engage in home practice, barriers and challenges were discussed for the purpose of problem solving. Key skills were reviewed, and parents were prompted to practice the skills during brief interactions with their child at the beginning of the session. The coach used this opportunity to encourage mothers to practice these new skills during daily routines. The coach was also available by phone, by messages via the ePALS app, and via email to answer questions or address concerns that arised between scheduled appointments.

Online monitoring and tracking. Online monitoring of participant activities used an automated multilevel feedback system. The web-based platform allowed for tracking online each participant's activities and responses during self-directed learning activities as well as their online involvement, including if they have completed tasks that were requested of them. This feedback allowed the coach to make maximum use of program tracking in support of the family's use of the program, accuracy of responses to check-in questions, ease of use, and satisfaction. Fidelity of intervention was monitored through documentation of parent engagement during phone calls. The coach completed a checklist of key aspects of the intervention via a secure website per session.

Intervention fidelity. Fidelity of the coach intervention implementation was promoted by following scripted session coach guides, which reflected key aspects of the intervention (e.g., discrete querying, descriptive feedback, and problem-solving tasks). Checklists were completed online via a secure website immediately following the coaching call. In addition, parent engagement and session content mastery were rated following each coach call by the family coach (PI).

Dosage. Families in the intervention group received 1 weeks of ePALS intervention sessions with weekly video conference performance feedback coaching calls that lasted between 35-65 minutes each. The coach (PI) filled out an electronic monitoring log after each call. It was used to record the focus of mother's daily practices, video call engagement, mother knowledge acquisition, skill mastery impression of current and past session, as well as parent implementation quality.

Comparison condition. Mothers in the DAS condition received weekly phone contact with the coach as well as used a parallel ePALS application and Zoom app. The app ePALS for the comparison condition contained a web-based intervention program that is structurally similar to the ePALS Program in terms of components (e.g., information pages, mother-infant video recording pages; coach contact pages). However, weekly information focused on their child' developmental skills, with no direct maternal skills instruction. Mothers in this condition received 13 sessions and weekly videoconference calls with the coach that lasted between 10-15 minutes, focused on general infant development observing the ASQ-3 items. The comparison condition controlled for the potentially confounding effect of introducing computer and Internet technology into the homes of participant families. Moreover, providing structural similarity to the program intended to allow equalization across conditions. The coach followed a scripted coach guide in order to steer away from any discussion with mothers around ePALS skills. See Table 2 for a summary comparing the two conditions.

Table 2

Comparison of Intervention and Comparison Groups by Session Content, Video Coaching and Video Uploading

	ePALS Program (Intervention)			DAS Program (Comparison)		
#	Sessions	Video Coaching	Upload Videos	Sessions	Video Coaching	Upload Videos
BL	Pre-introduction: to provide general instructions, instruction for baseline data collection, and set up next meeting.	X	2	Pre-introduction: to provide general instructions, instruction for baseline data collection, and set up next meeting.	X	2
1	Introduction: general introduction to the program and weekly sessions	√	2	Introduction: general introduction to the program and weekly sessions	√	X
2	Signals: reading child's signals	√	2	General observations: observations and concerns about child development	√	X
3	Responding I: responding to child's signals	√	2	Communication I: developmentally appropriate skills using ASQ-3	√	X
4	Naming: naming objects and actions	√	2	Communication II: developmentally appropriate skills using ASQ-3	√	X
5	Maintaining: maintaining child's attention and interest	√	2	Gross motor I: developmentally appropriate skills using ASQ-3	√	X
6	Reading: using prior learned ePALS strategies when reading	√	2	Gross motor II: developmentally appropriate skills using ASQ-3	√	X

(continued)

	ePALS Program (Intervention)			DAS Program (Comparison)		
7	Linking: linking objects, actions, and child's experiences.	√	2	Fine motor skills I: developmentally appropriate skills using ASQ-3	√	X
8	Review I: review and share strategies with alternate caregiver	√	2	Fine Motor skills II: developmentally appropriate skills using ASQ-3	√	X
9	Behavior I: preventing challenging behaviors	√	2	Problem solving I: developmentally appropriate skills using ASQ-3	√	X
10	Daily routines: embed ePALS strategies in daily routines	√	2	Problem solving II: developmentally appropriate skills using ASQ-3	√	X
11	Behavior II: strategies for dealing with challenging behaviors	√	2	Personal social I: developmentally appropriate skills using ASQ-3	√	X
12	Responding II: responding to child's signals when difficult to do	√	2	Personal social II: developmentally appropriate skills using ASQ-3	√	X
13	Review II: review and share strategies with alternate caregiver	√	2	Wrapping up: Healthy development & acting early	√	X
14	Wrapping it all up	√	2	--		
PT	Send post intervention data (questionnaires and videos)	X	2	Send post intervention data (questionnaires and videos)	X	2

Note: ePALS – Internet-based Play and Learning Strategies; DAS: developmentally appropriate strategies; X = no; √ = yes; BL = baseline; PT = post-treatment.

Measures

Dependent variables represented multiple methods of assessment, including parent-reported demographic information, child developmental skills, and direct observations of parent and child behaviors through 5-minute videos recorded by participants. All participants used Spanish language forms. Data were collected in two waves: pre-intervention and post-intervention. During the pre-intervention wave, mothers were sent a package containing demographic and developmental skills questionnaires. Parents were given two weeks to complete their packages if interested in participating. When packages were returned to the PI, a second package was sent with needed equipment. At this time, mothers were instructed to record two 5-minute videos that were part of baseline data collection.

Demographics. Data were collected on characteristics such as race, ethnicity, gender, age, education, profession, occupation, income level, and marital status. Specific information regarding acculturation items (4 items), Spanish and English language use at home and information regarding home literacy environments (76 items), computer use, and knowledge (7 items) were compiled into a single baseline questionnaire (Appendix G). Information was collected via U.S. mail.

Brief Acculturation Scale for Hispanics. This scale (BASH) is a four-item language-based measure of acculturation developed by Norris, Ford and Bova (1996). The items ask about language use (1) while reading and speaking, (2) at home, (3) while thinking, and (4) with friends. Responses are given on a five-point scale: 1 = only Spanish, 2 =more Spanish than English, 3 = both equally, 4 = more English than Spanish and 5 = only English. Scores range from 4 to 20, with higher scores indicating greater

levels of acculturation. In several studies, the BASH reported evidence for convergent, discriminative, criterion, and incremental validity. Internal consistency reliability was strong for the total sample ($\alpha = .94$), and for both language-preference groups (English $\alpha = .89$, Spanish $\alpha = .90$) (Mills, Malcarne, Fox, & Sadler, 2014).

The Encuesta sobre Lenguaje y alfabetización en el hogar. A researcher-developed survey (Home Literacy Environments [HLE]) was used for gathering information regarding home literacy environments (Durán et al., n.d.), (Appendix G). The survey contains a total of 76 items, including general demographic questions and questions about the frequency of literacy activities in the home, the types and amounts of literacy materials available, the language environment of the home, and caregivers' beliefs about literacy. Efforts were made to incorporate both questions that reflect children's likelihood to participate in literacy activities independently, as well as questions about literacy activities promoted by family members. The questions comprised four theoretical constructs for HLE: (a) value placed on literacy ($\alpha = .81$), (b) press for achievement ($\alpha = .80$), (c) availability of reading materials ($\alpha = .44$), and (d) reading with child ($\alpha = .67$), as well as a separate attitude towards reading scale ($\alpha = .81$). For these four constructs each item is answered on a 7 point scale options: (7) 5-7 times a week; (6) 2-4 times a week; (5) once a week; (4) 2-3 times a month; (3) once a month; (2) sometimes a year; (1) never. Cronbach's alpha analysis showed overall a strong internal consistency for four constructs of the HLE, with alphas ranging from .67 to .81, and only one below an acceptable range. A prior study found all constructs to be at least .74, (Duran et al., n.d.).

Developmental skills. Mothers filled out an age appropriate Ages and Stages Questionnaire (ASQ-3) (Squires & Bricker, 2009), (Appendix I). The ASQ-3 is a parent-completed questionnaire for identifying children from one month to 5½ years with developmental delays. The authors indicate that the ASQ-3 meets criteria for a first-level comprehensive screening and monitoring program. The ASQ-3 screening system is composed of 21 questionnaires designed to be completed by parents or other primary caregivers, with a reading level ranging from fourth to sixth grade, and illustrated to provide assistance to parents in better understanding the items. Questionnaires intervals include 2, 4, 6, 8, 9, 10, 12, 14, 16, 18, 20, 22, 24, 27, 30, 33, 36, 42, 48, 54 and 60 months of age. Each questionnaire contains 30 developmental items organized into five developmental areas: (a) communication, (b) gross motor, (c) fine motor, (d) problem solving, and (d) personal-social. An overall section addresses general parental concerns. Each item can be answered by three options: (1) "*yes*", meaning that child performs the behavior specified in the item; (2) "*sometimes*", indicating that child's response is occasional or emerging; and (3) "*not yet*", to indicate that child does not yet perform the behavior. Intraclass correlations ranged from .75 to .82 suggesting strong test-retest reliability. The percent agreement between ASQ-3 classifications (i.e., typical, risk) between parents and examiners was 93%. Intraclass correlations by area ranged from .43 to .69, suggesting robust agreement between parents and trained examiners when completing the ASQ-3. Lastly, internal consistency was address by examining the relationship between developmental area and overall scores. Correlations ranged from .60 to .85; all correlations are significant at $p < .01$.

Mother-child interaction. The bilingual child-mother study coder impression (COIMP) was used to observe mother-child dyads interactions (Appendix H). The Coder Impressions form for this project was developed using the COIMP from a variety of other projects coded at the Prevention Science Institute, including: Early Steps, the Oregon Parent Project, Project Alliance 2, and the Early Growth and Development Study.

The COIMP is a strength-based checklist of task-specific and/or general impressions of the family, including elements such as the quality of parent-child interactions, levels of engagement and compliance, and parent- and child-specific behaviors. It has 40 items; with a few exceptions, all questions are rated on a 9-point scale to gauge the level of the coder's agreement with each question/statement. Answers range from 0 signifying *not at all;* 5 signifying *somewhat*; to 9 signifying *very much*; and include options for the Primary Caregiver (PC), and the Target Child (TC), where appropriate. The questions in the COIMP result in four specific composite scores, with original alpha scores ranging from .64 to .86 from a previous study. These scores include: (a) parent promotes positive behaviors ($\alpha = .69$); (b) limit setting ($\alpha = .84$); (c) proactive parenting ($\alpha = .69$); and (d) child non-compliance ($\alpha = .86$). Given that the scale for this study had some normality and reliability model assumption issues, I also modeled and examined an empirically derived version, and tested accordingly. Results were not different, and given the small sample and the lack of construct validity for the adapted version, I decided to use the original measure with two minor changes. For example, subscale "*a*" could not be computed given that one of the 3 items could not be observed with this group of participants and consequently the empty cells were treated as missing data, and in subscale "*d*" a negative coefficient ($\alpha = -7.538$) was obtained, in which one

item was found that needed to be reverse scored, and when reversed, the new scale coefficient improved ($\alpha = .70$).

Six specific single items from the COIMP were used for naturalistic observation of mother and child behavior in the home; these six dimensions of parenting were evaluated with a single item each: positivity, negativity, sensitivity, intrusiveness, stimulation of cognition, and detachment. Each of the dimensions was rated on a 5-point Likert scale (1 = not at all characteristic; 5 = highly or predominantly characteristic) that considered both the frequency and intensity of the expressed affect or behavior. Dimensions were organized into two factors: positive engagement (positivity, sensitivity, stimulation of cognition, and reversed detachment) ($\alpha = .55$), and negative-controlling behavior (negativity and intrusiveness) ($\alpha = .18$). Negative items were reversed coded.

Shared book reading. The Adult-Child Interactive Reading Inventory (ACIRI)**,** (DeBruin-Parecki, 2007) was used to code observed mother-child dyad shared-reading behaviors (Appendix J). ACIRI is an interactive reading inventory that can be used in center-, school-, or home-based programs. It is typically used with a parent or caregiver and a child 3-5 years old; it has also been used with older and younger children. ACIRI is divided in 3 main categories for adult and child behaviors including: enhancing attention to text (adult behavior $\alpha = .86$, child behavior $\alpha = .47$), promoting interactive reading (adult behavior $\alpha = .78$, child behavior $\alpha = .80$), and supporting comprehension and using literacy strategies (adult behavior $\alpha = .68$, child behavior $\alpha = .78$), with 4 items in each category. Correlations between adult and child behavior scores (r= .71-95) suggested a strong relationship between constructs. Interrater reliability resulted in 97% agreement among eight raters across six observed reading dyads. ACIRI's concurrent validity has

not been established due to the unavailability at this time of any other instrument designed to measure interactive reading behaviors. Each item is rated on a 0-3 point Likert-type scale, with 0 signifying no evidence, 1 signifying infrequently (1 time), 2 signifying some of the time (2-3 times), and 3 signifying most of the time (4 or more times). ACIRI was tested on a group of 75 mothers and their children enrolled in the Even Start program. Seventy-four percent were Caucasian, 13.3 African American, 6.1% were Hispanic, and 2.6% were Native American (DeBruin-Parecki, 2007).

Treatment integrity. The PI was the coach for each video call, and completed the scripted guideline for conducting each session, and marked a checklist following each session. (See Appendix K and L for an example for each condition.) The PI was trained and certified to coach PALS by an experienced PALS specialist from the Children's Learning Institute from the University of Texas. Scripted ePALS and DAS session guides were used for each weekly video call with participants in either condition. Treatment integrity data consisted of self-report measures corresponding to the critical components of each lessons, and self-reported data suggest high fidelity of implementation (m = 99.65%). At the end of each call, the PI completed a quality of session summary item describing how well each session transpired for each participant weekly. All coaching sessions were recorded, but no interrater reliability observations were conducted because there was not an available bilingual trained supervisor to observe at least a 20% of the sessions.

Program engagement and satisfaction. Parent engagement in the program was measured via electronic tracking of the following: (a) amount of time parents spent in each session, and (b) amount of time spent in activity components of each session.

Measures of ease of use and parent satisfaction with the equipment, the app, and each session's content and utility were collected electronically at the end of each session based on weekly questions. In addition, a satisfaction questionnaire included 12 items with a 5-point response scale, which was administered at post-assessment (Appendix M).

Data Collection

The principal investigator was responsible for creating, housing, delivering, maintaining, and archiving and preserving all collected data. Four trained graduate students served as video coders for the current study. All video coders were bilingual (English/Spanish) and were required to hold a CITI research compliance training certificate. Two groups of trained coders were used; one team worked at the Prevention Science Institute (PSI) and were trained and supervised by their data coordinator; the second team was composed of two bilingual graduate students from the cognitive psychology department. They were trained and supervised by the PI. Data were collected in two waves: pre-intervention and post-intervention. Families were given one week to complete each assessment prior to intervention implementation and post intervention implementation.

Printed questionnaires. All packages were sent to families and/or returned by families via U.S. mail and/or FedEx. Families received all packages via U.S. mail, with a pre-paid shipping return label included for baseline and post-intervention questionnaires that needed to be returned, prior to intervention implementation. During the pre-intervention wave, parents were sent package # 1 that included a compiled questionnaire with written information about the program, consent forms, the demographics questionnaire, and the ASQ-3. When the PI received the returned package, package # 2

was sent which included the users' guidebook, intervention manual, a tablet, and a bilingual child's book. At the end of the intervention phase, package # 3 was sent and included the compiled questionnaire and the ASQ-3 for post-test. Parents were given $20.00 for their efforts and a diploma at the end of the program when the third package was returned and the post-assessment videos were uploaded.

Child-mother interactions video coding. The principal investigator received all the videos of mother-child interactions and provided the videos to the PSI research coordinator who was a video coder, and also managed and supervised one video coder. The two coders were trained to criterion by PSI researchers for coding all collected videos for using the COIMP. The supervisor was blind to condition, but not to time assessment, the other coder was double-blind to the study. Twenty percent of the videos were coded twice by different coders to test for reliability. To be considered reliable for the COIMP, a coder had to receive a score of at least 70%. However, although 70% as the minimum requirement, coders were routinely not considered to be fully trained or given data that has not yet been coded until they demonstrated at least 85% reliability.

Shared book reading video coding. Two bilingual (English/Spanish) video coders were trained by the PI for using the ACIRI. Video coders were double-blind to the study. To establish reliability in scoring, video coders were given printed directions for scoring the ACIRI to become familiar with the definitions of the behaviors contained in the protocol. To establish reliability in scoring, a series of 12 videotaped sessions were observed and scored, observing the target behaviors, using the ACIRI inventory. After each dyad was observed, the PI discussed each of the behaviors on the ACIRI with the two video coders as suggested by ACIRI developers. Whenever there was a disagreement

in scoring, everyone read the behavior definitions provided, and a discussion ensued to find out why there were disagreements and an attempt was made to reach agreement, using the behavior definitions provided. To be considered reliable for ACIRI, a coder had to receive a score of at least 70%. However, although 70% was an established minimum requirement, coders were not considered to be fully trained until they demonstrated at least 85% reliability. Weekly meetings were held for conducting IOA refreshers, in order to prevent drifting.

Data Analysis

Data were screened for errors prior to running analyses. Data missing from questionnaires were missing at random. The COIMP questionnaire had missing data in items that were not possible to observe by their observation tool protocol; empty cells were treated as missing data.

Analytic technique. Prior to analyzing the results, data were examined thoroughly to check the assumptions of normality, linearity, and homoscedasticity. Then, baseline comparison analyses were used to explore the equivalences between the intervention and control groups. Descriptive statistics of the mother-child dyads in terms of demographic characteristics, as well as the means and the standards deviations of the dependent variables of interest, were computed. Correlational analyses were used to explore relations between variables of interest for understanding and describing cultural characteristics of the sample.

When comparing conditions, my primary interest revolved around the examination of participants who received ePALS versus those who did not, while controlling for any difference in baseline scores for all outcome measures. Therefore, an

analysis of covariance (ANCOVA) was computed to test the effect of the intervention in the two conditions. ANCOVA is typically used when determining the effects of an intervention, while controlling for additional continuous variables that could influence the dependent variable.

Power analysis. A sensitivity analysis was conducted to evaluate the power of the study design. With at least 8 child-mother dyads per condition, alpha set to .05, there is sufficient power (.80) to detect and individual moderate to large effect size of *d* ranging from 0.53 – 1.02. Because the feasibility trial is under powered to detect clinically meaningful effects, $d \geq .30$ was used to evaluate intervention effects on the outcome measures rather than statistical significance (Faul, Erdfelder, Land, & Buchner (2007).

Research questions and hypotheses. The primary purpose of this study was to determine the following research questions and hypothesis.

1. What is the effectiveness of ePALS with Hispanic/Latino mother-child dyads?

    a. Is there an increase in positive child-mother interactions as measured by the COIMP?

        Hypothesis 1: It was hypothesized that targeted mother-child interactions in the experimental group would significantly improve after intervention, compared to the comparison group.

    b. What are the effects of receiving ePALS coaching in the use of responsive behaviors in a shared book reading activity, as measured by ACIRI?

        Hypothesis 2: It was hypothesized that targeted mother-child interactions learned through ePALS in the experimental group would have an impact on shared book reading skills, when compared to the comparison group.

In order to better understand the hypothesized possible effects of responsive parenting behaviors on shared book interactive reading, information was gathered about home literacy experiences and the language associated with them. The following exploratory questions were asked.

2. What is the home literacy environment of participant Hispanic/Latino mother-child dyads as measured by the HLE questionnaire?

Exploratory question: no hypothesis.

2.1. How are the home literacy environments related to shared-interactive book reading as measured by ACIRI?

Exploratory question: no hypothesis.

3. Will Latino/Hispanic mothers perceive ePALS to be easy, relevant and satisfying to use?

Exploratory question: no hypothesis.

CHAPTER IV

RESULTS

This study examined the effectiveness and acceptability of implementing ePALS with Latino/Hispanic mother-child dyads via telehealth. This chapter presents findings from the preliminary analyses, and as well as overall results pertaining to each research question.

Preliminary Analyses

Baseline equivalence. Baseline equivalence comparisons were conducted on mother-child demographic variables and outcome baseline measures to determine if there were significant differences between intervention and comparison groups. To determine baseline equivalence for age and number of years living in the U. S. and Oregon, and for baseline outcome measures, an independent t-test was used. Chi-square tests of independence were used to compare the percentage of ethnic groups, gender, employment, language use, and poverty level in each group. Baseline equivalence tests for participant outcome measures yielded no statistically significant differences between conditions, with the exception of the COIMP's parent limit setting subscale, t (8) = 1.79, $p < .05$; ACIRI's child interactive subscale $t(13) = 3.09$, $p < .05$, and HLE's availability book subscale $t(10) = 1.39$, $p < .001$. Likewise, demographic variables were not significantly different, with the exception that groups differed significantly by child's ethnicity, with more Mexican-American children in the comparison condition $\chi^2 = (1, N = 14) = 4.10$, $p < .05$.

Differential attrition. A total of 24 mother-child dyads originally entered the program, and all provided baseline questionnaires; of those, six dyads (24%) dropped out

after submitting the questionnaires. Five families dropped out immediately after submitting the baseline questionnaires and prior to recording videos for baseline; of those, two mothers reported a major change in life events (i.e., divorce, illness), which they believed would interfere with participation in the study; two mothers suffered delays and issues getting their tablet packages via mail, so they communicated frustration and losing interest in the program; one mother could not be reached and was the only participant who did not return the equipment. Two mothers started the program and dropped out for different reasons. One mother was in the comparison condition, and she uploaded two baseline videos, and completed one session and became non responsive when contacted by the PI. A month later she requested to get back in the program, and was given access but never made any progress so we (mother and PI) decided to terminate the program after another two weeks of failed attempts. The second mother completed the program on a different schedule given personal issues (i.e., illness, death), but her data were not used in the results given that she was on a different timeline and was still mid-way in the program when all other participants had completed post data collection. Chi-square difference tests and t-tests were conducted to examine differences in missing data between conditions and participant demographic data. There were no significant differences between dyads characteristics among groups.

Assumptions. Specific violations of normality including outliers, linearity, and homoscedasticity were analyzed. Frequency scores on all variables were analyzed for any outliers in the data. Skewness and kurtosis were examined and fell within the acceptable range of -1.96 to +1.96 (Field, 2013) for most of the outcomes measures, with the exception of the literacy stragies subscale that was negatively skewed. It seems

reasonable that using literacy strategies is skewed given that it is too advanced for the participant children age-group (i.e. adult ask the child to recall information from the story, adult solicit predictions). The three COIMP subscales and two dimensions, seemed to indicate that distributions of scores were not normally distributed; also homogeneity of variance and regression slopes were analyzed showing negative slopes for the COIMP indicating heterogeneity of the data. Levene's tests were conducted on each outcome variable, finding four subscales that showed statistically significant differences in variance across treatment condition as seen in Table 3. In the COIMP's case, the tasks measured by this scale need to be carefully observed given that all subscales showed normality issues. It also needs to be taken into consideration the nature of the tasks observed with the COIMP (i.e., free play instead of play with specific commands as is been regularly used). Specifically, for the ACIRI's interactive reading scale, given that the rest of the data were normally distributed and the small sample, the data could be treated as normal.

Table 3

Assessment of Normality for Baseline Outcome Measures.

Variable	Skewness	*SE* of skewness	Kurtosis	*SE* of kurtosis	Levene statistic	*p*
COIMP						
Proactive parenting	-0.88	0.55	0.02	1.06	1.31	.816
Parent limit setting	-1.38	0.55	0.40	1.06	0.01	.122
Child non compliance	-2.07	0.55	4.87	1.06	0.37	.924
Positive parenting	4.21	0.55	2.81	1.06	0.01	.151

(continued)

Variable	Skewness	*SE* of skewness	Kurtosis	*SE* of kurtosis	Levene statistic	*p*
Negative-controlling behavior	4.55	0.55	-0.79	1.06	0.02	.667
ACIRI child						
Enhancing attention to text	0.11	0.55	-0.83	1.06	0.22	.300
Promoting interactive reading	-0.28	0.55	-1.44	1.06	0.00	.769
Using literacy strategies	3.14	0.55	9.80	1.06	0.40	.718
Total	-0.26	0.55	-1.18	1.06	0.17	.549
ACIRI adult						
Enhancing attention to text	-0.45	0.55	-0.42	1.06	0.67	.246
Promoting interactive reading	-0.45	0.55	-0.43	1.06	0.67	.246
Using literacy strategies	3.14	0.55	9.80	1.06	0.40	.718
Total	-0.47	0.55	-0.13	1.06	0.99	.277
HLE						
Value literacy	-0.42	0.55	-0.92	1.06	0.70	.107
Press achievement	-0.54	0.55	-0.85	1.06	0.24	.887
Book availability	0.58	0.55	-0.69	1.06	0.00	.218
Book reading with child	-1.57	0.55	3.13	1.06	0.14	.478
Reading attitude	-0.06	0.55	-0.98	1.06	0.02	.315

Note. COIMP = Bilingual child-mom study coder impressions; ACIRI = Adult-child interactive reading inventory; HLE = Home Literacy Environment.

Correlations between variables of interest. Pearson bivariate correlation coefficients were calculated to determine the relation among demographic variables of interest and outcome measures. The correlation coefficients are displayed in Table 4.

Correlations between pretest outcome measures and demographic variables of interest suggest that mothers of girls reported placing a higher value in literacy skills (r = .64, p < .01). Mothers with higher educational levels reported a higher reading attitude in the HLE (r = .53, p < .05). Furthermore, mothers who self-reported being unemployed also reported living in a lower SES household (r = -.62, p < .01), and obtained lower language acculturation scores (r = -.68, p < .01). Additionally, mothers with lower HLE reading attitudes scores obtained higher limit settings scores (r = -.56, p < .05). Mothers with higher press for achievement scores had children with higher scores on the child noncompliance subscale (r = .53, p < .05). Two HLE constructs were positively correlated; the higher the value placed on literacy, the higher scores that were obtained in reading attitude (r = .57, p < .05). Total ACIRI adult and child scores were positively correlated with each other (r = .60, p < .05). The higher educated the mother the more proactive parenting that she used (r = .5, p < 05). Some COIMP constructs were correlated, specifically proactive parenting with positive engagement (r = .56, p < 05), and negative controlling behavior (r = .59, p < 05).

Table 4

Bivariate Correlation between Demographic Variables of Interest and Baseline Outcome Measures

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Gender child	--																
2. Mom education	.09	--															
3. Mom job	-.13	-.19	--														
4. Federal poverty status	-.20	.37	-.62**	--													
5. Total acculturation	-.06	.29	-.68**	.44	--												
6. COIMP proactive parenting	-.10	.51*	.24	-.01	-.05	--											
7. COIMP limit setting	.27	.18	-.26	.08	.37	-.39	--										
8. COIMP child noncompliance	-.24	.19	.05	.20	.25	.44	-.38	--									
9. COIMP positive engagement	-.22	.30	.24	.00	.06	.56*	-.15	.49*	--								
10. COIMP negative-controlling behavior	-.29	.45	.28	.00	-.14	.59*	-.02	.24	.45	--							
11. HLE value literacy	.64**	.07	-.20	.20	-.14	-.07	.45	-.02	-.13	-.09	--						
12. HLE press achievement	-.34	-.08	.05	.32	.03	.35	-.37	.53*	.37	.21	.02	--					
13. HLE book availability	.23	.12	.14	.35	.35	-.18	-.05	.18	-.00	.18	.26	.42	--				
14. HLE book reading w child	.08	-.19	-.45	.40	.40	-.09	-.35	.11	-.25	.01	.38	.48	.44	--			
15. HLE reading attitude	.42	.53*	-.28	.24	.24	.50*	-.56	.24	.32	.08	.57*	.16	.09	.07	--		
16. ACIRI child	-.29	-.15	.12	.08	.08	-.21	.31	.02	-.20	-.03	-.26	.14	-.03	-.16	-.14	--	
17. ACIRI adult	-.14	.18	.03	.27	.27	-.21	.30	.27	-.27	.23	.05	-.06	.23	-.09	-.03	.60*	--

Note. COIMP = Child mom study coder impression; HLE = Home literacy environments; ACIRI = Adult-child interactive reading inventory.

*$p < .05$, **$p < .0$

What is the Effectiveness of ePALS with Hispanic/Latino Mother-Child Dyads?

Prior to reporting results for reach research question, it is vital to highlight that the present study is underpowered to detect changes, so results "approaching significance" for p values from .05 to .10. were also discussed. Also, emphasis was given to the clinical significance or practical importance of the treatment effect.

Is there an increase in positive child-mother interactions? It was hypothesized that targeted mother-child interactions in the experimental group would be significantly improved after receiving the ePALS intervention compared with the comparison group. This research question was tested with an ANCOVA controlling for pre-intervention scores, used as a covariate, to control for its influence on post-intervention scores by type of intervention. Results are presented in Table 5.

After adjustments for pre-intervention scores, there were no significant effects between the intervention and comparison groups on overall post-intervention scores as measured by the COIMP subscales, for proactive parenting, $F(1, 14) = 0.01$, $p > .05$, partial eta squared = 0.00; parent limit settings, $F(1, 14) = 0.00$, $p > .05$, partial eta squared = 0.00; and child non-compliance, $F(1, 14) = 0.68$, $p > .05$, partial eta squared = 0.13. Regarding the naturalistic observation of behavioral patterns, no significant differences were found between the two conditions on overall post-intervention scores as measured by the COIMP dimensions of naturalistic observation of parenting behavior, for positive engagement, $F(1, 14) = 0.37$, $p > .05$, partial eta squared = 0.013; and negative-controlling behavior $F(1, 14) = 0.19$, $p > .05$, partial eta squared = 0.01.

No statistical significance was found between conditions for parent and child behavior as measured by the COIMP; effect sizes for each subscale did not reach clinical

significance (potential practical importance of a treatment effect). Two subscales showed a meaningful decreasing trend in the limit setting and the negative controlling behavior used by mothers enrolled in ePALS compared to the comparison group.

Table 5

Pretest, Posttest, Standard Deviations, Adjusted Mean Scores and Analysis of Covariance Results for the COIMP

	Treatment ePALS			Comparison DAS			Condition Effect		Effect Size
	Pre-test	Post-test		Pre-test	Post-test				
Measure	*M (SD)*	*M (SD)*	$M_{Adj.}$	*M (SD)*	*M (SD)*	$M_{Adj.}$	*F* (1, 14)	*p*-value	η^2
COIMP subscales									
Proactive parenting	6.00	6.84	6.84	6.16	6.81	6.82	.007	.935	.000
Limit Setting	2.38	1.81	1.64	1.22	1.50	1.65	.000	.992	.000
Child non compliance	6.00	6.50	6.50	6.07	6.74	6.74	.179	.678	.013
COIMP dimensions									
Positive engagement	4.21	4.50	4.50	4.56	4.81	4.80	2.31	.151	.001
Negative controlling behavior	4.62	4.69	4.69	4.50	4.78	4.77	.193	.667	.014

Note. ePALS = Online play and learning strategies; DAS = developmental appropriate strategies; $M_{Adj.}$ = Adjusted Mean; COIMP subscale went from 1 = not at all, to 5 = somewhat, to 9 = very much; COIMP dimensions went from 1 = not at all characteristics to 5 = highly predominantly characteristic.

What are the effects of receiving ePALS coaching the use of responsive behaviors in a shared book reading activity?

Is there an increase in interactive reading? It was hypothesized that targeted mother-child interactions learned through ePALS in the experimental group would have an impact on shared book reading skills and would significantly be increased when compared to the comparison group, as measured by the ACIRI. This exploratory research question was tested with an ANCOVA controlling for pre-intervention scores, used as a covariate, to control for influence on post-intervention scores, by type of intervention. Results are presented in Table 6.

After adjustments for pre-intervention scores, there was a significant effect between the intervention and comparison groups on overall post-intervention scores on the ACIRI, for both child, $F(1, 14) = 10.55$, $p < .01$, partial eta squared = 0.43; and mothers, $F(1, 14) = 17.54$, $p < .01$, partial eta squared = 0.56. ACIRI subscales indicated that enhancing attention to text was not significant for child, $F(1, 14) = 1.01$, $p > .05$, partial eta squared = 0.07; or for mothers, $F(1, 45) = 4.02$, $p > .05$, partial eta squared = 0.22. The interactive reading subscale was significant for both child, $F(1, 14) = 10.10$, $p < .01$, partial eta squared = 0.42; and mothers, $F(1, 14) = 12.44$, $p < .01$, partial eta squared = 0.47. Child interactive ACIRI reading scores at post assessment accounted for 50% of the variation in the outcomes, whereas pre-assessment scores accounted for only 14%. While adult interactive reading scores at post-assessment accounted for 74% of the variation, whereas pre-assessment scores accounted for 51%. The literacy strategies subscale was not significant for child, $F(1, 14) = 4.35$, $p > .05$, partial eta squared = 0.24; but was significant for mothers $F(1, 14) = 6.05$, $p < .05$, partial eta squared = 0.30. These results, partially confirmed the hypothesis related to interactive reading. Children enrolled in ePALS increased their interactive reading skills, with a meaningful difference

Table 6

Pretest, Posttest, Standard Deviations, Adjusted Mean Scores and Analysis of Covariance Results for Child and Adult ACIRI

	Treatment ePALS			Comparison DAS			Condition Effect		Effect Size
Measure	Pre-test *M (SD)*	Post-test *M (SD)*	$M_{Adj.}$	Pre-test *M (SD)*	Post-test *M (SD)*	$M_{Adj.}$	*F* (1, 15)	*p*-value	η^2
Child									
Enhancing attention to text	2.56 (0.42)	2.88 (0.19)	2.83	2.36 (0.36)	2.50 (0.77)	2.54	1.01	0.33	0.067
Promoting interactive reading	1.91 (0.46)	2.50 (0.30)	2.48	1.81 (0.85)	1.47 (0.88)	1.49	10.10	0.007	0.419
Using literacy strategies	0.03 (0.09)	0.38 (0.42)	0.37	0.06 (0.17)	0.06 (0.11)	0.06	4.35	0.056	0.237
Total	1.50 (0.27)	1.92 (0.12)	1.88	1.41 (0.34)	1.32 (0.50)	1.37	10.55	0.006	0.430
Adult									
Enhancing attention to text	2.69 (0.32)	2.94 (0.18)	2.90	2.47 (0.40)	2.22 (0.84)	2.25	4.02	0.065	0.223
Promoting interactive reading	2.59 (0.32)	2.69 (0.38)	2.47	2.47 (0.40)	1.64 (0.47)	1.75	12.44	0.003	0.470
Using literacy strategies	0.03 (0.09)	0.53 (0.54)	0.53	0.06 (0.17)	0.06 (0.17)	0.06	6.05	0.027	0.302
Total	1.80 (0.23)	2.02 (0.16)	1.98	1.67 (0.26)	1.31 (0.42)	1.35	17.54	0.001	0.556

Note. ACIRI scale went from 0 to 3 where 0 = No evidence, 1 = infrequent (one time), 2 = Sometimes (2-3 times), and 3 = most of the time (4 or more times).

between groups; while for the mothers enrolled in ePALS there was a small increase in their interactive reading skills, but mothers in the comparison group decreased considerably in the same skill. Effect sizes were large, but the direction of interactive reading trended negatively for the comparison participants.

What is the home literacy environment of participant Hispanic/Latino Mother-Child Dyads?

Home literacy environments. Information regarding the home literacy environment was collected pre and post intervention. In the value placed on literacy subscale, mothers reported how often they themselves engaged in various literacy activities, including reading books, magazines, the Bible, and sales ads. The press for achievement subscale queried mothers about how frequently they taught their child colors, shapes, the alphabet, etc. The availability of reading materials question asked for the number of books for children and adult in the home. Lastly, the reading with children subscale was based on how often the mother and father read to their child.

Participants' home literacy experiences were not significantly different between conditions as measured by *t*-tests between each of the subscales at baseline. Descriptive statistics are presented in Table 7. Regarding the value placed on literacy, mothers in both groups reported engaged in adult literacy activities infrequently (i.e., slightly more than once a month on average). Regarding press for achievement, mothers in both groups reported to be engaged in activities that supported their children's early academic development, on almost a weekly basis in average. Regarding availability of reading materials, both groups of mothers reported having fewer than 10 adults and children's

books in their homes on average. Regarding reading with their own child, the majority of mothers reported reading once a week, while fathers read twice to three times a month.

As shown in Table 8, HLE scores were not significantly correlated with ACIRI scores, implying that there does not appear to be a significant relation with interactive reading activities. Two HLE subscales were the only variables that correlated positively between demographic variables, reading attitude and educational levels of the mother (r = .42, p = .05), with literacy value and gender of child (r = .64, p = .01).

Table 7

Home Literacy Environment Scores Means and Standard Deviation by Condition

	Intervention (n = 8)				Comparison (n = 9)			
	Mean	*SD*	*Min.*	*Max.*	*Mean*	*SD*	*Min.*	*Max.*
Value placed on literacy								
Reads book or novel	4.88	1.89	2.00	7.00	3.88	2.14	1.00	6.00
Reads bible or religious text	2.29	1.25	1.00	4.00	4.11	1.96	1.00	6.00
Reads magazine	2.75	1.49	1.00	5.00	2.78	1.98	1.00	6.00
Reads newspaper	2.14	1.68	1.00	5.00	2.44	1.74	1.00	5.00
Reads advertisements	3.50	2.33	1.00	7.00	5.11	1.96	1.00	7.00
Uses recipes for cooking	3.38	2.13	1.00	6.00	4.11	2.32	1.00	7.00
Makes lists (e.g., shopping)	2.88	2.23	1.00	6.00	5.11	1.90	1.00	7.00
Leaves a written note	2.25	1.16	1.00	4.00	3.33	2.23	1.00	7.00
Sends an email	2.86	2.54	1.00	7.00	4.78	2.33	1.00	7.00
Sends a text message	5.00	2.07	1.00	7.00	6.33	1.32	3.00	7.00
Reads text on Internet	5.88	2.03	1.00	7.00	6.33	1.32	3.00	7.00
Total subscale	3.48	1.13	2.00	4.70	4.39	1.07	2.36	5.64
Press for achievement								
Talks with child about ABCs	5.38	1.41	3.00	7.00	6.22	0.97	4.00	7.00
Talks with child about letter sounds	4.63	2.07	1.00	7.00	4.67	2.24	1.00	7.00
Colors with child	5.75	0.89	4.00	7.00	5.22	1.99	1.00	7.00
Helps child write	4.88	1.81	1.00	7.00	4.11	2.15	1.00	7.00
Helps child follow instructions on toy or game	5.29	1.98	2.00	7.00	5.56	1.88	1.00	7.00
Reads signs with child	4.75	2.05	1.00	7.00	4.44	2.19	1.00	7.00
Taking child to the library	2.87	0.69	1.00	6.00	2.67	0.58	1.00	6.00
Total subscale	4.78	1.11	2.57	6.29	4.70	1.34	2.71	6.14

(continued)

Availability of reading materials								
Number of adult books[a]	2.50	1.60	1.00	6.00	2.11	0.93	1.00	4.00
Number of children's books[a]	3.25	2.43	1.00	7.00	2.11	1.05	1.00	4.00
Total subscale	2.88	1.53	1.00	4.50	2.11	0.60	1.00	3.00
Book-reading with child								
Mother reads with child	5.75	2.05	1.00	7.00	6.44	0.73	5.00	7.00
Father reads with child	4.38	2.44	1.00	7.00	4.78	1.64	1.00	7.00
Total Subscale	5.06	2.02	1.00	7.00	5.61	0.96	3.50	7.00

Note. HLE scale went from 1 to 7 where 1 = Never, 2 = few times a year, 3 = once a month, 4 = twice or three times a month, 5 = once a week, 6 = two to four times a week, and 7 = five to seven times a week.

[a] = Note that this variable was coded categorically, such that a score of 0 = 0 books, 1 = 1 to 5 books, 2 = 6 to 10 books, 3 = 11 to 20 books, 4 = 21 to 30 books, 5 = 31 to 40 books, 6 = 41 to 50 books and 7 = more than 50 books.

Data were gathered during baseline and post-intervention; an ANCOVA was used to control for the influence intervention had on post-intervention scores by type of intervention, as seen in Table 8.

After adjustments for pre-intervention scores, there was no significant effect between the two intervention groups on overall post-intervention scores on any of the HLE's subscales for: (a) value literacy, $F(1, 15) = 2.47$, $p > .05$, partial eta squared = 0.07; (b) press achievement, $F(1, 15) = 0.25$, $p > .05$, partial eta squared = 0.02; (c) book availability, $F(1, 15) = 0.01$, $p > .05$; (d) book reading with child, $F(1, 15) = 0.27$, $p > .05$, partial eta squared = 0.09; and (e) reading attitude, $F(1, 15) = 4.47$, $p > .05$, partial eta squared = 0.24. These results show that characteristics of the home literacy environment provided overall information on the practices and values regarding literacy at home, but showed no significant differences between the two intervention groups on post-intervention scores.

Table 8

Pretest, Posttest, Standard Deviations, Adjusted Mean Scores and Analysis of Covariance Results for Home Literacy Environments

	Treatment ePALS			Comparison DAS			Condition Effect		Effect Size
	Pre-test	Post-test		Pre-test	Post-test				
Measure	*M (SD)*	*M (SD)*	$M_{Adj.}$	*M (SD)*	*M (SD)*	$M_{Adj.}$	*F* (1, 15)	*p*-value	η^2
HLE									
Value literacy	3.48 (1.12)	4.21 (1.28)	4.40	4.39 (1.07)	4.15 (0.68)	3.95	2.47	.322	.070
Press achievement	4.79 (1.11)	4.95 (1.34)	4.92	4.70 (1.34)	5.10 (0.99)	5.13	0.25	.628	.017
Book availability[a]	2.88 (1.53)	3.50 (1.98)	3.04	2.11 (0.60)	2.63 (1.09)	3.08	0.01	.943	.000
Book reading with child	5.06 (2.02)	5.38 (1.38)	5.55	5.61 (0.96)	5.33 (0.94)	5.17	1.32	.270	.086
Reading attitude	2.85 (0.65)	3.53 (0.24)	3.56	3.12 (0.34)	3.25 (0.40)	3.21	4.48	.053	.242

Note. ePALS = Online play and learning strategies; DAS = developmental appropriate strategies; $M_{Adj.}$ = Adjusted Mean; HLE scale went from 1 to 7 where 1 = Never, 2 = few times a year, 3 = once a month, 4 = twice or three times a month, 5 = once a week, 6 = two to four times a week, 7 = five to seven times a week.

[a]Book availability had a different scale, 0 = 0 books, 1 = 1-5 books, 2 = 6-10 books, 3 = 11-20 books, 4 = 21=30 books, 5 = 31-40 books, 6 = 41-50 books, 7 = >50 books

Will Latino/Hispanic Mothers Perceive their Web-Based Program to Be Easy, Relevant and Satisfying to Use?

All mothers used tablets, the Internet and two applications: (a) ePALS app for self-directed learning of the content individually designed for each condition, and (b) ZOOM app for the videoconferences. Given that the intervention was provided remotely via online means, it was hypothesized that both groups were going to be able to use their apps with ease and satisfaction, granted all the technical support was provided. To determine acceptability and implementation feasibility, descriptive statistics (i.e., means and standards deviations) were analyzed and presented in Table 9.

Overall, mean scores for all items was greater than 4.50 for both conditions and families indicated they were likely to recommend their received program. Families considered that each allocated program was respectful of their own family cultural values. The first subgroup of questions related to technology feasibility had an overall mean score of 4.41 (*min.* = 1.00, *max*. = 5.00, *SD* = 0.85) indicating overall easiness using the applications, ePALS and ZOOM. The second subgroup of questions was focused on looking at implementation feasibility with an overall mean score of 4.74 (*min.* = 4.00, *max*. = 5.00, *SD* = 0.43), indicating that mothers in the intervention group were able to practice daily, and both intervention groups were able to use the learned strategies in their daily activities. Regarding satisfaction with coaching and coach feedback, overall participants found it helpful, with an overall mean score of 4.85 (*min.* = 4.00, *max*. = 5.00, *SD* = 0.45). These results support the hypothesis that mothers found the program and the technology easy to use with appropriate support, and feasible to implement.

Table 9

Social Validity Descriptive Statistics by Condition.

Variable	Intervention ePALS (n = 8)				Comparison DAS (n = 9)			
	M	*SD*	*Min.*	*Max.*	*M*	*SD*	*Min.*	*Max.*
Technology feasibility								
1. ePALS app was easy to navigate	4.75	0.46	4.00	5.00	4.00	0.71	3.00	5.00
2. ePALS app was easy to use for doing my sessions	4.13	1.36	1.00	5.00	4.22	0.83	3.00	5.00
3. It was easy to understand the content and audio in each session.	4.38	0.92	3.00	5.00	4.78	0.83	4.00	5.00
4. It was easy to record the interactions with my child using the ePALS app.	4.25	0.46	4.00	5.00	4.00	1.00	3.00	5.00
5. It was easy to use the app ZOOM for videoconferences.	4.63	0.03	4.00	5.00	4.56	0.73	3.00	5.00
6. Weekly videoconference call with my coach helped me to learn/clarify the content or strategies.	4.88	0.35	4.00	5.00	4.75	0.46	4.00	5.00
7. More training and information could be added to the app.	4.50	0.76	3.00	5.00	4.00	0.93	2.00	5.00
Implementation feasibility								
8. I was able to practice daily the strategies learned in the program.	4.75	0.46	4.00	5.00	N/A	N/A	N/A	N/A
9. I feel confident in using the learned strategies in my day to day activities.	4.88	0.35	4.00	5.00	4.67	0.50	4.00	5.00
Satisfaction with coach/coaching								
10. I felt supported by my coach despite the distance.	4.88	0.35	4.00	5.00	4.89	0.33	4.00	5.00
11. I felt understood by my coach.	4.88	0.35	4.00	5.00	4.89	0.33	4.00	5.00
12. Feedback from my coach about the recorded videos with my child helped me to learn/clarify the content or strategies.	4.88	0.35	4.00	5.00	N/A	N/A	N/A	N/A

(continued)

	Intervention ePALS (n = 8)				Comparison DAS (n = 9)			
13. Feedback from my coach was respectful of my parenting values and practices.	4.75	0.46	4.00	5.00	4.78	0.44	4.00	5.00
Overall								
14. I would recommend this program to other families.	4.50	0.76	3.00	5.00	4.00	0.93	2.00	5.00
15. I consider this program was respectful of my cultural values.	4.88	0.35	4.00	5.00	4.56	0.73	3.00	5.00

Note. MIN = Minimum; MAX = maximum; N/A = does not apply; Social validity scale went from 1 to 5 where 1 = Strongly Disagree and 5 = Strongly Agree.

Program utilization. Mothers in both conditions received weekly text messages 48 hours before their next session as a reminder of their next scheduled meeting. Mothers were instructed to cancel their meetings with a 24 hours anticipation notice whenever possible. Twenty percent of the appointments were rescheduled within a week, mostly because of illness or family emergencies. Five percent of the sessions needed to be rescheduled because of last minute cancellations. Overall, 75% of the time, mothers showed up for their sessions as agreed with their coach.

The amount of time between initial access to the program and completion of the post training assessments ranged from 15 to 18 weeks (M = 17 weeks) for parents in both groups conditions. All participants viewed the training modules in the correct order. The coach was able to track progress for each participant on the coaching log page, as well as track when participants uploaded their two videos for the week that were needed before the video session. Overall families complied by doing their session and their two videos at least 24 hours before the video conference with their coach. When videos were not uploaded prior to the video call meeting, sessions were rescheduled, and a call took place to figure out if parents needed support to complete their sessions.

Time spent on the app ePALS for each session was not possible to track because not all mothers logged in or out after each session in either condition. Mothers were engaged using their ePALS app during different times of the day, which varied slightly by condition. This finding was hypothesized as expected, given that mothers in the intervention condition needed to use the app more frequently for uploading their two weekly videos as part of their homework. Usage by time of day is presented in Figure 2, and usage by day of the week is presented in Figure 3.

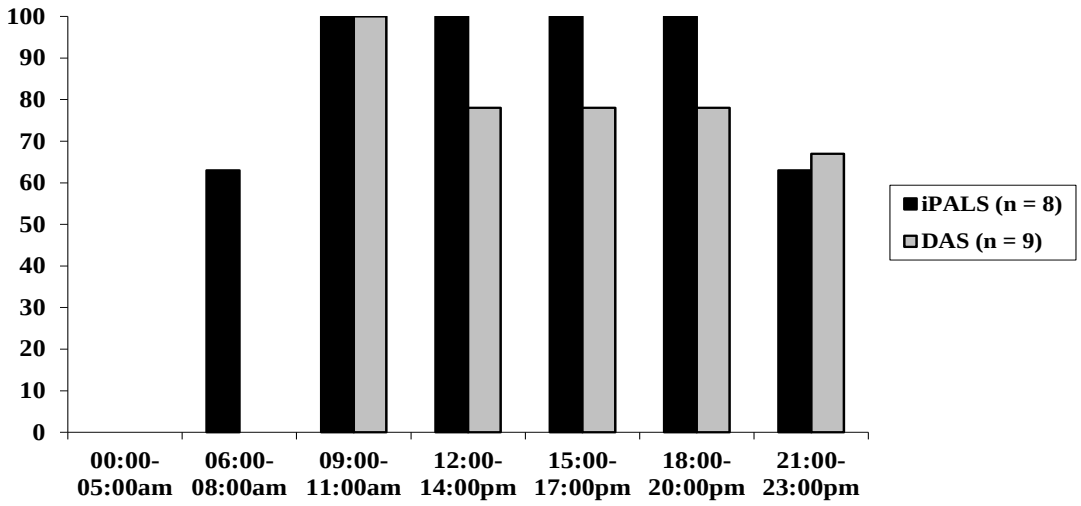


Figure 2. Program Utilization Percentage Usage by Time of Day by Intervention and Control group.

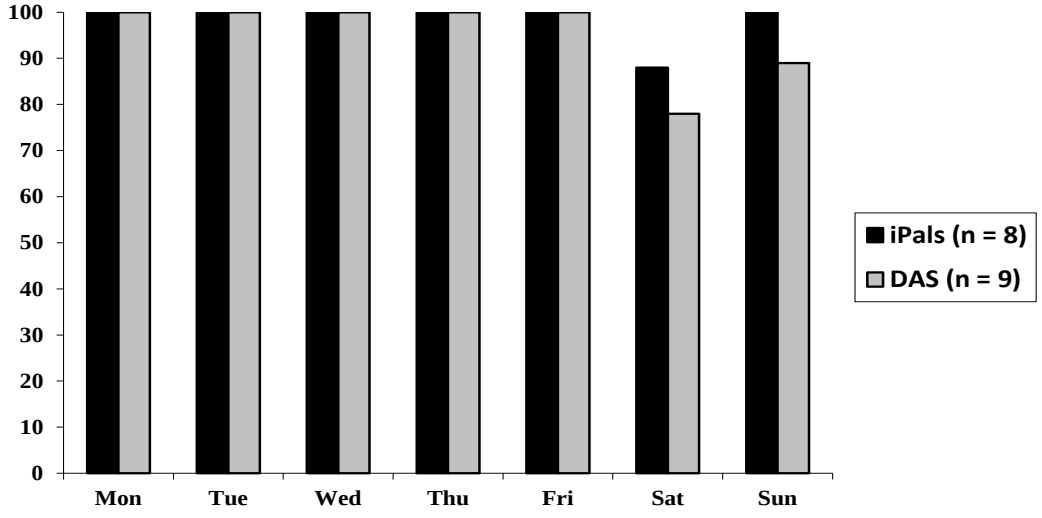


Figure 3. Program Utilization Usage Percentage by Day of the Week by Condition.

Video calls via ZOOM were held weekly with each participant; on average calls in the intervention condition lasted between 35-65 minutes, while in the comparison condition it lasted between 10-15 minutes. Ninety-six percent of the calls were held via the ZOOM app, and 4% were held via telephone call given Internet connectivity issues.

Mothers received weekly text messages 48 hours before their next session as a reminder. Mothers were instructed to cancel their meetings with a 24 hours anticipation notice whenever possible.

Technical support. A total of 86 hours of technical support were provided by the PI to participants, to support the use of equipment and technology, and for troubleshooting. During the intervention period, mothers were asked to update the ePALS app 3 times to improve the functioning of the app. Written instructions were developed and sent online to make it easier; however, for more than half the participants, a follow

up one-to-one call was needed to make the installation easier despite sending written instructions.

The current state of evidence regarding parent training interventions delivered via telehealth for young children with or at-risk for developmental disorders is of growing interest to researchers and policy makers. In the following chapter, results are discussed related to each research question and implications for future research.

CHAPTER V

DISCUSSION

The main findings in terms of fidelity of implementation (treatment integrity for both the coach and the mothers) are described as well as outcomes related to the subsequent impact of ePALS on the dependent variables of interest. Limitations of the study are examined and the impact of study findings on subsequent future research is explored**.**

The purpose of this dissertation study was to explore the efficacy of ePALS for Hispanic/Latino mother-child dyads interactions using a randomized-controlled trial design, a rigorous method of intervention evaluation. The effects of ePALS were measured using three dependent variables: COIMP, to measure child-mother interactions; ACIRI, to measure the effects of ePALS on shared book reading; and the HLE, to measure the context and values regarding literacy at home. Demographic data were also gathered, including an acculturation measure to better understand the Latino/Hispanic families' demographic variables, and the ASQ-3, a developmental screening tool to account for typical or atypical development in participant children. Treatment integrity (adherence, quality of delivery, and dosage) was measured through interventionist self-report, as well through direct observation (videos) and electronic data tracking embedded via the ePALS app. Discussion and future research suggestions are provided below.

Summary of Implementation

Treatment Integrity. A hallmark of conducting an RCT is the demonstration of functional relations between dependent variables (i.e., demographics and outcome measures) and independent variables (i.e. ePALS). The extent to which such relations can

be understood depends, in part, on the precise measurement of targeted behaviors and the accurate implementation of the independent variable. For the current study, intervention was carried out by the PI who was certified by PALS programs developers to be a coach; treatment integrity or adherence to the intervention protocol was self-reported by the PI using weekly coaching guides, and parent implementation integrity was assessed every session by the PI using two self-recorded videos in which parents implemented the weekly learned skills. The combination of treatment integrity measures suggested that ePALS was implemented fully; but the competent delivery of the coach intervention evaluation by a trained bilingual supervisor was not possible due to funding and lack of personnel. Assuring implementation fidelity provides confidence that the intervention is being delivered as intended to effect the desired change and improve the lives of parents and young children (Barton & Fettig, 2013; Breitenstein, Fogg, Garvey, Hill, Resnick, & Gross, 2010), so this type of research needs to have all possible treatment integrity measures as part of the study in order to meet research design standards (Kratochwill et al., 2013; U.S. Department of Education, Institute of Education Sciences, 2013).

Summary of Evidence of Efficacy of ePALS Delivered Via Telehealth

Impact on mother-child interactions. Results from this study suggest that for all mother-child dyads, regardless of treatment condition, there were no differences from pre to post intervention on this outcome variable as measured by the COIMP. Additionally, there was not a significant effect size. These results differed from other peer-reviewed articles that have evaluated interventions helping parents learn responsive behaviors that have shown increases in mothers' responsiveness result in their children demonstrating better problem-solving, language, and social skills (Landry et al., 2008), as well as

improved emotional skills, (Bakermans-Kranenburg, Van IJzendoorn, & Juffer, 2003), and behavioral development (Van Zeijil et al., 2006), encouraging warmth and trust between parent and child. PALS and Infant-Net have demonstrated moderate to large effects in previous random assignment studies regarding increasing mothers' use of a range of responsive behaviors and in turn increase children's emotional, behavioral, and language skills (Baggett et al., 2010; Landry et al., 2006; Landry et al., 2008; Guttentag et al., 2006; Guttentag et al., 2014).

Given that this is the first web-based adapted trial of PALS, there may be several reasons why there were no significant effects for the families enrolled in ePALS on the outcome measures (COIMP), besides sample size. First is the assumption that ePALS may have not been effective with this specific population, perhaps because the literature suggests that DLLs have at least equal (if not better) social-emotional outcomes compared to native English speakers despite the presence of risk factors in Latino families (Halle et al., 2014). Second, instrumentation issues are quite common in social sciences research, specifically in the parent training literature. For example, Bakermans-Kranenburg and colleagues (2003) in their meta-analysis of sensitivity and attachment interventions found that when measuring parent sensitivity and responsiveness, lower effect sizes have been found for studies using some specific outcome measure tools, for example the *Home Observation for Measurement of the Environment* (HOME) (d = 0.21), and the *Nursing Child Assessment Teaching Scale* (NCATS) (d = 0.25), than for studies using the Ainsworth or Erickson rating scales (d = 0.38). Lower effect sizes have also been found with studies (d = 0.45), which regularly use outcome measures that were rather closely related to the focus of the intervention. In this case, COIMP was previously

used in parent-child dyadic research with a diverse population of participants with positive effects; the specific tasks in this prior research included play with commands such as cleaning or changing tasks. Therefore, it is possible that the tool was not able to detect changes in an "only free play task" as measured by the COIMP constructs.

Summary of ePALS Impact on Interactive Shared book Reading Activities

Impact on interactive shared-reading. This exploratory research question is unique given that the skills that Latino/Hispanic DLL children develop during shared book-reading activities have yet to be examined in relation to responsive parenting interventions; a prior study exploring the effects of a responsive parenting intervention on parent-child interactions during shared book reading found significant changes in observed maternal and child behaviors, and evidence of mediation was found for the intervention with effects on children's behaviors through change in maternal responsiveness behaviors (Baggett et al., 2010; Landry, Smith, Swank, Zucker, Crawford, & Solari, 2012). Because there is a dearth of studies that focus on the relationship between socioemotional development and dual-language and literacy development of young DLL children across ethnic and SES groups (Gutierrez et al., 2010), this exploratory research question is relevant and critical.

We examined whether coaching mothers to use a range of responsive behaviors during play and in everyday activities (e.g., feeding, dressing, playing) would lead the mothers to generalize their use of these behaviors during shared book-reading activities and, in turn, enhance their children's engagement and language. Mothers were instructed during session about reading with child, about the importance of reading for young children's school readiness outcomes and how to use the learned responsive and warmth

skills when reading with their child. Mothers were asked to use the learned responsive skills and apply it to a shared book reading situation. Results from the current study suggest that the mothers enrolled in the intervention condition gained some interactive reading skills, and their children made large increases in interactive reading when compared to the comparison group. In the comparison group, mothers' and children's skills, surprisingly decreased in their interactive reading skills. Previous research, with middle and high income preschool families, suggested that the most prevalent style of parent book sharing interaction is characterized by the use of few extra textual utterances during the reading story, contrary to what is believed that this type of activity is highly interactive (Hammett et al., 2003).

The mother-child dyads in the ePALS program showed gains in the use of interactive reading and supporting comprehension techniques during shared reading activities, which prompted mothers to use more responsive behaviors (e.g., responding promptly to a child's signals, building on a child's interests), and use more language with their children (i.e., naming objects and actions, asking more open-ended questions, expand on child's response). In return, when mothers used more responsive behaviors and language techniques, children used higher-level language responses (i.e., respond questions about the book, relate the book's content to personal experiences, and make questions about the story), when compared to the comparison group. This finding is similar to those by Landry and colleagues (2012). Given that participant families included in this study are representative of families reported to be least likely to read to their children (Landry et al., 2011; Hammer et al., 2003), it is therefore noteworthy that an intervention that did not directly target facilitating the use of shared book reading

behaviors was effective in maintaining and slightly increasing maternal and child behaviors in this important activity. Children's maturation also may account for the observed behavior patterns. Thus the findings suggest that the effect of a broad responsive parenting intervention was effective with Latino/Hispanic populations, but replication with larger samples is needed. Given the relatively little research that has been conducted on Hispanic children's literacy development (Hammer et al., 2003), these results, highlight a possible promissory line of research on Latino/Hispanic low-income dual language learners.

Home literacy environments and shared-reading. Current statistics suggest that children whose first language is Spanish are at risk for poor literacy outcomes in U.S. schools, and that home literacy experiences of Hispanic children have not been well studied (Hammer, et al., 2003; Gutierrez et al., 2010). This study addressed participants' HLE to better understand the hypothesized effects of ePALS on shared-reading interactions. Responses to the *Encuesta sobre Lenguaje y Alfabetización en el Hogar* (Duran et al., n.d.) survey provided a preliminary view of HLEs of Spanish-speaking Hispanic/Latino families living in Oregon, which adds to well needed literature related to bettering understanding what factors exist that promote literacy development of young DLL children (Hammer et al., 2003; Gutierrez et al., 2010). Identifying home experiences that may lead to more success in literacy acquisition could enable educators to tap into and build on a child's and family's home culture (Hammer et al., 2003).

The ACIRI, for both child and adult outcomes, and the HLE survey's subscales were not correlated with each other. Home literacy environments did not suffer changes from baseline to post-intervention, with the exception of reading attitude with a moderate

effect size at post-intervention for the mothers enrolled in ePALS, but with no clinical significance. It may be that using responsive and warmth behaviors aided in a more pleasant interactive reading activity between child and mother, but more time points maybe needed to see if these changes increase or decrease over time.

There may be several explanations as to why significant relationships were not found between ACIRI and the HLE survey. First, a critical level of literacy events in the home may be necessary for home literacy events to impact literacy outcomes (Hammer et al., 2003). Second, there may be fewer opportunities for Spanish-speaking mothers to access written materials in Spanish; especially true for low-income families. Third, it may be that ACIRI is not measuring literacy-related abilities affected by the five factors outlined by the model proposed by Duran et al. (n.d.).

Acceptability and Feasibility Summary of ePALS Delivered Via Telehealth for Low Income Latino/Hispanic Families Living in Oregon

Given that most of the parent training programs are developed for White middle-class families, and that few programs have been adapted for ethnic non-dominant families (e.g. Breitenstein et al., 2012; Martinez & Eddy, 2005), this type of research is relevant and needed. Prior research with non-dominant racial/ethnic groups in the U.S., such as Latino/Hispanic and African American groups, especially for those families from low-income backgrounds, have demonstrated that certain programs are feasible and appealing for these parents raising young children in low-income neighborhoods (e.g. Breitenstein et al., 2012; Coard, Foy-Watson, Zimmer & Wallace, 2007; Williamson, Knox, Guerra, & Williams, 2013; Park & McHugh, 2014). The current study suggests that immigrant Latino/Hispanic mothers from low SES were interested in receiving services remotely in

their home language, with support available to use the intended technology. This is extremely relevant and positive, given that many immigrant parents face significant barriers as they try to engage with their children's early educational experiences in the U.S. (Park & McHugh, 2014). This study found that immigrant parents were interested in accessing educational opportunities for their children, which may be considered an important component of protective factors in early learning (Park & McHugh, 2014)

Given that online technology has become a part of people's everyday life (e.g., apps), it allows for services related to evidence-based interventions to be accesed from a wider variety of families anywhere at any time (Hall & Bierman, 2015; McGoron & Ondersma, 2015; Wainer & Ingersoll, 2013). Technology-assisted interventions are being incorporated into parenting training programs and have shown substantial potential to increase the reach and the quality of intervention delivery and better reach diverse families (Breitenstein et al., 2015; Hall & Bierman, 2015). A prevailing assumption has been that technology-assisted interventions may appeal more to higher income, well-educated parents (Hall & Bierman, 2015), but this study suggests that telehealth is equally used and effective in engaging Latino/Hispanic families from lower incomes and with less education. This suggests promising feasibility to reach a wider range of parents via telehealth (Breitenstein et al., 2015; McGoron & Ondersma, 2015).

Limitations

Study findings should be considered in light of several important limitations, all of which motivate future research on ePALS on play and shared-reading interactions. First, this program was tested in a small sample which may lack the statistical power to detect adequately intervention effects (Bakermans-Kranenburg, Van IJzendoorn, &

Juffer, 2013). Also, this program was tested among a predominantly first generation Mexican sample living in Oregon. The culture of immigrant Latino/Hispanic families is not homogenous and various contextual circumstances (e.g., level of poverty, language use) may differ widely across this population. As such this study is limited in its generalizability to Latino immigrants from other countries, and to those living in different social contexts. Study findings are additionally limited to mothers, as fathers were not eligible for participation. Fathers participated in two sessions in the program, but baseline and post-intervention data for these fathers were not collected. Finally, although the findings demonstrated ePALS effectiveness for shared-reading interactions for children at high environmental risk for developmental and behavioral problems, it is not clear whether effects would generalize to other groups of children with risks for developmental disorders as well as to families from a broader range of socioeconomic background (Landry et al., 2012).

Second, there are several measurement-related methodological concerns. We used 5-minute video-coding given the children's young age, with an assumption that brief segments of behavior, called "thin slices," can be used to make accurate evaluations (Ambady & Gray, 2002; Landry et al., 2012). It could have been that for the type of interactions for this research, the COIMP needed either more slices of behavior or it may be that the tool is not sensitive enough for detecting change when only a free play task is evaluated. Therefore, another type of responsivity measure will need to be used in future research.

Third, due to a small sample size, this study had a priori low statistical power (Button et al., 2013). Regularly, studies with small samples are less likely to find effects

that genuinely exist, have lowered probability of reflecting true effects (if the effects reach statistical significance), and effects that are found may be overstated. Post hoc power analyses were conducted to determine the power obtained using the G*Power tool by University of Düsseldorf for each of the dependent variables. For the COIMP subscales measure, the power analysis used an ANCOVA design with the *F* effect size found (.00), an alpha value of .05, a sample size of 17, with two groups, one degree of freedom, and one covariate. The measured power for each of the COIMP subscales ranged from .05 to .07. For the COIMP dimensions measure, the power analysis used an ANCOVA design with the *F* effect size found (.00), an alpha value of .05, a sample size of 17, with two groups, one degree of freedom, and one covariate. The measured power for each of the COIMP dimensions ranged from.05 to .07.

For the child interactive reading ACIRI measure, the power analysis used an ANCOVA design with the *F* effect size found (.87), an alpha value of .05, a sample size of 17, with two groups, one degree of freedom, and one covariate. The measured power for the ACIRI child subscale was .38. For the adult interactive reading ACIRI measure, the power analysis used an ANCOVA design with the *F* effect size found (1.12), an alpha value of .05, a sample size of 17, with two groups, one degree of freedom, and one covariate. The measured power for the ACIRI child subscale was .98.

For the HLE measure, specifically the reading attitude subscale, the power analysis used an ANCOVA design with the *F* effect size found (.57), an alpha value of .05, a sample size of 17, with two groups, one degree of freedom, and one covariate. The measured power for the HLE reading attitude subscale was .58.

The range of statistical power for each dependent variable in this study varied from(.05 to .98, suggesting that power varied accordingly to the outcome measures from non-significant to large effect sizes, considering the study small sample.

Fourth, treatment integrity is vital in every study –especially in an underpowered one. We did not have external trained observers that could assess the fidelity of implementation of ePALS in the current study. Given the importance of treatment integrity data to make better decisions about parent training interventions (McIntyre, Gresham, DiGennaro, & Reed, 2007), it is important to allocate time and funding to be able to establish fidelity monitoring strategies, as an important step in implementing evidence-based interventions on a large scale (Breitenstein et al., 2010). This is especially true in telehealth delivered interventions that can significantly enhance fidelity through technology-based mechanisms (i.e., supervision through recorded video coaching) (Feil et al., 2008).

Fifth, potential issues concerning access to reliable Internet access in poor neighborhoods and in rural communities require further attention. The digital divide has been reduced but is still a factor for many communities (Feil et al., 2008; Pew Research Center, 2015). These communities may only have limited Internet access (i.e., dial-up and/or low-speed) and outdated equipment, making interventions described herein unfeasible.

Sixth, ideally, participants would have been enrolled in a wait-list design, but given time and funding constrains, this was not possible. Also, outcomes did not provide information concerning whether the effects will sustain to later developmental periods, or

whether additional booster sessions will be required at later time points to support caregivers.

Implications for Future Research

The NELP (2008) report calls attention to the need for research to determine what interventions can be effective with particular groups of children. The growing population of young DLLs merits immediate attention. For other researchers studying interactive reading with very young DLL children, the findings of this study demonstrate the importance of examining adult and child behaviors in tandem to fully understand the qualities of extra textual interactions during shared reading (Hammett et al., 2003; Landry et al., 2012).

Given the promising results in interactive reading possibly due to changes in maternal responsiveness behaviors, resulting in a change in children's behaviors, more research is needed in order to understand the effects of parent interactions during interactive book sharing and its influence on later development of language and literacy skills (Hammett, et al., 2003) in both English and Spanish. Therefore, the use of multi-method standardized bilingual tools is critical in order to measure these constructs with a larger sample, and add to the literature base. Also, collecting the experiences of the participants involved, with semi-structured interviews may add critical information about cultural nuances in parenting training and experiences.

Parents' literacy involvement was a positive predictor of social functioning (Halle et al., 2014), and parents' perception of children's literacy interest mediated the relationship between parents' literacy involvement and DLL's social functioning (Farver et al., 2006). Clearly, there is a need for more research on the social-emotional

development in DLLs, either sequentially or simultaneously learning English and Spanish, in order to better document DLLs' developmental trajectories within the social-emotional domain (i.e., self-regulation, social competence, social cognition, and problem behaviors) in the early years of life (Halle et al., 2014). It is critical that we distinguish what is universal to all children from what is specific to the needs of DLL children, either by degree of uniqueness of their cultural and linguistic context (Halle et al., 2014).

Due to the nature of the ePALS intervention delivered at home, including using an alternate caregiver (e.g., fathers), future research can evaluate the collateral effects of the intervention in fathers (or significant caregiver), and siblings.

Conclusions

Despite these limitations, the outcomes of this study demonstrated preliminarily that ePALS delivered via telehealth is a promising method for improving shared interactive reading between Latino/Hispanic mothers and their young children. It is noteworthy that an intervention targeting mother-child interactions was effective in changing maternal and child behaviors in shared-reading interactions. Thus the promissory findings demonstrate that the effects of a broad responsive parenting intervention were observable in low-income Latino/Hispanic mother-child interactive reading activities.

Given that responsive parenting is considered a critical important set of behaviors to support young children's development, and that increased levels of this parenting style are contingently linked to the children's signals, improving the quality of interactions between parents and young children is critical. Cognitively responsive behaviors such as rich language input and maintaining children's interest have been shown to be an

effective target for enhancing parenting interactive skills. These results hold promise for improving academic and other outcomes for DLLs living in low income households. Therefore, determining the differential effects of these and other interventions through future research is critical for identifying interventions that hold the most promise for improving the educational and developmental outcomes for DLLs.

APPENDIX A

IRB APPROVAL

DATE: September 22, 2015 IRB Protocol Number: 07312015.033

TO: Silvia Batz Herrera, Principal Investigator Center for Educational Policy Research

RE: Protocol entitled, "Effects of Infant-Net on Latino/Hispanic Mother-Child Interactions and Shared book Reading"

Notice of IRB Review and Approval Expedited Review as per Title 45 CFR Part 46 # 6, 7

The project identified above has been reviewed by the University of Oregon Institutional Review Board (IRB) and Research Compliance Services using an expedited review procedure. This is a minimal risk study. This approval is based on the assumption that the materials, including changes/clarifications that you submitted to the IRB contain a complete and accurate description of all the ways in which human subjects are involved in your research.

For this research, the following additional determinations have been made:

- The study as described satisfies the requirements for additional protections for children involved as subjects in research under 45 CFR Part 46.404.
- The permission of one parent or guardian is sufficient for a child's involvement in the research.

Contingency:

- Since this research will be done in collaboration with another institution, Oregon Research Institute (ORI), the University of Oregon's IRB approval of this research is contingent upon one of the following: ORI's IRB approval; full execution of an IRB Authorization Agreement for ORI's deferral to the University of Oregon's IRB; or a determination by ORI that IRB review by them is not required. Documentation must be provided to Research Compliance Services.

This approval is given with the following standard conditions:

1. You are approved to conduct this research only during the period of approval cited below;
2. You will conduct the research according to the plans and protocol submitted (approved copy enclosed);
3. You will immediately inform Research Compliance Services of any injuries or adverse research events involving subjects;

4. You will immediately request approval from the IRB of any proposed changes in your research, and you will not initiate any changes until they have been reviewed and approved by the IRB;
5. You will only use the approved informed consent document(s) (enclosed);
6. You will give each research subject a copy of the informed consent document;
7. If your research is anticipated to continue beyond the IRB approval dates, you must submit a Continuing Review Request to the IRB approximately 60 days prior to the IRB approval expiration date. Without continuing approval, the Protocol will automatically expire on September 21, 2016.

Additional Conditions: *Any research personnel that have not completed CITI certificates should be removed from the project until they have completed the training. When they have completed the training, you must submit a Protocol Amendment Application Form to add their names to the protocol, along with a copy of their CITI certificates.*

Approval period: September 22, 2015 - September 21, 2016

The University of Oregon and Research Compliance Services appreciate your efforts to conduct research in compliance with University of Oregon Policy and federal regulations that have been established to ensure the protection of human subjects in research. Thank you for your cooperation with the IRB process.

Sincerely,

Carolyn J. Craig, Ph.D.
Research Compliance Administrator CC: Jane Squires, Faculty Advisor

IRB ADDENDUM
DATE: October 14, 2015 IRB Protocol Number: 07312015.033
TO: Silvia Batz Herrera, Principal Investigator
Department of Equity Promotion

RE: Protocol entitled, "Effects of Infant-Net on Latino/Hispanic Mother-Child Interactions and Shared book Reading"
Notice of IRB Review and Approval-Amendment
Expedited Review as per Title 45 CFR Part 46 #6, 7

The amendment submitted on October 02, 2015 for the project identified above has been reviewed and approved the University of Oregon Institutional Review Board (IRB) and Research Compliance Services using an expedited review procedure. This is a minimal risk study. This approval is based on the assumption that the materials, including changes/clarifications that you submitted to the IRB contain a complete and accurate description of all the ways in which human subjects are involved in your research.

Amendments:

☐Reduced amount of compensation from $25/questionnaire ($50 total) to $20/questionnaire ($20 total).
☐Clarified that Internet access will be provided for the duration of the project only and will not continue after the study has concluded.
☐Updated Research Plan, consent forms, and recruitment flyers accordingly.

For this research, the following additional determinations have been made:

☐The study as described satisfies the requirements for additional protections for children involved as subjects in research under 45 CFR Part 46.404.
☐The permission of one parent or guardian is sufficient for a child's involvement in the research.

This approval is given with the following standard conditions:

1. You are approved to conduct this research only during the period of approval cited below;
2. You will conduct the research according to the plans and protocol submitted (approved copy enclosed);
3. You will immediately inform Research Compliance Services of any injuries or adverse research events involving subjects;
4. You will immediately request approval from the IRB of any proposed changes in your research, and you will not initiate any changes until they have been reviewed and approved by the IRB;
5. You will only use the approved informed consent document(s) (enclosed);
6. You will give each research subject a copy of the informed consent document;
7. **If your research is anticipated to continue beyond the IRB approval dates, you must submit a Continuing Review Request to the IRB approximately 60 days prior**

to the IRB approval expiration date. Without continuing approval, the Protocol will automatically expire on September 21, 2016.

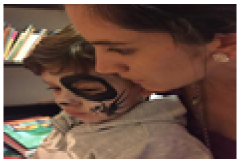
Additional Conditions: *Any research personnel that have not completed CITI certificates should be removed from the project until they have completed the training. When they have completed the training, you must submit a Protocol Amendment Application Form to add their names to the protocol, along with a copy of their CITI certificates.*

Approval period: October 14, 2015 - September 21, 2016
The University of Oregon and Research Compliance Services appreciate your efforts to conduct research in compliance with University of Oregon Policy and federal regulations that have been established to ensure the protection of human subjects in research. Thank you for your cooperation with the IRB process.

Sincerely,
Daniel Berman
Research Compliance Administrator
CC: Jane Squires, Faculty Advisor

APPENDIX B

BILINGUAL FLYERS



Participants Needed

UNIVERSITY OF OREGON

Are you a Latino/Hispanic mother with a child between 18 to 36 months?

We need a **mother-child dyad who communicate with each other mainly in Spanish** for a parenting research study!

This study will take place remotely under the direction of MSc. Ruby Batz, advised by Dr. Jane Squires from the University of Oregon. In this study we hope to learn more about parenting practices in Latino/Hispanic populations. If you participate in our study, you will complete a series of tasks online. It may include weekly independent self-pace learning material and one weekly call with a coach.

The study is entirely online. It will take place during 14 sessions with weekly online coach meetings and self-pace material over approximately 3 1/2 months (20-30 hours total: one-weekly 30 to 45 min. call with a coach, two 2.5-hour entry and exit tasks, & as much self-pace independent activities as each family would like to do online).

If you qualify, **you will receive up to $20 dollars for your participation. A tablet will be given to you if you finalize the program. Each tablet will have unlimited internet data only for the duration of the study.** You will receive some free material (e.g. books, timer).

Interested?

Contact **Ruby Batz** in English or Spanish at: **(541) 954-6603**

or **srb@uoregon.edu**

gual Child-Mom Study at UO
) 954-6603 or srb@uoregon.edu

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) 954-6603 or srb@uoregon.edu

Se necesitan participantes

UNIVERSITY OF OREGON

¿Eres una mamá que se identifica como Latina/Hispana con un hijo/a entre 18 a 36 meses de edad?

¡Necesitamos **madres con hijos/as e**ntre 18-36 meses de edad que se comunican la mayor parte del tiempo **en Español** para una investigación sobre prácticas parentales!

Este estudio llevará a cabo remotamente bajo la dirección de MSc. Ruby Batz, asesorada por Dr. Jane Squires de la Universidad de Oregón. En este estudio esperamos aprender más sobre las prácticas de crianza en la población Latino/hispana. Si participas en nuestro estudio, completarás una serie de tareas en línea. Incluirá material de aprendizaje autónomo y una llamada semanal con un especialista.

El estudio es completamente a distancia (en línea). Durará 14 sesiones, el cual podría incluir material de aprendizaje online autónomo y llamadas con un especialista durante aproximadamente 3 meses y medio (20-30 horas total: 30-45 min de llamada con un especialista una vez a la semana, dos sesiones de 2.5 horas antes y después de las 14 sesiones y actividades independientes online).

Si calificas, recibirás hasta **$20 dólares** por tu participación. El equipo o tablet te lo podrás quedar sí finalizas el programa y se te **proporcionará acceso a internet ilimitado** por el tiempo que dure este estudio. Recibirás algunos materiales regalados (por ejemplo libros).

¿Estás interesada?

Ponte en contacto con **Ruby Batz** en inglés o en español al: **(541) 954-6603** o al correo electrónico: **srb@uoregon.edu**

Estudio Mamá y Peque Latinos en UO (541) 954-6603 or srb@uoregon.edu

APPENDIX C

BILINGUAL CONSENT FORM

UNIVERSITY OF OREGON
Investigator: Ruby Batz, MSc.
Advisor: Jane Squires, PhD.
Consent Form
Introduction
You are being asked to be in a research study. You were selected as a possible participant because you self-referred to this project. Please read this form. Ask any questions that you may have before agreeing to be in the study.

What is the purpose of this study?
This study will test a distance parent education intervention (by Internet) to support parents in their parenting practices.
This project is for Latino/Hispanic mothers with children ages 18-36 months whom speak in Spanish, English, or both to each other. We will loan needed video conferencing equipment (laptop computer, web camera) to participating parents for the duration of the study.

As a participant in this study I understand that:
- ✓ This project will study how Latino/Hispanic mothers and their young children interact.
- ✓ This project includes both a mother and one child 18-36 months.
- ✓ We will take part in the project for approximately 3 months.
- ✓ We will take part in the study voluntarily.
- ✓ My family and I will be randomly put into 1 of 2 groups, like in a coin toss. My family will not be able to choose which group we belong to. Both groups will participate in a study will take place during 10 sessions with different self-pace online material and different type of weekly contact with a coach over approximately 3 months (20-30 hours total: one-weekly 30 to 45 min. call with a coach, two 2.5-hour entry and exit tasks, & as much self-pace independent activities as each family would like to do online).
- ✓ We will provide you with a device (Samsung Tablet 4) and access to Internet (Sprint) for the duration to the program. If you finalize the entire program you can keep the device.
- ✓ Project staff may contact me or my child in the future to be in another project.

What will my participation involve?
If you agree to be in this study, we would ask you to do the following things:
- ✓ We will ask you to set up video conferencing equipment (laptop computer, web camera) prior to each visit. We will teach you how to do this and will be available by telephone and email to support you.

- ✓ Participate in interviews and complete short questionnaires via video conference and email about your child's behavior (about 2 -2.5 hours prior to intervention and post-intervention).
- ✓ Help us learn about you and your child's interactions by recording and uploading four 5-minute video (2 videos prior to intervention and 2 videos post-intervention).
- ✓ Help us learn about you and your child's interactions by recording and uploading one weekly 5-minute video (about 45 min.)
- ✓ Participate in one weekly online call with a coach to review weekly sessions and uploaded videos, but also for planning weekly activities (about 30-45 minutes).
- ✓ Participate in weekly self-pace online activities (each family decides how much time, minimum 10 minutes per week).
- ✓ Carry out observation and or activities with your child. (families decide how much time)
- ✓ Research will take place in your home. We will also ask for your consent to share videos at conference presentations, and for classroom instruction at the University.

Are there any risks to me or my child?

- ✓ In every study there are risks. We do not think you will encounter more risk than you already do day to day in responding to your child's behavior or in your daily interactions.
- ✓ Some procedures may elicit some uncomfortable behaviors, such as video recording your interactions either from you or from the child, but that it would not be outside of the range of their day-to-day behaviors.

Are there any benefits to me or my child?

- ✓ You may be better able to understand your child and the interactions between the two of you. However, I cannot guarantee that you or your child will personally receive any benefits from this research.

Will I receive compensation for my participation in this study?

- ✓ If you qualify, both participants in group 1 or 2 will receive up to **$20 dollars** for your participation (**$10** after filling pre-intervention questionnaires and **$10** after filling post-intervention questionnaires). Equipment can be kept by you if you finalize the program. Some material will be given away (books, timer).

Are there any costs for participation?

- ✓ There is no cost to you to participate in this research study. However, you must already have access to Broadband Internet in your home. Equipment will be loaned to you.

How will my confidentiality be protected?

- ✓ Access to research records will be limited to researchers. This includes digital video of experimental sessions that will be kept online on the Infant-Net secured server and on a password protected desktop computer in the PI's office at the

University of Oregon. However, regulatory agencies, the Institutional Review Board and internal University of Oregon auditors may review records. They want to make sure that everybody who takes part in the study is safe and treated with respect at all times. They are trained to protect our privacy.

- ✓ Data will be kept in the principal investigator's office for 7 years. Then it will be destroyed.
- ✓ The project will not use or present any information that could identify our family. Names, faces, and any other information that could identify me or my family will never be used when the project shares results of the study in papers and presentations.
- ✓ When this study is over, all the information from this study will be in locked cabinets, behind locked doors, and in protected computer files.
- ✓ In written or oral reports, data will be presented so that you and your child will not be identified.
- ✓ Data will be transmitted from computer to computer, but will be encrypted using 128-bit encryption. Encryption means that any electronic information transmitted over the Internet is encoded so that only persons with authorized access may decode and read the data. Authorized access would only be available to a person operating a computer that has an electronic "key" that unlocks the transmitted data for reading.

Who should I contact if I have questions?

- ✓ The researcher conducting this study is Ruby Batz. For questions or information concerning this research you may contact her at 541-954-6603 or srb@uoregon.edu.
- ✓ If you have any questions about your rights as a research subject, you may contact: Subjects Research Compliance Services, University of Oregon at (541-346-2510) or ResearchCompliance@uoregon.edu.

Voluntary Participation/Withdrawal

- Your participation is voluntary. You are free to withdraw at any time, for whatever reason. If you choose to withdraw, you may withdraw consent for the use of data collected up to that point.
- There is no penalty or loss of benefits for not taking part or for stopping your participation.
- If you choose not to participate, it will not affect your current or future relations with the University.

Copy of consent form

- You will be given a copy of this form to keep for your records and future reference.

Statement of consent

- I have read (or have had read to me) this consent form. I have been encouraged to ask questions. I have received answers to my questions. I give my consent for my child to participate in this study. I have received a copy of this form.

I agree to let you videotape or audiotape me during the sessions: (Check those that apply)

☐ Yes, I give you my permission to videotape me.
☐ Yes, I give you my permission to audiotape me.
☐ No, I do not give you my permission to videotape me.
☐ No, I do not give you my permission to audiotape me.

If you have any questions, please feel free to contact [*Ruby Batz who is in charge of this study at the UO. Dr. Jane Squires is her advisor for this project. Please contact them if you have any questions or want to know more about this study. You can call Ruby Batz directly at (541)-954-6603 or you can reach her at srb@uoregon.edu You can also reach her advisor at jsquires@uoregon.edu*] If you have questions regarding your child's rights as a research subject, contact Research Compliance Services, University of Oregon, Eugene, OR 97403, (541) 346-2510.

Your signature indicates that you have read and understand the information provided above, that you willingly agree to your child's participation, that you may withdraw your consent at any time and discontinue participation without penalty, that you have received a copy of this form, and that you are not waiving any legal claims, rights or remedies.

Print Parent/Guardian
Name_____
Parent/Guardian
Signature_____
Date_____
Child Name _____

Universidad De OREGON
Investigadora: Ruby Batz, MSc.
Asesora: Jane Squires, PhD.

Formulario de consentimiento

Introducción

Se te ha solicitado participar en este estudio. Fuiste seleccionado como un posible participante porque te has auto referido a este proyecto. Por favor lee este documento. Por favor haz preguntas y resuelve cualquier duda con la persona de contacto antes de firmar este documento.

Objetivos de este estudio

Este estudio es realizado a distancia en un programa diseñado para padres via electrónica (por Internet) para apoyarte en tus prácticas de crianza.
Este proyecto es para madres latinas/hispanas con un hijo/a que tenga 18-36 meses que hablen en español, Inglés o ambos en sus interacciones diarias. Se te prestará el equipo (ordenador portátil, cámara web) a las madres participantes para la duración del estudio.

Como participante en este estudio entiendo que:

- ✓ Este proyecto estudiará cómo interactúan las madres latinas/hispanas y sus hijos.
- ✓ Este proyecto incluye una madre y un niño/a de 18 a 36 meses de edad.
- ✓ El proyecto dura aproximadamente 3 meses.
- ✓ Mi participación en el estudio es voluntaria.
- ✓ Mi familia y yo participaremos al azar en 1 de 2 grupos, como en un sorteo. Mi familia no será capaz de elegir a qué grupo pertenecemos. Ambos grupos van a participar en un estudio que se llevará a cabo durante 10 sesiones con diverso material en línea y con cierto contacto semanal con un entrenador en aproximadamente 3 meses (20-30 horas total: uno a la semana 30 a 45 min de llamada con un entrenador, dos entrada de 2.5 horas y tareas de salida y actividades independientes online como cada familia desea).
- ✓ Te proveeremos con el equipo y el acceso a Internet durante la duración del programa. Si finalizas el proyecto puedes quedarte con la tabla.
- ✓ El personal del proyecto puede contactar conmigo o mi hijo en el futuro en otro proyecto.

Mi participación en este estudio implica:

- ✓ Tener listo el equipo de conferencias (laptop computadora, web cámara) o teléfono previa a cada visitar. Nosotros practicaremos contigo para que te sientas cómoda utilizando la tecnología.
- ✓ Participar en entrevistas y contestar cuestionarios electrónicos o en papel según sea su preferencia (aproximadamente por 2-2.5 horas antes de la intervención y después de la intervención).
- ✓ Participar en grabar y subir 4 videos de 5 minutos sobre algunas interacciones entre tú y tu hijo/a durante toda la intervención. (2 videos antes de la intervención y pos t-intervención 2 videos).

- ✓ Participar en grabar y subir 2 videos de 5 minutos semanales sobre algunas interacciones entre tú y tu hijo/a durante para practicas las habilidades aprendidas sobre la semana (10-15 minutos)
- ✓ Participar en una llamada en línea semanal con un entrenador para revisar sesiones semanales y videos subidos, pero también para la planificación de actividades semanales (30-45 minutos).
- ✓ Participar en actividades online de manera autónoma (cada familia decide cuánto tiempo, mínimo 10 minutos por semana).
- ✓ Observar y realizar actividades diarias con tu niño/a. (cada familia decidan cuánto tiempo y la frecuencia)
- ✓ Este estudio se realizara en su hogar.

Posibles riesgos para mí y mi hijo/a como participante.

- ✓ En cada estudio existen algunos riesgos. Nos hace pensar que este tipo de estudio no incluye más riesgo del que te encuentras en tu día a día en la manera en que interactúas con tu hijo o la manera en que se comportan.
- ✓ Algunos procedimientos puede provocan algunas ideas o comportamientos incómodos, tales como el hecho de la video grabación sobre sus interacciones ya sea de usted o de la hijo, pero estas consideramos son parte normal de sentirse observado y filmado.

Posibles riesgos para mí y mi hijo/a como participante.

- ✓ Pudiera ser que participar en este estudio te permita comprender mejor a tu hijo/a y las interacciones entre ustedes dos. Sin embargo, no puedo garantizar que tu o tu niño recibirá algún beneficio de esta investigación.

¿Recibiré compensación por mi participación?

- ✓ Si calificas como participante, ambos participantes en el grupo 1 o 2 recibirán hasta **$20 dólares** por su participación (**$10** después de llenar cuestionarios pre intervención y **$10** después de llenar cuestionarios al final de la intervención). El equipo de videoconferencia te lo podras quedar si finalizas tu participación en el programa. Material didáctico te será regalado (por ejemplo libros, contador de tiempo).

¿Cuál es el costo de participar?

- ✓ No existen costos para ti en este estudio. Sin embargo, debes tener acceso a Internet de banda ancha en tu casa. El equipo te será prestado si fuera necesario.

¿Cómo te mi confidencialidad ser protegido?

- ✓ El acceso a los registros y datos de esta investigación está limitada a investigadores. Esto incluye los videos grabados que se encuentran en el servidor seguro de Infant-Net y que si se guardan estarían protegidos con una contraseña en el ordenador en la oficina de la Investigadora Principal en la Universidad de Oregon. Sin embargo, algunas agencias regulador, como la Junta de Revisión Institucional y los Auditores Internos de la Universidad de

Oregon pudieran tener acceso a los materiales recolectados. Ellos quieren asegurarse de que todo el mundo que participa en la el estudio está seguro y es tratado con respeto en todo momento. Ellos están entrenados para proteger nuestra privacidad.

- ✓ Los datos serán guardado en la oficina del IP por7 años. Después de ese tiempo el material será destruido.
- ✓ El proyecto no utilizara o presentara información que podría identificar a nuestra familia. Nuestros nombres, rostros y cualquier otra información que podría identificarme a mí o mi familia nunca se utilizará cuando el proyecto comparte resultados del estudio en ponencias y presentaciones.
- ✓ Cuando este estudio finalice, toda la información de este estudio será guardado en gabinetes con llave, y en archivos de computadora que se encuentran protegidos.
- ✓ En los informes orales o escritos, al momento de presentar datos y resultados, nunca se proveerá información individual que pudiera identificarte a ti o a tu hijo.
- ✓ Los datos serán transmitidos en línea de computadora a computadora, pero serán cifrados con cifrado de 128 bits. Encriptación significa que cualquier información electrónica transmitida por Internet está codificada para que solo las personas con acceso autorizado pueden decodificar y leer los datos. El acceso autorizado sólo estaría disponible para una persona que opere un equipo que tiene una "llave" electrónica que desbloquea los datos transmitidos para la lectura.

¿A quién puedo contactar si tengo dudas?

- ✓ El investigador realizar este estudio es Ruby Batz. Para preguntas o información sobre esta investigación puedes contactarle al 541-954- 6603 o srb@uoregon.edu.
- ✓ Si te surgen preguntas sobre sus derechos como sujeto de investigación, puedes contactar: A la unidad de investigación y cumplimiento de servicios, Universidad de Oregon en (541-346-2510) o ResearchCompliance@uoregon.edu.

Participación voluntaria/ Retiro del estudio

- ✓ Tu participación es voluntaria. Eres libre de retirarte en cualquier momento y por cualquier razón.
- ✓ No tendrás pérdida de beneficios por no participar.
- ✓ Si decides no participar, esto no tendrá repercusiones en tu relación actual o futura con la Universidad.

Copia de consentimiento informado

- ✓ Se te entregará una copia de esta forma para que tus registros y futura referencia.

Declaración de consentimiento

- ✓ He leído (o me han leído) este consentimiento informado y me han animado a realizar preguntas. He recibido respuestas a mis preguntas. Doy mi consentimiento para que mi niño/a participe en este estudio. He recibido una copia de esta forma.

Estoy de acuerdo en dejarte grabar en video o audio durante las sesiones de: (marque los que corresponden)

¨ Sí, te doy mi permiso para grabarme en video.
¨ Sí, te doy mi permiso para grabarme en audio.
¨ No, no te doy mi permiso para grabarme en video.
¨ No, no te doy mi permiso para grabarme en audio.

Si tienes cualesquier duda, contacta con [*Ruby Batz, quien está a cargo de este estudio en la UO. Dr. Jane Squires es su asesor de este proyecto. Por favor ponte en contacto con ellos si usted tiene alguna pregunta o quiere saber más sobre este estudio. Usted puede llamar a Ruby Batz directamente al 541-954-6603 o al email srb@uoregon.edu también puede comunicarse con su asesor al correo jsquires@uoregon.edu*] Si usted tiene preguntas con respecto a los derechos de su hijo/a como un tema de investigación, ponte en contacto con la Unidad de Cumplimiento de Servicios de Investigación, de la Universidad de Oregon, Eugene, OR 97403, (541) 346-2510.

Su firma indica que tú has leído y entendido la información proporcionada anteriormente, y que voluntariamente aceptas participar tú y tu hijo/a, así como que puedes retirar tu consentimiento y participación en cualquier momento, así como que tú has recibido una copia de este formulario, y no renuncia a demandas legales o derechos.

Nombre de padres_____

Firma de padres_____

Fecha_____

Nombre de tu niño/a_____

APPENDIX D

PHONE CALL SCREEN

Hi, thank you for calling us about the project "Mama-Peque". I am Ruby Batz from the University of Oregon. We appreciate your interest. Would you want me to conduct the call in English (*yes* or *no*) or Spanish (*yes* or *no*)? Please, tell me your name: _____ and where did you get information regarding our study: _____.

(*Say mom's name*), do you have 10-15 minutes for me to tell you about this project? If this is not a good time to talk, when would be a better time? (*Schedule it*) _____.

Let me tell you a little more about this project.
For our project Mama-Peque, we are interested in recruiting Latino/Hispanic mothers with a child between 18 – 36 months. In this study we hope to learn more about parenting practices in Latino/Hispanic populations. If you participate in our study, you will complete a series of tasks online. It may include weekly independent self-pace learning material and one weekly call with a coach.
The study is entirely online. It will take place during 13-14 sessions with weekly online coach meetings and self-pace material over approximately 3 1/2 months (20-30 hours total: one-weekly 30 to 45 min. call with a coach, two 2.5-hour entry and exit tasks, & as much self-pace independent activities as each family would like to do online).
If you qualify, you will receive up to **$20 dollars** for your participation. A tablet will be given to you if you finalize the program. Each tablet will have unlimited Internet data only for the duration of the study. You will receive some free material (e.g. books, timer).

Do you have questions at this time? _____
Do you have a few more minutes so I can get some information about you and your family to determine whether you meet eligibility for participation?

(Ask the following questions to determine eligibility)

a. Do you consider yourself Latino/Hispano? **Yes**_____ No _____
b. How old is your child? (between 18-36 months) Yes_____ No _____
c. Do you speak mostly in Spanish with your child at home? **Yes**_____ No _____
d. Do you live in Oregon? **Yes**_____ No _____
e. Do you receive services or qualify for: Head Start, Early Head Start, and WIC? **Yes**_____ No _____

If all the questions responded are YES, the participant qualifies for the study. If one of the questions is a NO, then the participant does not qualify at this moment.

If the child is 16 or 17 months, ask the mom if she would like to be in the waitlist group? **Yes**_____ No _____
If parent qualify, ask if the parent is interested in participating? **Yes**_____ No _____

(Only complete if eligible and caregiver wishes to participate)

1. Caregiver's full name: _____
2. Caregiver's full address: _____
3. Phone (home): _____
4. Cellphone: _____
5. Child's birthdate: _____

APPENDIX E

BILINGUAL TABLET AGREEMENT FORM

Computer Agreement
"Infant-Net" (ePALS2)

You are receiving a Samsung 4 7" tablet as part of the Infant-Net (ePALS2) Project. This tablet will be used to go through the program, make the videos, and make a weekly Zoom call. The computer will automatically connect to the Internet through the Sprint wireless network. We will provide any maintenance needed for wear and tear on equipment and will provide support if you have any trouble with the tablet. If your tablet is stolen, we will file a police report.

We have a limited number of tablets, and replacing tablets can be very costly. We ask that you follow a few simple guidelines when using your tablet to help keep our costs down and make sure that when you are done with your participation in the research project, you can keep it and activate it with your desired provider.

Before we give you your tablet, we ask that you agree to the following:

- ✓ You have access to unlimited data hosted by Sprint. If you have a home wireless network, you may use that instead.
- ✓ Don't download anything from an unknown source.
    - ✓ Computer virus protection software has been installed on your tablet, but it can't protect you from everything.
    - ✓ Beware of attachments in e-mail. Computer viruses are much like real viruses. You can easily catch them from the ones you love.
- ✓ Do not give any personal information to strangers.
- ✓ Don't believe everything you read on the Internet.
- ✓ Please keep the tablet for your own use. Do not give the tablet to anyone else to use.
- ✓ Please do not let children play with the computer. We will provide you with a kids shock proof foam case cover stand for Samsung Galaxy Tab 4 for helping you to protect your tablet, but also it will allow you to better position your tablet for recording your videos.
- ✓ Please keep it from getting damaged or wet.
- ✓ Please keep it plugged in whenever possible to extend the battery life.
- ✓ Zoom to Zoom calls are free; however, Zoom charges fees for calling someone on a landline telephone or cellular phone or for acquiring a zoom premium account. We are NOT providing participants with this additional service.

- ✓ If your tablet becomes lost or broken, please let us know right away. The computers are an important part of the project, so it is important that we know if you are unable to use your computer at any time.
- ✓ You will be able to keep the tablet if you complete your participation in this project. If you are not able to finish participating in our project, we will need to retrieve the laptop for another participant to use.
- ✓ If you have questions or concerns, contact your parent coach. If no one is available to take your call, please leave a voice message or text message and we will return your call as soon as possible. If you do not hear back from us within 2 business days, please, call again.

I agree to follow these guidelines and will let my parent coach know if I have any trouble with the tablet or with the web-based program.

_____ _____

Parent signature Assessor signature

_____ _____

Print name Date

Acuerdo de Uso de la Tabla (Tablet Samsung 4 7")
"Infant-Net" (ePALS2)

Tu estas recibiendo una tabla (Tablet) Samsung 4 7" como parte del proyecto Infant-Net (ePALS-2). Esta tabla será utilizada para realizar el programa, los videos, y hacer una llamada semanal via Zoom. La tabla se conecta a Internet automáticamente a través de la red inalámbrica Sprint. Vamos a proporcionar cualquier mantenimiento para asegurarnos de que tu tabla funciona adecuadamente. Si te roban la tabla, levantaremos un informe a la policía para indicar sobre el robo. Tenemos un número limitado de tablas, y reemplazarlas es costoso. Así que te pedimos que sigas las siguientes pautas sencillas para mantener los costos bajos y para asegurarnos de que al final del proyecto de investigación, si completas todas las sesiones, puedas quedarte la tabla y activarla con tu proveedor deseado.

Antes de entregarte tu tabla, nosotros te pedimos acordar lo siguiente:

- ✓ Tienes acceso a Internet ilimitado provisto por Sprint. Si tiene acceso a red inalámbrica en casa, puedes utilizar esta en su lugar.
- ✓ No descargar nada de fuentes desconocidas.
    - ✓ Antivirus ha sido instalado en tu tabla, pero aun así no puede protegerte de todo.
    - ✓ Ten cuidado con los adjuntos en tu correo electrónico. Los virus electrónicos son mucho como los virus reales.
- ✓ No le des ninguna información personal a extraños.
- ✓ No creas todo lo que lees en Internet.
- ✓ Por favor usa tu tabla de manera personal. No dar la tabla a otros para usar.
- ✓ Por favor no permitas que los niños jueguen con la tabla. Nosotros te proporcionaremos una funda de silicón protectora para Samsung Galaxy Tab 4 con el fin de ayudarte a proteger tu tabla, que a la vez también te permitirá posicionar la tabla para grabar tus videos.
- ✓ Por favor cuidar tu tabla de la humedad y de ser dañada.
- ✓ Por favor mantén tu tabla conectada siempre que sea posible para alargar la vida de tu tabla.
- ✓ Hacer llamadas con la aplicación ZOOM es gratis; sin embargo, Zoom carga honorarios para llamar a alguien a un teléfono fijo o celular o para adquirir una cuenta Premium de Zoom. Nosotros no cubrimos estos costos dentro de este proyecto, solo incluimos las llamadas gratis entre las aplicaciones ZOOM.
- ✓ Si su tabla es robada o se pierde, favor indíquenos a la brevedad posible. El uso de las tablas son importantes para poder realizar el proyecto, así que es importante que nos informes inmediatamente si algo pasa. Nosotros levantaremos un informe a la policía si se pierde o es robada.
- ✓ Tú serás capaz de mantener la tabla después de finalizar tu participación en el proyecto. Si no eres capaz de terminar tu participación en el proyecto tendremos que recuperar la tabla para poder dársela a otro participante para que pueda participar en el proyecto.

- ✓ Si tienes dudas o preguntas por favor contacta a tu instructor. Si el/la instructor(a) no está disponible a tomar la llamada, por favor deja un mensaje de voz o mensaje de texto y te devolveremos la llamada tan pronto nos sea posible. Si no has escuchado de nosotros en 2 días hábiles por favor vuelve a llamarnos.

Estoy de acuerdo con las instrucciones brindadas y le dejare saber a mi instructor (a) si tengo algún problema o dificultad con la tabla o con el programa en Internet.

_____

_____

Firma del padre/madre Firma Instructor (a)

_____

Imprimir nombre y fecha

APPENDIX F

BILINGUAL COMPILED DEMOGRAPHICS QUESTIONNAIRE

Questionnaire General information

This section is for general questions about you and your family. Please remember that your answers are only for our research purposes and are strictly confidential. Please answer the following questions to the best of your knowledge.

1. What is your marital status?
_____ Single never married _____ free union _____ Married _____ widow
_____ Separate _____ other, specify:
_____

1. **Are you Hispanic, Latino or Latin American descent? Yes _____ no _____**
2. **Is your son/daughter, Hispanic or Latin American descent? Yes _____ no _____**

Would you say:		**Only Spanish**	**More Spanish than English**	**Both equally**	**More English than Spanish**	**Only English**
4.	In general, in what language do you read and speak?					
5.	What language do you usually speak at home?					
6.	In what language do you usually think?					
7.	What language do you usually speak with your friends?					

(Norries, Ford, & Bova, 1996, Brief Acculturation Scale)

8. How much do you agree or disagree with each of the following statements about your family's financial situation? Consider your income from all sources, including any financial support you receive from friends or relatives for answering the following statements.

We have enough money to afford:		**Strongly agree**	**Agree**	**Neutral/ Mixed**	**Disagree**	**Strongly disagree**
a	A place to live that meets our needs…….					
b	Clothing that meets our needs……..					
c	Furniture or household equipment that meets our needs……					
d	A car that meets our needs……					

e	Food that meets our needs……					
f	Medical care that meets our needs……					
g	Fun activities that meets our needs……...					

(Elder, Robertson, Ardelt, 1994)

General computer questions

9.	How familiar are your with computers?	**Not at all**	**Somewhat**	**Moderately**	**Very**
10.	Do you have experiences using a:	**PC**	**MAC**	**Both**	**None**
11.	How comfortable are you using a computer?	**Not at all**	**Somewhat**	**Moderately**	**Very**
12.	How familiar are you with using a tablet?	**Not at all**	**Somewhat**	**Moderately**	**Very**
13.	Do you own a computer?	**Yes**	**No**		
14.	How do you connect to the Internet? (Choose all that apply)	☐ **Through employer** ☐ **Through school** ☐ **Through community center, library, coffee shops** ☐ **Through personal Internet service account** ☐ **I do not have access to Internet**			
15.	If you have an Internet connection at home, what kind is it?	☐ **Dial-up** ☐ **DSL** ☐ **Cable** ☐ **Wireless** ☐ **Unknown** ☐ **Other: please explain_____**			

HOME LITERACY ENVIRONMENTS (Duran, Pratt, & Schalla, n.d.)
Please answer the following questions in an honest way. We remind you that your answers are confidential and only will be used for this study.

1. What is your relationship to the child?
__ Mother __ Father __ grandparent
__ Uncle ___stepfather/ stepmother
__Adoptive mother __ other, specify: _____

2. How many adults live in your household?
____ 1 ____ 2 ____ 3 ___ 4 ____ 5 ____6 or more

3 Does this number include the mother of the child? Yes _____ no _____

4 Does this number include the father of the child? Yes _____ no _____

5. What is the highest level of education achieved by the mother of the child?
_____ Elementary _____ middle school_____ high school _____ College

6. What is the highest level of education obtained by the father of the child?
_____ Elementary _____ middle school_____ high school _____College

7. How many children under 18 are living in your home?
____ 1 ____ 2 ____ 3 ___ 4 ____ 5 ____6 or more

8 What is the language that is more spoken in your home?
Spanish _ English _
____ other, please explain: _____

9. What languages does your child speak with you? *(Check those that apply)*
Spanish _ English _
____ other, please explain: _____

10. Please select the amount that represents the total income per month at home.
_ Less than $2,000 monthly _ $18,001 to $22,000 monthly
_ $2.001 to $6,000 monthly _ $22,001 to $24,000 monthly
_ $6,001 to $10,000 monthly _ $24,001 to $28,000 monthly
_ $10,001 to $14,000 monthly _ $28,001 to $32,000 monthly
_ $14,001 to $18,000 monthly _ more than $32,001 monthly

The activities of House questionnaire

Typically with how often does your child to the following?

	5-7 times a week	2-4 times a week	Once a week	2-3 times a month	Once a month	Some times a year	Never
11 look a book alone							
12. look at a magazine							
13 look at a newspaper							
14 listening to music							
15 color and drawing							
16 trying to write							
17 tell stories							
18 sing songs							
19 create a greeting card to someone							

Now I have a few questions about the activities that you do with your child.

Typically how often you do the following?

	5-7 times a week	2-4 times a week	Once a week	2-3 times a month	Once a month	Some times a year	Never
20 talk with your child about the alphabet							
21 talk with your child about the sounds that correspond to the letters							
22 talk with your child about a television program							
23. tell a story of your childhood or your family to your child							
24 help your child to follow printed instructions such as in a game							
25 coloring with your child							
26 help your child to write							
27 read with your child							
28 take your child to a bookstore							
29 take your child to a library							
30 read signs with your child							

Typically how often do the following people read to your child?

	5-7 times a week	2-4 times a week	Once a week	2-3 times a month	Once a month	Some times a year	Never
31. the mother							
32. the father							
33. the stepfather or stepmother							
34. the siblings of your child (What ages do? _____							
35. grandparents							
36. other, specify: _____							

The following questions are only about you

Typically how often you do this...?

	5-7 times a week	2-4 times a week	Once a week	2-3 times a month	Once a month	Some times a year	Never
37. read a book or a novel							
38. read the Bible or religious texts							
39 read a magazine							
40 read a newspaper							
41. read advertisements							
42 use a dictionary							
43 use recipes							
44. make a list (for example, for grocery shopping)							
45 leave a							

memo written for someone							
46 send a message (mail or email)							
47 send a text message via cell phone							
48 read something on the Internet							

The following questions are beliefs about reading.

Answer according to their opinions.

	Totally in disagreement	In disagreement	Moderate agreement	Agree
49 My child likes to be read by me.				
50. I feel close to my child when we read together.				
51 I have to punish or discipline my child when we try to read together.				
52 I want my child to enjoy books.				
53 I don't read to my child because it's impossible				
54. I think reading is boring for my child				
55. When we read I try to sound excited so that my child be interested.				
56. Even if I wanted to, I'm too busy or very tired to read to my child.				
57. I don't have appropriate material to read with my child.				
58. I don't read with my child because there is not a proper space at home and/or is too loud				
59. I don't have time to read, there are other parenting tasks that I need to do.				
60. I read to my child when she wants to be read.				
61. I don't read to my child because I have trouble reading myself.				

How many books do you read in a year? _____ *(enter a number)*

63 How many books for adults are there in your home? *(Please indicate one)*

____ 0
____ 1 to 5
____ 6-10
____ 11 to 20
____ 21 to 30
____31 to 40
____ 41 to 50
____ More than 50

64. What of the following items you have at home*? (Check those that apply)*
__ a dictionary
__ cookbooks
__ a computer
__ a Smartphone (for example, iPhone, blackberry, etc)
__ magazines
__ newspapers

68. Did you parents read to you when you were a child? Yes __ no _
69 Did your grandparents or other relatives read to you when you were a child? Yes _ no _
70 How old was your child when you began to read to him or her?
__ Between birth and 6 months
__ Between 7 to 12 months
__ After a year of age (*write a specific age)* _____

71 where do you get books for your child to read and/or read with you*? (Check all that apply.)*
__ from school
__ gift for someone
__ from a library or a public library
__ from a shop
__ older siblings
__ from the clinic or health center
_____ other, please explain _____

72. How many books your child own? *(Please do not include books of older brothers.)*
____ 0
____ 1 to 5
____ 6-10
____ 11 to 20
____ 21 to 30
____31 to 40
____ 41 to 50
____ more than 50
73 With which of the following things your child plays at home? *(Check all that apply.)*
_ paper

_ pencil and pen
_ coloring books
_ crayons and markers
_ book or alphabet toys

74. would your child normally enjoy looking at books? Yes _ not _
75. would your child normally enjoy listening to a story?
Yes _____ no _____

Cuestionario de Información General

Esta sección tiene preguntas generales sobre usted y su familia. Por favor recuerde que sus respuestas son únicamente para propósitos de nuestra investigación y son estrictamente confidenciales. Por favor, conteste las siguientes preguntas de manera honesta.

1. ¿Cuál es su estado civil?
____ Soltera, nunca casada ____ Unión libre ____ Casada ____ Viuda
____ Separada ____ Otro, Especifique: _____
2. ¿Es usted latina, hispana o de descendencia latinoamericana? sí ____ no ____
3. ¿Es su hijo/a, hispana o de descendencia latinoamericana? sí ____ no ____

Tu dirías que:		**Solo Español**	**Mas Español que Inglés**	**Ambos de igual forma**	**Mas Inglés que Español**	**Solo Inglés**
4.	En general, ¿en qué idioma lees y hablas?					
5.	¿Qué idioma hablas en casa?					
6.	¿En qué idioma hablas en casa?					
7.	¿En qué idioma hablas con tus amigos?					

(Norries, Ford, & Bova, 1996, Brief Acculturation Scale)

8. ¿Qué tan de acuerdo o desacuerdo estas con cada una de las siguientes frases sobre la situación financiera de su familia? Considera tu ingreso, incluyendo cualquier ayuda financiera que recibas de amigos o parientes.

Tenemos suficiente dinero para poder pagar:		**Bastante de acuerdo**	**De Acuerdo**	**Neutro**	**En desacuerdo**	**Bastante en desacuerdo**
a	Un lugar para vivir que cumpla con nuestras necesidades……					
b	Ropa que cumpla nuestras necesidades……..					
c	Muebles o equipo que cumpla con nuestras necesidades……					
d	Un carro que cumpla con nuestras necesidades……					
e	Comida que cumpla nuestras necesidades ……...					

f	Atención médica que cumpla nuestras necesidades.					
g	Actividades diarias que cumplan nuestras necesidades.					

(Elder, Robertson, Ardelt, 1994)

Preguntas generales de computación

9.	¿Qué tan familiar te son las computadoras?	**Nada**	**Algo**	**Moderado**	**Bastante**
10.	¿Tienes experiencia usando qué tipo de computadoras?	**PC**	**MAC**	**Ambas**	**Ninguna**
11.	¿Qué tan cómoda te sientes usando computadoras?	**Nada**	**Algo**	**Moderado**	**Bastante**
12.	¿Qué tan familiarizada estas con las computadoras portátiles (tablas)?	**Nada**	**Algo**	**Moderado**	**Bastante**
13.	¿Tienes una computadora propia en casa?	**Yes**	**No**		
14.	¿Cómo te conectas a la red o Internet? (Escoge todas las que aplican)	☐ **A través de tu empleador** ☐ **A través de tu escuela** ☐ **A través del centro comunitario, biblioteca, cafés** ☐ **A través de una cuenta personal con un proveedor de servicios de Internet** ☐ **No tengo acceso a Internet**			
15.	Si tienes conexión a Internet en casa ¿de qué tipo es?	☐ **Dial-up** ☐ **DSL** ☐ **Cable** ☐ **Inalámbrica (Wireless)** ☐ **No lo sé** ☐ **Otro: favor explica_____**			

HOME LITERACY ENVIRONMENTS
(Durán, Pratt, & Schalla, n.d.).
Por favor, conteste las siguientes preguntas de manera honesta. Le recordamos que sus respuestas son confidenciales y solo serán usadas para este estudio.

1. ¿Cuál es su relación al niño/a?
   ____ Mamá ____ Papá ____ Abuelo/a
   ____ Madrastra ____ Padrastro ____ Tío/a
   ____ Madre adoptiva ____ Otro, Especifique:
   _____

2. ¿Cuántos adultos viven en su casa?

____ 1 ____ 3 ____ 5
____ 2 ____ 4 ____ 6 o más

3. ¿Incluye este número a la mamá del niño/a? sí ____ no ____

4. ¿Incluye este número al papá del niño/a? Sí ____ no ____

5. ¿Cuál es el nivel más alto de educación obtenido por la madre del niño/a?

____ Primaria ____ preparatoria / bachillerato
____ Secundaria ____ universidad

6. ¿Cuál es el nivel más alto de educación obtenido por el padre del niño/a?

____ Primaria ____ preparatoria / bachillerato
____ Secundaria ____ universidad

7. ¿Cuántos niños menores de 18 años viven en su casa?

____ 1 ____ 4 ____ 7
____ 2 ____ 5 ____ 8
____ 3 ____ 6 ____ 9 o más

8. ¿Cuál es el idioma que <u>más</u> se habla en su casa?

____ Español ____ Inglés ____ Maya
____ Huichol ____ Náhuatl ____ Mixteco
____ Otro, Especifique:

_____

9. ¿Qué idiomas habla su niño/a? *(marque los que aplican)*

____ Español ____ Inglés ____ Maya
____ Huichol ____ Náhuatl ____ Mixteco
____ Otro, Especifique:

_____

10. Por favor, seleccione la cantidad que representa los ingresos totales por mes en su casa.

____ Menos de $2,000 MN mensuales ____ $18,001 a $22,000 MN mensuales
____ $2,001 a $6,000 MN mensuales ____ $22,001 a $24,000 MN mensuales
____ $6,001 a $10,000 MN mensuales ____ $24,001 a $28,000 MN mensuales
____ $10,001 a $14,000 MN mensuales ____ $28,001 a $32,000 MN mensuales
____ $14,001 a $18,000 MN mensuales ____ Más de $32,001 MN mensuales

<u>Cuestionario de las Actividades de Casa</u>

Típicamente ¿Con qué frecuencia hace su niño/a lo siguiente?

	5-7 veces a la semana	2-4 veces a la semana	Una vez a la semana	2-3 veces al mes	Una vez al mes	Algunas veces al año	Nunca
11. Mirar un libro solo o sola							
12. Mirar una revista							
13 Mirar un periódico							
14. Escuchar música							
15. Colorear solo o sola							
16. Pretender escribir							
17. Relatar un cuento							
18. Cantar canciones							
19. Crear una tarjeta de felicitaciones para alguien							

Ahora tengo unas preguntas sobre las actividades que usted hace con su niño/a.
Típicamente ¿Con qué frecuencia hace usted lo siguiente?

	5-7 veces a la semana	2-4 veces a la semana	Una vez a la semana	2-3 veces al mes	Una vez al mes	Algunas veces al año	Nunca
20. Hablar con su niño/a del alfabeto							
21. Hablar con su niño/a sobre los sonidos que corresponden a las letras							
22. Conversar con su niño/a sobre una programa de televisión							
23. Contarle una historia de su infancia o de su familia a su niño/a							
24. Ayudar a su niño/a a seguir instrucciones impresas de un juego o un juguete							
25. Colorear con su niño/a							
26. Ayudar a su niño/a a escribir							

27. Leer con su niño/a							
28. Llevar a su niño/a a una librería							
29. Llevar a su niño/a a una biblioteca							
30. Leer letreros con su niño/a							

Típicamente ¿Con qué frecuencia leen las siguientes personas a su niño/a? :

	5-7 veces a la semana	2-4 veces a la semana	Una vez a la semana	2-3 veces al mes	Una vez al mes	Algunas veces al año	Nunca
31. La madre de su niño/a							
32. El padre de su niño/a							
33. El padrastro o madrastra de su niño/a							
34. Los hermanos de su niño/a (¿Qué edades tienen?_____							
35. Los abuelos de su niño/a							
36. Otros, especifique: _____							

Las siguientes preguntas tratan de usted.

Típicamente ¿Con qué frecuencia hace usted lo siguiente…?

	5-7 veces a la semana	2-4 veces a la semana	Una vez a la semana	2-3 veces al mes	Una vez al mes	Algunas veces al año	Nunca
37. Leer un libro o una novela							
38. Leer la Biblia o textos religiosos							
39. Leer una revista							
40. Leer un periódico							
41. Leer los anuncios							

comerciales							
42. Usar un diccionario							
43. Usar recetas de cocina							
44. Hacer una lista (por ejemplo, para el supermercado)							
45. Dejar un recado escrito para alguien							
46. Mandar un mensaje (por correo o por correo electrónico)							
47. Mandar un mensaje de texto por celular							
48. Leer algo por el Internet							

Las siguientes preguntas tratan de sus creencias acerca de la lectura.

Conteste de acuerdo con sus opiniones.

	Totalmente en desacuerdo	En desacuerdo	De acuerdo	Totalmente de acuerdo
49. A mi niño/a le gusta que le lean.				
50. Me siento cercano/a a mi niño/a cuando leemos.				
51. Tengo que castigar o disciplinar a mi niño/a cuando tratamos de leer.				
52. Quiero que mi niño/a valore los libros.				
53. No le leo a mi niño/a porque no se queda quieto/a.				
54. Me parece aburrido o difícil el leerle a mi niño/a.				
55. Cuando leemos trato de sonar entusiasmada para que mi niño/a esté interesado/a.				
56. Aún si quisiera, estoy muy ocupado/a y muy cansado/a para leerle a mi niño/a.				
57. No le leo a mi niño/a porque no tenemos nada que leer.				
58. No le leo a mi niño/a porque no hay espacio y no hay un lugar tranquilo en la				

casa.				
59. No le leo a mi niño/a porque tengo otras cosas más importantes que hacer como padre/madre.				
60. Le leo a mi niño/a cuando él/ella quiere.				
61. No le leo a mi niño/a porque no sé leer o tengo dificultades para leer.				

62. ¿Cuántos libros lee usted cada año? _____ *(escriba un número)*
63. ¿Cuántos libros para adultos hay en su casa? *(por favor indique uno)*

____ 0
____ 1 a 5
____ 6 a 10
____ 11 a 20
____ 21 a 30
____ 31 a 40
____ 41 a 50
____ Más de 50

64. ¿Hay las siguientes cosas en su casa*? (Marque los que aplican)*

____ Un diccionario
____ Libros de cocina
____ Una computadora
____ Un Smartphone (por ejemplo, iPhone, BlackBerry, etc.)
____ Revistas
____ Periódicos

65. ¿Suele de leer el libro favorito de su niño/a muchas veces con él/ella? Sí ____ no ____
66. ¿Disfruta usted leer? Sí ____ no ____
67. ¿Le gustaba leer de niño/a? Sí ____ no ____
68. ¿Le leyeron sus padres a usted cuando era niño/a? Sí ____ no ____
69. ¿Le leyeron sus abuelos u otros familiares a usted cuando era niño/a? Sí ____ no ____
70. Después de que su niño/a nació, ¿qué edad tenía cuando comenzaron a leer a él o ella?

_____ Entre su nacimiento y 6 meses
_____ Entre 7 a 12 meses
_____ Después de un año de edad (*escriba una edad específica)* _____

71. ¿Dónde obtiene su niño/a los libros*? (Marque todos que aplican. **Haga un círculo en el más común)***

_____ De la escuela

_____ Como regalo de alguien
_____ De una librería o una biblioteca pública
_____ De una tienda
_____ De hermanos mayores
_____ De la clínica o un centro de salud
_____ Otro _____

72. ¿Cuántos libros propios tiene su niño/a? *(Por favor no incluya libros de hermanos mayores.)*

_____ 0
_____ 1 a 5
_____ 6 a 10
_____ 11 a 20
_____ 21 a 30
_____ 31 a 40
_____ 41 a 50
_____ Más de 50

73. ¿Con qué de las siguientes cosas juega su niño/a en casa? *(Marque todos que aplican.)*

_____ Papel
_____ Lápiz y pluma
_____ Libros de colorear
_____ Crayones y marcadores
_____ Libro o juguetes del alfabeto

74. ¿Normalmente disfruta su niño/a mirar los libros solo? Sí ____ no ____

75. ¿Normalmente disfruta su niño/a escuchar una historia que le cuenta usted? Sí ____ no ____

¡Muchas gracias por su participación en este proyecto!

APPENDIX G

BILINGUAL USER GUIDEBOOK SAMPLE

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APPENDIX H

BILINGUAL CHILD-MOM CODER IMPRESSION (COIMP)

I. Circle the family members that are present in the task:

Primary Caregiver (PC) Alternate Caregiver (AC) Target Child (TC)

II. Circle the gender of the child.

Female Male

III. Questions about specific tasks

A. Free play

1. Disengagement vs. Engagement? Consider how much each person is involved in the task.

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9
TC	1	2	3	4	5	6	7	8	9

2. Who seems to be in lead during the task (caregiver(s) or child)? (e.g. parent asks lots of questions and guides TC, or is TC leading the play and parent is following the TC's lead)

Child	1	2	3	4	5	6	7	8	9
				PC					
Child	1	2	3	4	5	6	7	8	9
				AC					

3. Caregiver stimulates cognition and learning (e.g. uses a big word then explains its meaning; elicits information from the child; asks questions effectively)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

4. Is the caregiver in-sync or engaged with the child (e.g. focused on the same task/toy; this can include a parent who is sitting back quietly but is attentive to the child)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

5. Is the caregiver in-sync with the child's emotions (e.g. demonstrates warmth; attempts to make the task an overall positive experience; manages and/or responds to child's cues)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

GENERAL FAMILY INTERACTION: Please answer the following questions regarding the overall observation session.

1. Does the caregiver encourage positive child behavior with praise and/or incentives? (e.g. "good job! "keep going like that and you'll be an expert")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

2. Does the caregiver use directives that seem specific and clear to the child? (e.g. "Put the toys back in the box"; "come here and sit next to me" vs. less clear questions like "do you want to clean up now?")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

3. Does the caregiver prompt the child to transitions and/or future requests for behavior change? (e.g. "we have one more minute to play with these toys before we have to put them away"; "how about next time you listen to what your teacher tells you instead of talking back to her")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

4. Does the caregiver set limits firmly and sensitively? (i.e. without using aversive control techniques such as yelling, anger, criticism, threats)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

5. Does the caregiver provide praise and rewards without regard to child's behavior (non-contingently)? (e.g. child complains/whines and parent offers treats/gives praise; saying "good job" for most of the child's actions regardless of if they are actually doing a good job)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

6. Does the caregiver give in to the child's negative moods or behaviors with treats and positive activities? (e.g. making jokes, hugs, tickles, playing games)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

7. Does the caregiver seem to be avoidant or reluctant to set limits on the child, allowing the child to engage in misbehavior without responding? (e.g. child throws toy and parent doesn't respond; child pushes boundaries and parent ignores and allows the behavior)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

8. Does the caregiver seem to over-indulge or spoil the child? (e.g. gives child too much attention; gives lots of treats; doesn't set limits)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

9. Does the caregiver follow through with requests or directives to assure compliance and/or cooperation? (e.g. parent gives command and if child doesn't comply the parent continues to direct the child until they have done what the parent asked; parent asks child to put a toy away and continues to do so if child doesn't comply immediately)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

10. Is the caregiver appropriately contingent in responding to positive or compliant child behavior? (e.g. praising child for following a direction; generally positive when child is pro-social/obedient; praises or encourages child's efforts)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

11. Is the caregiver appropriately contingent in responding to negative or non-compliant child behavior? (e.g. provides reminders; assists child with completing task; provides consequences; verbal reprimands)

	Not at All				Somewhat				Very Much	
PC	1	2	3	4	5	6	7	8	9	N/A
AC	1	2	3	4	5	6	7	8	9	N/A

12. Does the caregiver give the child choices? ("What toy would you like to play with?"; "Shall we play with the kitchen set first, or the animals first?"

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

13. Is the caregiver intrusive (e.g. asks too many questions too quickly; doesn't consider child's wishes; insists on doing things PC's way; not responsive to child's emotions).

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

14. Does the caregiver communicate to the child in calm, simple and clear terms? (e.g. doesn't use big words that the child doesn't understand; communicates what they want to the child clearly; doesn't get annoyed/frustrated with the child)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

15. Does the caregiver give understandable, age appropriate reasons for behavior change?

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

16. Does the caregiver adjust or define the situation so as to assure the child's interest, success and comfort (e.g. making a game, reframing the activity, explains concept in a different way if child doesn't understand)?

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

17. Does the caregiver redirect the child to more appropriate behavior if the child becomes off task, uncooperative or misbehaves? (e.g. child leaves room and parent calls the child back in and tells them to sit down; child starts complaining during a focused task, parent says "no, it's time to do this activity now")

	Not at All				Somewhat				Very Much	
PC	1	2	3	4	5	6	7	8	9	N/A
AC	1	2	3	4	5	6	7	8	9	N/A

18. Does the caregiver seem to be responsive to the child's feelings? (e.g. "I know you're getting frustrated"; "don't worry, you don't need to get it exactly right!")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

19. Does the caregiver seem to be inconsistent in responding to the child's behavior? (e.g. child throws toy, mom says "don't throw the toy" but child keeps repeating the behavior and mom doesn't respond)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

20. Does the caregiver use verbal structuring to make the task manageable? (e.g. dad says "lets first take all the blocks out of the bucket, then look for the biggest pieces, then we can find the smaller ones")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

21. Does the caregiver display anger, frustration, and/or annoyance during activities?

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

22. Does the caregiver threaten the child with any sort of punishment to gain compliance? (e.g. mom says "you can't go to grandpa's house if you don't finish this"; "if you don't stop messing around you won't get a sticker")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

23. Does the caregiver use physical discipline during the observation session? (e.g. smacking, flicking, pinching, hitting)

	Not at All				Somewhat				Very Much

PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

24. Does the caregiver show affection and/or love for the child during the observation session? (e.g. parent smiles; general overall warmth; positive physical contact)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

25. Does the caregiver actively ignore/reject the child? (e.g. child show parent a toy during play task and parent continually doesn't respond; child asks for help and the parent continues doing something else)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

26. Is the child compliant and cooperative with the caregivers' directives and requests? (e.g. does what parent asks, clearly listens to parent)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

27. Does the child seem dysregulated and difficult to manage, unable to control his/her behavior and emotions? (e.g. trouble following rules; can't sit still; easily upset/angry)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

28. Does the TC become overly upset or angry with tasks or changes in routines? (e.g. throwing a tantrum during clean-up task; doesn't want to put blocks away to switch to homework task)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

29. Does the TC seem overactive or impulsive? (e.g. keeps getting up and leaving room; grabs at toys before they are supposed to play with them)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

30. Does the TC seem anxious, timid, or shy? (e.g. hides behind parent; nervous around assessors; looks at parent for approval/security)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

31. Does the TC seem to have difficulty staying on task and following caregiver instructions? (e.g. easily distracted, complains, wants to touch/play with something that is not part of task)

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

32. Does the family follow the directions for the tasks? (e.g. parent doesn't touch the blocks if told not to; child generally cooperative; family doesn't get distracted doing something other than what the task requires)

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

TC	1	2	3	4	5	6	7	8	9

33. Overall, how effective were the caregivers' parenting strategies? (e.g. how well does the child behave; if child misbehaved, how effective does parent seem to redirect the child's behavior)

	Not at All						Somewhat		Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

34. How easy or difficult is this child?

	Difficult								Easy
TC	1	2	3	4	5	6	7	8	9

35. Choose the option below that best describes the quality of the child's overall level of compliance during the observational session:

A) Committed compliance ___ PC ___ AC

Child stayed engaged in tasks willingly and appeared to have "embraced" the session wholeheartedly. She or he did not need parental interventions to maintain task orientation: the child seemed to be committed to the activities.

B) Situational compliance ___ PC ___AC

The child was generally cooperative but needed parental prompting to stay engaged in the session – otherwise he or she tended to cease to comply.

C) Passive noncompliance ___ PC ___ AC

The child did not clean up on his or her own, and failed to follow parental instructions during other activities. When prompted, the child tended to be reluctant and ignore most directives. The child may have been engaged in the activities, but not in a cooperative manner.

D) Refusal/Negotiation ___ PC ___ AC

The child did not comply to parent directives and suggestions and, if prompted, tended overtly to refuse and/or negotiate with the parent, but in a non-aversive manner. This child may have been engaged in some tasks, but openly refused or negotiated with many parent instructions.

E) Defiance ___ PC ___ AC

The child did not clean up on his or her own and, if prompted, refused by defiance, with poorly controlled anger, whining, kicking toys or having a temper tantrum. Similar child responses would be observed in most other tasks as well.

36. Was there any positive school talk or indications of academic achievement values? (e.g. "it's

good to practice math because you'll be learning more in school soon")

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9
TC	1	2	3	4	5	6	7	8	9

37. Intensity: Calm (1) to Intense (9)? - This item considers the intensity of **positive** emotional expressions and emotional overtones. Scores in the low range reflect low intensity. Scores in the high range reflect high intensity. Watch for happiness, excitement, and seriousness.

	Low Intensity (Calm)							High
Intensity								
a. PC	1	2	3	4	5	6	7	8 9
b. AC	1	2	3	4	5	6	7	8 9
c. TC	1	2	3	4	5	6	7	8 9

38. Intensity: Calm (1) to Intense (9)? - This item considers the intensity of and **negative** emotional expressions and emotional overtones. Scores in the low range reflect low intensity. Scores in the high range reflect high intensity. Watch for nervousness, anger, sadness, irritability, and seriousness.

	Low Intensity (Calm)							High
Intensity								
a. PC	1	2	3	4	5	6	7	8 9
b. AC	1	2	3	4	5	6	7	8 9
c. TC	1	2	3	4	5	6	7	8 9

39. Is the child overweight?

	Not at All				Somewhat				Very Much
TC	1	2	3	4	5	6	7	8	9

40. Is the caregiver(s) overweight?

	Not at All				Somewhat				Very Much
PC	1	2	3	4	5	6	7	8	9
AC	1	2	3	4	5	6	7	8	9

OVERALL GENERAL IMPRESSIONS: Please consider the frequency and intensity of the expressed affect or behaviors.

41. Positivity. The verbal and/or behavioral expressions of positive regard, affect, warmth, and affection.

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

42. Negativity. The expression of negative affect, disapproval, verbal hostility, harsh tone of voice, or nonverbal behavior (i.e. strained expression, look of disgust).

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

43. Sensitivity. Child-centered and developmentally appropriate maternal behavior (i.e. mom responsive to child's needs, soothed child when/if necessary, provided structure and stimulation).

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

44. Intrusiveness. Adult- vs. child-centered maternal behavior (i.e. Mother puts her own agenda on the child without regard to the child's signals, or is unwilling to relinquish control)

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

45. Simulation of Cognition. Maternal attempts to developmentally appropriately foster her child's cognitive growth and development.

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

46. Detachment. Marked nonresponsiveness and a lack of awareness of the child's needs.

	Not at All Characteristic		Somewhat Characteristic		Highly/Predominantly Characteristic
PC	1	2	3	4	5

47. Comments on this family interaction?

APPENDIX I

AGES AND STAGES QUESTIONNAIRES (ASQ-3)

ASQ-3

16 Month Questionnaire *15 months 0 days through 16 months 30 days*

On the following pages are questions about activities babies may do. Your baby may have already done some of the activities described here, and there may be some your baby has not begun doing yet. For each item, please fill in the circle that indicates whether your baby is doing the activity regularly, sometimes, or not yet.

Important Points to Remember:

- ☑ Try each activity with your baby before marking a response.
- ☑ Make completing this questionnaire a game that is fun for you and your child.
- ☑ Make sure your child is rested and fed.
- ☑ Please return this questionnaire by _____.

Notes:

_____

_____

_____

_____

At this age, many toddlers may not be cooperative when asked to do things. You may need to try the following activities with your child more than one time. If possible, try the activities when your child is cooperative. If your child can do the activity but refuses, mark "yes" for the item.

COMMUNICATION

	YES	SOMETIMES	NOT YET	
1. Does your child point to, pat, or try to pick up pictures in a book?	●	○	○	10
2. Does your child say four or more words in addition to "Mama" and "Dada"?	●	○	○	10
3. When your child wants something, does she tell you by *pointing* to it?	●	○	○	10
4. When you ask your child to, does he go into another room to find a familiar toy or object? *(You might ask, "Where is your ball?" or say, "Bring me your coat," or "Go get your blanket.")*	●	○	○	10
5. Does your child imitate a two-word sentence? For example, when you say a two-word phrase, such as "Mama eat," "Daddy play," "Go home," or "What's this?" does your child say both words back to you? *(Mark "yes" even if her words are difficult to understand.)*	●	○	○	10
6. Does your child say eight or more words in addition to "Mama" and "Dada"?	○	●	○	5
			COMMUNICATION TOTAL	55

GROSS MOTOR

	YES	SOMETIMES	NOT YET	
1. Does your child stand up in the middle of the floor by himself and take several steps forward?	●	○	○	10
2. Does your child climb onto furniture or other large objects, such as large climbing blocks?	○	●	○	5
3. Does your child bend over or squat to pick up an object from the floor and then stand up again without any support?	●	○	○	10

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APPENDIX J

ADULT-CHILD INTERACTIVE READING INVENTORY

aciri™ Adult–Child Interactive Reading Inventory

ADULT BEHAVIOR	OBSERVATION	CHILD BEHAVIOR	OBSERVATION
I. Enhancing Attention to Text		**I. Enhancing Attention to Text**	
1. Adult attempts to promote and maintain physical proximity with the child.		1. Child seeks and maintains physical proximity.	
2. Adult sustains interest and attention through use of child-adjusted language, positive affect, and reinforcement.		2. Child pays attention and sustains interest.	
3. Adult gives the child an opportunity to hold the book and turn pages.		3. Child holds the book and turns the pages on his or her own or when asked.	
4. Adult shares the book with the child (displays sense of audience in book handling when reading).		4. Child initiates or responds to book sharing that takes his or her presence into account.	
II. Promoting Interactive Reading and Supporting Comprehension		**II. Promoting Interactive Reading and Supporting Comprehension**	
1. Adult poses and solicits questions about the book's content.		1. Child responds to questions about the book.	
2. Adult points to pictures and words to assist the child in identification and understanding.		2. Child responds to adult cues or identifies pictures and words on his or her own.	
3. Adult relates the book's content and the child's responses to personal experiences.		3. Child attempts to relate the book's content to personal experiences.	
4. Adult pauses to answer questions that the child poses.		4. Child poses questions about the story and related topics.	
III. Using Literacy Strategies		**III. Using Literacy Strategies**	
1. Adult identifies visual cues related to story reading (e.g., pictures, repetitive words).		1. Child responds to the adult and/or identifies visual cues related to the story him- or herself.	
2. Adult solicits predictions.		2. Child is able to guess what will happen next based on picture cues.	
3. Adult asks the child to recall information from the story.		3. Child is able to recall information from the story.	
4. Adult elaborates on the child's ideas.		4. Child spontaneously offers ideas about the story.	

APPENDIX K

INTERVENTION CONDITION COACH CALL PROTOCOL SAMPLE

During Coach Call 1/ ePALS

Coach Phone Call Organizer

1. Establish Rapport, complete Hopes and Dreams questions
2. Help mom organize for call (computer on at Coach Call, PALS notebook out, Calendar out for next appt.)
3. Discuss mom's session 1 progress
4. Review and Discuss practice video
5. Daily Activity: Toys mom received
6. Plan for next call

1. Establish Rapport

- Establish rapport and welcome mom to the PALS program.

Hope and Dreams

1. As you think of your child and the future, what kind of life do you want for your child?
2. What hopes and dreams do you have for your child?
3. What kind of person do you want your child to become?
4. Of the people you know in your life and look up to, who would you like your child to be in like?

****Coach will record the responses to these questions in the Session Note for Call 1****

- Discuss parent responses to the Hopes and Dreams Questions. As appropriate, make links between parent's hopes and dreams and purpose of PALS 1.
- This is a good time to reference what mom noted she wants to get out of this program in session 1 and how Healthy Infant can help her achieve these goals.

2. Organize for the call

- Computer out and ready at Coach Call 1
- PALS Notebook out with Session Handouts
- Calendar out to schedule next appointment

3. Discuss mom's session 1 progress

- Discuss with mom what she thought about her first PALS session: Introduction
  - **'What did you think about PALS session 1?'**
- Either praise mom for getting through or comment that the log shows that she wasn't able to get through session 1. If mom did not get through the session, talk with her about barriers- what got in the way and problem-solve with her about how and when she will go through session.
- Discuss any challenges / questions that came up during the session or videotaping

- **'How easy or hard was it for you to make a video?'**
- If mom made a video:
  - Congratulate her and remind mom of how important the videos are for learning about baby (they give us a chance to see what your baby likes and dislikes and to talk together about your baby's needs).
- If mom did not make a video or challenges arose:
  - Empathize and encourage mom that it gets easier with practice. If mom was uncomfortable with playing with her baby, acknowledge the discomfort and encourage her that it does get easier with practice. Let her know that focusing on the baby helps make it easier to not think about the video. If mom struggled with the steps for video creation, review key steps for successful video creation and problem solve.
    - Facilitate mom's establishment of a specific plan for making a session 1 video- when she will make it- when you will check to see if it's posted.

4. Review and Discuss Practice Video
   - Make sure mom knows where to go on the website to watch the video and complete the coach call
   - Watch the video with mom: **'Let's spend a few minutes watching the video that you made during this past week.'**
   - If mom was uncomfortable with playing with her baby, let her know that it's sometimes hard to know how to interact with young babies and sometimes mom's feel silly at first, but that "We'll look at lots of ways in PALS to play and interact with babies".
   - Let mom know how important the videos are for learning about baby (they give us a chance to see what your baby likes and dislikes and to talk together about your baby's needs).

5. Daily Activity
   - Did you get a chance to try noticing when your baby is showing you that he or she likes or doesn't like something? If so, what did you notice?
     - **How can you tell baby likes something?**
     - **How can you tell baby does not like something?**

6. Conclude session and Plan for next call
   - Highlight mom's accomplishments
   - Direct mom to the Resources tab and Talk tab on the project website
   - Talk with mom about when she will go through PALS Session 2 and create her next video. Encourage her to email or call if questions come up.
   - Remind mom about the session handouts
   - Set time for your next call.

APPENDIX L

COMPARISON CONDITION COACH CALL PROTOCOL SAMPLE

1. Establish Rapport
    - Establish rapport and welcome mom to the program.

Review ASQ-3

1. Ask what skills have mom observed this week regarding developmental trajectories only, if there are any concerns, families will be referred to community organizations and/or providers such as Early Head starts.

****Coach will record the responses to these questions in the Session Note for Call 1****

2. Organize for the call
    - Computer out and ready at Coach Call 1
    - Notebook out with ASQ:3 for each child-mother dyad.
    - Calendar out to schedule next appointment
3. Discuss mom's session 1 progress
    - Discuss with mom what she thought about her session: Introduction
        - **'What did see on your child's general developmental skills?**
        - **What are some skills your child does pretty well?**
    - Either praise mom for getting through
    - **Discuss any challenges / concerns regarding some developmental skills?**
4. Plan of action if concerns present:
    - Help mom to prepare developmental appropriate activities to support their child's healthy development if concerns are raised.
5. Conclude session and Plan for next call
    - Highlight mom's accomplishments
    - Direct mom to the Resources tab and Talk tab on the project website
    - Talk with mom about when she will go through next Session and create her next video. Encourage her to email or call if questions come up.
    - Remind mom about her next session and to check her manual.
    - Set time for your next call.
        - Schedule a date for next meeting.
        - Give mom access to her next session.

APPENDIX M

BILINGUAL SOCIAL VALIDITY QUESTIONNAIRE

Parent: _____ Date: _____

This questionnaire consists of 12 items. For each item, please indicate the extent to which you agree or disagree with each statement. Thank you!

1.	Finding information in the ePALS app was easy.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
2.	It was easy to use the ePALS app to complete the training sessions.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
3.	It was easy to understand the audio and text information presented in the sessions.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
4.	It was easy to videotape interactions with your infant.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
5.	It was easy to use the ZOOM app for the video calls	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
6.	The weekly video calls with the coach helped me learned/clarified the strategies/content.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
7.	Feedback from the coach about my own videos with my child was helpful to learn/clarify the strategies/content.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
8.	Feedback from the coach was respectful of my parenting practices and values.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
9.	I was able to practice daily the parenting skills.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
10.	I felt well-supported by the coach in spite of the distance.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
11.	I felt the coach understood me and my child.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
12.	I feel confident using the learned skills with my child.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
13.	I would recommend this intervention to other families.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
14.	More information and training could be added to the ePALS app.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
15.	I believe that ePALS was responsive and appropriate to my cultural values.	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Please provide any additional information that might be important for us to know to improve ePALS: _____

Thank you for your time! ☺

Cuestionario de Validez Social

Madre: _____ Fecha: _____

Este cuestionario consiste en 15 preguntas. Para cada ítem, por favor indica cuan de acuerdo o desacuerdo estas con cada oración de la manera más honesta posible. Gracias

1.	Encontrar información en el app de ePALS fue fácil.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
2.	Fue fácil utilizar el app de EPALS para realizar mis sesiones.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
3.	Fue fácil entender el audio y el texto presentado en el contenido de las sesiones.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
4.	Fue fácil grabar las interacciones con mi niño/a.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
5.	Fue fácil usar el app ZOOM para las video llamadas.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
6.	La video llamada semanal con mi coach me ayudo a aprender /clarificar las estrategias/contenido.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
7.	La retroalimentación de mi coach sobre mis videos grabados con mi niño/a me ayudo a aprender /clarificar las estrategias/contenido.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
8.	La retroalimentación de mi coach fue respetuosa de mis prácticas y valores parentales.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
9.	Pude practicar diariamente las estrategias aprendidas de ePALS.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
10.	Me sentí apoyada por mi coach a pesar de la distancia.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
11.	Sentí que mi coach me comprendía a mí y a mi niño/a.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
12.	Siento que puedo utilizar con confidencia las estrategias aprendidas con mi niño/a.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
13.	Yo recomendaría esta intervención a otras familias.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
14.	Más información y entrenamiento pudiera ser agregada al app EPALS.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo
15.	Considero que ePALS fue respetuoso y apropiado sobre mis valores culturales.	Totalmente de acuerdo	De acuerdo	Neutro	Desacuerdo	Totalmente en desacuerdo

Por favor provea cualquier información adicional que consideres que es importantes para nosotros saber sobre cómo mejorar el programa ePALS: _____
Thank you for your time! ☺

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