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# MATERNAL LITERACY PRACTICES AND BELIEFS IMPACT INFANT DEVELOPMENT

A dissertation submitted in partial fulfillment
of the requirements for the degree of

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## ABSTRACT

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Deirdre Cruz

Infancy is a pivotal time in the development of a human's cognitive ability. There is a lack of research in this area, specifically on mothers and their beliefs about literacy practices and the home learning environment. By utilizing Bronfenbrenner's ecological framework, this study explores the beliefs of mothers and how they impact the infants' preliteracy skills and knowledge, which are paramount to success in kindergarten and beyond. Using a phenomenological study, the researcher interviewed mothers on their views of literacy, their infant's home learning environment, and how they perceive their culture and mothering style impact their infants.

## DEDICATION

I dedicate this research study to my family who has supported me along this endeavor. To my beautiful son, Brendan for giving me the time to dedicate to my passion to help other families and in turn their later success in school. To my husband, for the beautiful life we have created together and continue to grow. For the newest addition to our family, my daughter, Viviana. This study is also dedicated to every mom, everywhere.

## ACKNOWLEDGEMENTS

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## CHAPTER 1: Introduction

Infancy is the most critical period of brain development that impacts future academic achievement as well as success later in life. (Choi et al, 2018; Niklas et al., 2016; Morgan et al., 2015). The literature in this area of literacy development in infants indicates there are important elements of preliteracy acquisition that are related to the home learning environment and maternal literacy and parenting practices. This study explored maternal literacy beliefs and how these beliefs impact parental actions and home learning environments. It contributes to the research investigating how to better prepare our youngest learners before they reach school.

Infant care is often viewed from a deficit perspective and as a problem for low-income families. In fact, infants do not experience the same quality of care across a myriad of spectrums. However, this line of thinking is detrimental to society at large and has been shown to further marginalize communities (Johnson, 2015).

Thus, the issue of infant care, and particularly literacy development in infants, applies to infants of various backgrounds. Quality of the childcare environment contributes to the child's overall cognitive abilities and communication skills "as early as 1 year of age" (Burchinal et al., 1996). The problem with children receiving low-quality care—and, therefore, experiencing low-quality interactions—in infancy is that by missing exposure to rich language, new vocabulary, and other literacy experiences, infants miss out on developing neuroplasticity that they cannot gain later. By the time an infant reaches age three, 85% of their brain is already developed (Lally, 2012). Infants need support and scaffolding, especially those infants living in stressful environments, whether the stress comes from parental stress, maternal stress, environmental stress, poverty, or

nutritional deficiencies. Mothers can mitigate the effects of these challenges by understanding how the home literacy environment and interactions between mother and child affect infant cognition.

## Statement of the Problem

### *Parental Knowledge*

Parental knowledge of literacy development in infancy is paramount. Parental knowledge of the expectations of what their infants are expected to accomplish by the time they reach Kindergarten is present. However, what happens prior to Kindergarten entry is lesser known. The emphasis on school readiness in Western culture impacts infants because meaningful interventions can be provided in infancy and early childhood that would help students from marginalized communities close the achievement gap (Rowe et al., 2015). Additionally, this study was conducted with mothers, although open to all primary caregivers, because previous research states children's developmental outcomes are influenced by mothers (Rowe et al., 2015). For instance, Rowe et al., 2015 concluded there are direct relationships between mother's parenting knowledge and child language and literacy skills, and many of the socioeconomic status (SES) factors that contribute to achievement gaps can be mediated through early parenting knowledge (Rowe et al., 2015).

Most research in this area focuses on parental practices; however, my study aims to explore parental beliefs, perceptions, opinions, and experiences of mothers. (Sonnenschein & Sun, 2017). The reason is that these internal processes influence external practices that then affect the infant. For instance, maternal concepts and perceptions of infant development relate to later IQ scores (Rowe et al., 2015).

The role of parental knowledge of development has also not been explored (Sonnenschein & Sun, 2017). My study therefore aims to uncover parental knowledge of infant development and how it impacts the home literacy environment.

### *Infant Care*

Quality of infant care centers is associated with infant development, yet many provide insufficient quality care (Li et al., 2013; Burchinal et al., 1996). The lack of quality is observable in class sizes and adult-child ratios as well as caregivers' responsivity, sensitivity, provision of developmentally appropriate activities, and interest in infants' needs (Li et al., 2013; Burchinal et al., 1996). According to Lally (2012), only 10% of infant childcare is high quality. There is a lack of equity that can be seen in this area of study. Many mothers who are of higher SES are older, have less parental stress, and have more time to interact with their infants. Higher SES families also attend better schools. To add to this inequity, infants in higher-quality infant care centers had a more secure attachment to their caregivers and were more socially oriented than their peers in lower-quality care centers with a less secure attachment to their caregivers (Burchinal et al., 1996).

There are also different norms of interaction in child care across cultures and cultural beliefs that need awareness (Kartner et al., 2010). Culturally informed caretaking can impact developmental outcomes for infants (Kartner et al., 2010). Infants whose caretakers were similar to their mothers had more back and forth responses (Kartner et al., 2010). This is pertinent because responsive interactions with adults enhance cognitive and language development in infancy (Burchinal et al., 1996).

Infant-adult ratios may make a significant difference for infants, and the teacher's

education level also matters (Burchinal et al., 1996). The insinuation is that better-educated teachers interact with infants in a way that enhances expressive language development in the infants. Burchinal et al. (1996) furthered that infants who entered infant care at a slightly older age had better expressive skills at 1 year old than infants who entered infant care at a younger age. It shows that less responsive mothers are providing more stimulating quality than most childcare centers (Burchinal et al., 1996).

The first three years of life are the most impactful on early language and joint attention (Li et al., 2013). The effects of interactions on this time period are cumulative (Dodici et al., 2003). This study examined parenting styles of mothers of different SES backgrounds, races, and education levels; where those styles come from; how they are similar or different based on a variety of variables; and how they affect literacy in infants, specifically the infants' preliteracy skills.

### *Deficiencies in the Evidence*

Many studies focus on kindergarten as the first significant milestone in literacy education. However, infancy (ages 0–2) is the first period when humans are creating connections and developing at rapid rates, and interactions in early infancy affect cognition and learning (Lally, 2012). Many research studies as well as intervention programs are conducted with children over the age of 3; however, the more crucial time period is prior to age 3 because 80% of the brain is developed in this period, making the early learning opportunities influential in development (Erkel et al., 2019). It is this infantile time period that sets the stage for success in kindergarten and beyond (Morgan et al., 2015).

The paramount study in the field of infant literacy is Hart and Risley's "The Early Catastrophe: The 30 Million Word Gap" (2003). Their work suggests that the early language environment is the biggest factor in children's language acquisition and, in turn, school success (Suskind, 2015). They concluded that by 3 years of age, there is a 30-million-word difference between children belonging to affluent families and children belonging to families in poverty (Johnson, 2015). This stark difference between the number of words acquired by children of affluent families and children of underserved families was coined "the word gap" and has influenced educational practices and policies to date (Johnson, 2015).

While an initial interpretation of Hart and Risley's study was that SES was what impacted children's cognitive development, many scholars have made differing arguments. They conjecture that socioeconomic status is important not because of how it directly affects child development, but because of how it affects parental beliefs and behaviors (Lugo-Gil & Tamis-LeMonda, 2008), which affect how parents interact with their infant. High-quality interactions, operationalized in the present study as behaviors that lead to early literacy skills, are affected by parent language, emotional tone, joint attention, parental guidance, and parental responsivity (Dodici et al., 2003). "...[S]upportive, warm, and engaged parent-child interactions are associated with the child's emerging competencies in social, cognitive, and linguistics domains throughout early and middle childhood" (Dodici et al., 2003, p. 124).

One deficiency in the literature on language development in infancy is that studies do not use varied SES and racial backgrounds. To fill this gap, my study looked at various participants without differentiating based on demographics. Another deficiency is the

lack of conclusive or extensive literature on parental beliefs and early literacy development of infants (Lugo-Gil & Tamis LeMonda, 2008); moreover, many of the studies on early literacy take place when children are 3 years old and older. My study focused on how mothers of infants viewed themselves and their home learning environment in relation to literacy practices.

However, the crux of my study was to uncover what mothers believe is important for language development and how that impacts the home literacy environment and infant cognition. Maternal beliefs impact their literacy practices with their infants, and this study aimed to find out what mothers believe. The discovery of how mothers perceive their role as well as how they allocate their time when formulating their home literacy practices drove this study. The researcher listened to mothers' stories to find what types of literacy development activities they engage in with their infants. How important do mothers feel reading, talking, and singing with their infants are? Do they have special games or songs? If so, what made them special? Do cultural practices affect maternal beliefs? Do mothers know what preliteracy skills are?

My study aimed to identify tangible attributes of maternal practices that affect preliteracy skills. Parents may not understand the vast amount of preliteracy skills that can be acquired throughout the day, not just through shared reading and practice of formal literacy skills; many parents may need education around what creates a quality interaction and support in how to do this (Dodici et al., 2003). Low-quality interactions, such as not speaking to the infant directly, admonishing the infant, not responding to the infant’s needs, or not paying attention during a joint task between mother and infant, can hinder the child’s development and in turn affect their socioemotional development

(Zeegers et al., 2019). Since infancy is often overlooked and can be seen as a powerful period of growth and development, it is important to know what mothers and primary caregivers of varying backgrounds understand about literacy practices and how they apply these practices in their everyday caregiving.

### *The Audience*

This work is speaking directly to mothers. This is an informative piece about how important literacy practices in the home learning environment are during infancy. Mothers who read this are made aware of the importance of preliteracy skills at a young age. Mothers are armed with the knowledge that they can make an ordinary experience an extraordinary learning experience without monetary expenditures but through their interactions with their infants. Sharing this knowledge may give a mother the opportunity to adopt a parenting style she might not have known existed. Furthermore, it will reassure parents that they do not need to buy anything expensive or new; they have the tools they need. Finally, themes and commonalities that were found among different social groups of mothers and primary caregivers will serve as benchmarks for a potential intervention that will be developed after this research is completed. This is the first step toward gaining understanding of an often-overlooked phenomenon.

This study may also be used to inform early childcare facilities and early childhood development courses as well as teacher preparedness courses. This is an important aspect because of how mothers in modern society often work full-time and place their infants in the care of others. According to Li et al., 2013, funding should be provided for teacher training in infant care settings because high quality care during the

infant and toddler time period have the greatest impact on cognitive development and academic achievement in early childhood.

According to Li et al. (2013), smaller class sizes are beneficial. Smaller class sizes will allow for more joint attention, scaffolding, and communication between infant and teacher (Li et al, 2013; Burchinal et al., 1996). Mortensen and Barrnett (2015) further that socioemotional growth in infancy and teacher-child interactions in infancy affect self-regulatory skills, which are essential components of school readiness.

**Significance of the Study**

The significance of my study is to discover mothers' attitudes about literacy practices and what they do (or do not do) to create supportive home environments for their infants. These discoveries may help inform guidelines that can be used to bolster infants' preliteracy skills and close the gap for infants who grow up in stressful environments so that they are not behind when they enter school. "Parents who provide their children with more or less amounts of warmth and autonomy in the home may emphasize different types of home literacy practices, with these practices being directly associated with child outcomes" (Bingham et al., 2016, p. 4).

Many studies focus on white, middle-class families, while few focus on African American parents (Bingham et al., 2016). Therefore, my study is significant in that it aims to "examine the universality of associations by ethnic and cultural groups" (Bingham et al., 2016, p. 14). I chose to focus on mothers of varying backgrounds, including varying ethnicities, SES, and educational backgrounds to identify similarities and differences between them that can inform the aforementioned guidance for parents belonging to these differing groups.

Finally, this study contributes to awareness of the significance of literacy development in parenting. Parents may not realize how meaningful interactions with their infants are or how these interactions can impact their infants' cognitive and literacy development later in life (Dodici et al., 2003). Parents' knowledge of educational activities and how to engage in these activities to foster preliteracy skills may lead to the closing of racial and ethnic achievement gaps (Sonnenschein & Sun, 2017).

Parents may not be aware that neural connections begin when infants and parents share gazes, gestures, vocalizations (such as repeating a vocalization back to an infant as in "parentese"), and facial expressions (Hirsh-Pasek et al., 2015). Furthermore, parents may not see the early language opportunity in talking to an infant who does not talk back. Therefore, parents need to be made aware that these teachable moments occur all day every day, and they should be taught how they can effectively incorporate early literacy skill-building practices into their everyday lives (Dodici et al., 2003).

To do that, however, we need to meet parents where they are. That is the purpose of my study: to identify parental beliefs about early literacy practices and to find patterns in their thinking and behaviors that can be changed, improved, or emphasized. This will in turn help infants grow into academically successful students when they reach elementary school. In a recent study of more than 500 mothers and their children, the National Institute of Child Health & Human Development Early Child Care Research Network (NICHD ECCRN, 2000) reported that ratings of responsive, sensitive caregiving from birth to age 3 were related to children's cognitive and language development through 3 years of age. A follow-up analysis of outcomes at four-and-a-half years showed that maternal sensitivity and responsiveness (i.e., sensitive, stimulating, and

supportive maternal behavior) was the strongest single predictor of children's language and preacademic skills at entry to kindergarten (NICHD ECCRN, 2002; Roberts et al., 2005). Furthermore, vocabulary size in infancy is related to lexical and grammatical development and linguistic and cognitive abilities at age 4 (Marchmand & Fernald, 2008). The importance of preliteracy development can be further extrapolated to lifelong literacy, as the levels of literacy and language abilities that children possess in kindergarten strongly predict school achievement and completion of high school (Li et al, 2013; Cunningham & Stanovich, 1997; Dodici et al., 2003). By focusing on infant development, we will create more academically successful students in elementary school and beyond.

**Positionality**

This research study has been years in the making. It began when I was a kindergarten teacher in an underserved Title I school in Staten Island, New York. I had the privilege of being the English as a Second Language teacher for 25 kindergarten students. I had a powerful experience, because many students did not know how to walk up stairs or stay in a line, let alone know their letters or letter sounds, as I had assumed they would. In my experience as a kindergarten teacher in a Title I New York City public school, many students attended Universal Pre-K (known as UPK), an initiative funded by New York City that offers free preschool to 4-year-old children, before they arrived in my classroom. However, many of my students did not have the skills that I expected, such as being able to stand in line or identify letters by sight, and which relate directly to self-regulation and preliteracy skills. When I spoke with colleagues in the early stages of my career, they alluded to the lack of quality in childcare centers or unilateral care among

these programs.

Later in the school year, I had a parent bring an advocate with her to parent-teacher conferences, as her son was in danger of being "held over," i.e., not being promoted because of his reading level. I was so taken aback and enamored by this mother's grace and tenacity that it stuck with me when I had my own son a year later. Why were some students having difficulty standing in line while other students had New York City advocates at their parent-teacher conferences? All students were minority students, all students were below poverty level, all students went to the same school, so where was the difference? It occurred to me that it must be in the home.

When I had my own son, I was inundated with media and advertisements for products claiming to make my child smarter. Serendipitously, I began my PhD program at that time and began to research what makes a difference in an infant's cognition. When I had my own child, I discovered the overwhelming number of products that were marketed to new parents to advance their infant's cognitive ability.

This sparked my desire to not only help other new parents wade through all of these advertisements but also to seek out what actually works. This was not an easy task. For instance, while Head Start aimed to change the trajectory of young students in poverty, it did little to support parents who wanted to help their children. In fact, there is no singular database or intervention program that is accessible to all parents in the United States. Some, such as zerotothree.org or vroom.org, provide resources for parents; however, they are not widely known or accessible to all parents, and many parents do not know where to turn for resources. Some universities have child development laboratories, but again, they are limited to the community where they are located. Where do parents

turn when they need help advancing their infant's development and cognition?

As I sorted through the various disparate resources I could find, I realized that the key to advancing infant cognitive development is, generally speaking, the ability to have positive interactions with infants. This can be done across any SES, culture, or race as long as there is awareness of its importance. My study seeks to find out if other mothers feel the same: Do they believe infancy is a crucial time for language development, as the research states? If so, what are the factors that push them to strive for a quality home literacy environment? Is it their history? Is it beliefs they have based on their culture? Is it their parenting style? Or is it something else entirely?

### *Identities*

This study is the necessary first step to understand and help all students by understanding their home lives and maternal beliefs and how these factors translate to their literacy abilities in kindergarten and their success in life thereafter. As a student, I am constantly evolving and changing; however, my passion for this topic remains the same. I am a firm believer that students will have a greater chance of success if they have the tools they need from birth. My belief is that all mothers or primary caregivers can cultivate literacy skills with their infants regardless of SES, race, or other demographic attribute that works against marginalized communities. As a mother, a professional, a researcher, a teacher, and a professor, I am interested in helping all students beginning in infancy.

### *Exploring Bias*

I may have bias in that I am white and from a middle-class background. I am married to a Latino male from a lower SES background. I am monolingual. My husband

is bilingual. Our cultural differences help me understand the disparities and, perhaps more importantly, similarities in all communities when it comes to infancy.

My objective was to gain knowledge from this research and use that knowledge as a researcher and practitioner. I eventually want to create an intervention or a program to help willing mothers or primary caregivers bolster their infant's preliteracy skills.

I expect that parents generally do not understand the true impact of their early interactions with their infants. I think that those parents who do understand will be parents who opt to send their children to high-quality preschools. I think if parents are made aware of what quality interactions are and the impact these interactions can have on infants, they too will create experiences that ultimately help their children to succeed. Furthermore, instead of race and SES affecting home literacy practices, I anticipate that culture is going to be the most influential factor. I do not think it is fair to say that preliteracy is a socioeconomic issue or a race issue; I believe that all parents want the best for their children, and awareness needs to be raised about how crucial infancy is in literacy development.

**Research Questions**

The purpose of this phenomenological study was to determine how mothers interact with their infants and what they believe about the importance of these actions. A secondary purpose was to understand how mothers or primary caregivers perceive their infants' development and what they do to bolster that development. The ultimate objective was to see if mothers and primary caregivers of diverse backgrounds, ethnicities, and SES have any common beliefs or practices for best advancing their infant's cognitive development.

Research Question: What are the perceptions of mothers around their influence upon infants' literacy development?

Sub-questions:

a) What do mothers perceive to be factors influencing infants' literacy development?

b) What are mothers' understandings about infant literacy development?

c) How do mothers perceive the home learning environment?

## Theoretical Framework

Since the study of infants is based on reports by caregivers or observations of parent-child interactions, it is important to look at how infants are shaped by their community and their mother's experiences and history, and how those things impact the beliefs and practices that are used with the infant. How parents cultivate their home literacy environment can provide valuable knowledge about what characteristics of parents impact the social and experiences of infants (Rowe et al., 2016). Societal norms, parents, peers, siblings, teachers learning environments, teaching opportunities, and interactions between an infant and their community are reflected in their culture (Damon et al., 1998), and cultural practices such as naming games and picture book reading help to situate language in a meaningful and personal way (Hirsh-Pasek et al., 2015). Thus, to investigate the perceptions of mothers regarding their infants' literacy development, I relied predominantly on the lens of Urie Bronfenbrenner's (1979) ecological theory.

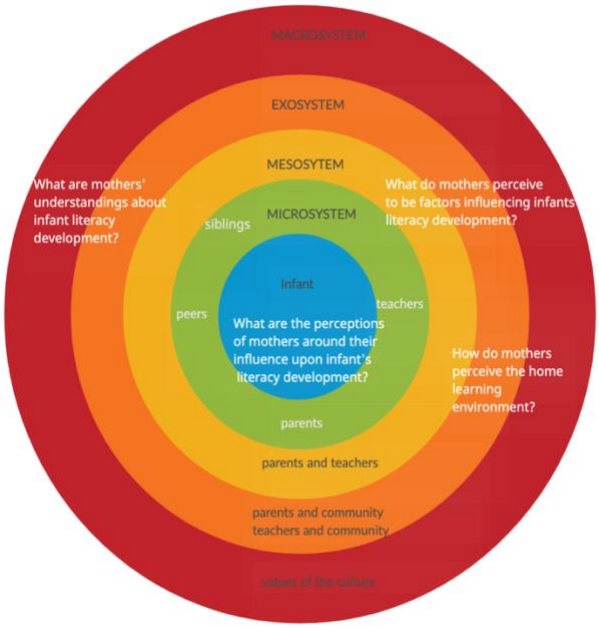
### *Ecological Theory*

Ecological theory surmises that development is reliant on embedded interwoven social contexts (Song et al., 2012), and evidence suggests that experiences and

development in infancy will predict later outcomes of success. Bronfenbrenner theorized that development is shaped by the interwoven environments in which infants live (Harrison & McTavish, 2018). There are four interconnected systems that will be discussed.

**Figure 1**

*Ecological Theory*




**Microsystem.** This system is in human relationships or personal interactions such as with parents, siblings, and the school environment. Researchers acknowledge the different and numerous aspects of parenting when considering the relationship between home literacy practices and children's language and literacy development (Bingham et al., 2017). Furthermore, the characteristics of those in the microsystem— parents, relatives, close friends, teachers, mentors, coworkers, and spouses—are included as well (Damon et al., 2000).

The microsystem also embodies activities, social roles, experiences, and engagement in the direct environment (Damon et al., 2000).

Bronfenbrenner's theoretical framework also focuses on the complexity of the evolving home literacy environment (Niklas et al., 2016). Although parents are the primary family members shaping the infant's language context via the home literacy environment (which is part of the microsystem), other people who may interact with infants regularly contribute to their language environment in their mesosystem (Song et al., 2012). Socioeconomic status in terms of income, occupation of parents, education, and family migrant background are less important than parent-child interactions (Niklas et al., 2016).

**Mesosystem.** The mesosystem can be seen in extended family and school interactions. The extended family, community, and society may have some impact, but the immediate family has more of an impact on infants' development (Niklas et al., 2016).

**Exostystem**. The exosystem refers to social settings that influence the development of infants without their direct participation, such as their community life, family SES, and parental stress and their occupations (Zhao & Phillips, 2013). The exosystem is the system that impacts the infant indirectly because they are not a part of the system itself but are influenced by it through events that indirectly impact their environment (Damon, 2000).

**Macrosystem.** The macrosystem is the furthest level from the infant that consists of cultural regularities. It encompasses socioeconomic, ethnic, religious, and other sub-cultural groups reflecting contrasting belief systems, lifestyles, and societal and gender

norms. (Zhao & Phillips, 2013). Different sociocultural groups have different beliefs about what roles parents play in their children's development, and language features vary between different communities, as do the ways developmental features emerge (Weisleder & Fernald, 2013). For example, different communities praise differently or question differently (Johnson, 2015). Hoff (2003) suggested that different social strata may have different beliefs and values (i.e., favorability) about talkative children.

However, many researchers have been criticized for being biased in their study design or in the way they coded results because of differences in SES or race between the researchers and participants. For example, Zeegers et al. (2019) found that in studies of mother-child relationships, data can be skewed or misinterpreted because of biases in survey data, participants, and interpretation of questioning of a talkative child or when it is appropriate for a child to talk.

My study explored maternal beliefs about family literacy practices to see if a common theme exists among different cultural and SES backgrounds to determine how to best support new parents who are looking for ways to help their infants succeed later in life. Ecological theory looks at the "whole picture" in that language, culture, history, and experiences all shape infants' learning trajectories. This is important for developing a study that is inclusive to all learners.

### *Interactions*

Infants learn through social interaction. Babies observe how others act and then learn which situations to seek out, avoid, or even fear (Lally, 2012). The more positive the social interactions, the more robust the child's language, especially in the second year of life. This change may come about based on what the child is doing physically at this

time of his or her life. For example, the onset of walking changes infants' social engagement, with an apparent increase in language development between 11 and 15 months of age because of how caregivers address their infants at this stage of development (Fenson et al., 1994). Furthermore, early book reading by a mother and child is a process of interaction where the introduction of vocabulary and relationships between caregiver and even siblings impact the infant's language development (Niklas et al., 2016). When exploring parental language usage, shared book reading is an example of an interaction that is embedded in the social practice of the family, where introduction of pronunciation, vocabulary, and joint focus are impactful on the interaction between parent and child (Abraham et al., 2013).

### *Peer Influence*

Falling under the category of microsystem, decisions by school boards or family neighborhood impact school decisions. Furthermore, peer influence is another factor that impacts infant development. Peer influence is the relationships that infants and young toddlers have on one another. Peer influence increases in importance when the infant is close to 24 months of age, and it is even more important when an infant crosses the threshold from infant to toddler at 36 months.

Peer influence is seen even in the earliest of educational settings. For instance, Henry and Rickman (2007) studied a Head Start program in Georgia and found that the ability level of the students in the classroom directly affected their peers' cognitive skills, prereading skills, and expressive language abilities.

Quality of infant care—and especially the peer influences it generates—affects the experiences and interactions the infant or toddler is having, which in turn affects their

cognitive development, language acquisition, executive function, and socioemotional growth both in a daycare setting and in a preschool setting. Burchinal et al. (1996) asserted that infants attending a higher-quality childcare center had better-quality home environments and older mothers, which in turn meant they had better receptive and communication skills. Henry and Rickman believe that peer influence in preschool is as significant as the home literacy environment in their interactions impact peers and the classroom environment (2007).

### *Preschool and Daycare Interactions Make a Difference in Development*

Just as maternal sensitivity and responsivity impact the infant, so does teacher behavior if the infant is enrolled in a daycare or childcare setting (Li et al., 2013; Burchinal et al., 1996). Burchinal et al. (1996) suggest that infants who attend poor nursery care experience less affection, less responsive interactions, and less communication from their teacher or primary caregiver as compared to those who are cared for by their mother, babysitter, or relative. This nursery care is regarded as poor because many of the federal and state subsidized early learning centers are minimally effective (Burchinal et al., 1996; Lally, 2012). This is important because of how the interactions serve the infant through ecological theory. According to Li et al. (2013), nonmaternal caregiving has increased because of the increase in mothers working, however, engagement in warm, responsive caregiving by both parents and nonmaternal caregivers impact interactions that affect infant development. This relates to Bronfenbrenner's ecological theory because interactions between infants and parent as well as other care providers such as daycare or teacher as well as grandparents can impact infant development.

## Application to Research Study

Bronfenbrenner's ecological theory provided a lens for my study through a Transformative framework. I expected maternal literacy practices, home literacy environment, quality of interactions, and maternal beliefs to influence infant cognitive development because ecological theory would consider maternal history, culture, and beliefs. These factors impact how mothers may interact with their infants, and these interactions can make the difference in the degree to which infants cognitively develop in infancy. Infants' skills develop together and are interdependent, which can be referred to as a development cascade (Song et al., 2012). Ecological theory allowed for the multitude of factors that affect intimate family relationships to be included and understood by the researcher in order to create a well-rounded view of what takes place to influence cognitive development and literacy in the first two years of life.

## Definition of Terms

### *Critical Periods*

Windows of development that are influenced by experience (Choi et al., 2018). Critical periods can also be referred to as sensitive periods when plasticity and neuron pathways are being formed at a significant rate in infancy (Kuchirko, 2019).

### *Home Literacy Environment*

Home literacy environment is a broad term that encompasses parents' established routines or ways in which parents and children interact around reading and writing to help develop strong language and literacy skills. It can be developed in two ways. One is through informal literacy activities, such as focusing on meaning or print and parent-child book reading, that build vocabulary and early comprehension skills. The other is through

formal literacy activities that focus on words and direct teaching from the parent, code-based knowledge, and how to print or read words (Bingham et al., 2017).

### *Home Literacy Practice*

Home literacy practice is the engagement of written and oral language that is intimate to the home (Street, 1993). Literacy practices vary in home literacy environments. They can take form through shared book reading or maternal sensitivity to infants' needs, likes, and dislikes. They can also take shape in singing, storytelling, list making, back-and-forth conversations, infant-directed speech, and use of nursery rhymes. Furthermore, they account for the frequency and enjoyment of these activities and the shared joint attention of a caregiver and an infant that affect the home literacy environment (Roberts et al., 2005).

### *Preliteracy Skills*

There are two specific domains of preliteracy skills. One is oral language skills that "…include expressive/receptive vocabulary and narrative comprehension." The other is decoding skills, which include "…the concept of print, letter knowledge, and phonological awareness" (Kim et al., 2015, p. 837).

### *Cognitive Development*

Cognitive development is defined as how infants think, explore, and figure things out. "Cognitive development is the process by which human beings acquire, organize, and learn to use knowledge" (Guaivain & Richer, 2016, p. 317). It is based on interactions, cultural norms, and environmental circumstances.

### *Executive Function*

"Executive function begins to develop in infancy and involves an array of processes, such as attention, inhibition, working memory, and cognitive flexibility…" (Cartwright, 2012, p. 24). Executive function is the way behavior is controlled. It affects how humans work toward goals and manage multitasking as well as challenges. The complexity of executive function plays a critical role in the development of academic skills such as reading because of how "...attention, planning, initiation of activity, inhibition, working memory, shifting of attention, and mental flexibility" contribute to the acquisition of preliteracy skills and later decoding and reading abilities (Cartwright, 2012, p. 25).

### *Maternal Scaffolding*

Scaffolding is providing the right amount of guidance or support to the individual who is learning. Maternal scaffolding is when mothers support their infants' development by stepping in at the right moment to provide a challenge or assistance. It is directly related to executive function, cognitive and social emotional development, and attachment security, and can be categorized in one of three ways: contingent response, cognitive stimulation, or promotion of autonomy (Mermelshtine & Barnes, 2016). Applying theories such as "theory of mind" (Song & Volling, 2018) and maternal responsive dyadic caregiving (Mermelshtine & Barnes, 2016) to child rearing can influence parental involvement and engagement with infants, which will in turn affect the infants' cognitive and socioemotional skills.

### *Supportive Mothering*

Supportive mothering is characterized by maternal responsiveness (Hoff, 2003) and is said to help develop cognitive, emotional, and social development in children, as well as a positive relationship between the infant and the mother (Fuligin et al., 2013).

### *Mothers*

The term "mothers" is operationalized in this study as being the biological parent as well as caretaker. Mothers can be described as responsible for instilling cultural beliefs and values and structuring the family (Durand, 2011). Mothers were used to elicit parental perceptions of literacy development because most studies in this area of infancy use mothers as their participants.

### *Culture*

The term "culture" is operationalized as the predominant language spoken in the home, how mothers identify themselves in terms of their race, sexuality and gender, SES, ethnicity, and community, as well as history of the mother and their view of socialization of their infant (Sonnenschein & Sun, 2017).

## Conclusion

Ecological theory in the study of infancy is a powerful framework because of the myriad complexities in how to interpret interactions between parents, self-reporting, and how mothers' and caregivers' histories will affect infants and their learning trajectories. Given the complex nature of the home learning environment and parenting variances, it is imperative to look at how mothers share language and literacy experiences and interactions with their infants and how these experiences and interactions relate to

academic outcomes (Bingham et al., 2016). Additionally, research in this area has not focused on beliefs, aspirations, expectations and knowledge of mothers, all which are interwoven in the ecological theory (Sonnenschein & Sun, 2017).

This study focused on mother-infant interactions and how mothers view their impact on infant literacy development. The following chapters will explore the literature on this topic, including the multifaceted complexities in the home learning environment and its impact on cognitive development through the exploration of socioemotional development, language development, and development of preliteracy skills through mother-child interactions and experiences. The literature review will also explore different maternal beliefs in parenting style as well as parenting theories such as theory of mind and maternal responsiveness and sensitivity. Then, through qualitative interviews, I dig deeply into the views, thoughts, and beliefs of mothers and how mothers and their beliefs impact their infants' cognitive abilities and preliteracy skills.

## CHAPTER 2: Literature Review

This literature review aims to provide an understanding of how infants acquire literacy skills in their home learning environment through interactions with their mothers or primary caregivers. It begins with an overview of ecological theory, which is the theoretical framework used to position and guide my research. It then explores interactions, including peer influence, quality of infant care, zone of proximal development, discourse, and dialect. Then it discusses the historical view of the word gap and the implications of this word gap. After that, it addresses SES differences and similarities in maternal beliefs and behaviors; what supportive environments are, including maternal scaffolding and parenting styles; and parenting ideologies such as theory of mind, mind-related talk, metacognition, mind-mindedness, parental sensitivity, and parental responsivity. I will also address joint attention and book reading. It is essential to discuss different parenting theories, because my study examines if mothers or primary caregivers are aware of these theories and then investigate how they use or do not use the theories, intentionally or otherwise. This will in turn impact how they establish their home environment. This will help identify what parents deem important and will help in the goal of supporting infants in attaining lifelong literacy skills in infancy through social interaction with their mothers.

### Effects of SES on Language Acquisition in Infancy

Lyndon B. Johnson's "war on poverty"' during the 1960s changed how the public viewed early literacy practices. Under President Johnson's initiative, Dr. Robert E. Cooke of Johns Hopkins University and Dr. Edward Zigler of Yale University came to prominence through their work on early childhood education programming with the

introduction of the Head Start program in the United States. The Head Start program, funded by the Economic Opportunity Act of 1964, was intended to break the cycle of poverty, beginning with early childhood education using ecological theory. It aimed to do this by addressing cultural responsivity, nutrition, emotional learning, socialization, involvement of parents, and whole-child learning for disadvantaged preschool children so they would "catch up" with higher SES peers in social development as well as language development and preliteracy skills when they reached elementary school. However, this "war on poverty" further marginalized communities because it created an environment of learning through a deficit model.

Teaching elementary school children through the deficit model displaces families and communities from the school environment (Johnson, 2015). According to Johnson (2015), students who are viewed as cognitively disadvantaged due to their primary language, SES, or race are not given equal opportunities, which is compounded by the fact that their parents may not be as school-focused as their peers' parents due to a myriad of factors. Interventions for parents and infants need to take place before school entry. In 1994, Head Start began including children from infancy to age 3 in their services. However, not all children meet the requirements for Head Start; enrollment is mostly based on a family's income level being below the federal poverty line.

A major disadvantage to programs like Head Start is the unreliable nature of its measures of competency and quality. "[C]enter-based childcare for infants can range from very high to very low quality; the quality of much of infant-center care is poor to minimally adequate" (Burchinal et al., 1996, p. 606). Quality of caregiving is based on sensitivity and responsivity to needs and interests and provision of developmentally appropriate

activities (Li et al., 2013; Burchinal et al., 1996). It can also be based on the number of adults per infant in a childcare setting. Furthermore, the National Child Care Staffing Study (NCSS) found that of 772 centers that serve low-income students, 70% were lacking in process measures such as responsivity and sensitivity (Burchinal et al., 1996). This is pertinent today because according to the National Center of Education Statistics, there are about 24 million children below the age of five in the United States of America (Redford et al., 2017). About 60 percent of these children receive nonparental care before Kindergarten (Redford et al., 2017). This is problematic because infants should receive a responsive and cognitively stimulating environment that will enhance cognition and language development in infancy (Li et al., 2013). A Cost, Quality, and Child Outcomes Study team found that only 10% of infant childcare centers in the United States are of high quality, whereas 40% are seen as detrimental to child development (Lally, 2012). According to Redford et al. (2017), children and infants who were cared for by others than their parents remained statistically unchanged from 2001-2012.

***The Word Gap***

The literature on infant development—and particularly on language acquisition in infancy—is limited (Tamis-LeMonda & Kahana- Kalman, 2009). Hart and Risley's (2003) work has been the most profound to date on language acquisition in literacy and in early childhood. Their study followed children from 42 families of high SES, middle SES, and low SES. All participants in this study were white or African American, which is a cause of contention, as the study asserted that it is generalizable to the broader population; however, it is not, because not only did it fail to represent the diverse racial makeup of the United States, but there was only one African American family in the

higher SES group and African American families were overrepresented in the lower SES groups (Johnson, 2015). The study began following the children as infants, aged 7–9 months, until 3 years of age. The early language environment was measured through the number of words per hour spoken to infants over the course of these three years.

According to their results, Hart and Risley surmised that there is a 30-million-word gap between affluent families and poverty-stricken families, which in turn creates an academic chasm (Johnson, 2015). In other words, they found that the low SES infants heard 30 million fewer words than the high SES infants. In addition, low SES infants also heard more negative feedback, called "prohibitions," from family members, which stymies cognitive development.

In addition to the aforementioned limitations concerning the racial makeup of the sample and its SES distribution, another limitation of this study was that it only included participants from stable homes, whereas many young learners in low SES situations may face homelessness or transient lifestyles. Those whose early language environment is full of stressors and poverty face larger challenges than their peers, but these stressors are not solely based on SES; they can have to do with other parental factors that will be discussed in this literature review.

Hart and Risley quantified the amount of words and the language directed toward the infants studied. The researchers added that interactions with the amount of words spoken to the infant matter. The language used with the infant, such as affirmations (positive remarks) and prohibitions (negative remarks), is also important to development. However, this study has been misunderstood and misinterpreted when used to influence educational policy decisions. As Johnson (2015) suggested, the language gap may not

exist if all interactions between mother and child were unbiased and teachers taught with a funds of knowledge approach which incorporates their history and culture (Recchia & McDevitt, 2018), instead of through a deficit model when the infant reaches school age.

Focusing solely on the quantity of words rather than the cultural context and social impact hinders marginalized groups and communities (Kuchirko, 2019). Words and the ways they are conveyed shape how infants become members of their communities and members of their culture (Duranti et al., 2011). Without this understanding or without considering the quality of interaction or the cultural transference of ideas through words, Hart and Risley miss the opportunity to explore the transaction of language (Kurchirko, 2019).

### *SES Differences and Similarities in Maternal Beliefs and Behaviors*

Early vocabulary development differs between children from higher SES and lower SES because of myriad factors including differences in family functioning and home environments and how these affect language learning experiences (Hoff, 2003). Lugo-Gil and Tamis-LeMonda (2008) concur that SES is important not because of its direct effects on child development but because of how it affects parental quality in terms of parental beliefs and behaviors. They posit that although family income is directly correlated with language and behavioral development, what is more important is maternal distress and, in turn, the parenting practices that affect the children (Lugo-Gil & Tamis-LeMonda, 2008).

SES plays a role in the amount of free leisure time mothers have to engage in meaningful play with their infant (Hoff, 2003). Less leisure time impacts mother's stress levels which in turn affects the quality of the interaction between mother and infant

(Hoff, 2003). In short, parenting quality is affected by economic resources, and this in turn influences children's development because of the importance of parenting—especially mothering—quality in the early years of life.

## Supportive Child-Rearing and Parenting Behaviors

### *Supportive Environments and Maternal Speech*

Hart and Risley's (2003) work suggests that the early language environment is the biggest factor in children's language acquisition. Supportive environments are characterized by maternal responsiveness (Hoff, 2003). In particular, mothers' verbal behaviors matter. Hoff (2003) stated that "…the observed difference in growth in productive vocabulary between a group of children from high SES families and a group of children from mid-SES families was fully explained in terms of differences in their mother's speech" (p. 1373). Thus, language practices should not be measured in terms of high and low classes but rather in terms of where different groups use language and why (Kuchirko, 2019). The use of language is tied to culture and the context in which we draw our knowledge of phonology, semantics, and syntax to communicate appropriately (Kuchirko, 2019). The quality of the language matters for infant's development more than the quantity (Kuchirko, 2019).

As Hart and Risley suggest, frequency and quantity of maternal speech matters. Investigating the early predictors of maternal language use allows for deeper understanding of the importance of early language input on infants' developing communication, language, and literacy (Abraham et al., 2013). For instance, the types of conversations mothers initiate and the questions they ask affect their infant's development. Connell and Prinz (2002) noted that verbal guidance in the form of

prompts, open-ended questions, elaborations, cues, and positive reinforcement predicts language and reading abilities. They noted that these behaviors were rarely seen in low-income mothers as compared to middle- and high-income mothers (Connell & Prinz, 2002), which can explain differences in outcomes by SES. Furthermore, mothers or primary caregivers under stress tend to respond less sensitively to their infant, which in turn provides the infant with less social and cognitive stimulation (Fernald et al., 2013). Another factor is maternal education: Fulgini et al. (2013) concluded that mothers with high school diplomas showed more supportive behaviors, whereas mothers without high school diplomas showed less support regardless of teenage motherhood or not. Moreover, some parents may believe that because infants do not talk, talking to them is futile, and there are some cultural differences in the adage "children should be seen not heard" (Dodici et al., 2003).

To help fill the gap in the literature on how mothering practices affect infant literacy, Tamis-LeMonda and Kahana-Kalman (2009) studied how mothers perceived motherhood in relation to their infant's academics and the hopes and dreams they had for their infants on the day they were born. They then focused on how these views affected the interactions between caregiver and infant.

Interactions are what shape the course of children's ability to learn. Tamis-LeMonda and Kahana-Kalman (2008) assert that children's literacy experiences affect their language and cognitive development at 4 months of age. Furthermore, parent-child interactions, maternal sensitivity, and engagement of the infant at different ages such as 20 months correlated with social development at 60 months (Dodici et al., 2003). Furthermore, the responsiveness of the parent when the infant was aged 6, 12, and 24

months was found to relate to the social and cognitive development of infants at 48–60 months of age (Dodici et al., 2003).

Tamis-LeMonda et al. (2014) suggest that parents' responsiveness to infants' exploratory communicative behaviors is indicative and predictive of word learning. How responsive a parent is to their infants' prelinguistic emotional outputs affects language before the second year of life (Tamis-LeMonda et al., 2014). Lally's (2012) work supports this assessment, stating that the foundations of capability and acquisition of numeracy, literacy, communication, critical thinking, social interactions, and emotional regulation are ingrained through experiences infants have with their caregivers. Furthermore, academic socialization is comprised of parental beliefs, aspirations, and expectations the parents hold as well as the educational practices they engage in (Sonnenschein & Sun, 2017).

Within this breadth of literature there has been a lot of discussion about the quantity of words and interactions; however, Hirsch-Pasek et al. (2015) reiterate that word quantity diminishes the interactions between caregiver and child, which is how they learn. The quality of the words and interactions is more critical than the amount of words alone (Hirsch-Pasek et al., 2015).

### *Supportive Mothering/Parenting*

Supportive mothering is said to help develop cognitive, emotional, and social development in children and their ability to form positive relationships in the future (Fulgini et al., 2013). In broader terms, the environment an infant develops in has an impact on their later growth (Erkel et al., 2019).

Tamis-LeMonda et al. (2014) assert that parents' responsiveness to infants' exploratory communicative behaviors is indicative and predictive of word learning. Responsiveness can be seen in descriptions, playing, and imitations (Tamis-Lemonda et al., 2014). How responsive a parent is to their infant's prelinguistic emotional outputs affects language before the second year of life (Tamis-LeMonda et al., 2014). Responsiveness is also culturally embedded (e.g., the way a mother responds, such as saying "good job" versus saying "I like the way you did…"). Moreover, mothers could respond to environmental attributes such as objects within the environment, and this leads to a more exploratory child. Some mothers respond more while playing with their infant, and thus the infant will look to the mother for more guidance (Tamis- LeMonda et al., 2001). These types of interactions and responsivity are culturally embedded. Tamis-LeMonda et al. (2014), concluded that parents' views and socialization goals reflect their larger sociocultural view and this view shapes their behaviors.

### *Maternal Scaffolding*

A common theme throughout the literature that will be reviewed is one that Damast (1996) noted: that children's play behaviors guide their mother's behaviors, and vice versa; the relationship is reciprocal. Maternal scaffolding is when the mother provides support, help, guidance, or further questioning or when she senses her infant's cues of what they need to best support their learning. Without proper scaffolding or engagement between parent and child or interest on behalf of the infant, the infant will not retain the information being presented to them (Hirsch-Pasek et al., 2015; Suskind, 2015).

Maternal scaffolding effectiveness may be attributed to higher education level as well as a more positive outlook on parenting, and age of the mother also plays a role. For example, teenage mothers are less responsive, and in turn there is a relationship between lower cognitive abilities in children when they are born to teenage mothers as compared to older mothers (Mermelshtine & Barnes, 2016). However, these differences in maternal scaffolding can be mitigated if mothers are taught what maternal scaffolding is and how it appears in the home and in daily interactions with their infants.

Parental sensitivity can be seen in the form of scaffolding. Scaffolding occurs through interactions with shared objects between parent/caregiver and infant (Hirsch-Pasek et al. 2015; Tamis-LeMonda et al. 2008). Scaffolding in this sense is meant in the form of mother-infant play behaviors and interventions. This scaffolding can be seen as joint attention or joint engagement and is defined as the words and symbolic gestures in a shared activity with a caregiver (Hirsch-Pasek et al., 2015). Without proper scaffolding or engagement between parent and child or interest on behalf of the infant, the infant will not retain the information being presented to them (Hirsch-Pasek et al., 2015).

Maternal scaffolding in infancy is directly related to executive function, cognitive and social emotional development, and attachment security (Mermelshtine & Barnes, 2016). Utilizing theories such as theory of mind (Song & Volling, 2018) and maternal responsive dyadic caregiving (Mermelshtine & Barnes, 2016) in child rearing influences parental involvement and engagement with infants; thus, the infants' cognitive and socioemotional skills increase. Mothers may use these theories unconsciously, or they may be purposefully taught these types of theories to engage and respond to their infants for maximum cognitive advances.

## Parenting Ideologies

### *Theory of Mind*

Some parent-child interactions take place in the form of play. Others take place in the form of how the parent thinks of the infant and how this affects how they talk to and interact with their infant. This is when theory of mind is important.

Theory of mind, from a mother's perspective, is seeing the infant as an individual person with needs and wants. This then turns into the infant understanding that people have different wants, knowledge, and beliefs, and that actions are often a produced because of mental states (Harris, 2006; Song & Volling, 2018; Wellman, 2014). This is a paramount social-cognitive skill that will help infants and children understand social relationships (Song & Volling, 2018). As summarized by Barreto et al. (2018):

> In fact, previous research carried out by Taumoepeau and Ruffman (2006) has also shown correlations between both the mother's mental state talk and the child's use of mental references and subsequent performance on emotional tasks, which provides support to the idea that children's talk about mental states is indeed tapping into their basic social understanding. (p. 2)

**Mind-related talk.** The way parents talk to their infants, including the way they refer to mental states, or "mind-related talk," allows infants to gain social skills and cognition. "[C]hildren's exposure to mind-related talk has been shown to foster young children's metacognitive understanding and to orient them to the patterns of literate language long before they commence formal literacy instruction at school" (Degotardi & Torr, 2007, p. 1). Degotardi & Torr (2007) performed a study that followed how mind-related talk affected young children's metacognitive understanding. They then followed

the relationship between this metacognition and how language patterns affected literacy learning when students entered school. It was concluded from the study, which observed infants aged 12–24 months in play with their mothers, that when mothers encourage autonomy and use mental-state talk to their infants during a free play session, infants then internalize this and are able to perform better on theory of mind tasks (Degotardi & Torr, 2007).

**Metacognition.** In simplistic terms, metacognition is thinking about thinking. Metacognition in infancy is important in early literacy skill acquisition and develops from mind-related talk (Degotardi & Torr, 2007). For example, as a parent narrates a task or discusses a feeling, it opens pathways for infants to be able to also articulate their thinking. This is critical in enabling infants—and later, children—to self-monitor their own literacy strategies and processes (Degotardi & Torr, 2007). According to Degotardi and Torr (2007),

> [mind-related talk] incorporates children's understanding of diverse mental states and processes such as thinking, knowing, believing, remembering, and understanding. Such awareness, it is argued, enables children to reflect upon and discuss their own and others' mental processes, allowing children to monitor and regulate their own literacy learning strategies (Griffith & Ruan, 2005) and to use language in literacy-oriented, abstract, and decontextualized ways (Dickinson & Tabors, 1991; Olson & Torrance, 1991; Snow, 1993). (p. 768)

### *Mind-Mindedness*

Mind-mindedness is another parenting ideology that views infants as separate and autonomous. It relates to theory of mind because it helps develop another sociocognitive

skill. Mind-mindedness is the way a mother treats her infant as a separate individual with their own with thoughts, feelings, and desires (Zeegers et al., 2019). According to Zeegers et al. (2019), mind-mindedness is lower in mothers with mental disorders, mothers who have parenting stress, and adolescent mothers. An example of mind-mindedness that encompasses a positive interaction that allows for the maximum benefit of preliteracy skill acquisition is when a mother and infant engage in a joint-attention activity such as eye contact or emotional expression through narration, or through parent vocalization during a parent-child interaction (Zeegers et al., 2019). Additionally, children who are reared in a mind-mindedness home benefit from an increased vocabulary—they are predicted to have a larger vocabulary at age 2 (Bernier et al., 2017).

### *Parental Sensitivity*

Parental sensitivity refers to the parent's ability to interpret from their child's behavior the child's behavioral, physical, and emotional needs and the ability to then respond to those needs in an appropriate and prompt manner (Zeegers et al., 2019). Lugo-Gil and Tamis-LeMonda (2008) define this sensitivity as parents' understanding of children's cues, emotions, interests, and capabilities in ways that support their children's needs. Parental sensitivity is one way to predict child outcomes (Zeegers et al., 2019). Overall responsiveness and the home environment (home literacy practices like shared book reading, maternal book reading strategies, children's enjoyment of reading, and maternal sensitivity) are the strongest predictors of children's early language and literacy skills (Roberts et al., 2005).

## Parenting Practice, Theory, and Culture

Another area of literature that is important to how mothers affect their infant's cognitive—and therefore literacy—development is parenting style. Parenting style can be influenced by a theory parents align with consciously or subconsciously and/or by their culture or community. Tamis-LeMonda and Kahana-Kalman (2009) studied the cultural variations among parents in New York City. They learned that Chinese mothers might be more predisposed to talk about infants' learning and development at birth. They also found that Chinese mothers saw their children's success as a reflection of themselves, placed greater importance on education, and intervened more in children's learning than European American mothers (Tamis-LeMonda & Kahana-Kalman, 2009).

Meanwhile, Lugo-Gil and Tamis-LeMonda (2008) noted that teenage mothers are often less mature and lack maternal self-definition, and their children, when assessed and compared to children of older mothers, also perform worse on cognitive and language development measures due to their mothers' parenting styles. These researchers also found that the mother's ethnicity and/or primary language related to how she parented regarding responsiveness or intrusiveness and, in turn, her teaching styles and interactions with her children.

## Reciprocal Teaching

Infants are part of the environment and learning process in which they are engaged. They are involved in their own experiences, and their cognitive development, physical development, and temperament affect parenting, so there is a reciprocal effect between the child's development and their parents' parenting (Lugo-Gil & Tamis-

LeMonda, 2008). For example, infant characteristics such as soothability at 8 months old predicted whether their parents would read aloud to them or not (Karrass et al., 2003).

In an infant's first three months of life, their mother's responsiveness is predictive of the infant's future responsiveness and engagement in social interactions, which are what shape the course of children's ability to learn (Mermelshtine & Barnes, 2016). Responsiveness is the parent's response to infant signals; it affects children's executive functioning and cognitive and language development. At 20 months of age, infant language abilities predicted maternal sensitivity and child responsiveness. Children with extensive vocabularies were more communicative, which in turn created the need for more sensitive attention and caregiving, which in turn promoted more language acquisition (Mermelshtine & Barnes, 2016).

Didactic caregiving and the way infants interact with their surrounding environment also impact cognitive development. Didactic caregiving, or meaningful, teaching moments between a caregiver and an infant, can be seen as responsive; for example, the contingent response is the lexical content of the parental responses to the infant pointing, gesturing, labeling, and describing (Mermelshtine & Barnes, 2016). Additionally, children's interest in book reading and literacy activities may contribute to children's language and early literacy development (Roberts et al., 2005).

## Other Influential Factors

### *Maternal Work Status*

Research has been conducted on the timing and extent of mothers' return to work and the impact that has on infants' vocabulary (Laing & Bergelson, 2019). More mothers are working part-time than ever before, and this explosion in working habits is positively

related to infants' productive vocabularies when there are multiple caregivers (Laing & Bergelson, 2019). Laing and Bergelson (2019) concluded that infants of mothers who worked part-time had the highest vocabulary compared to those whose mothers worked full-time or stayed home full-time. This may be because of a mother's need to get other household or work-related duties completed and the secondary caregiver would provide meaningful interactions in these short periods of time. The thought behind the positive relationship with the secondary caregiver is that they have a short amount of time and are often dedicated in that time to engaging with the infant. Thus, through direct engagement or joint attention they have better interactions than a mother or primary caregiver who has to complete tasks or simply cannot engage with their infant at the same interaction level all day, every day. Furthermore, the time working mothers have with their infants is less, but the quality of the interactions in this small window are more responsive, and mothers tend to show more affection (Laing & Bergelson, 2019). Plus, in this study, the infants who were in daycare were in high-quality daycare centers, and that level of quality—which relates to the amount of quality time and interactions where infants are engaging one-on-one with a caregiver, mother or otherwise—is what made the difference between those infants' outcomes and the outcomes of infants in low-quality daycare centers (Laing & Bergelson, 2019).

### *Book Reading*

Exposure to book reading in infancy is paramount to language acquisition. It has been researched that the average onset of reading, or when parents begin reading to their infant, is between 7.6 months and 9 months (DeBaryshe, 1993; Karass et al., 2003). Infants who, at 21 months of age, were exposed to less intensive reading, or fewer than

15 minutes of reading per day, were more likely to have a poor receptive vocabulary at 58 months of age (Liu, 2014). Receptive vocabulary is defined as being able to comprehend and respond to words even if they cannot articulate them (Burger & Chong, 2011). Additionally, reading to infants is an indicator of familial literacy habits that are an important component of the home literacy environment (Niklas et al., 2016).

Learning can be optimized if mothers read books to their infants in the same manner they would to older children—for example, having "discussions" around these books that would lead to lifelong vocabulary and reasoning skills (Liu, 2014). These fictitious acts of having a back-and-forth conversation, with wait times, are purposeful for scaffolding a conversation for an infant. Parent-child reading improves receptive vocabulary, memory, nonverbal ability, and emergent literacy skills (Hood et al., 2008). Shared book reading exposes infants to experiences and creates and introduces a stimulating language environment (Niklas et al., 2016). These are the interactions that will set the infant up for literacy success. Having a literacy-rich home, defined through factors such as access to literacy materials and the amount of time parents spend reading to their infants, has been shown to have a lasting impact on both monolingual and dual-language learners (Boyce et al., 2013).

### *Bilingualism*

Given the increasing number of bilingual children in the nation's schools, bilingual children inform debates on the critical period of infancy with implications for education (Kuhl, 2011). These children stay "open" to the opportunity to learn a new language for a longer period of time than their monolingual peers (Kuhl, 2011). Infants experience perceptual sensitives in their native language meaning they can distinguish

between sounds in their native language (Choi et al., 2018). This is referred to as the critical period in which there are sequential and overlapping parts of language development (Choi et al., 2018). Over the first few months of life infants attune to the language being presented to them through their home environment (Choi et al., 2018). This speech development in the first year of their lives impacts their later vocabulary (Choi et al., 2018). An example of this is that fetus can hear at 25 weeks in the womb, they become adept to hearing their mother as well as outside influences, and they can discriminate phrases their mother said repeatedly while they were in the womb at their time of birth (Choi et al., 2018).

In many sects of education, bilingualism is often misconstrued as a detriment when it should be seen as an advantage. Bilingual infants who grow up speaking Spanish and English spoke in longer utterances and used more words at 18 months were faster in word recognition at 24 months when their mothers spoke in their primary language (Marchman & Fernald, 2008). This shows that no matter the first language spoken in the home, the more that meaningful language is used in child-directed speech, the better that child's literacy skills become, which can then be applied to English learning. Bilingual children learned vocabulary in English when it was first taught in their primary language (Ijalba, 2014).

## Socioemotional Development, Cognitive Development, and Language Learning

### *Socioemotional Development*

Socioemotional development is the combination of social and emotional development, whereby the social aspect of interactions between a parent and child affects the child's emotional development. Emotional development in turn affects preliteracy

skills such as executive function and self-regulation, which impact brain development in working memory, mental flexibility, and self-control (Harvard Center on the Developing Child, 2020).

While socioemotional growth is most often studied in elementary school children, it is also relevant in early infancy (Mortensen & Barnett, 2015). Socioemotional growth is crucial for the development of self-regulation, or the ability to adapt to surroundings and situations, and leads to increased ability to navigate social situations, develop emotional understanding, follow rules, and form peer relationships (Mortensen & Barnett, 2015). Developing these skills by the time infants reach school age is important, because they and all the preliteracy skills—self-regulation and executive function, which affect working memory; inhibitory control; and cognitive or mental flexibility—are paramount in the classroom environment. As such, both parents and other caregivers of infants need to be made aware of the implications of how they address and interact with infants and how these interactions foster infants' brain development

### *Cognitive Development*

Cognitive development is based on interactions, cultural norms, and environmental circumstances:

> [C]ognitive abilities are socially guided and constructed. As such, culture serves as a mediator for the formation and development of specific abilities, such as learning, memory, attention, and problem solving. It is proposed that culture-specific tools play an integral role in the way children organize and think about the world. (Moore et al., 2011, p. 157).

Language is a specific stage of cognitive development. It can be seen in processing efficiency, visual expectation, habituation, and recognition memory (Marchman & Fernald, 2008). Overall cognitive development, which takes place through interactions with caregivers and through joint attention with caregivers, influences language development (Dodici et al., 2003). These separate but entangled developmental milestones—cognition, language development, executive function, self-regulation, and socioemotional development—work together to build preliteracy skills.

For example, interactions that promote cognitive development have been shown to use joint attention, parental responsivity, and positive emotional tone, as well as parental guidance or scaffolding (Dodici et al., 2003). Likewise, "…[s]upportive, warm, and engaged parent-child interactions are associated with the child's emerging competencies in social, cognitive, and linguistic domains throughout early and middle childhood" (Dodici et al., 2003, p. 124).

***Link between Cognition and Language***

The link between cognition and language may relate to information processing abilities; for example, vocabulary size in infancy is related to early lexical and grammatical development (Marchman & Fernald, 2008). Moreover, infants who habituate words more quickly are usually more engaged in encoding, retrieving visual information, and executing skills paramount for cognitive growth, and these differences in measures of infants' early processing are associated with verbal and nonverbal intelligence later in childhood (Marchman & Fernald, 2008).

Working memory, which affects the speed of word recognition in early language development, may be the factor that most affects linguistic and nonlinguistic

understanding of meanings of new words and, in turn, infants' vocabulary later in childhood (Marchman & Fernald, 2008). For example, an infant's working memory at 25 months has been found to relate to their vocabulary at 8 years of age (Marchman & Fernald, 2008). Consequently, infants and children who are less efficient in verbal processing (or have a weaker working memory) require more exposure to the same words repeatedly to develop their vocabularies and, ultimately, their preliteracy skills (Marchman & Fernald, 2008).

### *Development of Preliteracy Skills*

Preliteracy skills are skills that emerge before and during the preschool years. Such skills include oral language skills, such as phonological awareness and vocabulary, and written language skills, like letter knowledge (Hood et al., 2008). However, before these skills can emerge, infants must develop pathways that enable the skills' development. They do this through interactions with their caregivers. An example of a positive caregiver-infant interaction that leads to literacy skill-building is shared book reading. This task helps children to develop vocabulary and comprehension skills and incorporates joint attention and caregiver-child conversation, thus affecting both cognitive development and language development (Bingham et al., 2015). Early literacy experiences such as book reading, storytelling, and singing songs are language experiences that improve language development (Song et al., 2012). Development of preliteracy skills such as numeracy and communication as well as positive attachment and emotional regulation are explored through experiences infants have with their caretakers (Kuchikro, 2019).

**Summary of Gaps in the Literature**

There is a need to assess the quality of child-caregiver interactions prior to the child's reaching school age at 3 years old or later. Many of the researchers who focus on these topics agree that there are not enough assessments of this age group. They have identified several challenges, including a lack of literacy measures that span the 12- to 36-month age range and the limited ability of infants and young children to "answer" questions (Weigel et al., 2017). Weigel et al. (2017) also pointed to the problem of test fatigue in young children. Finally, there are issues with providing assessments in both English and Spanish language and a lack of sensitivity to all socioeconomic status groups when it comes to involving the literacy of parents (Weigel et al., 2017).

Yet another issue is that most studies involving preschool-aged children have relied on very small clinical samples, which affects the generalizability of the findings (Horwitz et al., 2003). In addition, Kuhl (2011) states, "[t]he developmental timing of critical periods for learning phonetic, lexical, and syntactic levels of language vary, although studies cannot yet document the precise timing at each individual level" (p. 132). It would be important to assess for the various levels of language with a broader range of samples.

Tamis-LeMonda and Kahana-Kalman (2009) reiterate that there is a lack of research on infancy, specifically on mothers' views of their infants at the time of birth. Tamis-LeMonda and Kahana-Kalman (2009) deduced that more research should take place in the first few days of infants' lives; that interventions at the beginning of infancy may help support parents and prepare them for future problems; and that service

providers such as pediatricians, nurses, psychologists, and social workers can help aid and guide parents.

Fulgini et al. (2013) agree that there needs to be more research into how maternal supportiveness benefits young children and their development. Connell and Prinz (2002) also suggest researching this area and especially focusing on both childcare and parental interactions and the effects they have on readiness abilities across backgrounds.

This review of literature shows that a goal for future research in this area should be to strengthen the quality of parenting, include services to improve family literacy and education, reduce parental stress, and provide high-quality childcare (Connell and Prinz, 2002; Lugo-Gil & Tamis-LeMonda, 2008). It is important to understand how infants understand and respond to the world around them, how they gain new knowledge, and how they acquire language.

Moreover, studies should be done to identify how maternal supportiveness affects regulatory behaviors to see how mothers can be supported in helping their children develop across all ethnic backgrounds (Fulgini et al., 2013). Culturally sensitive guidance should be developed and provided to new parents (Tamis-LeMonda & Kahana-Kalman, 2009).

The research presented in this literature review has uncovered many findings on literacy development in infants. However, much remains to be explored. The studies that have been done to date, although telling about the infant time period, are not inclusive of all infants and their parents. In order to benefit all students when they reach school, we need to begin teaching in infancy. The first teacher is the primary caregiver, who is most often the mother. There is a lack of awareness and accessibility for mothers about the

critical time period of infancy and how much brain development occurs before the age of 3. Plus little is known about parents knowledge of children's development, the home-based activities they engage in, and the impact on infant development (Sonnenschein & Sun, 2017). Consequently, my study explored these understudied areas by examining maternal beliefs about literacy; maternal beliefs about mothering style; and if these beliefs intersect across cultures, SES, and racial groups.

**Conclusion**

By examining infant development—specifically language acquisition—through the lens of ecological theory, I hope to shed light on meaningful and purposeful interactions between infants and their caregivers. Research shows how crucial the home learning environment, and particularly parental responsiveness, is for infants' cognitive development. Caregivers of infants need to be attentive, warm, responsive, and engaging with their infants in order for the infants to build the connections for language to flourish. However, parents need the proper tools with which to scaffold and support their infants—a particular challenge given that there does not seem to be a consensus in the literature about what makes a quality interaction.

Infancy is the most critical time period for setting up children's brains to be able to make connections, retain information, utilize executive function, and build vocabulary, all of which set the foundation for any lifelong learner. I aimed to discover if mothers agree that this is a critical time period and, if they do, what makes them think that. Is it culturally embedded? Is it because they want something different for their child than what they themselves have experienced and achieved? Is a parenting style natural to a specific person, or do caregivers intentionally try to engage in one style over another? We

know that literacy in infancy is important, and the reasons have been accumulating since the 1960s; however, marginalized communities are still marginalized, and there is a lack of development in research on this age group. Thus we must develop ways to help to foster skills in executive function, self-regulation, and preliteracy acquisition in infancy so that when children reach pre-K and kindergarten classrooms, they are in a better position to succeed.

In the future I hope that, as educators, we can eventually measure the quality of child-caregiver interactions. There needs to be more research on the quality of interactions, not just the quantity of an infant's exposure to words. Moreover, there is not one nationally applicable and universally available parenting resource for anyone who wants or needs support. Therefore, in order to provide valuable resources from the field of infant literacy practices, we need to understand how to better support parents and their infants by determining what their beliefs are about infant literacy practices and provide a gauge for assessing what a meaningful interaction between a caregiver and an infant is. These goals were the drivers of my research, in which I surveyed mothers and primary caregivers across different SES, ages, and races to uncover what literacy practices they undertake with their infants and the importance they assign to them.

# CHAPTER 3: Research Design

This study explored interview responses of mothers of infants ages 0–2 in order to answer the research question: What are the perceptions of mothers around their influence upon infants' literacy development? and sub-questions: a) What do mothers perceive to be factors influencing infants' literacy development? b) What are mothers' understandings about infant literacy development? c) How do mothers perceive the home learning environment?

The participants in this study were mothers or primary caregivers of infants ages newborn through 2 years old. Recruitment intentionally pulled in participants with various SES and racial backgrounds in order to explore the commonalities and differences in maternal beliefs and behaviors pertaining to literacy across these factors. Selecting for this infant age group also protects the integrity of the study because mothers cannot recall their daily childcare practices after two years (Twintoh et al., 2021). The research design was a qualitative design, conducted through qualitative interviews. This was the best research method for the study because it allowed for a holistic view of the participants through an ecological theory lens. The researcher used an interpretivist paradigm in the phenomenological study.

## Mothers as Caregivers

Parents and caregivers are influential in infant literacy development (Niklas et al., 2016). This study focused on mothers, although all caregivers, including fathers, grandparents, aunts, uncles, and teachers, impact infants' development through infant-adult interactions (Kuchirko, 2019). Mothers were the primary population for my study

because the majority of studies in infant literacy focuses on primary caregivers who are mothers (Roberts et al., 2005; Bernier et al., 2017). The primary caregiver tends to be more influential than other caregivers in early language acquisition; for this study, they will subsequently be referred to as mothers (Bernier et al., 2017; Karrass et al., 2003; Rowe et al., 2016).

Mother-child interactions during book reading and other literacy activities where the mother presents sensitivity, responsivity, and support directly influence the child's motivation and engagement in literacy activities and thus support language and cognitive development (Conway et al., 2018; Daneri et al., 2018; Hirsh-Pasek et al., 2016; Roberts et al., 2005). Higher levels of maternal sensitivity and responsivity—i.e., prompt and appropriate responses toward the infant—are related to improved social, linguistic, and cognitive development (Dodici et al., 2003; Gros-Lois et al., 2016; Ruffman et al., 2018). These qualities of mothers' parenting styles are related to children's cognition and language development until three years of age, which then predicts children's preliteracy skills when the child reaches kindergarten (Gros-Lois et al., 2016; Roberts et al., 2005; Ruffman et al., 2018).

The target demographic was intended to include a myriad of backgrounds and parenting styles because no two parents—whether from the same racial or ethnic group or SES status or a different one—parent alike. Instead of studying exclusively Caucasian parents with high educational degrees or exclusively African American parents, I wanted to look at parents side by side in order to see what commonalities could be found between groups. Many studies (e.g., Bingham et al., 2017) focus on Caucasian mothers from European backgrounds who have higher educational backgrounds. Moreover, existing

research on parental language use focuses on children over the age of two who live in middle- to upper-class environments (Abraham et al., 2013). Few studies have looked at African American families, and those that have may not have had African American coders, which could create a bias in the results (this will be further discussed in later sections; Zeegers et al., 2019). The coders may analyze and interpret behavior and interactions differently based upon their own implicit bias or cultural norms, and they may also show this bias when coding behaviors of various ages (Zeegers et al., 2019).

Instead of further separating parents, I seek to unify all parents, because all infants have the right and ability to have high-quality connections and interactions with their caregivers that will boost their cognitive development so that when these students reach kindergarten, they are able to effectively learn in a classroom setting. In order to help all students, I need to first see what the general practices are of mothers of various mindsets, cultures, races, and parenting styles and what they believe to be important in order to later on create an equitable intervention program for parents.

**Qualitative Study**

In this study, I used a qualitative research approach. This approach was selected in order to understand the views of mothers in their literacy beliefs and practices with their infants. The researcher needed to hear directly from the target participants. The qualitative approach involved one 90-minute interview containing questions pertaining to demographics and open-ended questions. There was a subsequent 60–90-minute interview to gain information to be more in- depth regarding mother's perceptions about what is important, in their view, of their infant's literacy development. In-depth interviews allow for the researcher to gain perspective about an event or circumstance

and find meaning (Coe et al., 2017). Therefore, I chose to collect my data this way in order to tell the stories of what mothers do to get a deeper look into the home lives of mothers and their infants.

I sought to recruit six participants and conduct each interview via telephone. Twelve participants were a part of the first round of data collection. Although the target was six participants, as more participants enrolled in the study and saturation would be met after 10 participants, the additional participants were viewed positively by the researcher as helping to gain as much perspective and experience from these interviews as possible (Twintoh et al., 2021). The 12 initial interviews were conducted over the phone, while telephone interviews do not provide visual cues such as body language or facial expression, this meant that I needed to focus on language modalities such as pauses, utterances, and tone of voice when reviewing the data (Coe et al., 2017). (Interview questions can be found in Appendix C.)

The same participants were contacted for a follow-up 60–90-minute interview to gather more information about their perceptions of their infant's literacy development. Six of the 12 participants consented, and the follow-up interviews were conducted via Zoom, since face-to-face interviews were impossible due to the COVID-19 pandemic. Some advantages to the secondary interview were that the relationship and rapport already established during the first interview between the researcher and the participant improved further in the second, and the emotional connection shared was furthered by the video call style of interview (Weller, 2017). The secondary interviews helped to secure validity in participants' responses, and they provided an opportunity for participants to comment on the findings as well as reflect on what had been previously discussed

(Creswell, 2014). The interviews were semi-structured and open-ended to allow me to gain access to participants' experiences (Coe et al., 2017); however, the open-ended questions were specific enough that interviewees were able to respond (Coe et al., 2017). Open-ended questions were selected because narrative data extracted from open-ended interviewing allows the narrator to write stories of participants' lives that would be limited through other interviewing methods (Holt, 2010). Member checks were conducted for accuracy and validity in the second round of interviews (Coe et al., 2017).

**Research Paradigm**

The proposed study used the interpretivist paradigm in order to understand the human experience in relation to literacy and the mother's views of their impact on their infant's literacy development (Kivunja & Kuyini, 2017). This paradigm was chosen because it shows a subjective view of the human experience which directly relates to ecological theory in that the history, experience, and social context of the individual play a crucial role in infant development (Kivunja & Kuyini, 2017). Additionally, the interpretivist paradigm seeks to understand what the participant is directly thinking, which the researcher aimed to understand through the interviews with participants (Kivunja & Kuyini, 2017). The interpretivist paradigm aspires to view the world in the same way the participants do (Thanh & Thanh, 2015). Furthermore, it is a socially constructed paradigm (Kivunja & Kuyini, 2017), and this study sought to reveal the cultural aspects of infancy and how they influence the development of the infant through social interactions with their mothers. The social construction, which aligns with ecological theory, prioritizes understanding the context of the research, and this is paramount to a phenomenological study in the interpretation of the data (Thanh & Thanh,

2015). This paradigm leads the researcher to take a broad, comprehensive overview because it allows and accounts for differences in perspectives and a holistic approach (Thanh & Thanh, 2015).

The subjectivist epistemology that is used in the interpretivist paradigm establishes that the researcher will make meaning of the data through their own thinking and experience with the participants (Kivunja & Kuyini, 2017). This researcher aimed to do exactly this by interpreting the data by using past experiences as a kindergarten teacher and as a parent in order to code the data. The use of open-ended questions allowed the participants to engage in self-reflection via the interactive process the subjectivist epistemology embodies (Kivunja & Kuyini, 2017). Furthermore, the interpretivist paradigm uses the relativist ontology, which shows that the study has multiple realities among the researcher and the research participants (Kivunja & Kuyini, 2017). The interpretivist paradigm also adopts the naturalist methodology, which is when the researcher uses observable tools in order to gather data such as interviews or written responses (Kivunja & Kuyini, 2017).

The interpretivist paradigm encompasses a balanced axiology in which the researcher presents the findings in a balanced approach representative of the researcher's own values (Kivunja & Kuyini, 2017). The researcher aimed to have believable, trustworthy, and authentic data that met the criterion for dependability and confirmability. The researcher sought to understand how various mother/caregiver backgrounds would reflect the variances in society members and thus be generalizable to the public (Kivunja & Kuyini, 2017). The nature of the interpretivist paradigm is a qualitative research design (Kivunja & Kuyini, 2017). The researcher’s results consider

the historical, social, and cultural context, and so the paradigm lends itself to the ecological theory that will be used when extrapolating commonalities and differences among participant answers (Kivunja & Kuyini, 2017).

### *Phenomenology Research*

The researcher selected a phenomenological research approach in order to understand the subjective world of the human experience (Kivunja & Kuyini, 2017) and to ultimately help develop best practices for educating families on the importance of and how to have quality interactions with their infants (Terrell, 2016). According to Creswell, phenomenological research analyzes statements in order to gain insight and describe the interviewees experiences (2014). This type of research aligns with the interpretivist paradigm because it allows the researcher to create a theory based on the real-life experiences and interactions of the participants and clearly explain the context of the social process in which these experiences and interactions are based (Kivunja & Kuyini, 2017).

The aim of this study was to identify the what, how, and why of mothers' literacy practices in the home learning environment—for example, what methods they use, consciously or subconsciously; why they engage in certain literacy practices with their infants; and why some parents may not use literacy practices to engage with their infants. This research may then be extended to investigate how families' use (or lack) of literacy practices affects the infant's future cognitive development at pivotal stages of infancy.

The phenomenological research design allowed the researcher to understand the perceptions mothers hold because this methodology enabled the mothers to share their lived experiences as individuals. Interviews lend themselves to this type of research

because of the descriptive experiences of the participants (Creswell, 2014). The researcher was able to determine the phenomenon of how mothers perceive literacy-based engagement for their infants 0-2 years of age. The researcher's understanding of mothers' perceptions unfolded as themes emerged from participants' responses (Creswell, 2014).

**Methodology**

This study was conducted as a qualitative study in the form of interviews in order to identify the beliefs and literacy practices of mothers of infants. The data were coded through two-cycle coding including in-vivo coding in which the codes were taken directly from what the participants themselves said (Saldana, 2016). This allowed for a rich narrative to develop. The in-vivo process is shown in Appendix B. The researcher also engaged in first- and second-cycle coding (Saldana, 2016). Utilizing in-vivo coding, the researcher extracted key phrases from the participants' responses for the first coding cycle. For the second coding cycle, the researcher used color-coding to group similar ideas into groups. The similar groups were then put into categories and subcategories as the themes of the findings. The themes are interrelated, which lends itself to discovering the phenomenon being studied (Saldana, 2016).

The researcher used analytic memos while the interviews were conducted for validity. The researcher then used the interpretivist paradigm in order to gain a holistic view of the infant and their family interactions and how these interactions create the experiences that will become their preliteracy skills and practices. The second round of interviews allowed for member checking as well (Creswell, 2014). Each participant who participated in the second round of interviews was then emailed their interview

transcription and the researcher's analytic memos. The participants responded with their approval and confirmation of accuracy of the transcription and analytic memos. Two participants responded with follow up anecdotals they wanted to add.

**Population and Recruitment**

Participants for this study were mothers of infants ages 0 to 2. Recruitment materials were approved by St. John's University IRB. Participants were recruited from private preschools in the borough of Staten Island in New York City via flyers. Flyers were placed in pediatrician and obstetrician offices. Word of mouth was also used, and there was widespread exposure on The Dissertation Coach Facebook page from October 2020 to December 2020 in the form of postings. These recruitment methods provided for a diverse sample for the study, because participants were from various cities and states and of various ages and socioeconomic backgrounds.

Word of mouth and The Dissertation Coach Facebook page worked together in order to recruit participants. For example, one participant who responded after seeing The Dissertation Coach Facebook page told the researcher she would participate because of the page and then asked if she could share the flyer with her friends and family to help with recruitment. Word of mouth also worked because the flyer was being passed between coworkers and friends of the preschool community. Participants asked if they could share the flyer with their family members and friends to help with the recruitment. Furthermore, discussing the study in casual settings led to the flyer being circulated among mother rehabilitation groups within New York City.

Participation was voluntary. Participants responded because the study objective was listed on the flyer that was circulated. The participants were informed that by

participating in the study they would help infants and their families in the future by shedding light on maternal literacy practices and how they impact infants' cognition. The flyer asked anyone who was interested and who met the participant criteria to email the researcher at the email address provided.

The researcher began to schedule interviews. Initial interviews were conducted over the telephone. Before each interview, the researcher read a disclaimer about participation in the interview and obtained oral consent for being recorded. Phone recordings were sent to Rev.com for transcription. The second round of interviews took place on the Zoom platform where they were recorded and transcribed by Zoom. The data were then input into MAXQDA for ease of data extraction utilizing coding and in vivo coding.

The researcher used Staten Island, New York as the location for the study. This was a beneficial location for this study because of its close proximity to Manhattan and other New York City boroughs as well as the tristate area. According to the U.S. Census (2020), the population of Staten Island is estimated to be around 476,143. Most residents (88.5%) have a high school education or higher, with 33% having a bachelor's degree or higher. This broad educational background is advantageous because there is a lack of educational levels within the literature (Rowe et al., 2016). Many studies focus solely on one group such as teen mothers, low socioeconomic status or high socioeconomic mothers and do not look at all backgrounds simultaneously (Rowe et al., 2016; Kim et al., 2015; Gros-Lois et al., 2016, Hirsh- Pasek, 2015).

**Sampling Strategies and Criteria**

The participants were mothers of infants ages 0 to 2. The researcher aimed to have six participants in the study. Twelve participants were interviewed in the initial data collection, and six of those participants re-enrolled in the study for a secondary interview to gather more information.

The other requirement for participation was the ability to speak English, as the interview was conducted in English.

**Data Collection**

The study's primary method of data collection was an interview that took approximately 90 minutes to complete. This one-time meeting and duration was important to the study because it allowed for the caregivers to participate in the study in their limited amount of time. After the initial phone interviews were conducted, it was determined that there were not enough in-depth responses to utilize in vivo coding methods, so secondary interviews were then scheduled to gather more information from the participants. The questions in these secondary interviews were focused and relevant to the research questions proposed (Appendix C).

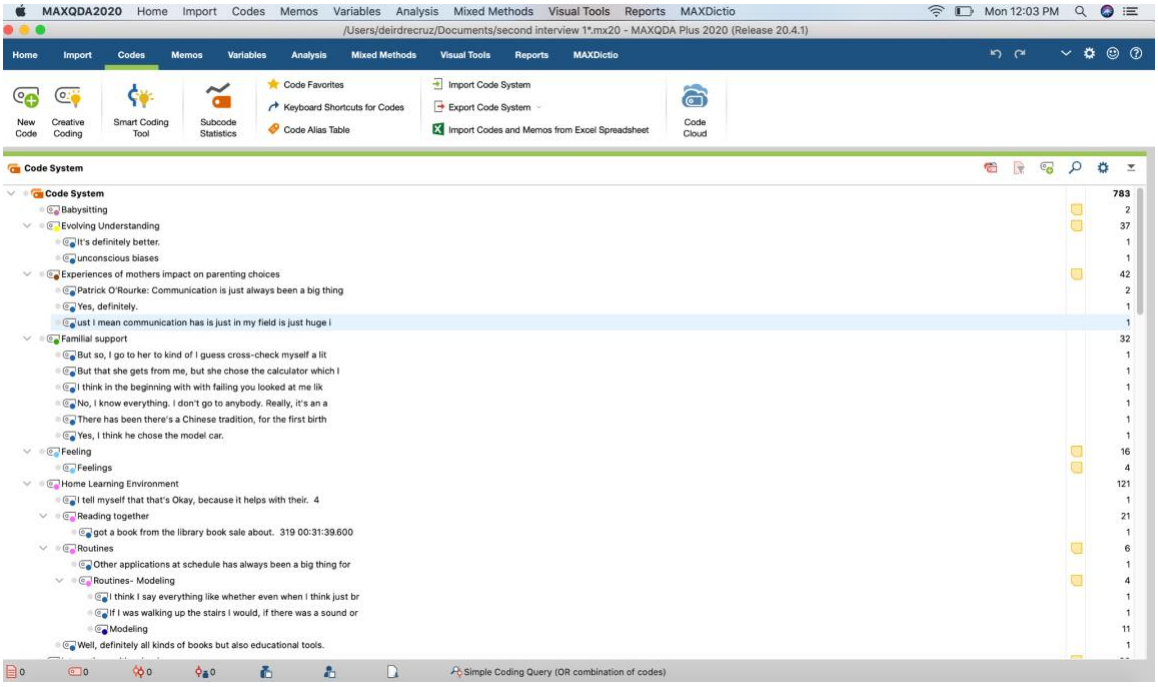
Although the questions in the first round of interviews were open ended and strived to obtain in-depth responses from the participants, the interviews did not contain enough information to extract in-depth themes related to the research question. Once this was discovered, the researcher then added a subsequent interview for willing participants to expand on their thoughts regarding their perceptions of their influence on their infants' literacy development.

**Data Coding and Analysis Process**

Responses to the interview questions were recorded and transcribed by Rev.com and Zoom. While the interview took place, the researcher took notes in the form of analytic memos that would be shared with the participant for member checking. The researcher then utilized the analytic memos to help the inquiry process evolve while coding themes (Saldana, 2016). The data were coded to themes (Creswell, 2014). The researcher utilized in-vivo coding using phrases from the participants' language in the first cycle of coding (Saldana, 2016). The second cycle of coding established the themes through color coding. Themes began to surface from the researcher's MAXQDA spreadsheet where the data were organized and sorted (Creswell, 2014). The codes were then split into categories that eventually transformed into the themes and subthemes. Some words found to be similar among participants during the coding process were feelings, family, together, routines, and book reading.

**Figure 2**

*In-vivo Coding Process Using MAXQDA*



The researcher followed a traditional approach to coding where codes were able to develop naturally during data analysis (Creswell, 2014). Connections were found among mothers' parenting styles, their belief systems, their experiences both in their upbringing and their professional lives, experiences they provide for their infants, and components that comprise home literacy environments such as shared book reading, playing, music, narration, and modeling. Additional codes that led to the development of themes were support—pertaining to physical support by their location to their family, familial support, and resources within their communities—and interactions, being not only interactions between mother and infant but also between siblings, as well as other interactions that take place in social settings.

**Ethical Considerations**

The participants agreed to participate on a voluntary basis. The participant responses were confidential and anonymous. The researcher coded the answers from a researcher standpoint, which prioritized neutrality and objectivity when categorizing answers. The researcher then used the themes that emerged to create the analysis in order to make connections between the participant answers to questions

**Limitations**

Due to the fact that interviews were conducted twice, a limitation from the study could be that half of the original participants agreed to be re-interviewed. One limitation to this methodology is that although the researcher wanted to interview mothers from a broad spectrum of SES and ethnic identities in order to look for potential relationships, it is possible that the mothers who volunteered to participate in the interview were of similar mindsets, similar socioeconomic and ethnic backgrounds, and the results will not

be well balanced. For example, mothers' interests may be on literacy and they are more willing to participate in a study of infant literacy. Furthermore, participation was limited to English-speaking only participants and focused on mother–child relationships specifically rather than parent–child relationships more generally. This precludes certain SES/ethnic groups from participating and therefore not reflective of the entire US population. Additionally, mothers are not the only primary caregivers, however, only mothers responded to the flyers. The results would be more generalizable if there were varied caregivers who participated in the study.

Another limitation to this study is in its design: observing mother–child interactions may more accurately capture parenting practices than analyzing self-reports from mothers (Dodici et al., 2003). However, given the current COVID-19 climate, in-person interactions were inadvisable, so the interviews were conducted first by telephone, then by Zoom. This is still a valid research method, however, as phenomenological studies like this one construct meaning based participants' experiences and perspectives (Twintoh et al., 2021).

## Trustworthiness

### *Internal Validity and Reliability*

The researcher only sought answers from willing participants. Although the researcher is a member of the community being researched, all participants remained anonymous. Since the interviews were conducted once by phone and once by Zoom, a rapport began to take place between each interview participant and the researcher via correspondence to set up the secondary interview. When the Zoom interviews took place a trust was established between the researcher and the participant from the

correspondence between the initial interview and the second. The researcher referred back to the initial interview to ease any concerns the participant may have experienced.

Member checking was also conducted. The participants were emailed their transcripts and analytic memos. The participants then emailed back their approval or additional comments or statements. Member checking allowed for accuracy in participant responses. In addition to member checking, notes taken by the researcher were triangulated along with the transcripts and the audio of the interview to ensure that the data was represented accurately. In addition to member checking, the researcher provided descriptions of each of the participants' experiences in their own words to support the themes found during data collection.

***External Validity***

The researcher had more participation from higher-SES parents, which could have affected the results. The participants were from a myriad of backgrounds. However, of the mothers who participated in the secondary interview, five were of Caucasian descent, one was of Hispanic descent. Of these six mothers, five worked either full or part time, one did not. See appendix A for the demographic characteristics of each participant.

***Assumptions***

The underlying assumption of this study was that literacy practices and supportive mothering during infancy can affect childhood school outcomes later in life. It is also assumed that mothers can recognize the intentionality (or lack thereof) of their parenting practices, including literacy practices.

## Protection of Human Subjects

The interview was voluntary and participants were given pseudonyms. I obtained IRB approval from St. John's University. Furthermore, the flyer I created to recruit participants also communicated the reasons for the study and the anonymity and voluntary nature of participating in the interview(s). Finally, the interviews were executed via telephone and then Zoom to prevent the spread of COVID-19 infection.

## Data Storage

The interview answers were transcribed by Rev.com, a service which encrypts and makes the data inaccessible to the public. The interview participants were given anonymity by the researcher using pseudonyms. The researcher is the only person to have access to the rev.com account. Zoom is another platform for transcription services that were deleted from the Zoom platform. The researcher extracted the data for coding via MAXQDA, and the extracted data were securely locked in the researcher's office on a password protected computer.

## Summary

This study was conducted in order to gain understanding of what takes place in the home literacy environment. The mothers interviewed in this study allowed for the researcher to hear the daily life of what they do with their infants including their thoughts and perceptions of what impacts their infants' literacy development. Through this, the researcher was able to elicit a phenomenon of what mother's perceive as important or influential to their infants' literacy learning and development. The researcher was able to gain insights into what mother's understand about this time period, and what they think would help other mothers and primary caregivers of infants.

# CHAPTER 4: Findings

The purpose of this chapter is to present the findings from the phenomenological research used to investigate the research question: What are the perceptions of mothers around their influence upon infants' literacy development? In addition, the following sub-questions were also addressed: What do mothers perceive to be factors influencing infants' literacy development? What are mothers' understandings about infant literacy development? How do mothers perceive the home learning environment?

## Findings in Relation to Research Question

The next section presents the themes derived from the research findings via the two cycle coding method including the in vivo coding process. The research questions allowed for mothers to speak about their perceptions, thoughts, and beliefs about their infant's literacy development. Hearing from mothers about their interpretation of literacy development as well as their own literacy practices with their children was a crucial aspect to this study. This allowed for the researcher to see a holistic view of how mothers feel about their influence surrounding their infant's literacy development. The themes that were uncovered by this research are: experiences, home literacy environment, support and interactions. The theme of experiences grew from mother's experiences in their own childhood, their work experiences that led to understanding and knowledge of themselves as well as the literacy knowledge that they utilize with their infants. Experiences are also in the form of interactions and experiences they cultivate with their infants. The home literacy environment consists of factors that mother's perceive to be important to their home and their infant's development. For example, the way they narrate or model for their infants, as well as the times they incorporate shared book

reading into their day. The theme of support grew from the support mother's feel they have in their family life, as well as community support in their physical setting. Community support can also be seen in the types of programs that mothers sought out to enrich their infant's literacy experiences. Support also includes how mothers support their infants emotional needs as well as their own. The theme of interactions is from the interactions mothers have with their infants but also interactions between siblings, family members and community members.

**Table 1**

*Sociodemographic Characteristics of Participants at Secondary Interview*

| Participant Pseudonym | Age | *Age of Infant* | SES | Employment | *Degree* | *Secondary Caregiver* | *Ethnicity* | *Marital Status* |
|---|---|---|---|---|---|---|---|---|
| Participant 2 Sabrina | 37 | 21 months infant twins [a] | Low | Drug Recovery Live In Program | Some College | Daycare | Puerto Rican and Filipino | Single |
| Participant 4 Lauren | 35 | 13 months [a] | Mid | Works Fulltime | MA | Husband | Caucasian | Married |
| Participant 5 Brielle | 33 | 19 months [a] | Mid | Works Fulltime | MA | Daycare | Caucasian | Married |
| Participant 6 Danielle | 40 | 25 months [a] | Mid | Stay at home | PhD | Husband | Caucasian | Married |
| Participant 8 Sydney | 26 | 30 months [a] | Mid | Works parttime | BA | Husband | Caucasian | Married |
| Participant 11 Denise | 33 | 18 months [a] | Mid | Works Fulltime | MA | Husband and Nanny | Caucasian | Married |

[a] age at second interview

### *Theme 1: Experiences Shape Mother's Views of Literacy Development in Their Past Experience as Well as the Events They Engage in with Their Infants*

The first theme to emerge was experiences. Experiences that the participants had as children that have shaped them to become the mothers they are through the choices they make. Experiences have also impacted mother's parental knowledge of literacy development through work experiences as well as lifelong learning. Also, experiences they create in order to share literacy experiences with their infant as well.

**Family experiences.** Mothers shared that the way they were raised impacts their parenting style and in turn their infant's literacy development. Sydney said her expectations come from her parents' emphasis growing up that school was her job. She wants her infant and child to know that school is important in life. Sydney also shared that she tries to implement the same rules that her parents and their generation followed but adds to it by explaining thoughts and feelings to her infant and child. To that effect, Danielle also stated, "I definitely want to guide them because my parents were very hands off." Brielle shared that her parents showed her love with an emphasis on spending time together in fun ways. She took what her parents showed her and coupled it with her education. She said she thinks that is what impacts the parenting decisions she makes with her daughters.

Sabrina, a participant from a drug rehabilitation center, shared that she attends parenting classes. Administration for Children's Services (ACS) mandated her participation in the program; however she continues to stay of her own volition now that ACS is no longer a part of her life. She shared that in addition to parenting classes, she

also attends a new reading program that she enjoys, and the other mothers in her program do not.

Finally, Molly mentioned how her upbringing is *not* something that helped her succeed. She wants to do the opposite of her mother and be hands-on and engaging with her infant.

**Work experiences.** Mothers shared that their work experience is also an influential factor. For example, Danielle said she worked in childcare and has a large repertoire of songs and videos that she introduces to her children. Danielle was both a nanny and a preschool teacher for about one year. Brielle shared that her work experience impacts her awareness of milestones. She said, "I am in the field of special education so developmental milestones or something that is in just my wheelhouse and something that I've always been in tune to." She said working with preschool children showed her the importance of language development and it became increasingly important to her when she had her own children. Brielle shared that her work experience impacts the way she views her infant's literacy development. She stated she measures her children herself, perhaps more than other mothers measure their children because she is in the field of education. Brielle then said her work experience impacted her perception of her infant's literacy development, because she would recall the milestones and assessments she used with her preschool age students.

Denise shared that her work experience influenced her parenting perceptions. She said, "Early intervention experience I think that experience, just because of the ages of my kids so far, has really impacted what I do with them and how I treat them and how I parent them." She said the fear of seeing behaviors manifest from parenting styles scared

her and impact the way she parents for example, she said she is “afraid of things becoming a habit” such as using cell phones for games, instead when she eats in restaurants she brings coloring books and crayons for her infant and child so they do not become accustomed to cell phones.

As an occupational therapist, Denise often gives parents advice. She advises parents to encourage problem-solving and creative play with imagination by using low technology toys. She shared that she thinks higher tech toys take away from children.

Denise said her job allows her to be comfortable in silly and imaginative play—for example she will use personalities for stuffed animals and models silliness. She also said that she integrates music into her home as well, and she is comfortable dancing and being silly because of her job. She said she will make time for creativity and that it helps build confidence and personality. She then said, “So I think that my career gave me everything that I needed to obsess over and kind of took the obsessing out of it.” She also said as an OT introducing routines and structure early on is important. She stresses the importance of music and imitation skills that can be taught through music and reading.

Experiences also take shape in the activities mothers engage in with their infants as Denise mentioned like in music and reading. Experiences can be formed by the mother through planning or daily life. Sydney said she takes her children out of the house as often as she can. They go to the park or the zoo that is about an hour from their house and this is the time of day she can be hands on and “just really play with them.”

Lauren also mentioned taking her infant and child to activities outside the home—for example to a nature preserve—as experiences. She emphasized her longing for the library to re-open so she could attend the sign language classes with her infant. Lauren

also had monthly subscription boxes sent to her home for hands-on activities to engage in with her infant and child then she would relate the contents within those boxes to her own life and community. She said she would receive the subscription boxes to do something fun and educational together, she said it was a good way to use recreational time on the weekends and it made the day feel special.

Danielle shared that her state is the state of national parks, so there is a lot of opportunity for nature. Danielle also shared that she recently got chickens. She shared part of her routine with her infant is to take care of the chickens early in the morning. She said she did not realize it was a learning experience for her infant but after thinking about it, seeing chickens and the walk to get to them is an experience in and of itself.

Denise shared experiences as well. She reiterated Danielle's perspective that even small day to day experiences can have large impacts on infant literacy development. She said,

> I feel like some people feel like they need to do big things. And like I said, I definitely do think that I should do more with my kids and give them more experiences, but I think that people miss sometimes, things don't have to be big or extravagant for kids. Like I can take my kids just for a walk up and down the block and make that into a really big, special experience for them. Just the same as going to the waterpark or something else. It doesn't have to be a big excursion or a big adventure. You could just go outside. Like I let my kids plant seeds and water them and now they're watching them grow. Just like taking little moments and engaging your kids in them I think is really important to development, too.

Denise also creates experiences for her children at home; for instance:

> We just got caterpillars so they just came in the mail yesterday. And so we're going to read The Very Hungry Caterpillar, of course. And I'm so excited. We did this last year but nobody understood it because they were too little. And now when they become butterflies, it's the cutest thing.

The experiences described by mothers take place both in the home and outside of the home. Their experience both as a child and as a parent and their work experiences have influenced the way they approach literacy and parenting their infants and children.

**Experiences with language.** The integration of a new or secondary language is another area where mothers had beliefs and perceptions like when and how to introduce a new language, they recalled their experiences introducing a new language. Brielle said, "…I introduced sign language like not extensively, but just like 'all done', 'more,' 'help' when they were infants because I think it was just it, you know helps them communicate what they needed." Whereas Lauren who also introduced sign language said, "But really with my older daughter was something to do together bonding and it did remind me of me and my mom when I was younger." Lauren's integration of sign language was different; her sister-in-law recommended her getting into it, and she said she always wanted to learn it and that her local library offered courses. However, due to COVID-19 and the closure of that library, she does not currently engage in it the same way she did with her eldest daughter because the virtual learning experience is different for her and her infant daughter.

Danielle said she is exploring the option of a Mandarin tutor for her infant and child. When Danielle was asked how she introduced the secondary language, she said, "They watch the phone Baby Bus, which is the Mandarin songs on YouTube and they get

the FaceTime with their grandparents. There are also some books that they use." Her husband, who speaks Mandarin, is not keen on teaching her or her children the language, so they use these alternative means.

Finally, Anastasia shared her experience of introducing a second language in saying that "language and culture go hand in hand." Anastasia views culture as a segue for language and perceives it as a factor in infant's literacy development.

**Parental knowledge from experience.** Mothers' beliefs around literacy development and the parental knowledge they hold could also be related to experiences. The parental knowledge mother's have impacts the decisions they make in their infants experiences as well as parenting decisions they make. Throughout the study, mothers shared their beliefs around their influence on their infant's literacy development. Another subcategory that mothers felt was a factor in their infant's literacy learning was their parental knowledge of literacy development. To this effect, some also mentioned there should be more awareness surrounding this topic. Sydney shared that she has a basic understanding of literacy development. She said she has a "very basic understanding of literacy development" from a child psychology course she took while she was in college. She said she cannot say much about the class but she tries to incorporate what she can when she can in her infant's daily life. She also said she does not know about specific milestone that should be met at specific times. She later shared that she has her own expectations for what she wants her kids to be able to do at a certain time such as knowing the alphabet before school entry. Sydney believes preparation is paramount for their success. Sydney shared she has her own values and expectations she perceives to be important that are not contingent on milestones, but rather on her own beliefs.

Lauren shared that she heard that infants learn on the periphery, so if her children are not engaged, they are at least seeing and hearing her. For example, she said she will talk even if her children are not paying attention because she hopes they will remember something that she has said. Denise also mentioned that she will continue reading even if her infant has lost interest in the story because she wants to teach them how to finish a book.

Regarding how Brielle could help her infants reach certain milestones she said she would focus on that particular milestone and think about how she could get her infant to meet it, for example if they should be doing more tummy time or if she should be reading to them more or generating more time for parallel play. She always wanted her infants to meet their developmental milestones and if they did not she would think of her day and plan how she could spend targeted time on that milestone for them.

Brielle said she does not think she has an understanding of infant literacy but she thinks it is important for moms and people to know, especially educators to have knowledge in infant literacy but generally she does not think many people do. Brielle followed up by saying she wants to know more information and is looking for how she can find that information.

She said,

> I mean, I think, for me, I think I look at like just like I would Google search like developmental milestones, to be honest and just make sure that it's a reputable and reputable page and making sure that that's a research based web page that has accurate information, but other than that I don't really know where I would go to I would think that it would, I think it would be helpful if, like pediatricians had

> information to give to moms about that or even like OBGYN of moms that are expecting babies and that would be helpful, but I'm not really sure where to get that information from and honestly searching the web, sometimes you can get stuff that is not helpful and is not accurate.

Brielle said literacy development is important because it will help infants develop as human beings and be able to communicate with others. Brielle also said she thinks she is the primary influence because the amount of time she spends with her infant and how she communicates with her infant are crucial for her infant's language and literacy development.

**Mother's characteristics impact experiences.** A mother's characteristics may impact the way they perceive experiences and how these experiences impact the way they view factors that influence their infant's literacy environment. For example, Denise said, she is very rigid and easily overwhelmed, she prefers to stay in her comfort zone. She said her family, particularly her brother who has children of similar ages to her own, makes fun of her. But, she believes even though she does not engage in "big" experiences her infant and child are getting the experiences they need in their day to day life. The experiences Denise mentioned are what other mothers perceive as important influences on their infant's literacy learning. Making room for these experiences or focusing on certain aspects of experiences is influenced by maternal characteristics.

The family experiences, work experiences, experiences with language, parental knowledge and mothers' characteristics can be influential factors in the way mothers perceive their parenting style. For example, Denise said her personality is structured and that although she does have a career that makes her this way, she would be a structured

parent without it. She added that she might not know as much about the topic of parenting without her career, though; her work experiences impact her parenting style. Whereas, Danielle emphasizes the sciences with her infant because both she and her husband are scientists. This was exemplified when she said there is a lot of science talk within the home: they discuss it, the infant and child both pick up on it, and it has an effect even if she is not consciously rewarding it. She thinks her personal influences are impacting her infant's and child's interest in the topic of science.

Brielle shared that her personality may influence her infant's literacy development because she puts pressure on herself to help her infant achieve development milestones due to her awareness of them. She said "…still developmentally where she should be. I'm still wanting to like get her to the next step before she has to be there, so I think I put a little bit extra pressure on myself with that."

Mothers' beliefs, their characteristics, their parental knowledge, and their experiences in their family lives, their professional lives, language experience as well as the experiences they perceive to be important for their infants literacy are factors mothers have formed opinions on and perceive themselves to influence regarding their infants' literacy development.

***Theme 2: Home Literacy Environment***

The second theme to emerge was the home literacy environment. Mothers indicated what they believe are important attributes of the home literacy environment. These categories include shared book reading, playing, music, narration, modeling and physical space.

The mothers' opinions of these categories differed. Denise said she prefers older movies, television shows, and toys. She said she is strict with screen time, whereas Sydney described a high-tech toy that uses the alphabet that was gifted to her son that he loves to play with. Sydney also said she tries to be present with her children as they are playing together. She mentioned reading street signs aloud so that her children are comfortable with their surroundings and said her son is picking up on letters as they pass by signs on their drives. She shared they are working on noticing deer signs and that stop signs are red and have the word stop in the middle. She is focused on having her infant aware of their surroundings. She also said her infant notices letters and says them aloud.

**Shared book reading.** Sydney described her main literacy interaction with her infants as book reading: "I think it's really just reading to them, I don't really engage them much others besides, like the workbooks like I said, I just wanted to try and get a little preparation and get her more used to." She added she read to her infants in utero. She said it was something fun for her to do as well as she knew the fetus would be able to hear her. She shared that sometimes she does not think she is engaged, so she sets aside time and puts her phone away in order to connect.

Danielle shared that she makes book purchasing decisions collaboratively with her infant and child. She also likes to get books based on their interests. Meanwhile, Riley shared that she sets up the physical space for her infant in certain ways to elicit the most conducive book reading environment:

> We have appropriate reading material, but we also go based off of what he's interested in now. So basically he's interested in trucks so we try to have toys that are trucks, but also books that incorporate the trucks that he's playing with, the

different pictures. Say he's play with a dump truck, we would want to have a book based on garbage, and we would try to tell them the different parts. So right now he's learning wheels, door.

**Playing.** Sydney described playing board games with her children and she does this to engage in routines and turn-taking. Lauren shared her view of eye contact and emotional and physical connection are important in developing literacy skills. Danielle mentioned that she gives her children a variety of activities to choose from, including imaginary play, reading books, songs, and pen and paper. Denise shared what she does to make a home literacy environment. She shared that she has puzzles, books, blocks and magnet tiles. She said she focuses on hands on toys that encourage pretend play such as little people. She said she will model for her infant and child how to play with the little people by making up names and characters. She does this with stuffed animals too. She said she comes up with personalities for the stuffed animals and characters and tries to be silly and model silliness.

Danielle also thought the type of play she engages in with her infant is important—for example she shared that creative play and STEM-based activities are important. She wondered if her science background impacts the activities she chooses to engage with her infant. She also shared that she worries the reading material she chooses and her parenting style, i.e., her strict approach, could impact her infant's literacy learning. Danielle shared that she views her home literacy environment as pervasive throughout her home. She said the way they approach literacy is pervasive in her home because it is valued in terms of goals, so it is instilled in her children at infancy. Both she

and Sabrina believe playing on the floor with their children is important to their literacy development.

Riley portrayed her home literacy environment in what and how she sets up her son's routine and physical space. She said,

> So we actually incorporate reading into his play area. We have a reading nook full of books, and also in his room when he goes down for nap time or quiet time, we have a reading nook just in there. We don't have any toys. So we just basically go off of what my son wants, he'll just bring us books. But the most important thing that we do is that we rotate the books.

The norms set forth in Riley's house show that she and her partner purposefully set up an environment geared toward reading. This shows her perceptions of which factors contribute to making home learning environment that will impact her infant's literacy development.

**Music.** Music was another factor mothers felt contributed to the home literacy environment. Denise shared that she took her children to Music Together classes. Sydney said she has music playing in the background at all time throughout the day such as Sesame Street. She said her son loves Elmo so she will play a lot of music. She said she also sings nursery rhymes and gets her infant and child moving by doing hand motions as in the Itsy Bitsy Spider.

Lauren also shared she and her infant and child sing songs together. Lauren also shared she is starting to listen to podcasts in the car with her children. Danielle also said that her son is very interested in music, and she thinks it impacts his speaking, comprehension, and learning. Danielle said she believes,

> music helps order the developing mind so that he can understand cadences of language, and I think that you know matching the lyrics to the tune and even helping with the rhyming words and stuff.

In saying this, Danielle shared her perception of why music is important, and she finds joys in her son's enjoyment of music.

Denise shared, "My kids love music, which is great. We like music, too. So we'll do... Like a lot of times after dinner, we'll have Disney dance party or classic rock dance party and that's something that's important to me."

**Narration.** It became clear through the interviews that mothers participated and engaged in literacy activities such as narration. For instance, Noelle engages in narration. For example, Noelle shared she tries to talk to her infant as much as possible and use language to explain what she is doing. She said she points things out and identifies the names of them. She said they are trying to get him to talk a bit and say things as well as try to engage in a back and forth conversation with her infant.

Narration can also occur when reading aloud to infants. Sabrina said she reads to her twins "[a]ll the time. All the time. Constantly reading to them. I show them anything, if I see anything on the wall, anything that I can just grasp, I show them. I tell them, 'Look, this is a bear, this is a ball,' like that." Allison also narrates and said about her daughter,

> [W]ith the literacy, since she was a baby I always narrated everything I was doing and I told her what we were doing. So, I'd be like we're going to the kitchen and we're getting your milk and it's in the fridge. So, now when she asks for her milk,

she says, “Milk. Fridge.” So, I guess she just retains it that way too from just listening to Tom and I.

Allison’s comment shows that she perceives her influence of narration to be helpful in her daughter’s language acquisition.

Brielle also shared that she engages in narration:

> Um, I'll point to things throughout the house and be like, "Oh, this is the light," or, "This is the light switch," and kind of talk about how it works. Um, reading books and having her point to things with me. Um, if she's, like, I know she's kind of requesting something, because I'm her mom so I know what she wants, but I'll kind of say- ... "Oh, like you want your sippy cup," or, "You need water." So, really just honing in on that expressive language with her.

Although Brielle discussed narration, she also touched upon responsive caregiving in that she knows how to interpret her daughter’s wants and desires because she is the mother. This is her perception of their relationship and how these contributing factors align with literacy development in infancy.

Riley also shared that she narrates to her son, she relates back to providing experiences because she tries to take them outside as much as possible and narrate everything such as, "The street sign, stop sign, white car, white truck."

**Modeling.** Modeling is another literacy practice and behavior that mothers alluded to engaging in. For instance, Noelle shared that she provides modeling and support by letting her son experience the book how he wants to, then she will show him how he is supposed to hold the book. She said she gives him freedom to learn things the way he wants to. Lauren shared she also engages in this type of book reading and

modeling behavior. She said,  I'm doing it more, like, "Look at this," try to get her finger to follow something-..." Lauren further shared that she likes her infant and child to see her read—she thinks if she shows them that it is important to her they will follow in the same footsteps.

Denise shared more modeling behaviors when she said,

> I think that using books so much throughout our playing and try model for them, even if my son's not listening to me read a book, I still read through the whole thing. So like I encourage that follow through. And I think that, just my parenting style in general, I think a lot of people say to me how my kids have a really good attention span. And I think that it's because of the way that we interact with them.

Denise showed that she engages in purposeful play and modeling especially with book reading; however, her comment shows outside sources and judgment in relation to her children's attention spans. She attributes their attention spans to her parenting style, which she perceives as the gateway for not only behavior but also literacy development in infancy.

This section explored the ways mothers create their infants' home literacy environments. These methods included narration, modeling, book sharing, music and playing activities they engage in as well as the physical spaces for their infants.

### *Theme 3: Physical Support from the Community, Emotional Support from Others for Mothers; Mothers Supporting Their Infants Through Emotional Connection*

The term "support" can be seen in four facets of the mothers' interviews: familial support, community support, and the physical location where the mothers reside and their

perceptions of their emotional needs as well as their infant's. There are also impacts from society that impact mother's perceptions about literacy development in their infants. Participants also discussed their support for their infants through close connection and literacy activities.

Danielle shared that her physical community is her support system, as she and her husband both live far from their families. They communicate with family via video messaging and text messages which she often ties into their literacy time, but their religious and physical communities both play a more immediate part in her infant's literacy learning because of the experiences they can share together. She turns this into a literacy activity because she will have her infant and child dictate messages or draw pictures to send to her family. She also said it is a diverse community and very up-and-coming, and she is considering a Spanish immersion preschool that was recommended by a friend. Cultural influences from her family, both her Jewish heritage and her husband's Chinese heritage, are also influential. For example she shared a story of a first birthday tradition where the child is in the center of a circle surrounded by different items, items that are representative of future careers. They chose one item and it is believed that is what they will be when they grow up. Danielle reflected on her religion as a factor in her beliefs about her infant's literacy development. Her religious community can be another tenet of the support she feels. She said her Jewish religion has a history of honoring students and the culture pushes for doctors and lawyers, she added there is a bit of technical pressure.

Sydney shared her familial support is far away, "so it's scarce. We do have like visitors often up here [upstate New York], there's no family like 10, 20 minutes away;

everybody's at least an hour family wise and friend wise." Sydney said she turns to her mom and mother-in-law for advice as well as the online community that she is a part of. She shared that her part-time work is being a Beach Body Coach and her community is other mothers, online. She said her Beach Body community is far and wide in Delaware, Michigan, New Jersey and Texas. She said she met through social media such as on Instagram and Facebook. She is looking forward to having her eldest child start school so that she can not only be a part of that community but also make other mom friends. She said if she really needs advice, she will post something on social media and get responses that way. Her main source of research on the topic of literacy development is Pinterest, and she shared she was not sure of how much information she would be able to receive from social media. She said, "I think family is a huge factor, like extended family." Allison also said that extended family is an important factor in her infant's literacy development because most members of her family are college educated and that is the expectation.

Riley shared that her family is also influential in creating literacy enrichment for her children, she said her mother buys her children books and educational toys. She also shared that her parents converted their one family home into a two family home so she could live with them as an adult. Not only is Riley receiving support in the form of a close familial bond such as sharing a house and the financial support that gives but, she also included examples of ways her mother impacted her infant's literacy development in material goods as well.

Lauren shared she is more of the support system for her friends because she is a therapist. She said that if she were to ask anyone a question that is literacy-related it

would be her sister-in-law who is a special education teacher. She said, “She was the one to tell me about the sign language there’s a lot of her parenting stuff  line up [with mine].” Similarly, Denise expressed that she does not turn to many others for support or advice either. She said, she really does not go to anyone for advice. She has a best friend who is similar to her and that is who she will seek advice from. She also expressed frustration that her brother and their family do not see her as a child development expert even though she is an occupational therapist, but she would not want to give unsolicited advice. She said she does not ask her parents or family members for advice because she does not agree with how they parent. She did say she will talk to her husband, but she will make all of the decisions and he will support her. Brielle shared the same about her husband being supportive.

Family values are important to the development of literacy practices within a family. The perceptions mothers hold around their infant’s literacy development is rooted in social pressures and expectations. Allison said both she and her husband’s family are family oriented. She said their families encourage continuing education and that their family members have gone to college so being around those types of people and around their family and big groups helps with their infant’s literacy development.  Allison’s description of her family dynamics and the role that their participation has on her infant’s educational outcomes shows both the pressures from within the family to believe in education but also in a larger context as continuing education is the societal norm.

**Physical location and community.** The physical location and the community it provides mothers also seem to be important factors in mothers’ perceptions of their infants’ literacy developments. For example, Danielle mentioned there are a lot of

opportunities to get into nature in her location in Arkansas. She also mentioned the diversity and community support from the university near where she lives. She mentioned how crucial the local libraries are to the community, which is something that she has in common with Lauren. Danielle mentioned the collection of libraries in her community would offer different story times, with some in Spanish and Mandarin, as well. Before the COVID-19 pandemic she would drive to each location depending on the day. Lauren used her local library for sign language classes before the COVID-19 pandemic, as well.

Sydney shared that her community has limited preschool options but identified education as a key factor to why they moved to their location, which is far away from family and friends. When she was making the decision to move she said, it was an important factor in their decision making process of where to move. She was adamant that she knew she did not want her children enrolled in the New York City public school system because she wanted her children to have a "name not a number" when they were in school.

Noelle's lives in a neighborhood of Brooklyn that emphasizes the importance of early education. She shared that the cultural norm in her infant's life is set by her community rather than by the intimate culture of her family.

**Society's impact based on mother's perceptions.** It also became clear mothers perceived society as influential factors in their infants' literacy learning. For example, Sydney said,

> Society has like that incredibly unrealistic expectation for all mothers, you know you have to work full time and bring home X amount of money, but you also have

to raise your kids to be perfect amazing angels all of the time. Which is just not how humans are so shove it.

The physical location and the physical community in which the mothers live are important factors in their literacy development of their infants because of the access to experiences in nature, community resources like libraries as well as proximity to their family, all of which were viewed as impactful to the participants as influencing their infant's literacy development.

**Mothers' stance on emotional needs in both the infant and mother.** A common theme throughout participant responses was mothers' desire to be present. They said that providing their full undivided attention has an impact on their infant's literacy learning. For example, Danielle, Sydney, Sabrina, and Lauren mentioned wanting to be present and that their infants are "only little once."

Sydney continued, "Like put the phone to the side and sometimes I'll catch myself like sitting and playing with them and still scrolling and I'm like I don't need to do this, I need to focus here." Sydney, Lauren, and Noelle focus on the emotional needs of their children and believe that will also impact their literacy development. For example, Lauren said, "I'm more of the one who is almost like 'hey I'll get in that bath with you….' I'm right down to level with them. I'm just very connected, very." Noelle shared that she engages in literacy practices for the emotional support it provides her infant. This emotional support is a value that she and her husband agreed upon. Noelle wanted to comfort and provided a safe space for her infant, and she thought one way of doing this was through reading. She and her husband both engage in book reading with their infant. She said, hearing their voices through reading is emotional comfort. She said he will not

be gaining much from reading at a young age but hearing her voice and her husband's voice provides comfort.

Many of the mothers want to be in tune with their children and infants emotionally, such as Sydney, Brielle and Lauren. There was reference by Lauren to a popular current child rearing method, "Big Little Feelings" that is a course parents take in order to help their infants and children navigate their emotions through gentle parenting. Sydney said, "Um I just I want my kids to know that, like being human is okay like having all of those emotions is okay I don't want them to think that they have to shy away." Sydney also alluded to the pressures put on infants to reach certain milestones at certain times, like sleeping through the night or walking, which then in turn makes mothers feel like something is wrong if their infant is not hitting these milestones. To echo the same sentiment of societal pressure on infants and their mothers Denise shared,

> So I think that just thinking about infancy, it goes all the way through the early years of school, too. I think that there are expectations and pressures on the wrong things. People are hyper-focused on do they know their letter sounds? Do they know structured wrote skills? And I think that that starts in infancy. Like even just, what color is this? Point to this, do this. You want to ... Nobody wants to make their babies into robots but it becomes that. Like you want them to memorize things and show their knowledge through these very wrote tasks or skills. And I think that people miss and society's misses that some of those fundamental ... I don't know. I feel like even when you and I probably were kids, things were a lot less pressured and a lot more play-based in preschool and kindergarten and there was a lot less stress and even in infancy, just play with

> your toys. Or just play with your siblings. And I think that people have lost that kids will learn all of those wrote skills a lot better by doing those play, imaginary, free, things than they will by being sat down and forced to memorize stuff.

Brielle's view of societal impact is more in line of parental knowledge. She said she does not think a lot of mothers think literacy is important in infancy. She said she does not think there is a lot of education out there for parents about infant literacy development. She said when people think of literacy they think of children starting to read or preschool perhaps when they are three or four years old.

Denise shared a similar viewpoint to Brielle. Denise said the foundational age for developing literacy skills with infants is ages 6–18 months. She was then asked if she thought many mothers or parents shared her opinion on 6–18 months being the building blocks of foundation for literacy and early childhood education. She responded,

> No. I think that people don't prioritize it at that age, because they don't realize that it does set that foundation. And I think that that's where some of the issues that may exist come from. Is that it's not prioritized early enough.

Whereas Danielle shared, she thinks society views infants as young adults and it is not a distinct separate stage like she would.

Molly further reflected on motherhood and society and said parents do not take time to put in effort with their children. She said she thinks parents think it is the teachers job. Molly thinks learning should be constant and that will help aid teachers in educating children. Molly raised some interesting social commentary where she thinks parents rely on screen and media usage. She described the type of mother she wants to be and her perceptions are based on what she sees in society that she does not want to emulate.

Jada brought up a different point about society: that mothers need support. She shared, “Yeah. You definitely need moms support.” Jada shared that mothers should support each other because some of the questions she has are answered through experiences other mothers share with her. Of the mothers interviewed for this study, some had support and some did not experience support or feel supported. For example, Molly shared that she is on her own, as she will be a single mother with an elderly father. She shared her father is elderly because she will not be relying on him for childcare.

In this area of support mothers had varying viewpoints about the way support factors into their perception of their infant’s literacy. Mother’s mentioned the pressures of society and the expectations put on mothers and their infants. Parenting style and the use of explanation of emotions and regulation of those emotions was also a factor. Parental knowledge and awareness of literacy education and developmental milestones was also a factor mothers perceived as impactful. Mother’s also mentioned the use of screens as a society as well as identifying who can be a support system to them in their childrearing.

### *Theme 4: Interpersonal Interactions During Infancy*

Interactions between mother and infant, as well as between infant and siblings and other individuals, are contributing factors mothers perceive to be important to the infant’s literacy learning.

**Interactions with mothers.** Throughout participant responses it became evident mothers view their interactions with their infants as important factors in their infant’s literacy learning. For example,  Denise chooses to engage with her infants in meaningful ways. She shared she does not keep her phone with her, she tries to be present and play with them. She said she engages in imaginative play, silly and engaging play where she

makes eye contact. She limits the amount of battery operated toys and keeps the interactions between people.

Denise's engagement with her infant shows the purposeful nature of how she is choosing to engage and why. For example, mentioning interactions between people and playing with low-technology toys are ways she engages with her infant. These interactions show the way Denise perceives her role as the mother in active engagement with her infant and child.

**Sibling interactions.** Mothers such as Lauren and Brielle noticed that their younger infant learns literacy skills from the older sibling just the way they read books or have conversations. During her second interview Danielle said that her children are engaging in more pretend play together, as they had grown and matured since the first interview. Sydney also said her children learn from each other and said that her son might actually be ahead of her older child. She said,

> He's he's a little quicker with the letter recognition than she is at the moment I don't know if it's that like his age and he's just more of a sponge and she may be lost a little bit of it already but yeah I definitely think it's going to impact his his learning in the future.

Alternatively, Lauren said her eldest child sometimes slides back to meet the infant at the infant level.

**Interactions with others.** Sibling interactions are not the only interactions that take place. Interactions with others whether different family members, day care, or strangers, infants interact with others. Brielle said mentioned how infants like to interact with one another she said,

> I mean even babies think about it like a social activity can also be that they're just you know in another room with a baby there you know sitting across from each other, so I think that those pieces are important as well. So I think just being out and doing activities and stuff I think those social interactions are always happening I just think that it's whether you're deciding to facilitate them or to ignore them, and I think for me when I'm out I'm you know, facilitating it whether it's even just taking a walk in there waving hi to somebody or they're labeling an item like a tree or the sky, or even just playing like I spy when we're in the car, I think, like all those things are so important. That Kate really right now is really liking like pointing out and observing just what's outside, but again I think that that's because I totally like you know I encourage that.

Sabrina said some of the daycare interactions her infants have experienced have been poor. She said one of the daycare teachers is vocal about her dislike for the job. One of the children has poor behavior, and she said that it is impacting the way her infants are behaving at home. Sabrina said as a part of her drug rehabilitation program, her children must attend this daycare and that it has recently opened back up after being closed due to the COVID-19 pandemic. She said she would prefer her infants to be with her throughout the day.

Brielle, on the other hand, recounted the daycare experience as having had a positive influence on her infant. Her eldest, Fallon, started daycare at four months of age, fulltime. She said her youngest, Kate, did not attend daycare until she was 10 months of age because of the COVID-19 pandemic, and she said their skills developed differently; Fallon developed more quickly. She said she was unsure if it was a first child versus

second child difference or if it was daycare itself as that extra factor that impacted her children's development. The experience Brielle shared relates to the perceptions mothers have about what factors influence infant development. She shared that in her experience, she thinks infants develop differently and do reach milestones at a faster pace when they are not with their parents all the time. She shared her infant was not crawling until she went to daycare she said that having a toddler at home when Kate was an infant impacted the time she dedicated to holding Kate which she thinks affected Kate's gross motor development. Ultimately, Brielle's perceptions of her daughter's developmental growth are largely based on her experience with daycare.

As illustrated above, mothers' perceptions of interactions are influential in their infant's literacy learning. The interactions between mother and infant, infant and siblings as well as infants and other individuals.

**Synthesis of Themes**

The themes established by this study show how each mother and infant dyad are different. The mothers' experiences impact the way they conduct their home learning environment. The themes presented from the findings show that mothers' experiences and their perceptions of factors surrounding their infant's literacy learning differ depending on their support, their experiences, and their innate characteristics. Although the mothers had differing opinions on what contributes to the home learning environment and engagement, they all shared that they want the best for their infants. The experiences mothers have had as well as what they provide for their infants permeates the decisions they make in their parenting.

Mothers' perceptions of their influence upon their infants' literacy development is complex, and the themes that emerged are woven together in this complexity. The experiences they had and provided for their infants were influenced by their characteristics, their parental knowledge, and how they integrated activities for their infants, which in turn impacted their home literacy environment. Their physical location impacted the social support they had, which again impacted their infant's interactions, such as with family. Experiences were experiences they had, experiences they provided for their infants, and their work experiences that shaped them. Home learning environment consisted of book reading, playing, music, narration, modeling, and the physical space mothers created for their infants. Support was in the form of familial support they received, the support they gave to their infants, their physical location, and societal impact. Finally, interactions included the way siblings interacted, the way infants interacted with those around them, and infants' interactions with their mothers. Themes changed from the initial interview conducted, which can be seen in Appendix E. The findings reported above are from both the initial and secondary interviews.

**Reflexivity**

The researcher's positionality has remained the same throughout the study. Positionality can influence interactions with the participants as well as the researcher's viewpoints. The researcher attempted to make participants comfortable by sharing that she was also a mother and, when she felt the mothers were hesitant to answer questions, that she too has been overwhelmed by the childcare–work struggle the COVID-19 pandemic has imposed upon parents. The researcher articulated to some participants that she was not judging and that she too is a mother who wants a general gauge of their

thoughts and opinions. Sharing this seemed to calm participants so they felt more at liberty to discuss their true literacy practices with their infants. In secondary interviews conducted with some of the participants, the mothers seemed more willing to share experiences. The Zoom platform made rapport and ease more conducive to in-depth interviewing than the initial telephone interviews that were conducted.

Moreover, the research questions began before the researcher was a parent herself. This line of questioning came about when the researcher was an inner city public school kindergarten teacher years before she became a parent. Although this research study was conducted with only mothers, it was open to all primary caregivers. This is an important part of the positionality because it was only mothers who engaged in the interview process, despite perhaps not being the primary caregiver due to the changes of parenting in a post-COVID-19 world.

The transcript analyses revealed the narrative account of mothers' perceptions on the influence of their infants' literacy development. All 12 participants provided insight into the complex nature of the home literacy environment and the nature of being the primary caregiver in regards to infant literacy development. It became evident that the 12 mothers had similarities and differences both in their demographic characteristics as well as their thoughts, views, and beliefs on their infants' literacy development. The implications of these findings will be further analyzed in the subsequent chapter in accordance with the theoretical framework and literature review providing the next steps for future research.

# CHAPTER 5: Implications

In this study, mothers' perceptions of their influence on their infants' literacy development as well as the complexities of literacy development in infancy were examined through a phenomenological lens. This lens allowed the researcher to analyze participants' interpretations of their experiences with their infants and their infants' literacy development. These interpretations help to inform the research on mothers' understanding around literacy in infancy.

The purpose of this phenomenological study was to investigate the beliefs and practices of mothers regarding their infants' literacy development. The following research question guided the study: What are the perceptions of mothers around their influence upon infants' literacy development? The sub-questions were: a) What do mothers perceive to be factors influencing infants' literacy development? b) What are mothers' understandings about infant literacy development? c) How do mothers perceive the home learning environment?

The themes that emerged from this study were (a) experiences shape mothers' views of literacy development in their past experience as well as the events they engage in with their infants; (b) home literacy environment; (c) interpersonal interactions during infancy; and (d) physical support from the community, emotional support from others for mothers, and mothers supporting their infants through emotional connection. The findings from this study may help to inform mothering practices, as well as language planning policies, school-family partnerships, and how mothers can get information about infant literacy development. This study contributes to the current literature and practice

on how to engage with infants, how to establish a home literacy environment, and awareness surrounding literacy practices within the home.

During the study, the researcher found that all of the participants engaged in some form of literacy practices with their infants; however, parental knowledge around the topic was an area they suggested needs assistance. According to the data, the mothers understood the importance of literacy at a young age due to their past experiences, work experiences, and life experiences, all of which influence their parenting decisions.

**Overview of Findings**

In familial relationships and dynamics, especially with infants, researchers should look at multiple angles of why phenomena are being experienced. The participants were asked a myriad of questions about their perceptions, thoughts, opinions, and beliefs about literacy practices and how they impact their infant's literacy development. Many of the mothers in the study drew on their life experiences, as well as their intuition and observations to answer these questions. According to the data collected in this study, mothers' beliefs of literacy in infancy appeared to be linked to their own belief systems, which they have acquired through their experiences.

**Contribution to Current Literature**

Ultimately, this study contributes to the literature on infant literacy development by investigating what literacy practices mothers perceive to be important when they engage with their infants. It further showcases mothers' perceptions of and knowledge around their infants' literacy development through the interactions with their children that they deemed important.

There is a gap in the literature in literacy development in infancy. To address this gap, the researcher recruited mothers of infant ages newborn to 2. This age was chosen because this is when the sensitive and critical time periods of brain development are formed and the social experiences surrounding this brain development are crucial at this time and the foundation laid during this time cannot be undone (Kuchirko, 2019). The critical periods of infant learning happen from the time of birth and this study aimed to identify what mothers view as important during this critical time in hopes of raising more awareness around the topic in the future (Choi et al., 2018). Understanding parents' knowledge of their infants' development and critical periods within that development are paramount to what they believe, what they expect from, and how they interact with their infants (Sonnenschein & Sun, 2017). This research study allowed the researcher to gain insights into mothers' perceptions around their infants' literacy learning and what they view as important, which helps to identify parental knowledge around literacy and infant development (Sonnenschein & Sun, 2017).

Additionally, this study furthered the cultural conversation around infant literacy and home environment because four of the mothers studied had an intercultural relationship. Many of the existing studies that focus on a specific culture do not include intercultural relationships. This study revealed that relationships are impactful on infant literacy development. The impact is layered because of the complex nature of family dynamics especially in infancy. For example, Riley shared that she believes her culture and her husband's and the experiences they had growing up impact how they view education in their infants. Riley wants to pay for private preschool because she deems it important whereas her husband does not. Danielle tries to incorporate Chinese culture

and language into her infant's literacy practices but does not speak the language herself so she relies on media and extended family. Jada believes that culture is important and wants to share her fiancé's Spanish language with her infant and yearned for a deceased family member to be here to introduce the language to her infant.

Additionally, although open to all primary caregivers, this study was conducted with mothers because previous research states children's developmental outcomes are influenced by mothers (Rowe et al., 2015). For instance, Rowe et al., concluded there are direct relationships between mothers' parenting knowledge and child language and literacy skills, and many of the SES factors that contribute to achievement gaps can be mediated through early parenting knowledge (Rowe et al., 2015).

This study showed a need for more parental education for mothers to better understand and feel certain about their infant's learning as evidenced by the first theme of mother's beliefs. Sabrina held the idea that her babies were smart because of the number of words they knew. This is based on what society deems as valuable such as the quantity of words infants know (Hart & Risley, 2003). Allison furthered this when she felt happy the doctor complimented her infant daughter's vocabulary. Due to a lack of literature and understanding around infants' literacy development, this study was paramount in understanding mothers' literacy beliefs, perceptions, and practices in creating their home literacy environment.

Additionally, there is a lack of understanding of crucial time periods in infancy and their influence on later literacy learning. Most research to date, such as Hart & Risley (2003), Hoff (2003), Roberts (2005), shows that the extenuating circumstances for infants who do not succeed in kindergarten are based on demographic indicators such as

education level of the mother, ethnicity, and SES; yet this study showed that there was no correlation in regard to these areas (See Appendix A). For example, both Allison and Sabrina were aligned in their perceptions of narration and book reading as literacy activities, although they were from different ethnic, SES, and educational backgrounds. The research presented by this study suggests that all mothers, regardless of demographic background, do engage in literacy practices with their infants. Participants across different SES backgrounds engaged in similar literacy practices such as book reading, playing on the floor together, and having a routine where they engage in these types of activities daily.

**Discussion of Research Findings in Relation to the Theoretical Framework**

The framework that guided this study was Urie Bronfenbrenner's ecological framework because infants' developmental outcomes can be viewed as an embedded system of interaction between characteristics of the infant and their environment (Durand, 2011). Bronfenbrenner and Heath both agree that literacy is not just cognitive and linguistic skills but also a complex social and cultural phenomenon (Harrison & McTavish, 2018). This is what makes the mother's role in the home literacy environment so pivotal for infants. The home literacy environment can consist of activities such as parental book reading, library visits, and teaching of letters and their sounds, as well as the number of books in the home (Niklas, 2015). This is one example of a home learning environment, but the layers that comprise this are what guided the current study. The multifaceted interactive system Bronfenbrenner uses in the ecological framework guided the interpretation of the findings of this study.

The themes that emerged from this data show that the ecological framework is interactive in that each theme there are multiple levels of relation to the ecological framework systems. For example, the microsystem is most closely related to the infant and can involve parental involvement, television viewing, and interactions in the home and relates to the mesosystem of extended family and school based interactions that work in conjunction with the microsystem (Zhao & Phillips, 2013). Meanwhile, the exosystem is the social settings that influence the infant without the infant directly engaging—this is the community in which they live, their family SES, parental education, and family income. The final, largest system, the macrosystem, includes the cultural variations such as religious systems, belief systems, and lifestyles (Zhao & Phillips, 2013). All these systems work together to perpetuate a home learning environment for infants. See Table 2.

**Table 2**

*Themes in Relation to the Ecological Framework*

| Theme | Relation |
|---|---|
| **Experiences shape mother's views of literacy development in their past experience as well as the events they engage in with their infants** | This theme refers to the microsystem of infant interactions with family and parents, as well as the mesosystem, exosystem, and macrosystem:<br><br>Experiences of infants with their mothers are part of the microsystem. |
| Sub-themes:<br><br>Family experiences<br><br>Work experiences<br><br>Experiences with Language<br><br>Parental Knowledge from Experience | Experiences mothers have had that impact the decisions they make with their infants are part of the microsystem because of their religious organization, their relationship with peers, and their families as well as their choice in neighborhood.<br><br>The microsystem because of the relationship and interactions between parent and infant as well as parental knowledge of literacy development.<br><br>The mesosystem because of the dynamics between the family.<br><br>The macrosystem because of the cultural implications on school choices, as well as integration of new and additional languages. |
| **Home Literacy Environment**<br><br>Sub-themes:<br><br>Shared book reading<br>Playing<br>Music<br>Narration<br>Modeling | The home literacy environment comprises the macrosystem, which is the attitudes and ideologies of a specific culture, which the mother would ascribe to, as well as the microsystem which has the most interaction and relationship with the infant. The exosystem would also take place because of the relationship with extended family.<br><br>The exosystem because of the parental economic situation and beliefs on how to spend money on or for their infant. |

| | |
|---|---|
| **Physical support from the community, emotional support from others for mothers; mothers supporting their infants through emotional connection.** | The theme of support relates to ecological theory because it incorporates the microsystem, or the family, the physical location of where the family lives, and the exosystem in where and how the family relates to extended family both in relationship and proximity. |
| Sub-themes:<br><br>Physical location and community<br>Society's impact based on mother's perceptions | |
| **Interpersonal Interactions During Infancy** | The interactions take place on the microsystem level where the relationships are the key to the interaction. |
| Sub-themes:<br><br>Interactions with mothers<br>Sibling interactions<br>Interactions with others | |

**Discussion of Research Findings in Relation to the Literature**

The literature review explored relationships between mothers and their infants and how this may impact infant's preliteracy skills. However, there is a lack of literature that is inclusive as well as a lack of breadth of knowledge in this area because it is understudied. The following discussion will explore what this study can contribute to literacy development in infancy through the lens of the host culture of the United States. It will also explore the literature that suggests how literacy development in infancy occurs to complement and compare to what mothers' perceptions of these occurrences are.

### *Experiences Shape Mother's Views of Literacy Development in Their Past Experience as Well as the Events They Engage in With Their Infants*

Experiences was a theme to emerge, with the subcategories of experiences that mothers have with their infants and also experiences that shape the mother into who she is and her perceptions. The research on experience shows how experiences in infancy shape their literacy development (Bingham et al., 2017; Shonkoff et al., 2011). Yet, in the current study, family experiences were one way that mothers identified with instilling a home literacy practice or not. For example, Sydney compared her upbringing to what she does in her own home as an adult which impacts the home learning environment. Work experiences were also influential in shaping mothers' perceptions of infant literacy development. For example, Denise shared that her work experience in early intervention programming showed her parenting styles of what not to do. Brielle shared that her work experience allowed her to seek out milestones and made her more aware of the developmental stages.

There were also mothers who categorized and reflected on what they see and experience and use that to help inform their parenting practice. For example, Molly reflected on parents' participation with their infants—she wants to be fully engaged. Riley echoed the same sentiment, but she blamed the lack of participation of some parents on the educational status of the parents. The stark contrast between Molly and Riley's education shows the dangers to thinking as Riley did, because it further marginalizes low SES mothers. See Appendix A for socioeconomic status information.

**Parental knowledge from experience**. Parental knowledge was discussed by Brielle and Denise who felt that parents may not know where to receive information or that the information that is being given to parents is rare. One component of parental knowledge is where and how information is sought. Mother's apart of the current study looked for guidance from apps, the internet, family members and peers. The support mothers receive is essential to achieve their desired goals (Kirsch, 2012). The support mothers have when they do seek guidance is crucial. Rowe's research showed that most mother's seek advice from their mother's or family members, few sought counsel from doctors or nurses (2016). Parenting knowledge is directly linked to infant language and literacy skills (Rowe, 2016). In Rowe's study the findings showed that parental knowledge was very low (2016). The evidence gathered from this study shows there is a lack of evidence-based support that mirrors infants' ages and developmental trajectories available to the public.

**Experiences with language.** Mothers' attitudes and beliefs about family language planning directly impact children's attitudes and beliefs (Kirsch, 2012). However, they often do not know the factors surrounding language acquisition and implementation in infancy. Moreover, the difficulty in language planning and the execution of the implementation is that beliefs and practices are not always effective in practice or, as many of the participants of this research study suggested, they do not know how to incorporate the additional language into their home learning environment (Kirsch 2012). Research also states that children socialize their parents into speaking the majority language rather than parents teaching their children the minority language (Kirsch 2012).

Most mothers did not know how to integrate a second language, although several planned to do so. Danielle, one mother who was already integrating a second language, relies on YouTube and Facetime with grandparents to teach her children Mandarin. This method is supported by research that suggests that an infant learns a second language through social interactions, as the social part of the brain is the part that makes these connections (Kuhl, 2011). Anastasia, on the other hand, shared that her older daughter has speech issues and that the daughter's speech therapist said that they were caused by Anastasia introducing Russian too early. This claim is factually incorrect. Infants who experience two different phonological systems (i.e., languages) can switch between each language at a crucial period of language development (Kuhl, 2011). A common misunderstanding is that bilingual children will not understand English if they do not learn it; however, bilingual children learn vocabulary in English when it is first taught in their primary language (Ijalba, 2014). In Anastasia's case, the error on the clinician's part in turn impacted the way Anastasia would introduce a language to her subsequent infants.

In the discussion around dual language integration, Brielle shared that she engaged in sign language learning with her infants. Although Brielle engaged in this activity with her infants, she was unsure and questioned if it was something she should be doing but believed it to be an important stepping stone for her infant's communication. Introducing sign language that promotes infant and toddler communication with parents is a strategy employed by the United States and other parts of the world (Colwell et al., 2014). According to the research, babies who used sign language prior to verbal language learn to speak at a faster pace and score higher on intelligence tests than peers who did not learn or use sign language (Colwell et al., 2014). Moreover, the use of sign language

prior to verbal language during mother-infant interactions has been shown to produce gains in verbalizations, vocabulary, language development, literacy, and emotional expression (Colwell et al., 2014). The introduction of a new language such as sign language sheds light on the literacy practices typically used in the United States and Western cultures which are often not commonly known to mothers.

Mothers' knowledge of how to introduce a second language may be skewed because of the education system we have in the United States where the leading ideology is that exposure to two languages places too many demands on language learning systems of children, whereas it has been found that learning in their primary language promotes success (Ijalba, 2014). Mothers who conducted literacy activities with their infants in their proficient language added to their home literacy environment in significant ways (Ijalba, 2014). Furthermore, in infant care there should be more of an understanding of how dual language learners acquire language(s) so that they can be supported in daycare as well as school environments (Boyce et al., 2013). Preliteracy activities and coaching can take place to dual language learners and their families living in underserved communities to help infants gain a preliteracy skill set (Boyce et al., 2013).

Language and culture are inexplicably interwoven. The participants in this study echoed this as well. Anastasia made the connection between language and culture by stating the two are connected. Molly felt culture was tied into the environment, whereas Noelle did not feel she belonged to identifiable culture aside from her physical community. Riley shared the different upbringings she and her husband had and their impact on their differing educational philosophies for their children. Jada is the only mother who connected her cultural identity to nursery rhymes, food, and relatives. Denise

shared that learning about new cultures can take place with infants in book reading. The variety of answers provided by participants shows how multifaceted and layered the complexities of perceptions of mother's beliefs impact infant literacy development lending itself to the ecological framework.

The implications are that teacher training should focus on facilitating infant emotional self-regulation, especially for teachers who work with temperamental or difficult children, children from socioeconomically disadvantaged backgrounds, or those who could benefit the most from positive adult interactions in the form of infant-teacher relationships (Mortensen & Barrnett, 2015). Furthermore, cultural awareness in teachers and caregivers can impact the way mothers and infants of differing cultures feel comfortable (Kim, 2011). Teachers can also be equipped to be partners to parents who may not understand how to help their infants with self-regulatory behaviors or know what signs to look for (Mortensen & Barrnett, 2015). Teachers should be trained in the mind-mindedness approach to account for sensitivity and stimulation because of the benefits this approach has for infants (Mortensen & Barrett, 2015). These teacher trainings will help teachers in self-regulatory processing, which affects infants' ability to acquire preliteracy skills and, if implemented in the right schools, can help raise equity in marginalized communities (Mortensen & Barrnett, 2015).

**Restatement of positionality.** The researcher can relate to many of the mothers' experiences with introducing a new language. When my bilingual husband and I decided to introduce Spanish to our son, he was already old enough to speak in English. We waited until he reached the targeted number of words in his English milestones as recommended by the pediatrician. When we started speaking to him in Spanish, he said,

"Stop talking like that to me, I do not like that." My husband and I took his cue and eased on integrating Spanish into his life. We in essence missed the "window" of opportunity (Kuhl, 2011). We were more focused on his English word learning, which many of the mothers in this study relate to. I was concerned about him meeting his milestones in English then worrying about specific time periods of openness for learning a new language. Furthermore, I did not know how to integrate the second language and relied on my husband as he was the Spanish speaker, and I was not.

**Mothers' characteristics impact experiences.** Mothers identified themselves as being strict, rigid, routinized, or laid-back. Lugo-Gil & Tamis-LeMonda (2008) say maternal characteristics and skills influence the quality of parenting styles and development outcomes. They felt certain characteristics of their personality impact the way they engage with their infants. For example, Denise shared that she is rigid and nervous to venture out of her comfort zone; she said her family often ridicules her for not creating grand experiences for her infant and child. However, she was able to show the ways she does create meaningful, rich experiences for her children when she described reading *The Very Hungry Caterpillar* and watching caterpillars grow with her infants. This shows that a mother's belief and personality can lead to different activities that engage their infants in literacy learning.

Parental personality and attitude toward television viewing also differed between the participants. Some mothers used media to help teach their infants, whereas some used it for entertainment, and some did not incorporate it at all. Depending on the belief of the mother, some felt comfortable using educational television as a supplement. The American Academy of Pediatrics recommends no television viewing for infants under the

age of two (Hoffman & Paciga, 2014). Some mothers adhered to this guidance strictly, whereas some did not which is in line with the next category of parental knowledge.

### *Home Literacy Environment*

Home Literacy Environment is paramount to infant literacy learning (Abraham et al., 2013). The current study showed mother's putting a focus on their home learning environments. This finding was supported by research from Kim et al. (2015), who identified the home literacy environment as one of the most important factors in emergent literacy skills. Literacy-related activities such as parental book reading, storytelling, and singing songs in toddlerhood is beneficial for preschoolers' development of vocabulary and decoding skills, and vocabulary activities such as decoding fall within activities that can be done at home to expand literacy knowledge (Kim et al., 2015).

The mothers in the current study engaged in many of these activities that form a supportive home literacy environment. The leading literacy activity from the participants of this study was book reading, although there was no mention of vocabulary or decoding. Some mothers did engage in singing songs, and two mothers referenced nursery rhymes. Bingham et al. (2017) further that parents and the home literacy environments they create have a direct impact on children's acquisition of print awareness, reading comprehension, vocabulary, and spelling before they enter formal school environments. Noelle did mention that she thought the most important time for literacy development is age three, four, or five, but she then said she thinks what they are doing with him now is important because it "feeds into each other."

An element of the home learning environment is direct teaching. Direct teaching of literacy skills such as letters and phonemic awareness is crucial in pre-literacy skills.

Other engaging activities that would foster these emergent skills are singing, which Jada, Riley, Anastasia, engage in, as well. Allison, and Sabrina engage in flashcard memorization, while Riley introduces sight words. Phonemic awareness has been found to be a key predictor of reading skills, yet it appeared through the results presented here mothers did not have this knowledge and did not see it as a factor contributing to their infant's literacy development (Suorrtti & Lipponen, 2016). Mothers engaging in utilizing rhyming words, singing, or letter introduction are engaging in literacy practices that would allow for success in kindergarten and beyond in the United States of America as based on the societal norm that kindergarten is a determinant for later success (Rowe et al., 2016). Mothers did push back against the idea of being ready for school in what school is asking them to do. Both Danielle and Denise want their children to succeed but want them to be developmentally guided in the right direction before they get to school.

According to Bingham et al., parenting style is the force that impacts the quality and frequency of the home literacy experiences which then relates to the infant's oral language development (2017). Home literacy environment is a broad term that encompasses parents' established routines or ways in which parents and children interact around reading and writing to help develop strong language and literacy skills (Bingham et al., 2017). It can be developed in two ways, one is through informal literacy activities, such as focusing on meaning or print and parent-child book reading, that build vocabulary and early comprehension skills. The other is through formal literacy activities that focus on words and direct teaching from the parent, code-based knowledge, and how to print or read words (Bingham et al., 2017). Many of the ways mothers integrate these skills is through playing. Imaginative, silly play were a common trend throughout

secondary interviews, both Danielle and Denise described their play with their infants to grow their infant vocabulary.

The findings are consistent with research by Hood et al. state, "Parent-child reading fosters these pre literacy skills…" (2008). This became evident through analysis of the data coded from the interviews when the mothers who emphasized their book reading as a main literacy tool, they use in fostering their infant's literacy development. This is reflective of the literature to date as well.

**Book reading.** Book reading is the primary tool the mothers in this research study engaged with their infants. Mothers should scaffold for their infant by describing pictures or identifying what they see on each page of the book as Lauren shared, she does; this will help aid with word learning and retention (Hirsh-Pasek et al., 2015). Denise shared that she reads to her son, and even if he does not have interest, she will finish reading the book. Lauren also shared in her secondary interview that she does the same as Denise: She said she heard that infants learn on the periphery, so even if her infant and preschooler do not appear to be paying attention to her, she will continue to talk and read. However, Hirsh-Pasek et al., mention a need for interest and scaffolding on behalf of the infant and mother. (2015).

**Narration.** Interactions are a key component in the development of literacy practices; they play a prominent role in ecological theory that is leading this study. One element of interactions that some mothers described performing was narration, although not all mothers could explicitly identify what they were doing as such. Narration is a form of interaction because it is reciprocal; the infant can engage in this type of learning through pointing. Noelle seemed to miss the link between literacy and language when it

came to narration; she thought she was only building vocabulary and did not see the connection between language and literacy.

**Modeling.** Modeling behaviors refer to joint attention between mother and infant and this interaction is where the children will acquire new words and skills (Dodici et al., 2003). However, it is important to note that if it is an adult-selected object or topic, this modeling behavior or joint attention will not impact the infant because of their disinterest. An infant's interest in a literacy activity is an important part of the infant engaging and learning from that activity (Roberts et al., 2005).

Lauren shared that she attempts to get her daughter to follow along during shared book reading with "her finger to follow something." Noelle also shared that she will model how to hold a book and read a book to her son after he has explored and "read" it to himself. Riley, meanwhile, shared that she becomes frustrated if her son does not want to engage in an activity she has chosen—indicating her understanding that an infant must be interested in the modeled behavior to learn from it.

**Music.** Throughout the secondary interviews, music became a more salient fixture of the mothers' home literacy environments. Music promotes early language communication in infancy (Colwell et al., 2014). Danielle shared that her son loves music, and Sydney shared she has music playing all day. Danielle enjoyed that her son likes music because she sees it as a way to promote his literacy (Colwell et al., 2014). Denise shared she would go to Music Together classes with her infant. Jada (from the initial interviews) was the only one to say she engaged in nursery rhymes.

***Physical Support from the Community, Emotional Support from Others for Mothers; Mothers Supporting Their Infants Through Emotional Connection***

The theme of support can be seen in family support, physical location, and society's impact. The home literacy environment is impacted by the support mothers receive or in the community in which they live. This in turn impacts the way mothers will engage with their infants due to stress or environmental factors.

**Physical location and community.** Most participants revealed they have supportive communities such as in their spouse. Denise mentioned the consistency her husband supplies. Noelle mentioned her husband is the primary caregiver now that COVID-19 has changed work status and caregiver options. However, in other parts of Noelle's interview she mentioned ascribing to gender norms such as dinner preparation as well as conducting bath and bedtime with her infant. Riley on the other hand felt her husband was unsupportive; however, throughout her interview she did refer to their dynamics by saying "we." She shared that her son is in a private tuition-based preschool program, but her husband did not want to pay for it. The differences in their educational philosophies could impact the home literacy environment and the types of activities they engage in because of the level of support (or lack thereof).

Molly is a single mother, as is Sabrina. Sabrina relies on daycare as her secondary caregiver and in the first interview was happy with the literacy resources they provide for her infants in the initial interview. Upon the secondary interview with Sabrina, however, she was no longer happy with the daycare and felt there was nothing she could do about it because the daycare is a mandated service.

Mothers also felt the community in which they lived provided support. For example, Lauren shared her local library was a support for her and included Mom and Me

classes she would attend, such as sign language. Danielle also shared that her community in her physical space is where she finds her support because she lives far from her family. She also mentioned the libraries in her area are a support for literacy development because of the story times and language classes they offer. She also mentioned receiving support from friends in her community. Sydney shared she is also far from her family but relies on internet-based support such as through social media to answer any questions she may have in relation to child rearing or literacy development.

Support can also be seen in SES because it can include income, educational access, environmental resources, stress, health, and nutrition (Romeo et al., 2018). It is clear from this definition of SES that it is reliant upon many factors. Stress can impact maternal sensitivity, which is one of the great mediators in the home literacy environment (Harris et al., 2014).

The findings around this theme revealed that there is a difference in the way mothers perceive SES and its impact on infants' literacy learning. These findings refute the idea that mothers in higher SES homes are more likely to provide children with greater language input than those in lower SES homes (Daneri et al., 2019). Although only three participants from the current study were considered low SES, their interview responses show they engage in the same literacy practices as those from higher SES, especially Sabrina who was able to describe how she engages in quality interactions with her infants. Fernald et al., said there is a stark difference of inequality of vocabulary growth based on race and SES prior to 36 months. In this research study, having varied economic backgrounds as well as racially diverse couples allowed me to hear from

mothers themselves on their own literacy practices and habits. The current study allows for parental practices, beliefs, and intimate culture to be included in the conversation that they could be more important to literacy development than socioeconomic status which was also evidenced by Hood et al., (2008). Parental knowledge of literacy practices are paramount to infant success. The findings from the current study align with Dodici et al., who reported that parents need to be made aware of the interactions and the relationships they have and cultivate with their infant's impact later literacy skills (2003).

***Interpersonal Interactions During Infancy.***

A final theme to emerge was interactions. This included the interactions between mother and infant, infant and siblings, and infant and the world around them. These interactions all play a crucial role in infant literacy development.

**Interactions with mothers.** The first interactions to be discussed are those between mother and infant. The mothers, especially the mothers who participated in the secondary interview, such as Lauren, Sydney, Sabrina Danielle, and Denise, mentioned being present and aware. They wanted to create a space for their children where they engage in eye contact and playing with their infants. This is in line with the current research demonstrating that early interactions play a role in vocabulary and infant language development (Song et al., 2012).

**Interactions with others.** Brielle shared that not only are her interactions with her infant important, but she also facilitates interactions outside of the home for her daughter. She said it is a choice whether to facilitate these types of interactions. This is an important component of interactions because it challenges the status quo of parents needing to be the only individuals with whom an infant interacts for them to make gains

(Kurchiko, 2019). Abraham et al. (2013) stated that language acquisition is influenced by culture, home environment and parent child characteristics, this relates to interaction style by what interactions mothers perceive to be important. In the instance shown above, Brielle feels that interactions with others are important to her infant's literacy development. To that effect, many of the participants had multiple children, and in the time of COVID-19 the only interactions the infants were having aside from with their primary caregivers were with a sibling. The participants expressed that they do think that siblings impact the infant literacy development.

Research from Abraham et al. (2013) suggests that there should be programs to enhance opportunities where books and shared reading interactions occur because this would benefit both parent and infant. Sabrina shared her program has recently started a book reading class that mothers must attend with her infants.

**Recommendations for Practice**

The purpose of this study was to investigate mothers' perceptions around their influence upon their infants' literacy development as well as to determine what they viewed as factors influencing their infants' literacy development. Through learning mothers' understanding around their infant's literacy development, it is apparent that mothers are looking for more support. It is recommended that a contemporary source become readily available to mothers, so they have the information they need to be informed primary caregivers and bolster their infants' literacy development in the years prior to age 3 to close achievement gaps in kindergarten. Such a resource will equip all primary caregivers with information that they seem to want but do not know how to find.

Although it was not discussed in depth in the findings of this study, the recommendations also include engaging and educating secondary caregivers such as fathers, partners, grandparents, or daycare providers. For example, the role of fathers' positive involvement has been shown to reduce cognitive delays, especially in boys (Parfitt et al., 2014). Additionally, the father's perception of his relationship with his infant impacts the child's motor development (Parfitt et al., 2014). Information should be disseminated to mothers regarding how and why paternal play and engagement impacts literacy development. This information may help a mother such as Riley understand the differences between her parenting approach and her husband's approach. Of the 12 participants, three used daycares and reported positive perceptions of these daycares' impact on their infants' literacy development.

Tamis- LeMonda & Kahana-Kalman (2009) referred to the need for culturally sensitive guidance for new family relationships. Tamis-LeMonda & Kahana-Kalman (2009) called for this guidance to be disseminated from pediatricians, psychologists and social workers maybe be one way to educate parents in the early days of infancy. As evidenced by the findings in the current study, mothers would like access to information about their infant's literacy development.

The researcher recommends that there should be a culturally sensitive source of reliable research-backed information that is streamlined for parents. Although, it was stated in the research that parents do not refer to nurses or pediatricians for literacy development information but rather their own spouses, parents, or close kin (Rowe et al., 2016), the mothers in my study resorted to the internet for answers to their questions about developmentally appropriate activities and guidelines for their infants. That being

said, Brielle and Denise both stated that they would like to have received information from their pediatrician or OBGYN, and Brielle attended classes such as CPR and breastfeeding classes. She said she would have seized the opportunity to attend a literacy development class to help her infant. Sonnenchein and Sun (2017) state that increasing parental knowledge of infant development is important and can be done through information being disseminated at prenatal and postnatal classes and doctors' visits.

An additional recommendation for practice is to have community outreach in public service. The resource can be readily available at community locations such as libraries, schools, and nonprofit organizations. Furthermore, workshops can be developed on how to implement and support parents in their knowledge of infant literacy development in these public service locations. This will be attainable through speakers that will be recurrent, in order to build relationships and rapport within the community. The speakers will be an expert in this area and can provide additional support through question-and-answer periods with parents seeking specific guidance on a developmental topic.

**Recommendations for Future Research**

Recommendations for future research include studying effects of high quality childcare. As childcare has changed, the effect of this change should be studied, with emphasis on the role secondary caregivers play in impacting infant literacy development. The participants who used daycare centers were happy with their choices which is the antithesis of many of the research articles presented. Furthermore, there should be future research on what a quality interaction is and how it looks during primary caregiver interactions as well as secondary caregiver interactions.

There should be future research on family literacy and education (Lugo-Gil & Tamis-LeMonda, 2008). There should be future research on how to best support parents in an early intervention of infant literacy learning Rowe et al. (2016).

There should be future research on parental experiences and how they shape their beliefs. Furthermore, how parent interests and personality impact the decisions they make and how these decisions impact their infant's literacy development.

This study revealed the need for more research for mothers (as well as other primary caregivers) on the topic of literacy development for infants. This study has shown that many caregivers would like additional support in literacy development, although they do share their literacy activities, they want more awareness around the topic. For example, Brielle and Denise both said that giving information to parents would be both beneficial for their own families but also the families they work with in their professional lives.

Another future area of research can be on the pathways to parenthood. Different paths to becoming parents would impact the representations mothers and primary caregivers hold and how this translates to their literacy practices with their infants (Meins et al., 2011). This research would be more inclusive of more families in that families can be created through various sources such as adoption, surrogacy, and infertility treatments. Although Meins et al., studied how pregnant women viewed their pregnancy and conception, delivery, and the first moments of life with their infants, there are many families that achieve parenthood through alternate means, and their experiences can impact how they would in turn perceive their relationship and engagement with their

infants. This future research would be more inclusive to which is a gap in the study of infant literacy development.

**Limitations**

The sensitivity around motherhood and infancy may have led to some findings. For example, it is possible participants were led to answer a certain way due to the framing of how the study was publicized. For example, Brielle, when asked the most important age for literacy development, said she wasn't sure but guessed infancy—a guess the researcher suspects came from the fact that all the prior interview questions were framed around infancy. Likewise, some mothers may have answered the questions the way they thought the researcher would want them to, which could be why so many centralized their interview on reading. Finally, one participant, Denise, asked the researcher "What are you looking for?" multiple times throughout the interview to ensure that her answers worked for the dissertation rather than offering them up at face value. All these behaviors have to do with trying to please the researcher, and may have influenced the data provided and, consequently, the findings of this study.

In secondary interviews, the medium, Zoom allowed for a more personal, focused interview. It is recommended that when discussing an intimate topic like infancy or family values that a Zoom like platform be used as opposed to a phone interview where participants may feel less obliged to be open and in depth with their answers or possibly be distracted.

**Conclusion**

The present study investigated perceptions of mothers around their influence upon their infants' literacy development. The need for awareness around literacy development

in infancy became apparent through this research study. In order for these infants to succeed when they reach kindergarten based on the societal pressures and norms of the United States of America, it is clear that parents need to be armed with the research and tools to engage in meaningful practices, as they do engage in literacy practices but not always with clear purpose and not exhaustively. Creating a web source or other source of readily available information would alleviate societal and cultural expectations and provide mothers with tangible tools to integrate literacy practices into their daily lives with their infants. Such a resource will empower mothers and primary caregivers, which in turn will empower their infants. When these infants reach school age they will then be better prepared for success.

# APPENDIX A: Table of Participant Demographic Data

## Demographic Characteristics Table

**Table 1**

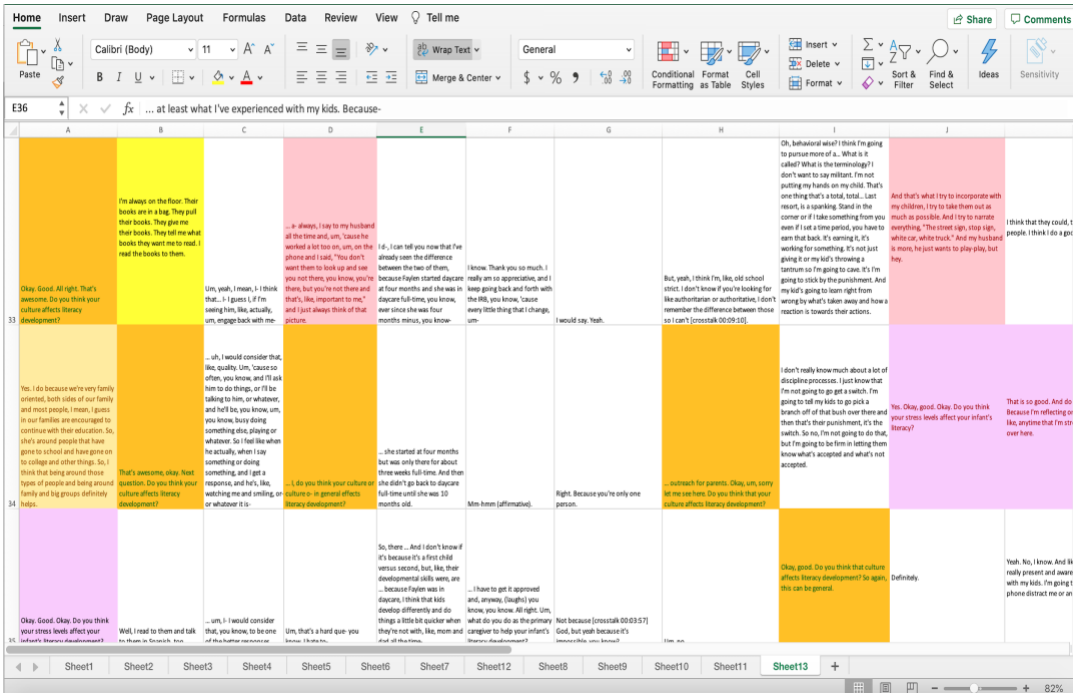
*Sociodemographic Characteristics of Participants*

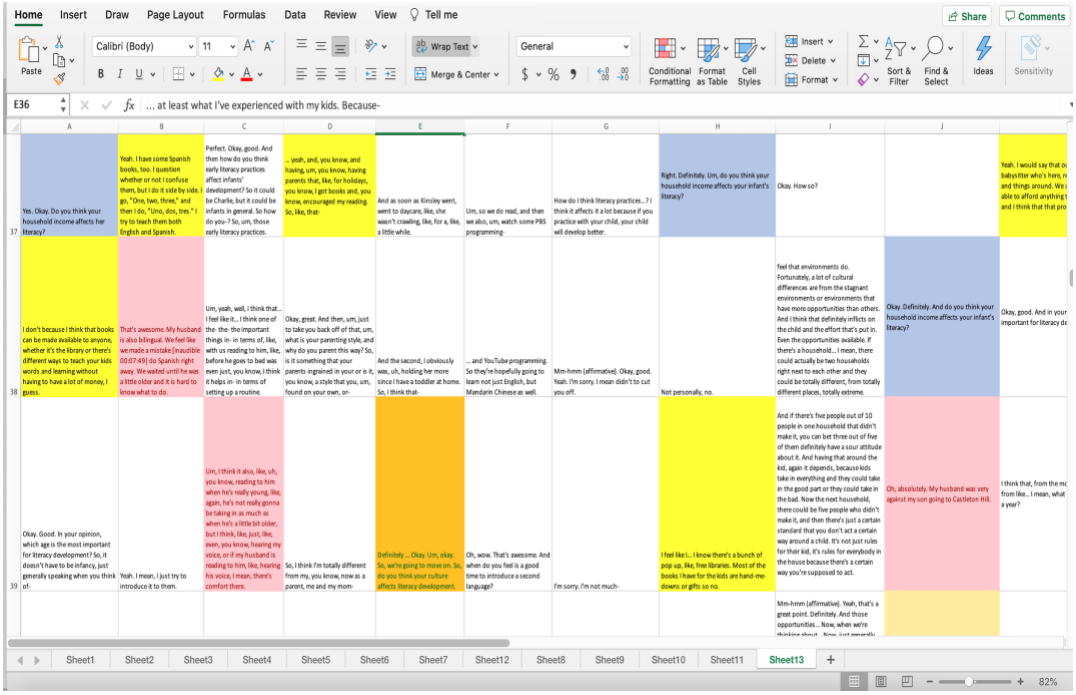
| Baseline characteristic | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | *Age* [a] | Age of infant [a] | *SES* | Employment | *Degree* | Secondary Caregiver | *Ethnicity* *And language spoken* | Marital Status |
| Participant 1- AF Pseudonym Allison | 32 | 18 mos., pregnant with second child | Middle | Works fulltime | BA | Husband And Grandparents | Caucasian | Married |
| Participant 2- SB Pseudonym Sabrina | 37 | Infant twins aged 15 mos. and a 5-year-old | Low | Drug Recovery Program | Some college | Daycare | Puerto Rican/Filipino Bilingual English/Spanish | Unmarried |
| Participant 3- NC Pseudonym Noelle | 36 | 12.5 mos. old | Mid | Works Fulltime | BA | Husband | Caucasian English | Married |
| Participant 4- LF Pseudonym Lauren | 35 | 7 mos. old, 3 year old, 13 year old | Middle | Works fulltime | MA | Husband for infant Daycare for Toddler | Caucasian English | Married |
| Participant 5- BO Pseudonym Brielle | 33 | 13 mos. old and 3 years old | Middle | Works full time | MA | Daycare | Caucasian English | Married |
| Participant 6- DC Pseudonym Danielle | 40 | 19 mos. old and three year old | Stay at home mom | Middle | PhD | Husband | Caucasian Jewish | Married to Asian man Teaching their children Mandarin |
| Participant 7- AB Pseudonym Anastasia | 31 | 8 mos. old twins | Low | Drug Recovery Program | BA | Grandmother | Caucasian Russian | Not married |
| Participant 8- SM Pseudonym Sydney | 26 | Two year old and 3 year old | Middle | Works parttime | BA | Husband | Caucasian English | Married |
| Participant 9- MB Pseudonym Molly | 30 | 6 months Pregnant | Low | Drug Recovery Program | GED | None | Caucasian English | Single |

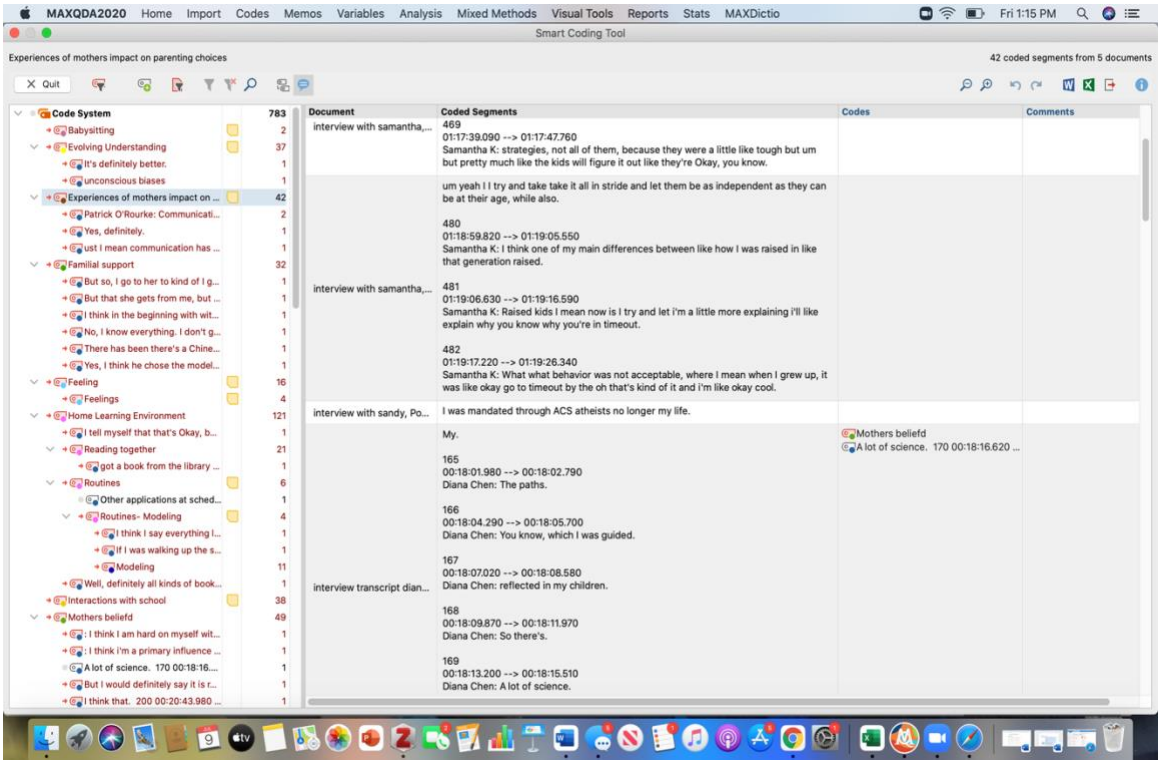
| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Participant 10- RL<br>Pseudonym Riley | 29 | 5 mos. old, two year old | Middle | On Maternity leave, works fulltime ordinarily | MA | Husband, grandparents | Caucasian<br>English | Married to Hispanic non-Spanish speaker |
| Participant 11- DP<br>Pseudonym Denise | 33 | 12 mos., 2 year old | Middle | Works Fulltime | MA | Husband and Nanny | Caucasian<br>English | Married |
| Participant 12-JJ<br>Pseudonym Jada | 34 | 11 mos. | Middle | Works fulltime | BA | Fiancé and Nanny | African American | Engaged to Hispanic male who is bilingual |

[a] Reflects the age and age of infant at time of interview

# APPENDIX B: In-Vivo Coding Process






in vivo coding using maxqda with secondary interviews.

## APPENDIX C: Interview Questions

Maternal and Primary Caregiver Interview Questions on Literacy Beliefs in Infancy

You have been invited to take part in a research study to learn more about how literacy practices and beliefs impacts infants' cognitive abilities. This study will be conducted by Deirdre Cruz, Department of Education, Literacy, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. McDowell, Department of Literacy.

The purpose of this interview is to investigate mothers' beliefs about literacy and their literacy practices.

If you agree to participate in this study, you will be asked to take part in an interview to help the researcher understand how you perceive literacy in infancy. By completing this interview process, you are giving your consent to participate in this study.

1. Thank you for participating in this interview. What made you want to participate? How did you find out about it?
2. Where do you live?
3. How do you view motherhood? Or being the primary caregiver of your infant?
4. What do you do as a primary caregiver to help your infant's literacy development? For example, early literacy can be how often, if at all you teach nursery rhymes and nursery songs, name pictures in books, do "finger play" songs or games with your infant (such as "Itsy Bitsy Spider"), make up stories, poems, or silly words, have back-and-forth conversations with your infant.
5. What do you think makes a quality interaction with your infant?
6. How do you think early literacy practices affect infant's development?
7. What is your parenting style? Why do you parent this way?
8. Do you think your parenting style affects literacy development? How?
9. Do you think your culture affects literacy development? How?
10. Do you think your stress levels affect your infant's literacy? How?
11. Do you think your household income affects your infant's literacy? Why?

12. In your opinion, which age is the most important for literacy development? Why?

13. In the past year have you participated in any groups, classes or workshops for infants or parents? If so, what were they? (skip)

14. Do you know where to find reading help for your family and/or answers to your questions about literacy in infancy?

15. Onset of reading

    Do you feel pressure to perform a certain way

    Where do you get your information for what you should be doing

16. Do you think the secondary caregiver makes a difference in your infant's literacy development?

17. What is your infant's date of birth?

18. Which category below includes your age? 17 or younger, 18-20, 21-29, 30-39, 40-49, 50-59, 60 or older

19. How much total combined money did all members of your HOUSEHOLD earn last year?
    $0 to $9,999
    $10,000 to $24,999
    $25,000 to $49,999
    $50,000 to $74,999
    $75,000 to $99,999
    $100,000 to $124,999
    $125,000 to $149,999
    $150,000 to $174,999
    $175,000 to $199,999
    $200,000 and up
    Prefer not to answer

20. What is the highest level of school you have completed or the highest degree you have received?
    Less than high school degree
    High school degree or equivalent (e.g., GED)
    Some college but no degree
    Associate degree
    Bachelor degree
    Graduate degree

21. What is your relationship to your child?
    Mother
    Father
    Step-mother
    Step-father
    Grandmother
    Grandfather
    Aunt
    Uncle
    Guardian
    Other

22. What is the secondary caregiver's relationship to your child?
    Mother
    Father
    Step-mother
    Step-father
    Grandmother
    Grandfather
    Aunt
    Uncle
    Guardian
    Other

23. What is your primary language?
    Chinese
    English
    French
    German
    Italian
    Korean
    Russian
    Spanish
    Tagalog
    Vietnamese
    Other/multiple languages (please specify)

24. What is the primary language you speak with your child currently? (Please choose only one.)
    Chinese
    English
    French
    German
    Italian

Korean
Russian
Spanish
Tagalog
Vietnamese
Other/multiple languages (please specify)

25. Which of the following best describes your current relationship status?
Married
Widowed
Divorced
Separated
In a domestic partnership or civil union
Single, but cohabiting with a significant other
Single, never married

26. How many children age 17 or younger live in your household?
None
1
2
3
4
More than 4

27. Are you White, Black or African-American, American Indian or Alaskan Native, Asian, Native Hawaiian or other Pacific islander, or some other race?
White
Black or African-American
American Indian or Alaskan Native
Asian
Native Hawaiian or other Pacific Islander
From multiple races
Some other race (please specify)

28. Are you Mexican, Mexican-American, Chicano, Puerto Rican, Cuban, Cuban-American, or some other Spanish, Hispanic, or Latino group?
I am not Spanish, Hispanic, or Latino
Mexican
Mexican-American
Chicano
Puerto Rican
Cuban
Cuban-American
Some other Spanish, Hispanic, or Latino group
From multiple Spanish, Hispanic, or Latino groups

## Second Round of Interview Questions

To begin: I will identify the participant's name, the date, the time, the location, and the subject matter. Then I will give four or five statements about the topic to activate prior knowledge (Duke & Mallette, 229)

I am interested in learning more about…. (Coe, 186).
What questions did you expect me to ask? (Coe, 186).
You mentioned that you had _____; could you tell me more about that.
You mentioned when you were doing ____, _____ happened. Could you give me a specific example of that?
Thinking back to that time, what was that like for you?
You mentioned earlier that you _____. Could you describe in detail what happened?
Think of a time when you experienced _____ and describe that in as much detail as possible.
You mentioned _____ tell me what that was like for you. You mentioned _____ describe that in more detail for me. (Roulston, 2010)

How do you view literacy development in the infant stage?

How does the infant stage differ from other literacy development?

How do you view quality time with your infant?

Can you tell me about a time that you had a literacy interaction with your infant?

Can you walk me through a typical day with your infant?

How do you view your role in relation to literacy development?

Has your view changed since the last time we spoke?

Was there anything that you wanted to share after we spoke in our initial interview?

How do you perceive yourself as an influence of your infant's literacy development?

How do factors impact literacy development? What are some of those types of factors? Can you
tell me about a time you experienced this?

How do you view your understanding of infant literacy development? How would you describe
your understanding of literacy development?

How do you view the home learning environment?

How do you identify contributing factors to the learning environment?

How do you view your input on the home learning environment?

How do you view talking with your infant?

How do you view your secondary caregivers' role?

How do you view society's expectation of infants?

What do you perceive to be an influence on your infant care practices?

Has anything changed since our last interview?

How do you think equity in kindergarten can be made possible?

What are some things you google about your infant's literacy development? Why do you?

How do you view the roll of daycare?

How do you view the roll of preschool?

Who do you seek advice from?

Are there any other factors you think contribute to your infant's literacy development?

**APPENDIX D: Consent Form**

To Whom It May Concern:

You have been selected to participate in research study to learn more about how parental literacy practices impact infant literacy development. This study will be conducted by Deirdre Cruz, Department of Education, Literacy, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Aly McDowell, Department of Education Literacy.

If you agree to participate in this study the researcher intends to recruit mothers of infants or primary caregivers of infants ages 0-2 to participate in a one-time phone interview. The interview can be followed up with a secondary interview of sixty-ninety minutes in length on Zoom. The interview is voluntary. The researcher will then send you notes for you to check the reliability of the interview transcripts. The interview will be recorded by rev.com.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the effects of how literacy practices in the home learning environment impact infant cognition and later, school age children.

Confidentiality of your patients will be strictly maintained by removing their name and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the interview documentation and will be stored in a locked file. Responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others.

Participation in this study is voluntary. Parents may refuse to participate or withdraw at any time without penalty.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Deirdre Cruz, Deirdre.murphy09@my.stjohns.edu, St. John's University 8000 Utopia Parkway, Queens NY, 11439 or the faculty sponsor, Dr. Aly McDowell, at

dralymcdowell@gmail.com, St. John's University, Sullivan Hall 4th Floor, 8000 Utopia Parkway, Queens NY, 11439.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

Yes, I agree to allow Deirdre Cruz to recruit from my office by showing her flyer for the study described above.

_____ _____

Signature Date

To Whom It May Concern:

Your day care center has been selected to be used as a site to recruit participants for a research study to learn more about how parental literacy practices impact infant cognitive ability. This study will be conducted by Deirdre Cruz, Department of Education, Literacy, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Aly McDowell, Department of Education Literacy.

If you agree to recruitment of your patients for this study, the researcher intends to recruit mothers of infants or primary caregivers of infants ages 0-2 to participate in a one-time phone interview. The interview is voluntary and will take at maximum ninety minutes.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

Although you will receive no direct benefits, this research may help the investigator understand the effects of how literacy practices in the home learning environment impact infant cognition and later, school age children.

Confidentiality of your families will be strictly maintained by removing their name and any identifiers will be replaced with a pseudonym. Consent forms will be stored in a separate location from the interview documentation and will be stored in a locked file. Responses will be kept confidential with the following exception: the researcher is required by law to report to the appropriate authorities, suspicion of harm to yourself, to children, or to others.

Participation in this study is voluntary. Parents may refuse to participate or withdraw at any time without penalty.

If there is anything about the study or your participation that is unclear or that you do not understand, if you have questions or wish to report a research-related problem, you may contact Deirdre Cruz, Deirdre.murphy09@my.stjohns.edu, St. John's University 8000 Utopia Parkway, Queens NY, 11439 or the faculty sponsor, Dr. Aly McDowell, at dralymcdowell@gmail.com, St. John's University, Sullivan Hall 4th Floor, 8000 Utopia Parkway, Queens NY, 11439.

For questions about your rights as a research participant, you may contact the University's Institutional Review Board, St. John's University, Dr. Raymond DiGiuseppe, Chair digiuser@stjohns.edu 718-990-1955 or Marie Nitopi, IRB Coordinator, nitopim@stjohns.edu 718-990-1440.

You have received a copy of this consent document to keep.

Agreement to Participate

Yes, I agree to allow Deirdre Cruz to recruit from my center by showing her flyer for the study described above.

_____ _____

Signature Date

To Whom It May Concern:

Your office has been selected to be used as a site to recruit participants for a research study to learn more about how parental literacy practices impact infant cognitive ability. This study will be conducted by Deirdre Cruz, Department of Education, Literacy, St. John's University, as part of her doctoral dissertation work. Her faculty sponsor is Dr. Aly McDowell, Department of Education Literacy.

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If you agree to allow your patients to be recruited for this study, the researcher intends to recruit mothers of infants or primary caregivers of infants ages 0-2 to participate in a one time phone interview open- ended survey. The interview is voluntary and will take at maximum ninety minutes.

Federal regulations require that all subjects be informed of the availability of medical treatment or financial compensation in the event of physical injury resulting from participation in the research. St. John's University cannot provide either medical treatment or financial compensation for any physical injury resulting from your participation in this research project. Inquiries regarding this policy may be made to the principal investigator or, alternatively, the Human Subjects Review Board (718-990-1440).

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_____ _____

Signature Date

## APPENDIX E: Commonalities Among Participants

| | Number of instances (out of 12 participants) |
|---|---|
| *Multiple Children* | 8[a] |
| *Mother's Observations of Sibling Development* | 6 |
| *Lack of Certainty* | 9 |
| *Family Values* | 5 |
| *Conventional Roles* | 7 |
| *Society* | 4 |
| *Spousal Support* | 4[b] |
| *Cultural Expectations* | 6[c] |
| *What resources are available?* | 7 internet/Google<br>2 peers<br>2 pediatricians |
| *Impact of Socioeconomic Status* | 3 childcares<br>3 does not thinks SES has an impact<br>3 time expenditure<br>1 material goods<br>1 impacts parent education |
| *Narration* | 5 |
| *Home Literacy Environment* | 1 |
| *Modeling* | 3 |
| **Other important characteristics** | |
| *Flash Cards* | 4 |
| *Perception of Book Reading Onset* | 3 Utero<br>2 0-2 years old<br>1 3-4 years old |
| *Thoughts on Age of Importance* | 4 infancy<br>5 toddlerhood |
| *Parenting Style* | 3 laid back<br>3 does not know<br>1 rigid<br>1 attachment parenting |
| *Quality Interactions* | 2 does not know<br>5 engagements<br>1 experiences frustration with lack of engagement |

[a] 2 include sets of twins. [b] 1 does not feel supported. [c] 1 feels they lack a cultural identity by race, religion, or ethnicity.

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# Vita

| | |
|---|---|
| Name | *Deirdre Cruz* |
| Baccalaureate Degree | *Bachelor of Arts*, *University of Connecticut, Storrs*<br>*Major: English* |
| Date Graduated | *May 2009* |
| Other Degrees and Certificates | *Master of Science, St. John's University Major: Childhood Education* |
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