THE HOME ENVIRONMENTS AND EMERGENT LITERACY SKILLS AMONG
CHILDREN IN A HAWAIIAN COMMUNITY ON KAUA‘I

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Abstract

Abundant studies conducted with monoracial Caucasian and minority families have shown that home environments play an important role in the success or difficulty children experience when they begin formal schooling. However, little is known about the home environment of multiethnic and Hawaiian families. The current study examined variations in home environment, including family background, the home literacy environment, and parenting stress in relation to emergent literacy skills (i.e., print knowledge, definitional vocabulary, and phonological awareness) in multiethnic Hawaiian and non-Hawaiian kindergarten children. Participants were 120 (58 girls, 62 boys) children (Mage = 59.79 months; SD = 5.00) recruited from two schools with a high Hawaiian/part-Hawaiian student ratio (51.9% and 31.5% at each school) on Kaua‘i. About 59% of the total sample was at least part-Hawaiian. Caregivers completed questionnaires about their family background, parenting stress, and home literacy environment, and children’s emergent literacy was assessed by trained research assistants prior to or at the start of kindergarten. Results of correlation analyses revealed that parent literacy involvement and their own literacy habits were positively related to all three aspects of emergent literacy, while home literacy resources was positively related to children’s print knowledge and definitional vocabulary. Parenting stress was negatively correlated with children’s definitional vocabulary. However, the significant relations between home environment variables and children’s emergent literacy skills diminished in the hierarchical regression analyses, after controlling for parents’ education, children’s ethnic background (Hawaiian versus non-Hawaiian), preschool attendance, and the use of Pidgin English at home. Among the control variables, preschool attendance was positively associated with all three aspects of emergent
literacy skills and parents’ averaged education was related to children’s definitional vocabulary and phonological awareness. In addition, non-Hawaiian children had higher scores in print knowledge than their Hawaiian peers. The frequency of Pidgin use in the home was positively related to definitional vocabulary, possibly a statistical artifact or suppressor effect. Two significant interactions were also found between ethnicity and home literacy resources and between ethnicity and parents’ literacy environment, on children’s phonological awareness. Future studies should continue to explore the role of the home literacy environment and parenting stress on children from a Hawaiian cultural community with a larger sample size and should examine how culturally relevant practices at home might influence the development of children’s emergent literacy skills.
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1. The moderating roles of ethnic background in the relations between home literacy resources and parents’ literacy involvement, and children’s phonological awareness……………….. 87
The purpose of the current study was to explore and understand the home environments of children from a Hawaiian cultural community on Kaua‘i at school entry and to examine the influence of this environment on children’s emergent literacy skills. Emergent literacy refers to the developmental continuum that ranges from pre-reading to reading and includes the skills, knowledge, and attitudes children have about reading and writing (Sulzby & Teale, 1991; Teale & Sulzby, 1986; Whitehurst & Lonigan, 1998). Studies have found most children start to read following the formal instruction received in early elementary school (Levy, Gong, Hessels, Evans & Jared, 2006) but that many children do not begin kindergarten with the foundational skills necessary to support their learning (Baroody & Dobbs-Oats, 2011). Although some children enter school with well-developed oral language, print knowledge, and phonological processing abilities, many other children begin school having less mastery in these skills, which decreases the likelihood they will gain from formal reading instruction (Lonigan, Farver, Nakamoto, & Eppe, 2013), and increases the potential for future disadvantages.

Learning to read is a skill essential for school success and adulthood (La Para & Pianta, 2000; Poe, Burchinal, & Roberts, 2004). Children’s emergent literacy is an important indicator of their later reading abilities including whether they will have difficulty with reading during their early elementary schooling (Lesaux, Rupp, & Siegl, 2007; Lonigan, Burgess, & Anthony, 2000; Sénéchal & LeFevre, 2002; Storch & Whitehurst, 2002). For example, Storch and Whitehurst (2002) found early language skills were associated with reading comprehension in the third and fourth grades. Additionally, Lonigan et al. (2000) identified that children who have well-developed oral language and code-related skills have an easier time transitioning to conventional reading once they receive formal reading instruction.
Models of Emergent Literacy Skills

A variety of emergent literacy models and skills have attempted to explain how children learn to read. Bradley and Bryant (1983, 1985) found children’s ability to respond to sound units in words was related to their later reading acquisition. Relatedly, numerous studies have identified phonological sensitivity as predictive of reading success and that interventions aimed at improving phonological sensitivity were also related to reading success (e.g., Ball & Blachman, 1988; Foorman et al., 1997; Wagner & Torgesen, 1987). Gough and Tunmer (1986) suggested reading results from translating print to sound, or decoding, and recognizing spoken words in print (i.e., what they mean and how they are used), or comprehension. Similarly, Scarborough (2001) suggested word recognition and language comprehension to be the basics of skilled reading. Word recognition skills include print knowledge, decoding, and phonological awareness, while language comprehension skills include syntax, vocabulary, and knowledge about facts and concepts, knowledge about print, and verbal reasoning.

Whitehurst & Lonigan (1998) reviewed a variety of skills identified as important for children’s literacy acquisition. These included semantic, syntactic, and conceptual knowledge; understanding and the ability to produce narratives; knowledge of typical print conventions (e.g., standard English text is read left to right across the page starting at the top left of the page); knowledge of letter names and sounds; phonological awareness; syntactic awareness; phonological memory; rapid naming; and interest in reading. Of the different skills proposed as explaining how children learn to read, three skills, phonological awareness, print knowledge, and oral language have repeatedly been identified as the strongest predictors of reading (Evans &
Shaw, 2008; Duncan & Dowsett et al., 2007; Lonigan, 2006; Lonigan et al., 2000; Lonigan, Schatschneider, & Westberg, 2008; and Whitehurst & Lonigan, 1998).

More recently, researchers have conceptualized emergent literacy abilities as divided into two domains, oral language skills, and code-related skills (Storch & Whitehurst, 2002; Whitehurst & Lonigan, 1998). Oral language refers to grammar and vocabulary in expressive and receptive language skills, which are thought to relate to achievement in reading comprehension (Cabell, Justice, Logan, Konold, 2013). In contrast, code-related skills consist of emergent writing, print concepts, letter knowledge, and phonological awareness, which are thought to relate to later achievement in word recognition (Cabell et al., 2013). Phonological awareness is considered unique from oral language and a code-related skill due to its influence on later reading achievement (Roth, Speece, & Cooper, 2002; Speece, Roth, Cooper, & de la Paz, 1999).

Whitehurst and Lonigan (1998; 2001) proposed a model of emergent literacy integrating skills previously identified as important for reading acquisition. They proposed that skills required for reading success fell into domains labeled “inside-out” (i.e., pieces of information inside of printed words) and “outside-in” (i.e., pieces of information from outside printed words). Inside-out processes represent children’s knowledge of the rules for translating what they are trying to read into sounds (Storch & Whitehurst, 2001; Whitehurst & Lonigan, 1998; 2001). Specifically, the inside-out domain consists of word-specific decoding and basic skills that include alphabet knowledge, phonological awareness, and phonemic decoding abilities that lead individual words to be accurately decoded and linked to the outside-in vocabulary and context knowledge. The inside-out domain includes sources of information, while outside-in processes
represent children’s understanding of the context in which reading or writing occurs (Whitehurst & Lonigan, 1998) and include sources of information outside of text that supports children’s understanding of the meaning of print (Whitehurst & Lonigan, 2001). Outside-in domain skills consist of language, vocabulary, content, and story schemas that lead to reading comprehension capabilities for individual words and connected text (Phillips & Lonigan, 2009; Whitehurst & Lonigan, 2001). Although children may have inside-out skills to read a sentence, such as knowing letters and sounds and the relationship between them, sentence grammar, and punctuation, outside-in skills are necessary to understand the meaning of the sentence (Whitehurst & Lonigan, 1998). In particular, two inside-out skills, phonological processing and print knowledge, and one outside-in element, oral language, has been found to have the strongest link to conventional literacy (Whitehurst & Lonigan, 2001).

Phonological processing includes activities that involve sensitivity to, manipulation of, or use of sounds in a word (Whitehurst & Lonigan, 2001). Three phonological processes including phonological sensitivity, phonological naming, and phonological memory (Wagner & Torgesen, 1987) have been strongly related to later decoding abilities (i.e., the ability to sound out words) (Whitehurst & Lonigan, 2001). Phonological sensitivity is the ability to detect and manipulate sounds of oral language including rhyming and blending (Whitehurst & Lonigan, 2001). The developmental progression of phonological sensitivity in young children begins with sensitivity to large and concrete sounds such as words and syllables, followed by understanding of the initial and end consonant or consonant clusters in a syllable, and then to phonemes or small, abstract units of sound (Lonigan et al., 2000; Lonigan, Burgess, Anthony, & Baker, 1998). Phonological sensitivity supports decoding skills since graphemes in written language relate to
phoneme speech sounds. A child’s ability to understand individual sounds in spoken words assists them in identifying the relationship between print and the language it represents (Whitehurst & Lonigan, 2001). Phonological memory is the ability to retain sound-based information in short-term memory (Baddeley, 1986), which allows children to have a correct representation of phonemes associated with letters in a word while decoding, and to allocate more of their cognitive resources to decoding and comprehension (Whitehurst & Lonigan, 2001). Phonological naming is the ability to obtain phonological information related to letters, word parts, and entire words, from permanent memory (Whitehurst & Lonigan, 2001; Wagner et al., 1997), increasing a child’s proficiency using that information in decoding (Bowers & Wolf, 1993).

Phonological processing skills are also referred to in the literature as phonological awareness, and include the ability to identify and manipulate the sounds of language, regardless of meaning (Lonigan, Anthony, Phillips, Purpura, Wilson, & McQueen., 2009; Wagner & Torgesen, 1987). Children who have mastery identifying smaller units of sound in spoken words can often manipulate the alphabet since printed letters relate to specific spoken sounds (Whitehurst & Lonigan, 1998; Wagner & Torgesen, 1987; Lonigan et al., 2009). In early stages of reading, letters are decoded into corresponding sounds and those sounds are linked into single words (Whitehurst & Lonigan, 1998). Phonological awareness is strongly related to reading acquisition even after accounting for other variables that influence reading ability, such as intelligence, receptive vocabulary, and memory skills (Wagner, Torgesen, & Rashotte, 1994; Wilson & Lonigan, 2009). A longitudinal study followed 244 Caucasian (75%) and African American (25%) children from kindergarten classrooms in Florida from kindergarten through
second grade (Wagner et al., 1994). Children’s phonological processing, word-level reading, and verbal ability were assessed in the fall of their kindergarten, first- and second-grade years. Findings from this study indicated children’s phonological processing abilities were related to word decoding, measured by word identification and word analysis between kindergarten and first grade and again from first to second grade. Additionally, children’s phonological processing abilities were relatively stable from kindergarten through second grade (Wagner et al., 1994). In their follow-up study of 216 children (who remained from the prior sample of 244), Wagner and colleagues (1997) found children’s phonological awareness was related to later word-level reading from kindergarten to second grade, first grade to third grade, and second grade to fourth grade.

Print knowledge, also referred to in the literature as letter identification, refers to the way letters are organized (Wilson & Lonigan, 2009). Print knowledge includes learning alphabet letter names and sounds, knowledge of what part of a book is the front, knowing print on a page develops from left to right and top to bottom across a page in English, and learning the use of punctuation (Wilson & Lonigan, 2009). Decoding printed words consists of translating print units (graphemes) to sound units (phonemes). Knowledge of letter names and the ability to distinguish between them is necessary for decoding (Whitehurst & Lonigan, 1998; 2001). A review by Scarborough (1998) found an average correlation of .46 between children’s concepts about print and their later reading achievement. Sénéchal & LeFarve (2002) also found knowledge of letters was directly related to children’s word reading skills at the end of first grade and their comprehension at the end of third grade. In addition to directly aiding text decoding, print knowledge is also influential in the development of phonological sensitivity, and vice versa.
Results from a more recent meta-analysis by Mol and Bus (2011), which examined publications prior to January 2009 indicate children’s exposure to print during early years predicted 12% of the variance in children’s oral language skills and 8% of the variance in children’s early reading skills. The correlation for print exposure and oral language was .34, and the correlation for print exposure and basic reading skills was .29 (Mol & Bus, 2011), which was similar to the findings by Bus, van Ijzendoorn, & and Pellegrini (1995).

Reading is a process that identifies meaning in words and children’s vocabulary is thought to play an important role in mapping phonological code (Whitehurst & Lonigan, 1998; 2001). In an alphabetic writing system, the beginning stage of reading involves decoding letters into their related sounds and linking those sounds into words (Whitehurst & Lonigan, 2001). Definitional vocabulary, or oral language, includes the words in a child’s vocabulary and the skill in using words to convey and understand meaning (Wilson & Lonigan, 2009). Definitional vocabulary is also referred to in the literature as expressive and receptive vocabulary and oral language. Studies have identified that the breadth of children’s vocabularies and understanding of spoken language is related to their reading scores. For example, children’s oral narrative skills at kindergarten were found to influence their reading comprehension at age 8 (Griffin, Hemphill, Camp, & Wolf, 2004).

Whitehurst and Lonigan (1998) followed a sample of 367 Head Start children until the second grade. They measured the “inside-out” and “outside-in” skills when children were in Head Start through children’s early elementary school and used structural equation modeling to predict reading in the second grade. The “inside out” skills measured included phonological
awareness and print knowledge when children were in Head Start and emergent writing at the start of kindergarten. The “outside in” skills measured included standardized vocabulary skills assessed in Head Start, Kindergarten, and the first and second grades. Children’s reading was assessed using standardized assessments in the first and second grades. Findings of this study indicated children’s outside-in skills (i.e., vocabulary) predicted the development of their inside-out skills (i.e., phonological knowledge), which then predicted reading skills in the first and second grades. Vocabulary was found to be indirectly related to reading through its association with phonological knowledge, while phonological knowledge was directly related to reading.

Sénéchal and LeFevre (2002) examined home literacy practices and reading in 168 middle class children in a longitudinal study from kindergarten through third grade. At the beginning of first grade, children’s phonological awareness, vocabulary, listening comprehension, print concepts, alphabet knowledge, invented spelling, and decoding were assessed, and their reading ability was measured at the end of the first and third grades. Findings from this study indicated receptive language indirectly related to children’s print concepts, alphabet knowledge, invented spelling, and decoding at the beginning of first grade and to reading ability at the end of third grade. These authors stated receptive language predicted reading skills in grade one indirectly through phonological awareness and that both language and phonological awareness contributed directly to children’s reading ability in the third grade.

Given the importance of emergent literacy skills on children’s early language and literacy development, and long term academic success, it is important to identify what factors contribute to these skills. Unfortunately, many ethnic-minority and low-income youngsters have language and emergent literacy skills that are underdeveloped in comparison to their Caucasian
counterparts (Brooks-Gunn, Rouse, & McLanahan, 2007; Dickinson & McCabe, 2001; Duncan, Ludwig, & Magnson, 2007). Despite these troubling findings, the home contexts and parents of many minority and low-SES children still manage to prepare their children with the emergent literacy skills necessary for their success at school entry. The present study will extend previous research on children’s home environments and emergent literacy to identify strengths of the home environments of multiracial children, raised in a Hawaiian cultural community, in relation to their emergent literacy skills.

A Working Model of Home Environments

Following a model proposed by Farver and her colleagues (Farver, Xu, Eppe, & Lonigan, 2006; Farver, Xu, Lonigan, & Eppe, 2013), the proposed study will explore three aspects of the home environment: (a) family background factors that potentially limit children's opportunities for learning, such as family income and parents’ education; (b) the extent to which parents actively promote their children’s learning including their involvement in literacy-related activities (e.g., shared reading and teaching), parent’s own literacy habits, and home literacy resources; and (c) the level of parenting stress that may influence the affective climate of the home where children begin to develop important school readiness skills.

Family Backgrounds

A considerable and distinct gap has been identified in the emergent literacy skills of children from at-risk family backgrounds, such as lower socioeconomic (SES) and minority status, in comparison to peers who are not from disadvantaged backgrounds (e.g., Hecht, Burgess, Torgesen, Wagner, & Rashotte, 2000). It is estimated that 22% of all children in the United States live in poverty, (Tavernise, 2011), but that the language development of even more
US children are affected by indicators of low SES such as low parental education, low income, and low job status (Hoff, 2013). SES, or poverty might influence the quality of a child’s home environment, which may then impact a child’s academic achievement (Bracken & Fischel, 2008). Teachers have reported students attending schools with high minority compositions and levels of poverty often lack important academic skills when they enter kindergarten (Rimm-Kaufman, Pianta, & Cox, 2000). High risk demographic indicators (e.g., SES, minority status) have been consistently linked to language outcomes in young children (Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009).

Burgess, Hecht, and Lonigan (2002) conceptualized resources at parents disposal including SES and parent characteristics (e.g., IQ, reading ability, education, occupation, attitudes towards education and reading) as the limiting environment, which could influence a child’s access and exposure to opportunities to develop emergent literacy skills. Studies have found that children from minority backgrounds with lower socioeconomic status generally enter school with lower language and cognitive abilities in comparison to European-American youngsters from middle class backgrounds (Lee & Burkham, 2002), and this gap tends to widen over time (Mitchell, Croy, Spicer, Frankel, & Emde, 2011). For example, McClelland, Morrison, & Holmes (2000) identified African American children who came from single parent homes and mothers with less education, as having poorer learning related skills in elementary school. Hoff (2013) suggests that mothers with less education speak less to their children, and that the type of verbal communication used with their children is less conducive to children’s oral language development in comparison to mothers who are more educated. Additionally, a
large longitudinal study with Head Start children found Hispanic and African American children were less likely to be read to daily in comparison to White children (Raikes et al., 2006).

Children from at-risk family backgrounds are often conceptualized as having similar, poorly developed, emergent literacy skills (Cabell, Justice, Konold, & McGinty, 2011), however, studies have found variation in children’s emergent literacy skills despite similar at-risk family backgrounds. Cabell and colleagues (2011) used a person-centered approach to examine differences in emergent literacy skills in 492 primarily African American and Caucasian preschool children from low SES backgrounds attending 93 publicly funded preschool programs in a mid-Atlantic state. Children receptive grammar and vocabulary, print concepts, alphabet knowledge, name writing ability, and rhyme awareness were assessed at the start of preschool. Findings indicated variation in children’s oral language and code-related abilities. Clustering strategies identified five profiles of emergent literacy skills including highest overall emergent literacy, average oral language with a strength in alphabet knowledge, high oral language with a weakness in alphabet knowledge, low average oral language with code-related weaknesses, and lowest oral language with code related weaknesses (Cabell et al., 2011). This study demonstrated variations in children’s emergent literacy skills despite being from similar low SES family backgrounds. However, this study is also limited in that it did not account for possible variables in a child’s home environment, such as the HLE that could account for some of the differences between clusters.

The studies reviewed above suggest children considered at-risk due to their family backgrounds (e.g., low parental educational attainment, SES, and minority status) have been found to perform worse on indicators of emergent literacy in comparison to non-disadvantaged
children. Despite these findings, studies have also identified variations in the emergent literacy skills of children from at-risk backgrounds suggesting there are strengths in the homes of some of these children that are important for the development of their emergent literacy skills.

**Home Literacy Environment (HLE)**

Children’s homes are where they typically first encounter language and literacy (DeBaryshe, Binder, & Buell, 2000). Children’s first teachers are their parents, who decide what types of literacy activities to provide for their children (Martini & Sénéchal, 2012). Researchers have identified various aspects of the home environment that influence the development of children’s language and literacy skills. For example, parental literacy teaching or coaching activities (e.g., Martini & Sénéchal, 2012; Evans, Shaw, & Bell, 2000), shared book reading (e.g., Bus et al., 1995; Sénéchal, LeFevre, Thomas, & Daley, 1998), and literacy resources (e.g., Burgess et al., 2002; Farver et al., 2013) have been found to predict children’s emergent literacy outcomes, even after controlling for parental characteristics such as mother’s intelligence, education, and language, and SES (e.g., Storch & Whitehurst, 2001; Bracken & Fischel, 2008).

**Shared reading.** Early studies of the HLE emphasized the role of shared reading in the development of children’s early literacy skills. For example, a meta-analysis by Scarborough, Dobrich, and Hager (1991) found parent-child reading explained 8% of the variance in children’s early reading skills. A meta-analysis by Bus et al. (1995) found moderate effect sizes for the relations between shared book reading and children’s language skills \( (d = .67) \), emergent literacy skills (i.e., print knowledge and phonological processing; \( d = .58 \)), and reading achievement \( (d = .55) \). Bus et al. (1995) also found the influence of shared reading on children’s emergent literacy outcomes did not differ by SES.
**HLE resources.** Another aspect of the HLE shown to predict children’s emergent literacy skills is literacy resources in the home, such as books, other print material, and educational toys. Access to children’s books may increase literacy behaviors in the home, such as shared bookreading (Raikes et al., 2006). Payne, Whitehurst, & Angell (1994) found the number of books in the home was related to children’s receptive and expressive language skills. Farver and colleagues (2013) used observational methods to assess the presence or absence of literacy resources (e.g., print materials, educational games, child reading books, alphabet books/toys) in both English and Spanish in a large sample of Latino Head Start children. They found that home resources in English were uniquely associated with children’s print knowledge in English but that most families had very limited literacy materials in Spanish. In a study of 455 kindergarten and first-grade twins and 288 mothers from middle-class families, the number of books children owned was significantly associated with their expressive vocabulary, phonological awareness, and early reading (i.e., letter identification, word identification, and word attack) skills (Johnson, Martin, Brooks-Gunn, & Petrill, 2008). These studies suggested that exposure to literacy resources in the home plays an important role in the development of children’s early literacy skills, possibly through providing opportunities for literacy activities in the home.

The ability to provide literacy resources in the home may be influenced by at-risk family backgrounds. Burgess (2005) surveyed 493 primarily Caucasian mothers, 22% of whom gave birth while a teenager, to investigate the differences in the home literacy environment provided by teenage mothers and those who had given birth later. Teenage mothers were found to provide a more disadvantaged HLE than non-teenage mothers such as being less likely to read for
pleasure, having lower vocabulary scores themselves, and having fewer children’s books in the home. These mothers also had children who went to the library less, watched more TV, and spent less time playing with magnetic letters. When controlling for mother’s age, differences in the HLE included the number of hours children watched television, income levels, and education of the mother and father. This study suggests that risk factors in family background (e.g., lower maternal vocabulary scores) and having less HLE resources (e.g., less books in the home) might put children at risk for less complex oral language abilities (Burgess, 2005).

**Multivariate views of the HLE.** Most recently, researchers have conceptualized the HLE as complex and multifaceted, and began to examine other aspects of the HLE in addition to shared reading and home literacy resources. Several models have been proposed to explain how aspects of HLE might be related to children’s literacy skills and reading comprehension. The Family as Educator model (Snow, Barnes, Chandler, Goodman, & Hemphill, 1991) suggested the family plays the role of educator and positively influences the development of children’s language and literacy. Five home environment aspects, including the number of books in the home, parental direct teaching (e.g., helping children with their homework), creating learning experiences, caregiver education, and parental expectations (e.g., amount of school parents expect of their children) were included in the Family as Educator model. Among these, parent education and expectations of school appeared to be the strongest predictors of children’s word recognition and vocabulary knowledge (Snow et al., 1991).

The Resilient Family model conceptualizes families as a buffer against life stressors that help prioritize adequate support necessary for children’s language and literacy development (Snow et al., 1991). In this model, resiliency refers to family functioning, including how the
family is organized, how resources are managed, and how family stressors (internal and external) are handled. Three aspects of home environments are particularly emphasized in the Resilient Family model, including the family organization (e.g., expected behavior, predictability in planned events), emotional wellbeing (e.g., children’s opinion of their relationship with their parents, extent of harsh parenting), and family stress (e.g., financial challenges, burdens on individual family members). Among these aspects of home environments, family emotional wellbeing seemed to be mostly strongly related to child outcomes such as children’s writing skills and reading comprehension (Snow et al., 1991).

The Parent-School Partnership model emphasizes parents’ active support for school and their engagement in school-related activities, such as joining a parent-teacher organization, contacting school teachers, helping children with their homework, parent-child interaction during homework time, and children’s school attendance and promptness. Snow et al. (1991) found that parents’ formal involvement in school such as participation in parent-teacher organizations, most strongly predicted children’s word recognition, vocabulary knowledge, writing skills, and reading comprehension.

In a test and comparison of these three models with a sample of preschool children from primarily White, middle-class families, Bennett, Weigel, and Martin (2002) found variables associated with the Family as Educator model, but not the other two models, were significantly related to preschool children’s book-related knowledge and expressive and receptive language skills. These findings highlight the contribution of parental beliefs and practices, which allow children to learn through observation and exploration, to some aspects of emergent literacy.
The three models outlined above primarily emphasize factors that may predict literacy skills among older school age children, with limited attention (with the exception of Bennett et al., 2002) being paid to emergent literacy skills, which represent developmental precursors of formal literacy and reading comprehension. There is increasing evidence that also focuses on aspects of home literacy environments in relation to the development of emergent literacy skills in young children.

**The HLE as a composite variable.** Early studies often combined various aspects of the HLE and treated it as a composite variable when studying emergent literacy skills. Payne et al., (1994) examined the relations between the HLE and receptive and expressive language in a sample of 236 Head Start children in Long Island, NY. An aggregate HLE score was derived based on nine variables including the frequency with which caregivers read to their child, the age of the child when caregivers first began reading to them, the number of minutes the caregiver spent reading to their child the prior day, the number of picture books in the home, the frequency the child asks to be read to, the frequency of bringing the child to the library, the duration each day the caregiver reads to him/herself, and caregiver enjoyment of reading to him/herself.

Children’s receptive language was assessed using the Peabody Picture Vocabulary Test- Revised (PPVT-R; Dunn & Dunn, 1981) and the Expressive One Word Picture Vocabulary Test (One Word; Gardner, 1981). An aggregate score of children’s oral language skills was derived based on their receptive and expressive language scores.

The results showed that the composite HLE scores accounted for 12% of the variance in children’s oral language scores, after controlling for caregivers’ IQ and education. Individual HLE variables that produced stronger relations with children’s oral language skills included the
child’s age when shared reading started, the number of picture books in the home, the frequency the child asks to be read to, and the frequency of library visits with the child. These findings suggested that despite of the challenges associated with low SES backgrounds, many families did manage to prepare their children for at least one aspect of emergent literacy skills: oral language. However, Payne et al. (1994) was also limited in at least two ways. First, the assessment of the HLE relied on a composite measure that failed to distinguish different aspects of the HLE that may play different roles in children’s emergent literacy skills. Second, the measures of emergent literacy skills were limited only to oral language.

Griffin and Morrison (1997) expanded upon the work of Payne and colleagues by assessing both oral language and print knowledge, another critical aspect of emergent literacy, in a sample of 295, primarily Caucasian and African American kindergarten children in Greensboro, North Carolina. Parents completed a background questionnaire that included demographic and HLE questions. A composite HLE variable was derived from nine variables including the number of child and adult magazine subscriptions in the home, number of newspaper subscriptions in the home, hours of television watched weekly by the child, frequency of library card use by a household member, frequency of reading to the child, number of books owned by the child, and frequency the mother and father read to themselves. Children’s receptive vocabulary was assessed using the PPVT-R Form L (Dunn & Dunn, 1981) and children’s reading recognition was assessed using the Peabody Individual Achievement Test, Form L (PIAT-R; Markwardt, 1989).

Results showed the HLE predicted unique variance of both children’s receptive language (2.9%) and reading recognition (1.2%) skills, controlling for child IQ, maternal education, age at
entrance, preschool experience, race, and gender in the fall of kindergarten (Griffin & Morrison, 1997). Findings from this study indicated children who had higher composite HLE scores had better receptive vocabulary and reading recognition skills after removing the influence of child factors and family backgrounds. While Griffin and Morrison (1997) measured a wider range of the HLE and assessed print knowledge in addition to oral language, their study still relied on composite HLE scores and failed to differentiate various aspects of HLE in relation to children’s emergent literacy skills.

**Differentiating aspects of the HLE.** More recently researchers have begun to attend to the importance of differentiating between different aspects of the HLE when examining their relation to children’s emergent literacy skills. For instance, Burgess et al. (2002) examined multiple aspects of the HLE in relation to children’s oral language, phonological sensitivity, and letter knowledge in a one year longitudinal sample of 115 middle-class preschoolers in northern Florida. These aspects of HLE included the active HLE (parental involvement in literacy activities), passive HLE (parent literacy habits), the Interactive HLE (i.e., a combination of both parent involvement and habits), the limiting environment (e.g., caregiver education and occupation), and shared reading.

Findings from this study indicated the HLE but not SES was related to children’s oral language, letter knowledge, and phonological sensitivity one year later (Burgess et al., 2002). When the Active HLE (parent involvement), Passive HLE (parent habits), and Limiting Environment were simultaneously entered into the HLE model, only the Active HLE (parent involvement) uniquely contributed to children’s oral language, phonological sensitivity, and letter-sound knowledge one year later. Additionally, when comparing the relative influence
of the Interactive HLE (i.e., a combination of both parent involvement and habits) and the Limiting Environment, the Interactive HLE predicted unique variance for oral language and phonological sensitivity, while the Limiting Environment only predicted unique variance of letter-name knowledge. The findings of Burgess and colleagues (2002) highlighted the importance of examining multiple aspects of the HLE and several emergent literacy outcomes instead of relying solely on composite predictor and outcome variables.

**Parental teaching and shared reading.** Sénéchal and her colleagues proposed a Home Literacy Model which emphasizes a distinction between formal parent literacy activities such as parental teaching and informal parent literacy activities such as parent-child shared reading (Sénéchal, 2006; Sénéchal & LeFevre, 2002). Specifically, Sénéchal (2006) maintained that informal parent literacy activities, such as shared book reading, are only related to oral language skills whereas formal literacy activities, such as teaching about print, are related to print knowledge (Sénéchal, 2006; Sénéchal & LeFevre, 2002).

Consistent with this model, in a study of kindergarten and first grade children from middle to upper class families, Sénéchal et al. (1998) found that, after controlling for parent print exposure and child intelligence, children’s exposure to storybooks, a composite score derived from parent-report title and author recognition checklists, predicted a composite language skill variable derived from children’s performance on listening comprehension, vocabulary, and phonological awareness measures. In contrast, parent teaching activities were related to a composite variable derived from children’s performance on measures of print concepts, alphabet knowledge, invented spelling, and decoding.
In a similar study, Evans et al. (2000) examined the contribution of reading and coaching activities in the home, and HLE resources, to children’s letter and sound knowledge, receptive vocabulary, and phonological sensitivity, in a sample of 67 children from Southwestern Ontario, Canada. Parents completed a demographic questionnaire about literacy resources in the home (e.g., number of books in the home, subscriptions to newspapers and magazines), shared reading was measured by a children’s title checklist, and parents were interviewed about shared reading and literacy coaching activities. Interviews were transcribed and coded to differentiate parents who had emphasized teaching letter names and forms to their children. Children were also interviewed about the frequency of library visits and shared reading at home, and how their parents helped them read. Children’s letter knowledge was assessed by asking children to identify the name and sound of letters written with upper and lower case font, the Test of Phonological Awareness – Kindergarten Version (TOPA-K; Torgesen & Bryant, 1994) measured children’s phonological sensitivity, and children’s receptive vocabulary was assessed with the PPVT-R (Dunn & Dunn, 1981).

Results from this study indicated after controlling for parental education, child age, and cognitive abilities, parents’ involvement in letter activities was associated with letter sound knowledge, letter name knowledge, and phonological sensitivity, but not receptive language abilities (Evans et al., 2000). In contrast to Sénéchal and colleagues’ (1998) finding that children’s exposure to storybooks was related to children’s early language skills, Evans et al. (2000) found shared reading, measured by a title recognition checklist, did not predict children’s emergent literacy skills. Letter activities were found to predict 9% of the variance in letter sound knowledge, 10% of the variance in letter name knowledge, and 5% of the variance in
phonological sensitivity. Caregiver reported coaching activities (e.g., learning letter names and letter sounds, and printing letters), predicted children’s letter and sound knowledge and phonological sensitivity after controlling for child age, parent education, and children’s cognitive ability. Literacy coaching activities were not found to predict children’s receptive language abilities. Although parents were also asked to report on literacy resources in the home, these were not examined as predictor variables and the influence of these resources on children’s emergent literacy skills in this sample is unknown.

While studies of middle- to upper-class samples (e.g., Sénéchal et al., 1998; Evans et al., 2000) have found parent coaching and shared reading to have different effects on children’s emergent literacy skills, the distinction between the two have not been replicated in studies of children from relatively low SES families (Farver et al., 2013). For instance, Farver et al. (2013) examined the influence of the English and Spanish HLE on children’s emergent literacy skills in both languages in a sample of 392 Latino children attending Head Start centers in inner-city neighborhoods of Los Angeles, California. Their results showed that parents’ engagement in teaching literacy was highly correlated with shared reading and their relations with children’s emergent literacy skills were also similar.

**Parent’s own literacy habits.** Although much research has examined influences of direct parent involvement on children’s literacy activities, less attention has been paid to indirect parent involvement. Social learning theory posits that children model behaviors they have observed (Bandura, 1977) and exposure to parents engaging in literacy activities may be related to an increase in children’s participation in literacy behaviors. Farver et al. (2006) examined three aspects of children’s HLEs, parental involvement in literacy activities, parent’s own literacy
habits, and children’s interest in literacy activities in relation to their oral language. They found that parent’s own literacy habits were positively correlated with children’s oral language.

Bracken and Fischel (2008) also examined the role of parent reading interest in addition to child reading and parent-child reading interaction on a broader scope of children’s emergent literacy skills, including: receptive vocabulary, print and story concepts, letter knowledge, and general emergent literacy skills in a sample of 233 Head Start preschool children. They found parent reading interest was correlated with children’s receptive vocabulary but not any of the other measures of children’s emergent literacy skills.

Other studies have found parent’s own literacy habits to be related to multiple indicators of emergent literacy. Weigel, Martin, & Bennett (2006) examined the associations of different HLE variables and preschool children’s literacy and language development and found children’s print knowledge, reading interest, and expressive and receptive language were significantly correlated with parent’s own literacy habits. Farver et al. (2013) also examined the influence of parent’s own literacy habits on multiple emergent literacy outcomes. Their study focused on the influence of parent’s own literacy habits in Spanish and English on children’s outcomes in both languages. Parent’s own literacy habits in English was correlated positively with children’s receptive and expressive language abilities, print knowledge, and elision (omitting a sound or syllable) skills, but was not correlated with children’s blending abilities, an aspect of phonological awareness. Parent’s own literacy habits in Spanish were positively correlated with children’s print knowledge in Spanish and negatively correlated with children’s receptive and expressive language in English.
Most studies included parent’s own literacy habits in their calculation of a composite HLE variable (e.g., Duursma et al., 2007; Payne et al., 1994; Griffin & Morrison, 1997). Other studies have treated parent’s own literacy habits as a control variable (e.g., Bracken & Fischel, 2008; Farver et al., 2006; Farver et al., 2013). The current study seeks to examine the unique influence of parental habits on various emergent literacy outcomes, beyond the contributions of parents’ direct literacy involvement.

**Summary.** The HLE and children’s emergent literacy skills have been examined in many different ways in previous studies. Early research identified the benefits of shared reading on children’s emergent literacy skills, but these studies often relied on the use of composite variables for both the HLE and emergent literacy. Subsequent research began to differentiate various aspects of the HLE to examine the relations of these HLE characteristics to various emergent literacy outcomes. Despite this progress, little is known about the HLE of children from a Hawaiian cultural community. The current study built upon previous findings by examining various aspects of the HLE, including parent teaching, shared reading, parent’s own literacy habits, and literacy resources, in relation to children’s print knowledge, definitional vocabulary, and phonological awareness.

**Parenting Stress**

While family backgrounds have been established as a possible limiting factor and the HLE as a potential strength in the development of children’s emergent literacy skills, the affective climates of children’s homes may also influence the development of these skills. Parenting stress during children’s early years has been found to influence their later language skills. Oxford and Lee (2011) used data from the National Institute of Child Health and
Development Study of Early Child Care and Youth Development to identify risk and protective factors that moderate socioeconomic context using latent profile analysis. A two class model was used, identifying an "advantaged" group and "disadvantaged" group. Parenting stress at 6 months was found to significantly reduce parental sensitivity at 36 months and language performance in preschool at 54 months for those in the disadvantaged group. However, parenting stress was not a statistically significant predictor of language performance for the advantaged group. Although this study demonstrated differences in parenting stress for those of varying socioeconomic status, such that children of more disadvantaged SES experience more parenting stress, which later relates to their language development, it did not examine concurrent influences of parenting stress on children’s early literacy skills.

Farver et al. (2006) examined the role of parenting stress on children’s oral language. The PPVT-R (Dunn & Dunn, 1981) and corresponding Spanish version (TVIP; Dunn, Lugo, Padilla, & Dunn, 1997) were used to assess receptive vocabulary in 122 children attending a primarily Latino Head Start preschool. Mother’s completed the Parenting Stress Index (PSI; Abidin, 1995). Results indicated mothers’ parenting stress had a direct effect on children’s oral language scores. Additionally, Baker and Iruka (2013) found maternal parenting stress was negatively related to children’s reading scores in kindergarten in sample of 2461 African American children from the Early Childhood Longitudinal Study.

Parenting stress may reduce parents’ ability to participate in activities and behaviors important for children’s emergent literacy development (Weigel, Martin, & Bennett, 2010) For example, parents with increased stress may provide a less stimulating environment for their children. They are also less likely to enjoy their engagement in reading and literacy teaching
activities with their children, which in turns negatively affects children’s enjoyment of these activities (Farver et al., 2006; Conger & Donnellan, 2007). Evans & Shaw (2008) suggested literacy interactions should be enjoyable and that children whose caregivers provide them with HLEs that they find gratifying will gain more out of the literacy interactions with their parents, by retaining skills learned, and developing the motivation to continue their learning.

Decreased parenting stress has been found to be related to better emergent literacy skills. Noel, Peterson, & Jesso (2008) examined the role of parenting stress on the language skills of 56 low SES preschoolers. Results indicated that children whose parents reported lower levels of parenting stress had more advanced expressive and receptive language skills. Lower perceived parenting stress was not found to be related to children’s higher narrative ability (Noel et al., 2008). These authors suggested the relation between parenting stress and children’s vocabulary may have been mediated by the quality of parent-child interactions and effort on the part of parents to make time to label objects in children’s environment.

Weigel et al. (2010) conceptualized less parenting stress as a family asset, in addition to family resources, and family routines that might be related to children’s emergent literacy. The role of parenting stress on children’s early literacy was examined for 85 primarily Caucasian children recruited through licensed childcare centers in a western US urban city. Parents completed questionnaires that included an assessment of parenting stress, measured by the Parenting Daily Hassles scale (PDH; Crnic & Booth, 1991; Crnic & Greenberg, 1990), parent-child literacy activities, children’s reading interest, perceptions of family resources, and family routines. The Children’s Emergent Literacy Task (CELT; Abt Associates, Inc., 1991) was used to measure children’s print knowledge and emergent writing.
Structural equation modeling revealed parenting stress, family resources, and family routines, conceptualized together as family assets, were related the frequency of parents and children engaging in literacy activities together, accounting for 35% of the variance in parent-child activities (Weigel et al., 2010). When considered alone, parenting stress not related to children’s early literacy skills. These findings suggest less parenting stress is related to children’s emergent literacy through increased parent-child literacy interactions, however, it was not as strongly related to the frequency of parent-child literacy activities or child outcomes as family household routines. Weigel et al. (2010) is limited in multiple ways. First, parenting stress is often associated with low SES backgrounds (e.g., Farver et al., 2006) and this study may underestimate the influence of parenting stress on children’s emergent literacy due to the primarily well-educated, middle-class, mostly Caucasian sample. Additionally this study only examined the influence of parenting stress on one aspect of children’s emergent literacy, print knowledge.

Abidin’s (1982) research suggested that high levels of parenting stress can also lead to increased dysfunctional parenting, which may indirectly influence child outcomes. For example, parenting stress is thought to affect parent’s perceptions about their roles as a parent, views of their child, and parenting behaviors, such as their ability to parent in a warm, sensitive, positive way (Gelfand, Teti, & Fox, 1992; Mesman, van IJzendoorn, & Bakermans-Kranenburg, 2012). Declines in positive parenting due to parenting stress may relate to a variety of child outcomes (Baker & Iruka, 2013). Webster-Stratton’s (1990) review found stressors can interfere with typical parenting practices due to an increase in parents being irritable, critical, and punitive, leading to negative parent-child interactions, and resulting in more parenting stress. A review by
Mesman et al. (2012) found minority families encounter more causes of stress and have children who more often experience insensitive parenting, putting them at risk for poorer childhood outcomes.

Whiteside-Mansell and colleagues (2007) found parenting stress, as measured by the PSI-SF, was associated with less emotional responsiveness and stimulation and increased punitive parenting behaviors in a sample of 1,122 primarily European American (42%) and African American (40%) parents of 7-, 15-, and 25-month-old children attending Early Head Start, who did not receive supplemental Early Head Start child development or family support services. Parenting stress was negatively associated with Language-Cognitive Stimulation, as measured by one item on the Home Observation for Measurement of the Environment (HOME; Caldwell & Bradley, 1984), at 25-months (Whiteside-Mansell et al., 2007). Findings from this study suggest parenting stress may be related to less language stimulation for children during their toddler years.

It is possible that increased parenting stress decreases the enjoyment of literacy activities for both parents and children, decreases the effectiveness of these activities, and decreases the frequency of these activities. Parenting stress may also influence the way parents rear their children, which in turn may relate to children’s outcomes, including emergent literacy. While increased parenting stress has been related to worse emergent literacy outcomes for children from African American, Caucasian, and Latino backgrounds, the role of parenting stress in the families of children entering kindergarten in a Hawaiian cultural community was unclear.
Hawaiian Cultural Context

Extant literature on the development of children’s emergent literacy skills suggests some ethnic minority children are at a disadvantage in the development of these skills due to unique circumstances related to their status as an ethnic minority. Additionally, despite challenges ethnic minority children face, strengths in their family background, HLE, and home emotional climate have also been identified, providing encouraging support for the development of their early literacy skills. The current study sample was raised in a unique Hawaiian cultural community, and some youth in the present study might face challenges typical to ethnic minority, such as being a dual language learner. Additionally, the unique Hawaiian historical context of this community, may present additional challenges or strengths for the children in the current sample.

Dual language. A challenge faced by some minority students is navigating learning as a bilingual or dual language learner. Dual language learners need to integrate component skills such as knowledge about grammar and vocabulary and sound-symbol awareness with sociocultural variables (Castro Páez, Dickinson, & Frede., 2011). National studies have found children from low-income families who are dual language learners fall behind their peers upon entrance to kindergarten, despite having attended early childhood programs (Castro et al., 2011). For example, Latino children, who comprise the largest group of dual language learners in the U.S., enter school with readiness skills behind their peers and continue to perform below non-Hispanic White youth in reading in Grades 4, 8, and 12 (National Center for Education Statistics; NCES, 2004). Research on Latino dual language learners has found these children enter preschool scoring one to two standard deviations below monolingual norms on measures of
receptive and expressive vocabulary in Spanish and English, and perform behind monolingual students at the end of the school year (Hammer, Lawrence, & Miccio, 2008).

Typically, language and literacy instruction at school occurs in a classroom where English is spoken, with monolingual English-speaking teachers, which creates an environment that some dual language learners might have difficulty actively participating in (Castro et al., 2011). Additionally, parents may be encouraging their children to speak one or both languages at home depending on their orientation to their native and western culture (Farver et al., 2013). It is important to identify environmental factors that influence the literacy and language development of dual language learners (Hammer Jia, & Uchikoshi, 2011). Farver et al., (2013) examined children’s English and Spanish early literacy skills in a sample of 392 Latino children attending Head Start centers in inner-city neighborhoods of Los Angeles, California. They used Structural Equation Modeling to explore relations between children’s emergent literacy skills and their HLEs in both Spanish and English. They found that the HLE parent factor in English (parent literacy involvement in English and parent literacy habits) was significantly related to children’s oral language skills in English.

Many youth raised in rural parts of Hawai‘i grow up speaking Hawai‘i Creole English (referred to hereafter as Pidgin). Pidgin is a creole language that developed on the sugar plantations in Hawai‘i during the latter part of the nineteenth century as immigrant workers used an adapted English infused with languages from their home countries (e.g., China, Japan, Portugal, Philippines) and Hawaiian to communicate with one another (Eades, Jacobs, Hargrove, & Menacker, 2006). Although Pidgin is viewed as a part of the culture and identity in Hawai‘i it
is also thought to have a negative influence in the educational and employment opportunities of those who speak it (Eades et al., 2006).

Smith, Truby, Tharp, and Gallimore (1977) identified five phoneme pairs pronounced differently by Hawaiian children in Pidgin and Standard English. For example, the word “there” is pronounced “dare” in Pidgin. When examining the influence of Pidgin use on reading instruction, Speidel, Tharp, & Kobayashi (1982) found changing the order of phoneme-grapheme pairs to introduce confusing pairs after children understood general principals of sound-symbol relationships was effective and children’s pronunciation challenges were judged to be a minor problem.

While the current sample was not comprised of traditional bilingual or dual language learners, it was important to examine how the use of spoken language, in either Standard English or Pidgin, by the participants and members of their families relates to their emergent literacy skills. It was unclear at this point how the use of Pidgin at home might affect children’s emergent literacy. The frequency of Pidgin use at home was included in this study as an important control variable as it was a unique aspect of the home environment that might potentially influence children’s emergent literacy skills.

**Hawaiian historical context.** The current sample participants attended two elementary schools in one of the three school districts on the island of Kauaʻi, in the state of Hawaiʻi. This school district has a high population of Hawaiian residents, reflected in the both the school and participant demographics. One school had 31.5% Hawaiian students school wide, with 51% Hawaiian children in the current sample and the other school had 51.9% Hawaiian students school wide and 65% in the current sample (School Status and Improvement Report; SSIR,
In addition to the high representation of part-Hawaiian youth in the present, multiethnic sample, many of these children also came from disadvantaged homes. According to the School Status and Improvement Report (2014) for each school, the percentage of students receiving free or reduced-cost lunch was 67.2% and 54.1%, respectively, and both schools received Title 1 funding, due to poverty levels (Hawai‘i State School Readiness Assessment School Results, 2012). Additionally, only slightly more than half of the incoming kindergartners in each school attended preschool (67% and 59%).

The unique cultural history of this sample and community suggests additional current life stressors or protective home factors may influence children’s early literacy skills. Native Hawaiians are descendants of the original people of Hawai‘i (Office of Hawaiian Affairs, 2006) and similar to American Indians and Alaska Natives, as they are descendants of the original inhabitants of territories that are currently under U.S. control (Kaholokula et al., 2012).

Significant disparities in economic, social, and health status’ exist between Hawaiians and other ethnic groups in Hawai‘i. Hawaiians are more likely to be undereducated, have poor living conditions, and have low paying jobs (Office of Hawaiian Affairs, 2006). Findings from the 2010 U.S. Census indicate 12.1% of Hawaiians in Hawai‘i live in poverty (in comparison to 9.6% of the total population), 13.8% of Hawai‘i’s Hawaiian children ages 5-17 live in poverty, while 17.2% of Hawaiian children under 5 live below the poverty level. In comparison to the state’s three other largest ethnic groups (i.e., Caucasians, Filipinos, and Japanese), Hawaiians have a lower life expectancy (Ka‘opua, Braun, Browne, Mokuau, & Park, 2011). Hawaiians also experience a higher prevalence of hypertension, diabetes, and asthma (Johnson, Oyama, LeMarchand, & Wilkens, 2004). In addition to children of Samoan and Filipino descent,
Hawaiian children were found to have a higher risk of being overweight or obese in comparison to white or Asian children in Hawai‘i (Novotny, Oshiro, & Wilkens, 2013). Furthermore, findings from Andrade et al. (2006) indicate a community sample of Hawaiians adolescents had higher rates of mental health diagnoses across disorders than non-Hawaiians.

Prior to colonization, Hawaiian was a spoken, oral language. *Mo‘olelo* (stories and history), *mele* (songs), *oli* (chants), and even one’s *mo‘okū‘auhau* (genealogy) was passed from generation to generation by spoken word (Kawakami, 1999). Although pre-contact Hawaiians did not read or write, they had an appreciation for the diverse functions of language such as *kaona*, a hidden, symbolic meaning in language (Au & Kaomea, 2000). Prior to western contact, education took place within families, with keiki working alongside their kūpuna. Children who showed special talent in the areas of healing, dancing hula, building canoes, and religion received formal instruction from an individual trained in that specialty (Au & Kaomea, 2009; Kamakau, 1968).

As European influence and pressures grew in Hawai‘i, traditional Hawaiian life was disrupted, including spiritual and religious beliefs, the form of governance, and the system of land tenure (Kame‘eleihiwa, 1992). Contact with Europeans was devastating for Hawaiians. When Captain Cook came to Hawai‘i in 1778, over 300,000 Hawaiians inhabited the islands but by 1850, only 80,000 Hawaiians remained (Office of Hawaiian Affairs, 2003) due to diseases introduced by the foreigners, for which Hawaiians did not have immunities.

English Literacy and an alphabet system, introduced to Hawaiians by Europeans, allowed for control of the way Hawaiians were represented to the outside world and reinforced the social, political, and economic oppression of Hawai‘i’s indigenous people (Au & Kaomea, 2009).
Despite continued attacks to their nation and wellbeing, literacy and the written language gave Hawaiians a system for preserving their culture and history and a way to express resistance against colonialism. Hawaiian language schools taught reading and writing in Hawaiian and in 1840, Kamehameha III (born Kauikeaouli) signed general school laws initiating a system of government schools to provide education to children across the islands. By the late 1800s, Hawai‘i’s literacy rate compared favorably to nations worldwide, which was perceived as threatening to colonizers, as many of them were unable to understand the *kaona* of the language (Au & Kaomea, 2009). In 1880, the ministry of education began to eliminate Hawaiian-language schools, putting English-language schools in their place and in 1883, Hawaiian language was banned from schools and government activities, coinciding with the overthrow of the Hawaiian monarchy (Au & Kaomea, 2009).

The Hawaiian monarchy was illegally overthrown in 1893 and three years later, in 1896, Act 57 mandated that English was the only language to be taught and spoken in both public and private schools in the territory of Hawai‘i (Ng-Osorio & Ledward, 2011). It was not until 1978 that ‘Ōlelo Hawai‘i, the Hawaiian language, was reestablished as an official language in Hawai‘i; however, the ban on ‘Ōlelo Hawai‘i in schools was not removed until 1986. Currently, there are very few individuals that ‘Ōlelo Hawai‘i (speak the Hawaiian language), however, Pidgin is still commonly spoken in many homes.

Many youth in Hawai‘i enter school already at a disadvantage, which perpetuates through their schooling. Only 57% of kindergarteners in Hawai‘i were reported to have attended preschool (Hawai‘i State School Readiness Assessment, 2012). Results from the Hawai‘i State School Readiness Assessment indicate less than 50% of kindergarten classes in Hawai‘i
demonstrate key skills and characteristics deemed necessary for a successful learning experience in school (Hawai‘i State School Readiness Assessment, 2012). Furthermore, students in Hawai‘i receive achievement scores significantly behind the national average on the National Assessment of Educational Progress in mathematics, reading, writing, and science for grades 4 and 8 (National Center for Education Statistics, 2013).

In comparison to other ethnic groups in Hawai‘i, Hawaiian youth begin school less prepared (Kamehameha School, 2005). Less than 50% of Hawaiians achieve a high school diploma or equivalent (Marsella, Oliveira, Plummer, & Crabbe, 1998; U.S. Census, 2010) and Hawaiians are less likely to obtain an associates, bachelor’s, or graduate degree in comparison to other ethnic groups in Hawai‘i (U.S. Census, 2010). It is possible the significant changes and loss Hawaiians have endured to their language, culture, and livelihood within the last century may be reflected in the opportunities currently provided in their home environments, and thus, evidenced by Hawaiian children’s school readiness skills (Marsella et al., 1998).

Despite the attacks to their livelihood, many Hawaiians in rural communities continue to participate in, or are becoming reacquainted with traditional Hawaiian cultural practices, language, values, and beliefs (Oliveira et al., 2006). There is evidence that many Hawaiian families are resilient and do provide opportunities supportive of their children’s early skill development (Weisner, Gallimore, & Jordan, 1988; Werner, 1992). For example, research with the Kamehameha Early Education Project (KEEP) an initiative to develop research-based educational and teaching programs for Hawaiian children (Tharp, et al., 2007) found peer learning played an important role in Hawaiian children’s learning in the home and school settings (Tharp et al., 2007; Weisner et al., 1988). Additional findings from this project indicated
children often initiated language or literacy events in the home (Weisner et al., 1998) and that
learning in Hawaiian homes occurred from models, by learning alongside other children and
adults (sometimes through information passed from adults to older children), and by error
correction from others after making a mistake (Tharp et al., 2007). A well-known ʻōlelo noʻeau,
or traditional Hawaiian proverb, lends support for the role of modeling and observation in
Hawaiian children’s learning. “Nānā ka maka; hoʻolohe ka pepeiao; paʻa ka waha,” which
means “Observe with the eyes; listen with the ears; shut the mouth; thus one learns (Pukui, 1983, p. 248). Pukui, Haertig, & Lee (1972b) wrote:

In the Hawaiian ʻohana, the extended family of the past, the young child began to watch, 
listen, and therefore, learn, long before parents or grandparents began any planned 
instruction. All young children learn from observation and imitation. For the Hawaiian 
child, the difference lay in the rich and constant opportunity to observe. (p. 49)

Contemporary investigations of Hawaiian ways of acquiring knowledge suggest 
modeling continues to play an important role in Hawaiian children’s learning. Findings from
KEEP indicated Hawaiian mothers of kindergarteners used significantly higher rates of
modeling/demonstration along with task-oriented verbalizations on three different tasks in 
comparison to Midwestern mothers, who had higher rates of verbal-controlling techniques 
(Jordan, 1981a, 1981b). KEEP research also identified Hawaiian children often actively 
participated in the task they are learning to do (Jordan 1981a, 1981b). The findings suggest 
important aspects of the HLE such as parents’ literacy habits may be part of the modeling 
influence highlighted in Hawaiian families.
Study Aims

Although the influence of children’s home environments on indicators of school readiness such as emergent literacy skills had been established in monoracial Caucasian, African American, and Latino American children, little was known about the experience of children in a Hawaiian cultural community as they begin formal schooling. Furthermore, no study has examined the influence of the home environment on Hawaiian children’s emergent literacy skills and it was unclear if extant findings were generalizable to Hawaiian children or multiethnic children residing in a Hawaiian community. The current study intended to fill this gap in the literature by examining the home literacy environment and emergent literacy skills in a sample of multiethnic children from a Hawaiian cultural community as they enter kindergarten.

This current study used archival data collected at the time the children began kindergarten. This primarily multiethnic sample was comprised of approximately half (n = 70; 58%) part-Hawaiian youngsters. Children were considered Hawaiian if they were identified by their caregiver as having at least part Hawaiian ancestry. The first aim of the current study was to examine children’s performance on standardized assessments of emergent literacy skills, including oral language, print knowledge, and phonological awareness. The second aim of this study was to investigate how aspects of their home environments, such as parent’s own literacy habits, parent literacy involvement, home resources, parenting stress, and family backgrounds might be related to variations in children’s emergent literacy skills. The final aim was to explore whether there are any group differences between part-Hawaiian and non-Hawaiian participants.
Method

Participants

The participants were 120 (58 girls, 62 boys) children aged 52-77 months (M = 59.79; SD = 5.00) and their caregivers. The sample was recruited from incoming kindergarten cohorts at two elementary schools on the western part of Kaua‘i, Hawai‘i. There were four kindergarten classrooms at each school with one main teacher for each classroom. Approximately 75% of the incoming kindergarten cohort from each school participated in this study. The majority of the participants were born on Kaua‘i, n = 10 were born on a neighbor island, n = 13 participants were born on the continental United States, and n = 2 were born internationally. All students were of a mixed ethnic background that did not include Hawaiian (n = 49) or had a mixed ethnic background, which included part-Hawaiian, or of full Hawaiian (n = 71) descent. Preschool experience was reported for 116 participants, with 86 children attending some form of preschool and 30 children receiving no preschool experience. Hawaiian children attended, on average, 17.80 (SD = 7.92) months of preschool, while non-Hawaiian children attended 16.42 (SD = 8.97) months. Fifty-two Hawaiian children attended preschool while 32 non-Hawaiian children received some preschool experience. Participant’s time in preschool ranged from 6 weeks to 3 years, with 72% of the sample attending some preschool.

Procedure

Caregivers were informed about the project and their written consent was obtained during kindergarten orientation meetings held at each school in May 2012, at summer programs children attended during June and July 2012, and during the first week of school in August 2012. Caregivers were told that their participation would contribute to knowledge about children’s
transition to formal schooling. Families partaking in the study received a $20 gift card to Walmart in appreciation for their participation. Parents completed study questionnaires at the schools after giving consent to participate, or took questionnaires home and returned them the following day. Trained research assistants were present to assist in the completion of measures during kindergarten orientation meetings. All study questionnaires were completed between May and August 2012.

Child assessments. Children’s emergent literacy skills were assessed in a quiet area of the school in July and August 2012 by the author and a team of retired elementary school teachers who previously worked in the same school district. Retired elementary school teachers were used as research assistants for this project for a number of reasons. These research assistants were familiar with each school participating in the study as many of them had worked at one or both schools at some point in their career and some of them were still involved with the schools in a volunteer or paraprofessional capacity. The existing relationship the research assistants had with participating schools was useful when coordinating with school staff to find appropriate locations to administer the standardized emergent literacy assessment. Additionally, the research assistants were knowledgeable about study participants’ community and family backgrounds, including being able to understand children who spoke primarily in Pidgin, all of which were helpful in building rapport with children prior to testing. Many of these research assistants were trained under KEEP (Kamehameha Early Education Project) and had also been trained during their career or during retirement in providing standardized assessments to children, including having the role of testing children to put them into reading groups throughout the school year or helping to administer island-wide assessments for children. Using research
assistants local to the community also eliminated the logistical and financial challenges that would have incurred had research assistants been transported from O’ahu to conduct the standardized assessments.

A training on standardized procedures for the literacy assessment used was held with all research assistants prior to data collection and the investigator was on site during all initial assessments to provide immediate feedback on standardized administration and address any questions research assistants had about testing. To reduce the potential for biases in scoring by research assistants, children’s responses were written verbatim by research assistants and this investigator completed all scoring. In the event there was any uncertainty about how to score a child’s response, this investigator and her advisor independently scored children’s responses and consulted with a third party familiar with the assessment protocol to determine appropriate scoring.

**Human Subjects Considerations**

This study was submitted to and approved under expedited review procedure by the University of Hawai’i at Mānoa’s Committee on Human Studies Program Institutional Review Board on March 21, 2012.

**Measures**

**Family background.** Caregivers completed a background questionnaire, which contained questions about family demographic variables (e.g., gender, ethnicity, parent education level, parent occupation, frequency of Pidgin and English spoken in the home, preschool attendance of child). Caregiver’s educational level was coded as 1 = Elementary – 6th grade, 2 = 7th – 8th grade, 3 = 9th – 12th grade, 4 = 1 – 2 years of college, 5 = 3 – 4 years of college, 6 =
college graduate or higher. Approximately half of the caregivers reported attaining the equivalency of a high school education or less. The mean level for mother’s and father’s educational level was 4.12 ($SD = 1.24$) and 3.83 ($SD = 1.14$), respectively. The mean parent education level, an average between mother and father education, for Hawaiian children was 3.76 ($SD = 0.81$) and for non-Hawaiian children was 4.28 ($SD = 1.13$). Caregiver education level was not reported for four mothers and 10 fathers. Average yearly household income was coded as 1 = $5000 or lower, 2 = $5000-$10,000, 3 = $10,001-$15,000, 4 = $15,001-$20,000, 5 = $21,001-$30,000, 6 = $30,001-$40,000, 7 = $40,001-$50,000, 8 = $51,001-$75,000, 9 = $75,001-$100,000, 10 = $100,001 or higher. The average yearly household income of the sample was highly scattered, ranging from $5000 or less to $100,001 or higher for 105 families. Fifteen participant’s caregivers did not provide information about their average monthly household income. Frequency of speaking Pidgin and English in the home was coded 1 = never, 2 = rarely, 3 = sometimes, 4 = usually, and 5 = always. The mean frequency reported for Pidgin use in the home was 3.00 ($SD = 1.05$) and for English was 4.52 ($SD = .68$) for the entire sample. The average frequency of speaking Pidgin in the homes of Hawaiian children was 3.22 ($SD = 0.98$) and in homes of non-Hawaiian children was 2.67 ($SD = 1.07$). The mean child use of Pidgin and English was 2.77 ($SD = 1.12$) and 4.55 ($SD = .68$) respectively. Twenty caregivers reported their children used other languages including Hawaiian ($n = 6$), Filipino ($n = 10$), Chinese ($n = 1$), Japanese only ($n = 1$), Japanese/Hawaiian ($n = 1$), and Tongan ($n = 1$).

**Home literacy environment.** Caregivers completed all three subscales (i.e., literacy involvement, literacy habits, and literacy resources) of the HLE Questionnaire (HLEQ; Farver et al., 2006). Items are rated on a 7-point Likert scale ranging from 0 = never to 6 = daily. The
literacy involvement subscale (e.g., about how many times per week do you read to your child at home) contains five items. The literacy habits subscale (e.g., how often does your child see you or your spouse reading for enjoyment) has three items. Literacy resources included two questions (e.g., how many children’s picture books do you own). Responses to the literacy resources questions were coded as 0 = none, 1 = 1 to 10, 2 = 11 to 20, 3 = 21 to 40, 4 = 41 to 60, 5 = 61 to 80, 6 = 81 to 100, 7 = 101 to 150, 8 = 151 to 200, 9 = 200 or more. The full HLEQ used in the current study is located in the appendix. The HLEQ has evidence of criterion validity as it has been correlated with literacy skills in Latino preschoolers (rs = .14-.38; e.g., Farver et al., 2006; 2013). Additionally, the literacy involvement and literacy habits subscales have been correlated with observational measures of the home literacy environment (rs = .14-.68; Farver et al., 2013). Chronbach’s alphas for the current study were .67 for literacy involvement, .62 for literacy habits, and .52 for literacy resources.

**Print knowledge, definitional vocabulary, and phonological awareness.** Children’s emergent literacy skills were assessed with three subscales (i.e., Print Knowledge, Definitional Vocabulary, and Phonological Awareness) of the Test of Preschool Early Literacy (TOPEL; Lonigan, Wagner, Torgesen, & Rashotte, 2007). The 35-item Print Knowledge subtest measures print concepts, letter discrimination, word discrimination, sound name, and letter name. The 35-item Definitional Vocabulary subtest measures a child’s ability to define words and use single-word spoken vocabulary. The 27-item Phonological Awareness subtest measures the developmental continuum of phonological awareness skills through blending and elision abilities. The TOPEL Print Knowledge, Definitional Vocabulary, and Phonological Awareness subtests have demonstrated convergent validity with other measures of print knowledge (r = .077
for the Test of Early Reading Ability 3 and TOPEL Print Knowledge subtest), definitional vocabulary \( (r = 0.71 \) for the Expressive One-Word Picture Vocabulary Test and TOPEL Definitional Vocabulary subtest) and phonological awareness \( (rs = 0.59-0.65 \) for the Comprehensive Test of Phonological Processing and TOPEL Phonological Awareness) (Lonigan et al., 2007). Additionally, the TOPEL has demonstrated predictive validity for later reading skills as scores obtained on the Print Knowledge and Phonological Awareness subtests that were administered in preschool were significantly correlated with measures of phonological awareness (median \( r = 0.40 \)) and word identification and word attack reading skills \( (rs = 0.30 – 0.60 \) administered at kindergarten and first grade (Sims & Lonigan, 2008).

**Parenting stress.** Caregivers completed the Parenting Stress Index – Short Form (PSI – SF; Abidin, 1995), a measure designed to evaluate the magnitude of stress in the parent-child relationship (e.g., I feel trapped by my responsibilities as a parent). This 36-item measure is rated on a 5-point likert scale from 1 = strongly disagree to 5 = strongly agree. The PSI-SF has three subscales including personal distress related to parenting and perceived ability, stress from interacting with the child, and stress related to the child’s behavior, as well as a Total Stress score corresponding to the overall perceived parenting stress experienced. Additionally, the PSI-SF also provides a defensive responding subscale, which is derived from the sum of seven questionnaire items. The PSI-SF has been validated for use with low-income African American Head Start populations (Reitman, Currier, & Stickle, 2002). Additionally, convergent validity has been established between the PSI-SF and both parent-report measures of parenting styles \( (rs = .23-.56 \) and divergent validity has been established between the PSI-SF and observational measures of positive parenting strategies \( rs = -.20 \) to -.24; Haskett, Ahern, Ward, & Allaire,
2006). The PSI-SF Total Stress score and defensive responding subscale were used in the current study. Cronbach’s alpha for PSI Total Stress was .96 for the present study.

Results

Overview of the Analyses

First, preliminary analyses were conducted and included a missing value analysis and a social desirability analysis. Second, descriptive statistics and bivariate correlations were reported for key variables. Third, a series of hierarchical regression analyses were conducted to examine how aspects of home literacy environments and parenting stress were related to children’s emergent literacy skills including print knowledge, definitional vocabulary, and phonological awareness.

Preliminary Analyses

Missing values. Fifteen of the 120 children had missing values in the parent or teacher ratings. Multiple imputations were used to compute missing values instead of using listwise deletion to reduce the likelihood of biased results (Schaffer, 1997). The EM algorithm and method of generating random numbers from probability distributions with Markov chains (MCMC; Markov Chain Monte Carlo) (Du Toit & Du Toit, 2001) was applied using LISREL 8.70. The following results are based on the data following multiple imputations.

Social desirability. Parents’ scores on the Defensive Responding Subscale of the Parenting Stress Index (PSI; Abidin, 1995) were used to examine the extent to which parents may have attempted to portray themselves in a favorable way. Among the 120 parents, 50 had a score less than or equal to 10, i.e., the cut-off for the Defensive Responding Subscale. To explore possible reporting bias due to the social desirability, parents’ scores on HLE variables
between those with a defensive responding score of 10 or less were compared with those with a
defensive responding score higher than 10. No significant differences were found between these
two groups. Therefore, the following analyses were reported based the entire sample.

**Descriptive Statistics**

**Standard TOPEL scores in comparison to national norms.** On the Print Knowledge
subtest, in comparison to the standardization sample, 47% of children performed similar to same
aged peers, 23% performed above same aged peers, and 30% performed below same aged peers.
On the Definitional Vocabulary subtest, 72% of children performed similar to same aged peers,
9% performed above same aged peers, and 23% performed below same aged peers in the
standardization sample. On the Phonological Awareness subtest, 48% of children performed
similar to same aged peers, 13% performed above, and 39% performed below.

**Means and standard deviations for both Hawaiian and non-Hawaiian groups.** Table
1 summarizes the descriptive statistics for main variables of interest. To examine whether
Hawaiian and non-Hawaiian groups differed in their demographic backgrounds, home
environment variables, and children’s emergent literacy skills, independent sample *t*-tests were
conducted. The results indicated that Hawaiian parents reported lower educational attainment
(*M* = 3.77, *SD* = .81), less home literacy resources (*M* = 2.36, *SD* = 1.23), and more frequent use
of Pidgin (*M* = 3.22, *SD* = .98) than did non-Hawaiian parents (Educational attainment: *M* =
4.28, *SD* = 1.13; home literacy resources: *M* = 3.01, *SD* = 1.57); home use of Pidgin: (*M* = 2.67,
*SD* = 1.07): *t*(107) = 2.62, *p* < .05, *t*(118) = 2.57, *p* < .05, and *t*(110) = 2.84, *p* < .05, respectively.
In addition, Hawaiian children had lower scores on print knowledge (*M* = 18.55, *SD* = 10.37)
than did their non-Hawaiian peers (*M* = 27.10, *SD* = 7.75): *t*(117) = 5.17, *p* < .01. Given the
differences between the two groups, children’s ethnicity was treated as a control variable in the hierarchical regression analyses below. In addition, the potential moderating role of ethnicity in the relations between home environment variables and children’s emergent literacy skills were also explored as interaction terms in the regression analyses.

Correlation Analysis

Table 2 summarizes the bivariate correlations among main variables of interest. The results showed children’s print knowledge scores were positively correlated with HLE resources ($r = .28, p < .01$), parent literacy involvement ($r = .19, p < .05$), parent’s own literacy habits ($r = .20, p < .05$), parent’s average education ($r = .37, p < .01$), and preschool attendance ($r = .25, p < .01$), and was negatively correlated with the frequency of speaking Pidgin in the home ($r = -.23, p < .05$). Both Hawaiian and non-Hawaiian parents reported a similar, high frequency of speaking English in the home so there was not much variation in the relationship between the frequency of speaking English and the main variables of interest. Children’s definitional vocabulary scores were positively correlated with parent’s literacy involvement ($r = .21, p < .05$), parent’s own literacy habits ($r = .24, p < .01$), parent’s average education ($r = .32, p < .01$), preschool attendance ($r = .35, p < .01$) and child age ($r = .18, p < .05$), and negatively correlated with parenting stress ($r = -.24, p < .01$). Children’s phonological awareness scores were positively correlated with HLE resources ($r = .25, p < .01$), parent’s literacy involvement ($r = .20, p < .05$), parent’s own literacy habits ($r = .20, p < .01$), parent’s average education ($r = .30, p < .01$), and preschool attendance ($r = .31, p < .01$).
Home Environments and Children’s Emergent Literacy Skills

Hierarchical regression analyses were used to examine the relationships between home environments and children’s emergent literacy skills. Due to the skewness of some variables, analyses were conducted based on both untransformed and log-transformed variables (with reduced skewness). However, the results were similar\(^1\). Therefore, the following analyses were reported based on untransformed variables to facilitate the interpretation of findings.

In each regression model, children’s age, ethnicity, parent education, preschool attendance, and frequency of Pidgin English in the home were entered in the first step as control variables. The main effects of home environment variables, including home literacy resources, parent literacy involvement, parent’s own literacy habits, and parenting stress were entered in the second step. In the third step, the interaction between home environment variables, which were all centered to reduce multicollinearity, and ethnicity were entered to examine the moderating roles of children’s ethnicity. The analyses were repeated for each emergent literacy variable (see Tables 3 to 5).

As shown in Table 3, no significant main effects or interaction was found between the home environment variables and print knowledge. Among the control variables, children who had attended some preschool \((t = 3.62, p < .01)\) or were from non-Hawaiian families \((t = -4.52, p < .01)\), tended to score higher on print knowledge scores.

Similarly, no significant main effects or interaction was found between the home environment variables and definitional vocabulary (see Table 4). Among the control variables, preschool attendance \((t = 3.32, p < .01)\), parents’ average education \((t = 2.66, p < .01)\), and the frequency of Pidgin use at home \((t = 2.22, p < .05)\) were positively associated with children’s
definitional vocabulary. The positive effect of Pidgin use was likely a statistical artifact of a suppressor effect due to its negative correlation with parents’ education.

As shown in Table 5, no significant main effects were found between the home environment variables and phonological awareness. Among the control variables, children’s preschool attendance (t = 3.23, p < .01) and parents’ average education (t = 2.02, p < .05) were positively related to their phonological awareness. In addition, the interactions between home literacy resources and ethnicity (t = -2.51, p < .05), and between parents’ literacy involvement and ethnicity (t = 2.96, p < .01), were significantly associated with children’s phonological awareness. As shown in Figure 1, the relation between home literacy resources and phonological awareness was stronger for non-Hawaiian than for Hawaiian children, and the relation between parent literacy involvement and phonological awareness was stronger for Hawaiian than for non-Hawaiian children.

Discussion

The current study examined how children from a Hawaiian cultural community performed on a standardized assessment of emergent literacy at the time they entered kindergarten, how aspects of their home environments might be associated with their emergent literacy skills, and whether there were any group differences between Hawaiian and non-Hawaiian children. The results indicated the majority of children performed similar to same aged peers in the standardization sample on a test of emergent literacy. The results of correlation analyses revealed that the home literacy environment was positively related to children’s emergent literacy skills. Additionally, parenting stress was negatively related to children’s definitional vocabulary. Hierarchical regression analyses indicated no significant effects were
found for the HLE or parenting stress on children’s print knowledge, definitional vocabulary, or phonological awareness scores. However, family background variables, including ethnicity, preschool attendance, and parent education were significantly related to children’s scores. Additionally, ethnic group differences were identified for the relations between home literacy resources and home literacy involvement, and children’s phonological awareness scores, respectively.

**Contributions of the HLE and parenting stress**

Home literacy resources were significantly correlated with children’s emergent literacy skills. Parent involvement in literacy activities and parent’s own literacy habits were positively related to all three emergent literacy skills ($rs = .19$ to $.24$, $ps = .01$ to $.05$) and home literacy resources was significantly related to children’s print knowledge ($r = .28$, $p < .01$) and phonological awareness ($r = .25$, $p < .01$). However, the home literacy environment was not associated with any of these skills after controlling for child age, preschool attendance, the frequency of speaking Pidgin in the home, average parent education, and ethnicity. Additionally, parenting stress was negatively correlated with children’s definitional vocabulary but not significantly related to children’s print knowledge, definitional vocabulary, or phonological awareness in regression analyses. Methodological issues with the current study may help to partly explain the lack of significant main effects in the regression analyses. The small sample size and comparatively large number of predictor variables included may have resulted in a lack of sufficient power for identifying significant main effects. Future studies should explore potential mediating effects of the HLE in relation between some of the control variables, such as parents’ education and children’s emergent literacy skills.
Parent education was positively related to all three aspects of emergent literacy and remained a significant predictor of children’s definitional vocabulary and phonological awareness in regression analyses. This result was consistent with findings from prior studies (e.g., Bracken & Fischel, 2008; Martini & Sénéchal, 2012; Storch & Whitehurst, 2001) where family background variables, in particular, parent education, was significantly related to children’s emergent literacy skills in children from lower SES and minority families. Scarborough & Dobrich (1994) suggested family demographic variables such as parental education and maternal IQ are responsible for observed relationships between home literacy variables and children’s language and literacy development, and that the HLE might be a marker for SES variables. For example, instead of individual HLE variables relating to an increase in children’s emergent literacy skills, it may be that these activities occur more frequently in the homes of more educated parents, leading to increased emergent literacy variables (Storch and Whitehurst, 2001). In the current study, it was possible that highly educated parents also provided a higher quality HLE but that any shared variance was attributed to parent education and thus, parent education may have confounded any effect of the HLE on children’s emergent literacy scores.

The lack of significant findings for the HLE in regression analyses may also be due to heterogeneity in parents’ education for the current sample. Parents in the current study reported educational attainment that ranged from some elementary school to college graduate or higher. In contrast, participants in prior studies have been from more homogeneous low SES (e.g., Farver et al., 2006; Farver et al., 2013) or middle SES (e.g., Sénéchal et al., 1998; Sénéchal & LeFevre, 2002) samples. While the limited variation in SES in prior studies may have resulted in
more pronounced effects of the HLE on children’s emergent literacy skills, the large variation of parent education in the present study may have made it difficult to identify a main effect of the HLE on emergent literacy variables.

The lack of significant main effects of the HLE could also be due to sampling differences between the current and prior studies. Many of the previous studies examining the influence of the home environment on minority children’s emergent literacy skills have been with immigrant populations. It is possible that there are fundamental differences in the experience of immigrant groups and the participants in the current study, which explain the differences in significant outcomes. One difference is that many immigrant children need to navigate early learning experiences with two different languages, such as Spanish and English. Prior research with Latino populations have identified the language primarily spoken in the home contributes to children’s emergent literacy skills, including the language of the HLE provided in the home (Farver et al., 2013). Additionally, Lonigan and colleagues (2013) found Head Start children who spoke Spanish at home scored lower on measures of oral language and phonological awareness in comparison to a group of Head Start children from English speaking homes. An additional difference between the current and prior studies is that prior studies (e.g., Hood, M., Conlon, E., & Andrews, 2008; Sénéchal et al., 1998) have not consistently examined the influence of the family background on children’s emergent literacy skills and it is possible that home literacy practices would not significantly predict children’s emergent literacy skills above and beyond the influence of parent education for some families.

Furthermore, the lack of significant relations between the home literacy environment and children’s emergent literacy skills in regression analyses may be due to the failure to include
other HLE variables, such as a child’s own interest in literacy activities, which has been identified as both an independent predictor of children’s emergent literacy skills (e.g., Bracken & Fischel, 2008) and a mediator between parent’s involvement in literacy activities and emergent literacy skills (e.g., Farver et al., 2006). Children who enjoy literacy activities may be more motivated to seek out these opportunities and engage in literacy activities more frequently (Baroody & Dobbs-Oates, 2011) leading to increased parent involvement in literacy activities and development of children’s emergent literacy skills. It is possible that there are other aspects of the HLE that were not examined in the current study, such as children’s interest in literacy interactions, that may play an important role in the development of children’s emergent literacy skills of multiethnic children from a Hawaiian cultural community.

The HLE measure used in this study focused on the frequency of parents engaging in literacy practices in the home, however, it is unclear how the frequency of these behaviors (i.e., the quantity of the HLE) was related to the quality of the HLE. Prior studies have identified the overall quality and responsiveness of the home environment to be an important predictor of children’s receptive and expressive language skills at age 4 and at entry to kindergarten (Roberts, Jurgens, & Burchinal, 2005). Caspe (2009) examined the influence of mother’s book sharing styles on Latino preschoolers’ early literacy skills and found differences in storytelling were differentially predictive of children’s print-related and narrative skills. Future studies should include observational measures of the HLE to better examine the range and quality of parent-child literacy interaction.

There may also be other unique home environment variables specific to the population sampled, that were not captured by the measures included in the present study. For example,
Kana‘iaupuni and Else (2005) found Hawaiian preschoolers who knew and understood the meaning of their Hawaiian names had higher scores on the PPVT-III. These authors suggested naming is an important Hawaiian cultural practice and a medium through which children may develop oral knowledge as parents interact with their children through oral storytelling.

Beniamina (2010), who was raised on Ni‘ihau, describes tēnā, a multistep learning lifestyle where kumu guide haumāna (students) through increasingly complex concepts and skills by first having a child learn through observation, then by completing a task while accompanied, and next by partial accompaniment, completing it unaccompanied, and then by teaching others the task.

Future studies should examine how these and other traditional Hawaiian cultural teaching practices may influence the development of children’s emergent literacy skills.

A variety of constructs related to the home emotional atmosphere (e.g., maternal depression, caregiver social support) have been examined in relation to children’s school readiness skills. Parenting stress, a marker of home emotional atmosphere measured in the current study, was negatively related to children’s definitional vocabulary but not correlated with their print knowledge or phonological awareness. Contrary to previous findings (e.g., Noel et al., 2008), parenting stress, was not associated with any aspect of children’s emergent literacy skills in regression analyses. It is possible that Hawaiian and non-Hawaiian caregivers in this sample responded in a socially desirable manner and thus underestimated their parenting stress. It is also possible that caregivers in the current sample experienced a relatively low level of stress related to parenting or have coping skills or parenting support, such as extended family members, which allow them to manage their stress in a manner that does not affect their parenting behaviors.
Future studies should continue to examine the role of parenting stress on children’s emergent literacy skills to determine if the current findings can be replicated.

It is well known that Hawaiian’s experience disadvantage and poor outcomes on numerous measures of education, physical and psychological health, and social wellbeing in comparison to other ethnic groups in Hawai‘i. Although these factors may lead to stress for parents of Hawaiian youth, which might decrease their ability to parent effectively, that was not observed in the current study. The measure of stress used in the current study may also help to explain the lack of significant main effect findings. Although the PSI-SF has been used with preschool aged children in other ethnic groups (e.g., Farver et al., 2006; Reitman et al., 2002) it is possible this measure does not accurately capture the experience of stress associated with parenting for multiethnic Hawaiian and non-Hawaiian youngsters in Hawai‘i. Hawaiians experience tremendous challenges related to acculturation issues, including difficulties associated with navigating between traditional lifestyles and values in the context of current western influence, especially due to the implications that decisions Hawaiians face have on the survival of the Hawaiian culture and people (Marsella et al., 1998). Hawaiians may also be experiencing challenges associated with historical trauma, transmitted across generations, related to the profound loss they experienced as a people and culture due to Western influence. The Hawaiian concept *kaumaha*, or intense feelings of sadness (Pukui, Haertig, & Lee, 1972a), which can be passed intergenerationally, reflects the Western notion of historical trauma. It is possible that stress related to the acculturation issues Hawaiians face and the experience of historical trauma and *kaumaha* may influence parenting behaviors, however, measurement tools do not
currently exist to accurately capture forms of stress related to the Hawaiian acculturation experience or historical trauma and *kaumaha*.

**Hawaiian and Non-Hawaiian Families**

The current study also examined ethnic group differences in emergent literacy skills. Non-Hawaiian children had significantly higher print knowledge scores than Hawaiian children. Although more Hawaiian children attended at least some preschool than non-Hawaiian children, it is possible that the preschool environments afforded to non-Hawaiian youth had an increased educational emphasis, allowing for better development of early literacy skills for non-Hawaiian youth. It is also possible that the type of HLE involvement differed for non-Hawaiian in comparison to Hawaiian youth, resulting different print knowledge scores. Future studies should examine the influence of shared book reading and direct teaching separately to gain more understanding of how specific HLE involvement practices relate to emergent literacy outcomes. Another possible reason for the difference in print knowledge outcomes between groups may be that Hawaiian children spend a lot of time with extended family caregivers (e.g., grandparents) rather than parents and did not have the same type of exposure to the HLE provided by their parent as did non-Hawaiian children. Additionally, average parent education approached significance as a predictor of print knowledge (*t* = 1.96, *p* = .05), and it is possible that increased parent education for non-Hawaiian caregivers related to different home literacy practices for this group such as the direct teaching of literacy skills.

Although no significant findings were observed for the main effects when considering the sample as a whole, the influence of two home literacy environment variables on children’s phonological awareness operated differently for children identified as Hawaiian in comparison to
those who were non-Hawaiian. Both of these findings are consistent with Whitehurst and Lonigan’s (1998) argument that children’s phonological awareness, categorized as an “inside-out” component, is enhanced by activities (i.e., parent involvement) and resources that provide letter-sound information. The number of home literacy resources did not have much of an influence on Hawaiian children’s phonological awareness, while having more literacy resources was related to higher phonological awareness scores for non-Hawaiian children. It is possible that despite having picture and alphabet books in the home, these materials are not used in the same way or as frequently by Hawaiian children as non-Hawaiian children, leading to the difference in phonological awareness scores. Hawaiian children had significantly less HLE resources in the home than did non-Hawaiian children, and the reduced number of resources may relate to Hawaiian children experiencing not much difference in phonological awareness scores. It is also possible that HLE resources are not helpful in teaching phonemes to Hawaiian children, although it is difficult to make inferences as to why this might be the case. This finding may also be a function of the types of home literacy environment materials that were surveyed in the present study. The current study only asked parents to report on the number of alphabet and picture books in the home and future research should attempt to understand how other types of literacy material, such as alphabet letters, puzzles, electronic literacy applications, and other literacy toys might influence the development of children’s emergent literacy skills in both groups.

Ethnicity was also found to be a moderator between parent’s involvement in literacy activities and phonological awareness, with an increase in involvement resulting in an increase in phonological awareness score for Hawaiian but not non-Hawaiian children. It is difficult to
interpret this finding and it is possible this is a type I error due to the large number of interactions being examined in the regression analyses. It is also possible that it is more important for the caregivers of Hawaiian children to have increased involvement in literacy activities due to their impoverished environment, although this statement should be interpreted with caution. The mean family income in Hawai‘i in 2012 was $95,405 (U.S. Census, 2012), while Hawaiian families in the current study had a mean family income of less than $30,001. Future studies should explore the hypothesis that caregivers of Hawaiian youth should have increased parent literacy involvement due to a lack of literacy resources. Caregivers of non-Hawaiian children had, on average, attained significantly higher education than caregivers of Hawaiian children. It is possible that due to the correlation between parent education and parental involvement, parent involvement plays a lessor role for non-Hawaiian youth due to the shared variance.

**Family Background**

Children’s preschool attendance and parent average education were positively correlated with all three emergent literacy skills. Additionally, child age was positive correlated with children’s definitional vocabulary, and the frequency of speaking Pidgin in the home was negatively correlated with children’s print knowledge. These family demographic variables were included as important control variables that highlight risk and protective factors that may influence the HLE and contexts within which children develop their emergent literacy skills. Consistent with previous findings (e.g., Bracken & Fischel, 2008; Evans et al., 2000), family demographic variables significantly predicted various emergent literacy skills in regression analyses. Attending at least some preschool was a significant predictor of children’s print knowledge, definitional vocabulary, and phonological awareness skills and higher average parent
education was related to an increase in definitional vocabulary and phonological awareness scores. Parent education was moderately correlated with home literacy resources. Educated parents may be in better position to provide literacy-related opportunities to their children and may value these experiences and thus, engage in them more frequently, resulting in higher emergent literacy scores. As education may be a marker that influences both the quality and quantity of the HLE, future studies should test a mediation model of the influence of education on the HLE and subsequently on emergent literacy skills.

Limitations
The findings from the current study should be interpreted within the context of several limitations. First, although significant correlations were observed between the HLE and parenting stress and children’s emergent literacy skills, the small sample size and inclusion of many variables may have limited the likelihood of main effects achieving significance due to relatively low statistical power. Similarly, it was also difficult to conduct group based analyses due to the small sample size of the non-Hawaiian group (n = 59).

Second, the lack of significant main effects observed for the HLE and children’s emergent literacy skills may be due to the failure to include more relevant HLE variables for this population. For example, the primary individuals who engage in literacy activities with children in the home may be grandparents, other extended family members or siblings (Farver et al., 2013). Future studies should examine the contributions of other important family members and other unique cultural circumstances when examining the HLE in multiethnic children from a Hawaiian cultural community.
Third, the lack of significant main effects for parenting stress and children’s emergent literacy skills may be due to the measure of stress used in the current study. Future studies should seek to understand the role of acculturative stress, historical trauma, and kaumaha, on the HLEs provided by Hawaiian families. Developing a psychometrically sound tool that accurately measures these concepts would be an important first step.

Fourth, it is possible that parents did not accurately report on the frequency of engaging in literacy activities with their children, their own literacy habits, the amount of literacy material in the home, and the use of Pidgin at home, perhaps due to overestimating their effort or social desirability. Almost half the sample (42%) responded in a defensive manner on the PSI-SF defensive responding scale. Although parents who responded in a defensive manner on the PSI-SF did not significantly differ from those who did not respond in a defensive manner on measures of the HLE, the use of caregiver-report measures to assess the home environment is susceptible to bias. Additionally, this study relied on parent report about the frequency of engaging in various HLE behaviors and inferences cannot be made about the quality of these interactions.

Future studies should seek to include diverse methods of measuring the HLE. For example, it would be beneficial to include observational measures of the diversity and amount of home literacy resources present in the home as well as the quality of literacy involvement (e.g., observing parents read a book to their child), while seeking to examine shared reading and direct teaching behaviors separately. Similarly, questions about family literacy resources included in the present study were specific to picture and alphabet books and did not take into account other types of literacy resources such as toys (e.g., magnetic letters), e-books and electronic literacy
learning applications (e.g., for the iPhone or iPad). Future studies should examine the role of a diversity of home literacy resources on the development of children’s emergent literacy skills and interest in engaging in literacy activities.

While also a unique strength of the present study, a fifth limitation is that the inclusion of such a diverse multiethnic, part-Hawaiian sample, limits the generalizability of these findings to other mono- or biracial ethnic groups. Additionally, the differences in historical experience, acculturation, and language use experienced by participants in this study may also limit the generalizability of findings to immigrant ethnic groups.

**Future Directions**

Despite these limitations, the present study has numerous strengths. The unique family background and cultural history of the participants was considered, and a measure of the frequency of speaking Pidgin in the home was included in the study, as it is a factor that potentially influences the ease at which children develop early literacy skills in English. An additional strength of this study is that potential group differences were examined for Hawaiian and non-Hawaiian participants. Both the influence of parent involvement as well as literacy resources on children’s phonological awareness was dependent on ethnicity. These findings are important as they demonstrate that in addition to individual differences in family background, that study participants also had cultural differences which related to different types of strengths in the HLE. Although many studies have examined the role of the HLE for middle-class Caucasian and low-SES immigrant samples, this is the first study that examined the HLE and children’s emergent literacy skills in a group of multiethnic and part-Hawaiian participants and is
an important foundational step in understanding the early literacy skills these children bring to kindergarten from experiences in their home.

Future studies should seek to use a larger sample size and adopt a longitudinal design to assess both the HLE and the development of multiethnic Hawaiian and non-Hawaiian children’s emergent literacy skills over time. Additionally, future studies should examine children’s emergent literacy skills at the time they enter preschool to learn more about the role of the HLE on the early development of these skills outside of the preschool experience.


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Footnotes

1Average parent education significantly predicted print knowledge using log transformed variables \(t = -2.42, p < .05\) but not untransformed variables \(t = 196, p = .05\). Parents own literacy habits significantly predicted definitional vocabulary using log transformed variables \(t = 2.26, p < .05\) but not untransformed variables \(t = .99, p = .33\). Ethnicity significantly predicted phonological awareness using log transformed variables \(t = 2.78, p < .01\) but not untransformed variables \(t = -1.94, p = .05\) and parent education significantly predicted phonological awareness using untransformed variables \(t = 2.02, p < .05\) but not using log transformed variables \(t = -1.95, p = .05\).
### Table 1

*Means with Standard Deviations and Ranges of Hawaiian and Non-Hawaiian Children’s Study Characteristics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Hawaiian&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Non-Hawaiian&lt;sup&gt;b&lt;/sup&gt;</th>
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<td></td>
<td>n</td>
<td>M</td>
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*Note.* <sup>a</sup>n = 71. <sup>b</sup>n = 49. <sup>c</sup>Parenting Stress = average
Table 2.

*Correlations between aspects of the home environment and children’s emergent literacy variables*

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<td>.08</td>
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*Note. *p < .05, **p < .01*
Table 3.

The Relation between the Home Environment Variables and Children’s Print Knowledge ($N = 102$)

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<th>Step and predictor variable</th>
<th>$B$</th>
<th>$SE_B$</th>
<th>$\beta$</th>
<th>$t$</th>
<th>$F$</th>
<th>$R^2$</th>
<th>$\Delta R^2$</th>
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Note. $B = $ Unstandardized regression coefficient. $\beta = $ Standardized regression coefficient. Ethnicity: 1 = Hawaiian, 0 = non-Hawaiian. 
*p < .05. **p < .01
Table 4.

*The Relations between the Home Environment Variables and Children’s Definitional Vocabulary (N = 102)*

<table>
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<tr>
<th>Step and predictor variable</th>
<th>B</th>
<th>SE B</th>
<th>β</th>
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<th>F</th>
<th>R²</th>
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*Note. B = Unstandardized regression coefficient. β = Standardized regression coefficient. Ethnicity: 1 = Hawaiian, 0 = non-Hawaiian. *p < .05. **p < .01*
Table 5.

*The Relations between the Home Environment Variables and Children’s Phonological Awareness (N = 102)*

<table>
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<th>B</th>
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<th>F</th>
<th>$R^2$</th>
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*Note. B = Unstandardized regression coefficient. $\beta$ = Standardized regression coefficient. Ethnicity: 1 = Hawaiian, 0 = non-Hawaiian. *p < .05. **p < .01*
Figure 1. The moderating roles of ethnic background in the relations between home literacy resources and parents’ literacy involvement, and children’s phonological awareness
Appendix A

Parent Demographic Questionnaire

CHILD

Child’s First Name: ____________________________________________
First               Middle               Last

Child’s Sex:  □ Female       □ Male

Today’s Date: __________________________
Month              Day              Year

Child’s Birth Date: __________________________
Month              Day             Year

What is your relationship to the child (circle)?  □ Mother       □ Father      □ Other: ____________

Specify

Child’s Birthplace (City/State/Country): ____________________________

1. What is your child’s ethnic/racial background (check all that applies to your child)?

□ Hawaiian    □ Chinese    □ Japanese    □ Filipino    □ White    □ Portuguese
□ Hispanic    □ Black      □ Samoan      □ Tongan      □ Marshalles Micronesia
□ Other

2. (1.) How frequently does your child speak Pidgin (Pidgin English)?
   □ never       □ rarely     □ sometimes  □ usually     □ always

   (2.) How frequently does your child speak English?
   □ never       □ rarely     □ sometimes  □ usually     □ always

   (3) Does your child speak other languages?  □ Yes       □ No
what language? ______________

3. (1.) How frequently is Pidgin (Pidgin English) spoken in the home?
   □ never       □ rarely     □ sometimes  □ usually     □ always
(2.) How frequently is English spoken in the home?
  □ never    □ rarely    □ sometimes    □ usually    □ always

(3.) Are there any other language(s) spoken in the home? □ Yes    □ No    what language?

4. Has your child attended any preschool? □ YES    □ NO    If yes, name of preschool(s):

5. If your child attended preschool, how long had your child been in the preschool?

CHILD’S MOTHER

6. Mother’s age? ____

7. What is the mother’s ethnic/racial background (check all that applies to the mother)?
  □ Hawaiian  □ Chinese  □ Japanese  □ Filipino  □ White  □ Portuguese
  □ Hispanic  □ Black  □ Samoan  □ Tongan  □ Marshallese
  Micronesian
  □ Other

8. (1.) How frequently does the mother speak Pidgin (Pidgin English)?
  □ never    □ rarely    □ sometimes    □ usually    □ always

(2.) How frequently does the mother speak English?
  □ never    □ rarely    □ sometimes    □ usually    □ always

(3) Does the mother speak other languages? □ Yes    □ No    what language?

9. Mother’s Marital Status (Circle One):
□ Married  □ Single  □ Separated  □ Divorced  □ Living  □ Widowed with Partner

10. What is the highest grade or year of school the mother has completed? (circle one)

Elementary – 6th grade  7th – 8th grade  9th -12th grade
1 – 2 years of college  3 – 4 years of college  College graduate or higher

11. Is the mother currently employed (circle one)? □ Full time □ Part time □ Not Working

12. If mother is currently employed, what is her job title?
___________________________________________

CHILD’S FATHER

13. Father’s age? _____

14. What is the father’s ethnic/racial background (check all that applies to the father)?
□ Hawaiian  □ Chinese  □ Japanese  □ Filipino  □ White  □ Portuguese
□ Hispanic  □ Black  □ Samoan  □ Tongan  □ Micronesian
□ Other

15. (1.) How frequently does the father speak Pidgin (Pidgin English)?
□ never  □ rarely  □ sometimes  □ usually  □ always

(2.) How frequently does the father speak English?
□ never  □ rarely  □ sometimes  □ usually  □ always

(3) Does the father speak other languages? □ Yes □ No  what language?
______________

16. What is the highest grade or year of school the father has completed? (circle one)

Elementary – 6th grade  7th – 8th grade  9th -12th grade
1 – 2 years of college  3 – 4 years of college  College graduate or higher
17. Is the father currently employed (circle one)?  □ Full time  □ Part time  □ Not Working

18. If father is currently employed, what is his job title?

FAMILY & HOUSEHOLD

19. What is your family income to the nearest $5,000 per year? (Check one Number or Range)

□ $5000 or lower  □ $5,001- $10,000  □ $10,001- $15,000  □ $15,001- $20,000  □ $20,001- $30,000

□ $30,001- $40,000  □ $40,001- $50,000  □ $50,001- $75,000  □ $75,001- $100,000  □ $100,001 or higher

20. (1.) Excluding mother and father, how many other adults are living in the same home?

(2.) If the grandparent(s) live in the same home, how frequently do the grandparent(s) speak Pidgin?

□ never  □ rarely  □ sometimes  □ usually  □ always

(3.) If the grandparent(s) live in the same home, how frequently do the grandparent(s) speak English?

□ never  □ rarely  □ sometimes  □ usually  □ always

(4.) Do the grandparent(s) speak other languages?  □ Yes  □ No  what language?

(5.) If other adults (aunties, uncles, etc.) live in the same home, how frequently do these adults (aunties, uncles, etc.) speak Pidgin?

□ never  □ rarely  □ sometimes  □ usually  □ always

(6.) If other adults (aunties, uncles, etc.) live in the same home, how frequently do these adults (aunties, uncles, etc.) speak English?

□ never  □ rarely  □ sometimes  □ usually  □ always

(7.) Do these adults (aunties, uncles, etc.) speak other languages?  □ Yes  □ No  what language?
21. (1.) Excluding the child, how many other children are living in the home? ___________

(2.) If the sibling(s) live in the same home, how frequently do the sibling(s) speak Pidgin?
   □ never        □ rarely        □ sometimes        □ usually        □ always

(3.) If the sibling(s) live in the same home, how frequently do the sibling(s) speak English?
   □ never        □ rarely        □ sometimes        □ usually        □ always

   (4.) Do the sibling(s) speak other languages?   □ Yes   □ No   what language? ______________

(5.) If the cousin(s) live in the same home, how frequently do the cousin(s) speak Pidgin?
   □ never        □ rarely        □ sometimes        □ usually        □ always

(6.) If the cousin(s) live in the same home, how frequently do the cousin(s) speak English?
   □ never        □ rarely        □ sometimes        □ usually        □ always

   (7.) Do the cousin(s) speak other languages?   □ Yes   □ No   what language? ______________

22. (1.) Besides you, how frequently does the other parent help to care for your child?
   □ never        □ rarely        □ sometimes        □ usually        □ always

   (2.) Besides you, how frequently do the grandparent(s) help to care for your child?
   □ never        □ rarely        □ sometimes        □ usually        □ always

   (3.) Besides you, how frequently do the child’s older sibling(s) help to care for your child?
   □ never        □ rarely        □ sometimes        □ usually        □ always

   (4.) Besides you, how frequently do other adults (Aunties, Uncles, etc.) help to care for your child?
   □ never        □ rarely        □ sometimes        □ usually        □ always
Appendix B

Home Literacy Environment Questionnaire

Language and Reading Survey

Instructions: This information will be used to help us learn more about children’s reading and other language activities in the home. For each question, please circle or check the appropriate answer or fill in the requested information. Please try to provide an answer for all questions, even if it represents your “best guess.” There is no right or wrong answer!

Home Literacy Resources

1. About how many children’s picture books do you own? (Check one).
   - □ None
   - □ 1 to 10
   - □ 11 to 20
   - □ 21 to 40
   - □ 41 to 60
   - □ 61 to 80
   - □ 81 to 100
   - □ 101 to 150
   - □ 151 to 200
   - □ 200 or more

2. About how many children’s alphabet books do you own? (Check one).
   - □ None
   - □ 1 to 10
   - □ 11 to 20
   - □ 21 to 40
   - □ 41 to 60
   - □ 61 to 80
   - □ 81 to 100
   - □ 101 to 150
   - □ 151 to 200
   - □ 200 or more

Parent Literacy Involvement

1. How many times per week do you read to your child at home?
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day

2. About how many times per week do you try to teach your child the letters of the alphabet? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day

3. About how many times per week do you play rhyming games with your child? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day
4. About how many times **per week** do you point out words to your child (e.g., in books, on signs) and tell him or her what they say? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day

5. About how many times **per month** do you go to the library with your child? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ more than 5 times

**Parent’s Own Literacy Habits**

1. About how many times **per week** do you read books or ebooks? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day

2. About how many times **per week** does your spouse (or partner) read books or ebooks? (Check one)
   - □ never
   - □ once
   - □ twice
   - □ 3 times
   - □ 4 times
   - □ 5 times
   - □ almost every day