

PARENT'S PERCEPTIONS OF LANGUAGE PROFICIENCY IN THEIR BILINGUAL
CHILDREN

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ABSTRACT

PARENTS' PERCEPTIONS OF LANGUAGE PROFICIENCY IN THEIR BILINGUAL CHILDREN

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Although language proficiency in bilingual children is often viewed as delayed, it is not ethically correct to compare language development in monolingual children to language development in bilingual children (Fleischman et al, 2010; Prevoo et al., 2016; Fernandez & Inserra, 2013).

Research shows there are various factors that contribute to a bilingual child's level of language proficiency in each language a child is exposed to and educated in; however, the research on parental perspectives of language development and resulting proficiency in bilingual children is limited. This study investigated the relationship between factors such as early social interactions children engage in, their exposure to child directed speech, their parents' education, parent/child relationships in relevance to acculturation level and beliefs, and parent perceptions on their bilingual child's level of language proficiency. An adaptation of the Parents of Bilingual Children Questionnaire, originally developed by Tuller and colleagues following the COST Action IS0804 in several countries, was developed to analyze the relationship between parental perceptions of language proficiency and the factors affecting it. Recruitment occurred through Facebook pages in Western North Carolina, and the survey, available from June 02, 2023, to August 6, 2023, was presented in both English and Spanish. The survey was started by 112 participants, however, despite their initial interest, only 13 completed the survey from beginning

to end, posing a challenge on statistical analyses. Therefore, descriptive data from these completions were analyzed. Results supported the existing research regarding the factors that affect parental perceptions on their bilingual child's level of language proficiency. More specifically, they supported that most bilingual children meet language milestones within the expected ranges for monolingual children; they support the research that frequent use of child directed speech, higher levels of initiation of interactions and one-to-one interactions, and parental beliefs in relevance to acculturation and language-based activities as well as educational involvement all directly affect language proficiency in bilingual children according to parent perspectives. The effects of parental education on a bilingual child's level of language proficiency, however, could not be confirmed or denied by this study due to the similarities in educational backgrounds within the participants.

INTRODUCTION

The number of bilingual children in the United States continues to grow at a rapid rate as it is estimated that roughly two thirds of the world's population is bilingual (Prevo et al., 2016; Ramirez & Kuhl, 2016). Of note, monolingual children tend to perform better than bilingual children in the school setting especially on standardized reading and math assessments (Fleischman et al., 2010; Prevo et al., 2016) and bilingual children are also more likely to experience negative school outcomes including repeating a grade or dropping out of high school (Prevo et al., 2016). This could be due to lack of English language proficiency. Research has shown that developmental milestones in language development are reached around the same age for both bilingual and monolingual individuals. In bilingual children, however, those milestones are typically first met in the parents' dominant language which is often not English, the language in which children are academically educated (Ramirez & Kuhl, 2016).

Language development in bilingual children is often thought to be delayed (Abderrazak, 2020; Byers-Heinlein & Lew-Williams, 2013; Prevo et al., 2016; Ramirez & Kuhl, 2016). One factor that contributes to difficulties is assessing multilingual children using monolingual methods. In order to get an accurate representation of children's abilities, they must be assessed in all languages spoken and not just English (Hansen et al., 2019). This study will examine various factors affecting proficient language development in bilingual children through the use of parental surveys.

REVIEW OF THE LITERATURE

Bilingualism

Bilingualism is defined as the ability to use two languages fluently (Edwards, 2004). Researchers typically consider individuals to be bilingual if they're receiving at least 10-25% of exposure to each language (Byers-Heinlein & Lew-Williams, 2013). Bilingualism can be obtained in many ways and in different environments. A second language can be learned at home, from birth or later in school. The language children learn at home can be the same as the language they hear in their community, or it can be distinct (Abderrazak, 2020). In some cases, the second language may even be learned from a different source such as caregivers or the child's grandparents (Abderrazak, 2020). Individuals who are exposed to two languages consecutively or from birth are referred to as simultaneous bilinguals, while individuals who learn one language first and then another are referred to as sequential bilinguals (Byers-Heinlein & Lew-Williams, 2013). Unfortunately, research on bilingual language learning is extremely limited despite the prevalence of bilingualism (Byers-Heinlein & Lew-Williams, 2013).

Statistics

Currently, more than 50% of the population world-wide speaks more than one language (Abderrazak, 2020). Furthermore, the percentage of language minority students in the United States is expected to increase to 40% in 2030 (Thomas & Collier, 2002). According to U.S. demographic data from 2016, 22% (more than 12 million) of children in the U.S. spoke a language other than English at home. Most of these children speak Spanish, as it's the most

common spoken language in the U.S. other than English (“*The Number of Bilingual Kids in America Continues to Rise.*,” n.d.).

Language Development

From the time babies are in their mothers’ wombs, they are picking up on language. Children are able to easily pick up on whichever and as many languages as they’re exposed to. No language is more or less difficult for children to learn than another, making it easier for them to become native speakers of various languages (Abderrazak, 2020; Dodman, 2016; Ramirez & Kuhl, 2016). Children who are exposed to multiple languages are able to produce their first words and first syllables at the same time as their monolingual peers (Conboy & Thal, 2006; Parra et al., 2011).

Typical Language Development

Infants begin discriminating phonetic sounds as soon as they’re born. The first year of an infant’s life is one of the most important years for their learning of language. By the early age of 6 months, infants are able to recognize differences between the sounds of vowels and consonants in any language and begin babbling (Kuhl et al., 2006; Visser-Bochane et al., 2020). At this age, infants can begin repeating sounds and produce canonical, reduplicated babbling such as “ma-ma” or “da-da” (Visser-Bochane et al., 2020). By 12 months, they are able to decipher sounds from their native language, but not from other languages (Kuhl et al., 2006). Additionally, between the ages of 12 to 24 months, children gradually begin to understand what is being said to them and begin producing their first words and building vocabulary, which may only include about 4 to 6 words, are beginning to understand questions, and can produce two-word sentences (Visser-Bochane et al., 2020). By the end of age two, children begin to initiate conversations. Their sentences then consist of three words that can include adjectives, and they’re able to tell

stories in chronological order. By the time they're three, children can use pronouns correctly, and they can develop compound sentences. They also enter the "why phase," where children are curious to know the reasoning behind anything and everything. Language development takes a different turn when children are four years old. At this age, they can use plurals, and develop sentences using conjunctions, such as because. From this age on, children's language is focused on building their language to expand their knowledge and ability to communicate efficiently (Visser-Bochane et al., 2020; Luinge et al., 2006). Children in both bilingual and monolingual families follow the same trajectory regarding expressive and receptive skills in the areas of grammar and vocabulary development when considering all languages, which tends to develop around age two followed by the development of the understanding of syntax and morphology (Ramirez & Kuhl, 2016; Visser-Bochane et al., 2020).

Language Development in Bilingual vs. Monolingual Children. Recent infant-friendly brain imaging studies have shown that bilingual infants experience the same timetable in learning language as monolingual infants at the age of 12 months (Ramirez et al., 2016). In contrast, studies have found that bilingual children learn less vocabulary words in their primary language than monolingual children (Hoff et al., 2012). This difference, however, is due to the fact that their vocabulary knowledge is only being assessed in one specific language. Studies have shown that when conceptual vocabulary is examined, bilingual children learn more vocabulary words in both languages combined than monolingual children learn in one language. They hear less of each language and are exposed to less vocabulary words in the language in which they are assessed (Byers-Heinlein & Lew-Williams, 2013; Marchman et al., 2010). Conversational abilities for both bilingual and monolingual individuals also develop within the same timeframe and with the same proficiency. It's also just as easy for a bilingual child to

recognize mispronounced words and correct them as it is for a monolingual child to do so (Comeau et al., 2010).

The Advantages and Disadvantages of Bilingualism. Several studies have found that bilingual children perform better than monolingual children on executive control tasks as well as measures of working memory and spatial perspective taking (Adesope et al., 2010; Barac & Bialystok 2012; Greenberg et al., 2013; Poulin-Dubois et al., 2011). Bilingual children are also more easily able to understand additional labels or names for the same objects at a younger age (e.g., calling tennis shoes sneakers) (Graf Estes & Hay, 2015; Yoshida, 2008). Bilingual children have better skills when it comes to understanding other people's points of view or thoughts. Flexibility with adapting to different environments, switching between tasks and inhibiting information that was previously learned in order to distinguish it from new but similar information is easier for bilingual children (Abderrazak, 2020; Byers-Heinlein & Lew-Williams, 2013; Kovaks, 2009). As we would expect, bilingual children show more appreciation for other cultures and commonly show interest and passion for topics regarding their personal cultural background (Abderrazak, 2020). Surprisingly, research has also found that bilingualism in adults acts as a protective barrier against cognitive decline with aging, including the onset of Alzheimer's Disease (Ramirez & Kuhl, 2016).

The most common difficulty faced by bilingual children is understanding whether the errors made in their everyday language are due to being bilingual or if they're due to other factors such as a language delay or disorder that may need the implementation of interventions with a speech-language specialist (Byers-Heinlein & Lew-Williams, 2013).

Code Switching. Many researchers have asked if bilingualism causes confusion in individuals switching between the use of multiple languages. This phenomenon is known as code

switching: combining words or phrases from two distinct languages into the same sentence when interacting with others. However, code switching occurs naturally and facilitates conversations as certain words in a specific language are more easily recalled than others. Therefore, it has been found that code switching does not cause confusion in bilingual individuals (Ramirez & Kuhl, 2016). Code switching has also been found to occur due to children mimicking the way adults around them speak. Additionally, children's vocabulary may be limited in each language; therefore, they're using the linguistic resources that are available to them in both languages (Byers-Heinlein & Lew-Williams, 2013).

The Issue of Language Proficiency

Language proficiency is defined as the ability for one to perform linguistic tasks fluently across various topics and settings. Language proficiency plays a strong role in children's educational outcomes. Children who understand verbal explanations and instructions given by teachers are more likely to perform well in the areas of literacy, reading, and spelling (Prevo et al., 2016). Therefore, language proficiency in the language the child is receiving their education, is essential in creating more optimal school outcomes.

Language proficiency can be directly measured with Cross-Linguistic Lexical Tasks that assess for both receptive and expressive language skills. These measures involve tasks that require children to hear a target word (noun or verb) and select a corresponding picture (receptive skills) as well as seeing a picture and giving the correct verb or noun corresponding to that picture (expressive skills). Language proficiency can also be indirectly measured through parental questionnaires including the Parental Self-Evaluation of Language Proficiency and Parental Judgement of Children's Language Proficiency measures (Hansen et al., 2019) as well as the Parents of Bilingual Children Questionnaire.

The Parents of Bilingual Children Questionnaire (Tuller. L, 2015) includes items related to the child's age at which a second language was exposed to them. It also includes items relative to their current level of language exposure in each language as well as how often each is used and with whom. The questionnaire also includes items related to parents' level of language proficiency in each language as well as parental judgement of the child's language skills/proficiency (Abbot-Smith & Morawska-Patera, 2018).

When examining research comparing the use of cross-linguistic lexical tasks to parental questionnaires as a measure of language proficiency in children, results have been significantly correlated ($r_t = 0.39, p = 0.002$) for some populations such as Norwegian/UK English children, but not as significant ($r_t = 0.14, p = 0.28$) with other populations, including Polish children. Therefore, parental questionnaires can give us an estimated measure of language proficiency, but a cross-linguistic lexical task often provides a more accurate measure (Hansen et al., 2019).

Factors Affecting Language Proficiency

There are many factors that contribute to language development in children. Both the quality and quantity of the language children hear are some of the most important factors that affect language development in children in general; however, simply exposing the child to more vocabulary and language input alone will not guarantee proficiency in language (Ramirez et al., 2016). Other factors affecting language development include the use of child-directed (also known as "parentese") speech, early social interactions, maternal education, and parent/child relationships.

Child Directed Speech

Child directed speech is a form of speech parents commonly use with their children that has an acoustic higher pitch, slower tempo, and exaggerated intonation (Fernald, 1985; Grieser &

Kuhl, 1988; Ramírez-Esparza et al., 2014). Child directed speech contains clear, complete phonological sounds that are distinct from one another and are exaggerated compared to standard speech (Burnham et al., 2002; Kuhl et al., 1997; Ramírez-Esparza et al., 2014). In a study conducted by Ramírez-Esparza and colleagues (2014), it was found that the environment in which children interact with others greatly affects their language development especially when there are various languages spoken in the environment and child directed speech is commonly used (2014). In this study, most participants (80%) spoke English at home and only 20% were from minority backgrounds including Hispanic or Native American backgrounds. In families where languages other than English were spoken, it was found that children whose parents used higher amounts of child directed speech were able to produce more words than those whose parents using this form of speech less commonly at 24 months (Locke, 2006). Child directed speech has also been found to be more frequently used in families of higher social economic status than those of lower social economic status regardless of cultural background (Locke, 2006). Children growing up in higher SES households also tend to have parents who use more gestures to communicate word meanings. Caregivers have also been found to engage in more child directed speech with infants who babble or coo more (Locke, 2006).

In a study by Ramirez-Esparza and colleagues, it was found that infants who experience more child directed speech also show more infant speech utterances (vocalizations), which then lead to more word production later in their development (Ramirez-Esparza et al., 2014). It is important to note, however, that in bilingual children exposed to child directed speech, this growth of language proficiency might only occur in the language the in which the parent is speaking child directed speech, and not the other language (Ramirez-Esparza et al., 2016).

Therefore, it is essential that bilingual infants experience child directed speech in both languages when possible.

Early Social Interactions

Social interactions are required in order for children to learn language (Ramirez-Esparza et al., 2014). The topic of there being a critical period for language learning has been a hot topic for years. This idea that there's a specific timeframe for when it's best to learn a second language has no research to support it. There is no specific timeframe for when language can be learned the quickest or easiest in children; however, there is a significant decline in language learning abilities with age (Byers-Heinlein & Lew-Williams, 2013; Hukata et al., 2003). Social interactions are impactful when they're experienced from 'live tutors' such as parents, teachers, caregivers, and grandparents but not as impactful if experienced via electronic devices such as a TVs, tablets, and phones (Conboy & Kuhl, 2011; Ramirez-Esparza et al., 2014). Research has found that infants can discriminate their mother's language from other languages as well as discriminate between rhythmically distinct languages at birth (Lanza, 2004). They can also discriminate between rhythmically similar languages such as French and Spanish as early as four months (Byers & Lew-Williams, 2013; Lanza, 2004). In a study by Ramirez-Esparza (2016), it was found that as early as 9 months of age, children were able to discriminate foreign language sounds after only 6 hours of exposure when those sounds were portrayed by a live tutor, but this ability was not present when the sounds were portrayed through video- or audio-tapes (2016).

Quantity and Quality of Social Interactions. Children's language expression in either language has been directly linked to high levels of language proficiency (Bedore et al., 2012; Bohman et al., 2010; Duncan & Paradis, 2018; Paradis, 2011; Rojas et al., 2016). The amount of language expression from the child at home appears to be more important than the receptive

language the child receives from family members (Bohman et al., 2010; Duncan & Paradis, 2018; Paradis, 2011). However, it is important to consider level of language exposure for each language the child hears on an everyday basis as the language he/she hears most will likely be the language they are most proficient in, particularly in relation to correct grammar usage and spoken word count (Hoff et al., 2012; Hurtado et al., 2013). Ideally, the child should be equally exposed to both languages for maximum proficiency in both and not only exposed to a language during certain times (i.e., when they're at school or when grandparents visit them on weekends) (Byers-Heinlein & Lew-Williams, 2013). For this reason, professionals recommend greater exposure to minority languages such as Spanish, Chinese (Mandarin), Arabic etc. as children are likely to interact in English in many distinct environments (Byers-Heinlein & Lew-Williams, 2013; Pearson, 2008). Additionally, balanced exposure in each language can lead to successful acquisition in both, which allows children to identify the language spoken with others for them to engage in conversations using the correct language (Byers-Heinlein & Lew-Williams, 2013).

Quality of social interactions refers to both the literate style of speech the child engages in as well as the social environment in which these interactions occur (Ramirez-Esparza et al., 2014). One-to-one interactions between infants and adults are often more advantageous as this provides children with a greater opportunity to reciprocally interact and helps in advancing the child's speech production and language learning (Ramírez-Esparza et al., 2014). Although one-to-one interactions are beneficial in language learning for bilingual children, engaging in these interactions doesn't necessarily mean they will be successful in their language acquisition as larger group interactions are also important in advancing language acquisition (Byers-Heinlein & Lew-Williams, 2013; De Houwer, 2007, Ramírez-Esparza et al., 2014).

Maternal Education

In monolingual families, mothers who have received higher levels of education provide more proficient linguistic input to their children, which in turn seems to enhance their children's vocabulary (Hoff, 2006). In bilingual families, however, the relationship between maternal education and its impact on linguistic input is more complex as the mother's educational experience was likely to have occurred in only one of the child's spoken languages (Duncan & Paradis, 2018; Montanari et al, 2022; Friend et al, 2022). In a study of the impact of maternal education on child linguistic development, it was found that children whose mothers attended school in Spanish-speaking countries received higher Spanish language scores than their peers, and children whose parents attended school in English-Speaking countries performed better in English classes than their peers (Bohman et al., 2010; Hammer et al., 2012; Hoff & Giguere, 2015).

Aspects of Parent/Child Relationships

Parental beliefs of any aspect of child development can be due to personal history or experiences with culturally bound norms or expectations regardless of ethnic background. Parental beliefs regarding language, however, are very likely to impact children's literacy experiences in the home (Rodriguez et al., 2009). These experiences are directly linked to cognitive and language development; therefore, we can see the impact parents can have on language development in their children (Bridges et al., 2012). In all families no matter their dominant language, most parents report reading to their children only if the child showed interest which help explain the higher rates of disadvantages in language and literacy in Spanish-speaking populations (Gonzalez et al., 2019).

Acculturation. Family traditions hold an important role in language development in children. Families who engage in oral storytelling, singing, reciting poetry, or oral folklore give their children better opportunities to engage in conversations, chants, and continue to build their vocabulary (Gonzalez et al., 2019). In Mexican-American households, parental beliefs have been focused around values such as the primacy of family (*familismo*), respect for your elders (*respeto*), and education (*educacion*) (Reese et al., 1995). Previous research has found that Mexican parents are less involved in their children's education than other cultures (Gonzalez et al., 2019). The methods used for these findings, however, consisted of teacher questionnaires and language barriers between the school and families were not taken into consideration (Fuller & Garcia-Coil, 2010). Recent research, however, has found that because Mexican-American families place a strong value on education, parents consider themselves active in their child's education despite the language barriers and that parents do not hold teachers accountable for educating their children completely as they believe education needs to be done in collaboration (Rogoff et al., 2015).

PROBLEM STATEMENT

The Hispanic/Latino population in the United States continues to rise, meaning more and more Hispanic/Latino children enter our schools (Prevo et al., 2016; Ramirez & Kuhl, 2016). These children experience different cultural factors that can affect their education that Anglo-Saxon children do not experience (Fleischman et al, 2010; Prevo et al., 2016; Fernandez & Inserra, 2013). The basis of this major problem is thought to derive from the issue of language development of bilingual children at an early age (Fernandez & Inserra, 2013). Research on parental perspectives of language development and resulting proficiency in bilingual children is limited. Therefore, this thesis project involved the use of parental questionnaires to gather both a better understanding of how parents of bilingual children rate their child's language proficiency and development of both languages and the factors affecting language proficiency. The following research questions were asked:

Research Question: Based on parental perception, does the quantity of child directed speech influence bilingual children's level of language proficiency?

Research Question: Based on parental perceptions, do the number of opportunities for child engagement in early social interactions influence bilingual children's level of language proficiency?

Research Question: Based on parental perception, does level of parental education influence bilingual children's level of language proficiency?

Research Question: Based on parental perceptions, do parent/child relationships in relevance to acculturation and beliefs influence a bilingual child's level of language proficiency?

Based on the review of literature, it is hypothesized that the quantity of child directed speech children are exposed to, the number of opportunities for child engagement in early social interactions, parental level of language proficiency, and parent/child relationships in relevance to acculturation and beliefs all influence bilingual children's level of language proficiency, based on parental perceptions.

METHODS

Participants

Participants in this survey included parents of bilingual children, or children exposed to multiple languages prior to the age of seven. 112 participants started the survey. Of those, 85 participants (75.89%) discontinued the survey after the first two items, and only 13 participants (11.61%) completed the survey from beginning to end; however, not all participants provided responses for each item and the multiple parts composing some of the items. For these 13 participants, most of their children fell within the ages of 2 to 3 (61.54%). Data on the specific ages for children in this survey is displayed in Table 1. For the participants who didn't complete the survey entirely, most of their children fell within the ages of 3 to 6 (71.42%).

Table 1

Age of Children

Age	Percent of participants N=13
<1	0%
2	38.46%
3	23.08%
4	7.69%
5	0%
6	15.38%
7	15.38%
8	0%

Of the 13 participants who completed the survey entirely, 3 children were identified as being multilingual or knowing more than two languages. In addition, more than half of the participants (53.85%) identified their child's native language as Spanish and 15.38% identified it as German. In terms of the primary language in the country where they are currently living,

84.62% of the parents that completed the survey entirely reported this as being English. Data on the native language and country language for the children of the participants in this survey is displayed in Table 2. Additionally, 53.85% of participants indicated that they believe their child feels most at home with the English language, 23.08% feel most at home with Spanish, and 7.69% with each of the following languages: French, German, and Estonian. For the participants who didn't complete the survey entirely, the majority identified English, Spanish, or Russian, as their Native language and English or English and another language as their Country language.

Table 2

Child's Native and Country Language

Language	Native Language	Country Language
	Percent of Participants N=13	Percent of Participants N=13
Spanish	53.85%	0%
English	7.69%	84.62%
Russian	7.69%	0%
French	7.69%	0%
Mandarin	7.69%	0%
German	15.38%	7.69%
Estonian	0%	7.69%
Japanese	0%	0%
Italian	0%	0%
Greek	0%	0%
Afrikaans	0%	0%
Catalan	0%	0%
English and another language	0%	0%

Table 3 displays parental country of birth. Of those who completed the survey entirely, about 50% of parents (both mothers and fathers) were born either in the United States or Mexico. Of those who did not complete the survey entirely, 75% of mothers were born in Mexico and

none were born in the United States, while 33.33% fathers were born in Mexico and 33.33% in the United States.

Table 3

Parents' Country of Birth

Country of Birth	Mother	Father
	Percent of Participants N=13	Percent of Participants N=13
Mexico	30.77%	23.08%
United States	23.08%	30.77%
Russia	7.69%	0%
Soviet Union	7.69%	0%
Namibia	7.69%	0%
Greece	0%	0%
Taiwan	7.69%	0%
France	7.69%	7.69%
Canada	7.69%	7.69%
Italy	0%	0%
Ukraine	0%	7.69%
Australia	0%	7.69%
South Africa	0%	7.69%
Estonia	0%	7.69%

In the area of maternal and paternal education, 100% of the participants indicated that both the mothers and fathers of the children represented in this survey attended primary and secondary school. In addition, 69.23% of mothers and 61.54% of fathers attended a university, and 30.77% of mothers and 15.38% of fathers attended other professional training. This information is displayed in Table 4. Of the participants that started the survey, but did not complete it entirely, 100% indicated that the child's father attended primary school and a university, but not all attended secondary school. Likewise, it was indicated that 66% of mothers attended secondary school and/or other professional training, but only 33% attended primary school.

Participants were also asked to indicate how many years of education they received at each level; however, this item did not appear to be clearly understood as responses varied between a quantity and language, therefore this item's responses will not be reported.

Table 4

Parental Education

Level of Education	Mother	Father
	Percent of Participants N=13	Percent of Participants N=13
Primary School	100%	100%
Secondary School	100%	100%
University	69.23%	61.54%
Other professional training	30.77%	15.38%

Participants were asked to identify the language/languages in which each parent communicates with others in their work environment. Item responses are displayed in Table 5. Of those who completed the survey entirely, 100% indicated that the mother speaks English at their place of work. Additionally, 7.69% indicated that they speak Spanish, and 23.08% speak English and another language at work. It was reported that 53.85% of fathers speak English at their place of work, 30.77% speak English and another language, and 7.69% speak Spanish and/or French. Of those that started the survey but did not complete it entirely, 100% indicated that the child's mother spoke Spanish at work, while the fathers were split evenly among English, Spanish, and French.

Table 5*Parents' Use of Language in Work Environment*

Language	Mother	Father
	Percent of Participants N=13	Percent of Participants N=13
English	100%	53.85%
Spanish	7.69%	7.69%
French	0%	7.69%
English and other language	23.08%	30.77%

Participants were asked to provide information about the languages spoken between the child and each parent. According to their responses, as displayed in Table 6, most mothers speak their native language Very Often with their child (53.85%) followed by their country language (33.33%) and finally another language (28.57%). Responses also indicated that 25% Sometimes and 25% Rarely speak to their child in their country language and 42.86% Rarely speak to their child in another language. Of the participants that provided a response to this item but did not complete the survey entirely, 60% indicated that they Very Often spoke to their child in their native language, 50% in their country language and 50% in another language.

Table 6*Language Spoken Between Child and Mother*

Rating	Native Language	Country Language	Other Language
	Percent of Participants N=13	Percent of Participants N=12	Percent of Participants N=7
Very Often	53.85%	33.33%	28.57%
Usually	15.38%	0%	0%
Sometimes	15.38%	25%	14.29%
Rarely	15.38%	25%	42.86%
Never	0%	16.66%	14.29%

Table 7 displays information regarding the language spoken between the child and their father. The responses indicated that 41.66% of fathers Very Often communicate with their child in their native language, 45.45% in their country language and 0% in another language. Additionally, 25% usually speak to their child in their native language and 27.27% Usually speak to their child in their country language while 71.43% Never speak to their child in another language. Of those that provided a response to this item but did not complete the survey entirely, 100% indicated that the child’s father Very Often speaks to the child in their native language, 50% in their country language and 0% in another language.

Table 7

Language Spoken Between Child and Father

Rating	Native Language	Country Language	Other Language
	Percent of Participants N=12	Percent of Participants N=11	Percent of Participants N=7
Very Often	41.66%	45.45%	0%
Usually	25%	27.27%	0%
Sometimes	8.33%	9.09%	0%
Rarely	8.33%	9.09%	28.57%
Never	16.66%	9.09%	71.43%

18 participants provided information regarding their child receiving childcare from someone other than a parent. 14 participants indicated that there is another adult who regularly takes care of their child. Of the participants that completed the survey entirely, 10 indicated that their child receives childcare from someone other than a parent.

Participants were asked to provide information regarding the languages spoken between the caregiver and their child. This data is displayed in Table 8. According to their responses, 50% of caregivers Very Often speak to the child in their native language, 75% Very Often speak

to the child in their country language, and 14.29% Very Often speak to the child in another language. Of those who provided a response to this item but did not complete the survey entirely, 33.33% Very Often speak to the child in their native language, 75% in their country language and 0% in another language.

Table 8

Language Spoken Between Child and Caregiver

Rating	Native Language	Country Language	Other Language
	Percent of Participants N=10	Percent of Participants N=8	Percent of Participants N=7
Very Often	50%	75%	14.29%
Usually	10%	0%	0%
Sometimes	10%	0%	14.29%
Rarely	10%	25%	0%
Never	20%	0%	71.43%

18 participants provided information about whether their child had other siblings. 11 indicated that their child did have at least one other sibling. Of the participants that completed the survey entirely, 9 indicated that their child had other siblings.

Participants were asked to provide information regarding the languages spoken between their child and their siblings. This data is displayed in Table 9. The responses indicated that the majority of their children Very Often communicate in their native language (44.44%) followed by their country language (33.33%). In addition, 80% of the participants' children Never communicate in another language. Of the participants that provided a response to this item but did not complete the survey entirely, 100% indicated that their children Very Often communicate in their native language and 100% sometimes communicate in their country language.

Table 9*Language Spoken Between Child and Siblings*

Rating	Native	Country	Other
	Language	Language	Language
	Percent of	Percent of	Percent of
	Participants	Participants	Participants
	N=9	N=9	N=5
Very Often	44.44%	33.33%	0%
Usually	11.11%	33.33%	0%
Sometimes	11.11%	0%	20%
Rarely	22.22%	22.22%	0%
Never	11.11%	11.11%	80%

Procedures

Participants were recruited from four Facebook pages in the Western North Carolina (WNC) area. The four Facebook pages were community group pages specifically targeted towards Hispanic/Latino’s in Franklin, Sylva, Asheville, and Hendersonville, which are all in Western North Carolina. Individuals within the Facebook pages where the survey was posted, shared the survey on their personal Facebook profiles. Recruitment letters and surveys were presented in both English and Spanish. Participants completed an online survey embedded within Qualtrics. The survey was made available from June 2, 2023, until August 6, 2023.

Measures

The survey utilized for this study was an adaptation of the Parents of Bilingual Children Questionnaire (PABIQ), originally developed by Tuller, et al. (2015) following the COST Action IS0804. The PABIQ was originally developed with the purpose of developing a valid and reliable parental questionnaire that aids in the identification of bilingual children with speech language impairments by gathering information about a child’s language milestones; level of language exposure and context in which each language is utilized; parental demographics and language proficiency; and historical language difficulties in the family. The adapted

questionnaire developed for the purpose of this current study was composed of six sections including: General Information/Milestones, Child directed speech, Early Social Interactions, Parental Education, Parent/Child Relationships, and Current Proficiency. Although the majority of the survey questions were quantitative, qualitative responses were accepted for some items such as explaining their cultural beliefs/traditions.

Pilot studies of questionnaires within the COST Action IS0804 were undertaken by 15 research labs in 12 different countries including: Cyprus, Denmark, France, Germany, Greece, Iceland, Israel, Lebanon, Luxembourg, Malta, Poland, and the United Kingdom (Tuller, 2015). Such studies include typically developing children as well as bilingual children with speech language impairments. Although the PABIQ itself was not analyzed in this study, its predecessors, the ALDeQ and the ALDQ created by Johanne Paradis, were (Paradis, 2011; Tuller, 2015). The results from the pilot studies were described by Tuller as “extremely encouraging and providing reliable information” (2015, p. 315). For this survey, the following areas were included: General Information/Milestones, Use of Child Directed Speech, Early Social Interactions, Parental Education, Parent-Child Relationships, and Current Proficiency.

General Information/Milestones

Participants were asked to provide information such as their place of residence, their relationship to the child, the child’s date of birth, country of birth, the languages the child currently speaks, and their early language milestones.

Use of Child Directed Speech

A thorough explanation was provided describing child directed speech and its differentiation from baby talk. Participants were then asked to provide information regarding the amount of time parents engaged in child directed speech with their children, as infants.

Early Social Interactions

Participants were asked to provide information regarding the level of language exposure their child had in each spoken language before the age of 4, the opportunities for child-led interactions in each language, the context in which the exposure or opportunities occurred, the amount of 1 to 1 vs group interactions the child engaged in, the distinct individuals who the child interacted with and in what language they interacted, and the perceived level of language proficiency for the individuals the child interacted with.

Parental Education

Participants were asked to provide parental demographic information including their country of birth, the language spoken in their place of employment if applicable, and their level of education as well as the language in which they received their education.

Parent/Child Relationships

Participants were asked to provide information regarding their beliefs and traditions in relevance to language-based activities including reading, storytelling, poetry, singing and cinema. They were also asked to describe their involvement in their child's education and information about the average number of hours per week that their child engages in the above-mentioned activities in each spoken language independently, and with others.

Current Proficiency

Participants were asked to rate their child's level of language expression in comparison to their same aged peers as well as their level satisfaction with the child's ability to express themselves.

RESULTS

Based on the review of the literature, it was inferred that parent perceptions of the children's level of language proficiency are influenced by the quantity of parentese/child-directed speech children are exposed to, the number of opportunities for child engagement in early social interactions, parental level of language proficiency, and parent/child relationships in relevance to acculturation and beliefs. These hypotheses were evaluated through the use of an adapted version of the Parents of Bilingual Children Questionnaire (PABIQ) originally developed by Tuller and colleagues.

Despite participants being solicited via several Facebook Groups/Pages and the survey being available for a duration of two months, only thirteen participants completed the survey in its entirety. This low participation rate prevented the completion of any statistical analyses to address the hypotheses. Instead, descriptive data from the surveys completed entirely (N=13) will be analyzed below.

Developmental Milestones for Speaking

All thirteen participants provided a response for each item in this area. Four out of thirteen respondents indicated that they had concerns regarding their child's language before their child was three or four years old. Additionally, one participant indicated that their child had hearing problems or frequent ear infections. Most children met language milestones within similar times, with the exception of using short sentences, initiating conversations and using adjectives, where a few participants indicated that their children met these milestones at later ages than the other participants' children. Table 10 displays the age (in months) when each participants' child met each developmental milestone. The majority of participants indicated that

their child began babbling between 4-7 months, spoke their first words between 8-15 months, spoke in short sentences between 16-23 months, demonstrated understanding of questions between 12-15 months, initiated conversations between 20-27 months, and began using adjectives between 20-31 months.

Table 10

Age Child Met Developmental Milestones

Age (in months)	Milestone					
	Babbling	First Word	Short Sentences	Understanding Questions	Initiating Conversations	Using Adjectives
4-7 mo.	76.92%	15.38%	0%	0%	0%	0%
8-11 mo	7.69%	30.77%	0%	7.69%	7.69%	0%
12-15 mo	0%	38.46%	15.38%	53.85%	0%	0%
16-19 mo	7.69%	15.38%	30.77%	7.69%	15.38%	15.38%
20-23mo	7.69%	0%	23.03%	15.38%	23.03%	23.03%
24-27 mo	0%	0%	15.38%	15.38%	30.77%	15.38%
28-31 mo	0%	0%	7.69%	0%	0%	23.03%
32-35 mo	0%	0%	0%	0%	0%	0%
36-47 mo	0%	0%	0%	0%	0%	0%
48-60 mo	0%	0%	7.69%	0%	15.38%	15.38%
61-72 mo	0%	0%	0%	0%	7.69%	7.69%

Notes: N=13

Use of Child Directed Speech

Out of the thirteen participants that completed the entire survey, eleven indicated that child directed speech was utilized by the child’s mother during infancy; additionally, eleven out of twelve respondents indicated that the child’s father also used this form of speech during the child’s infancy. One participant did not provide a response to this item. Table 11 displays the data regarding each parent’s use of child directed speech in each language. According to their responses, most parents Very Often/Always utilized child directed speech in their native language, followed by their country language.

Table 11*Use of Child Directed Speech*

Rating	Mother			Father		
	Native Language N=11	Country Language N=10	Other Language N=7	Native Language N=11	Country Language N=10	Other Language N=8
Very Often/Always	54.55%	10%	14.29%	54.55%	30%	0%
Usually	9.09%	50%	0%	18.18%	30%	0%
Sometimes	18.18%	20%	28.57%	9.09%	10%	0%
Rarely	18.18%	20%	28.57%	9.09%	20%	37.5%
Never	0%	0%	28.57%	9.09%	10%	62.5%

Early Social Interactions

Twelve out of the thirteen participants that completed the survey entirely, provided information regarding their child’s age during their first general exposure or contact with each language. This data is displayed in Table 12. Almost all participants indicated that their child’s first contact with the native language was between birth and 3 months. 58.33% indicated that their child’s first contact with their country language was also between birth and 3 months and 66.66% indicated that their child’s first contact with the other language they speak was during the same age between birth and 3 months.

Table 12*Child’s Age at First Contact with Each Language*

Age (in months)	Native Language N=12	Country Language N=12	Other Language N=6
Birth- 3 mo	91.66%	58.33%	66.66%
4-6 mo	0%	0%	16.66%
7-9 mo	0%	0%	0%
10-12 mo	0%	25%	0%
13-15 mo	0%	0%	0%
16-18 mo	0%	0%	0%
19-21 mo	0%	0%	0%

Age (in months)	Native Language N=12	Country Language N=12	Other Language N=6
22-24 mo	0%	0%	16.66%
25-27 mo	8.33%	8.33%	0%
28-30 mo	0%	0%	0%
31-33 mo	0%	0%	0%
34-36 mo	0%	8.33%	0%

Participants were asked to provide information regarding how often their child was exposed to each language prior to the age of 4. All participants indicated that their child was Very Often/Always exposed to their Native Language prior to this age, 75% were also Very Often/Always exposed to their country language prior to this age, and 25% to another language. Data for this item is displayed in Table 13.

Table 13

Child's Exposure with Each Language Before the Age of 4

Rating	Native Language N=13	Country Language N=12	Other Language N=8
Very Often/Always	100%	75%	25%
Usually	0%	16.66%	0%
Sometimes	0%	0%	37.5%
Rarely	0%	8.33%	12.5%
Never	0%	0%	25%

Participants were also asked to provide information regarding their child's age when each parent, grandparents, caregiver (if applicable), other adults, and siblings (if applicable) began exposing their child to each language. This data is displayed in Tables 14 – 17. According to their responses all parents, other adults, and siblings, and most grandparents, exposed their child to their native language between birth and 3 months. Most parents, other adults, and preschool/daycares and all grandparents, and siblings exposed their child to their country

language between birth and 3 months. Most mothers, grandparents, and all other adults and siblings exposed their child to another language between birth and 3 months.

Table 14

Child's Age at First Exposure with Each Language

Age (in months)	Mother			Father		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=11	N=7	N=5	N=10	N=10	N=0
Birth- 3	100%	71.43%	60%	100%	70%	0%
4-6	0%	0%	20%	0%	0%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	0%	28.57%	0%	0%	20%	0%
13-15	0%	0%	0%	0%	0%	0%
16-18	0%	0%	0%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	0%	20%	0%	0%	0%
25-27	0%	0%	0%	0%	10%	0%

Table 15

Child's Age at First Exposure with Each Language Continued

Age (in months)	Grandparents			Babysitter/Childminder		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=11	N=8	N=3	N=2	N=3	N=1
Birth- 3	90.9%	100%	66.66%	50%	33.33%	0%
4-6	0%	0%	0%	50%	33.33%	100%
7-9	0%	0%	0%	0%	0%	0%
10-12	9.09%	0%	33.33%	0%	33.33%	0%
13-15	0%	0%	0%	0%	0%	0%
16-18	0%	0%	0%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	0%	0%	0%	0%	0%
25-27	0%	0%	0%	0%	0%	0%
28-30	0%	0%	0%	0%	0%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	0%	0%	0%	0%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	0%	0%

Table 16*Child's Age at First Exposure with Each Language Continued*

Age (in months)	Other Adults			Siblings		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=5	N=7	N=1	N=1	N=2	N=1
Birth- 3	100%	85.71%	100%	100%	100%	100%
4-6	0%	0%	0%	0%	0%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	0%	14.59%	0%	0%	0%	0%
13-15	0%	0%	0%	0%	0%	0%
16-18	0%	0%	0%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	0%	0%	0%	0%	0%
25-27	0%	0%	0%	0%	0%	0%
28-30	0%	0%	0%	0%	0%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	0%	0%	0%	0%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	0%	0%

Table 17*Child's Age at First Exposure with Each Language Continued*

Age (in months)	Preschool/Daycare			Kindergarten		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=3	N=7	N=1	N=1	N=4	N=1
Birth- 3	0%	71.43%	0%	0%	25%	0%
4-6	33.33%	0%	100%	0%	0%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	0%	28.57%	0%	0%	0%	0%
13-15	33.33%	0%	0%	0%	0%	0%
16-18	33.33%	0%	0%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	0%	0%	0%	0%	0%
25-27	0%	0%	0%	100%	25%	0%
28-30	0%	0%	0%	0%	0%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	0%	0%	0%	25%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	25%	100%

Participants were asked to provide information regarding the frequency at which their child began initiating interactions in each language, prior to the age of 4. Parents indicated that 46.15% of children Very Often/Always interacted in their native language, 41.66% in their country language, and 16.66% in another language. This data is displayed in Table 18.

Table 18

Child's Initiation of Interactions Before the Age of 4

Rating	Native Language N=13	Country Language N=12	Other Language N=6
Very Often/Always	46.15%	41.66%	16.66%
Usually	23.08%	16.66%	0%
Sometimes	23.08%	16.66%	16.66%
Rarely	7.69%	8.33%	33.33%
Never	0%	16.66%	33.33%

Tables 19-22 display information regarding the age at which participants' children led their first interaction with their mother, father, grandparent, babysitter/childminder, other adult, sibling, preschool/daycare, and kindergarten (if applicable.) There were no specific patterns evident based on this data.

Table 19

Child's Age at First Child-Led Interaction with Each Language

Age (in months)	Mother			Father		
	Native Language N=9	Country Language N=5	Other Language N=2	Native Language N=9	Country Language N=6	Other Language N=0
	Birth- 3	11.11%	0%	0%	11.11%	0%
4-6	11.11%	20%	0%	11.11%	16.66%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	22.22%	20%	0%	11.11%	33.33%	0%
13-15	11.11%	0%	0%	11.11%	0%	0%
16-18	22.22%	0%	50%	33.33%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	11.11%	20%	50%	11.11%	16.66%	0%

Age (in months)	Mother			Father		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=9	N=5	N=2	N=9	N=6	N=0
25-27	0%	20%	0%	0%	16.66%	0%
28-30	11.11%	20%	0%	11.11%	16.66%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	0%	0%	0%	0%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	0%	0%

Table 20

Child's Age at First Child-Led Interaction with Each Language Continued

Age (in months)	Grandparents			Babysitter/Childminder		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=7	N=5	N=1	N=2	N=1	N=1
Birth- 3	0%	0%	0%	0%	0%	0%
4-6	14.29%	20%	100%	50%	100%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	28.57%	40%	0%	0%	0%	0%
13-15	0%	0%	0%	0%	0%	0%
16-18	28.57%	20%	0%	50%	0%	100%
19-21	0%	0%	0%	0%	0%	0%
22-24	14.29%	0%	0%	0%	0%	0%
25-27	0%	0%	0%	0%	0%	0%
28-30	14.29%	20%	0%	0%	0%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	0%	0%	0%	0%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	0%	0%

Table 21

Child's Age at First Child-Led Interaction with Each Language Continued

Age (in months)	Other Adults			Siblings		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=3	N=3	N=0	N=2	N=2	N=0
Birth- 3	0%	0%	0%	0%	0%	0%
4-6	33.33%	66.66%	0%	50%	50%	0%

Age (in months)	Other Adults			Siblings		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=3	N=3	N=0	N=2	N=2	N=0
7-9	0%	0%	0%	0%	0%	0%
10-12	0%	0%	0%	0%	0%	0%
13-15	0%	0%	0%	0%	0%	0%
16-18	66.66%	33.33%	0%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	0%	0%	0%	0%	0%
25-27	0%	0%	0%	0%	0%	0%
28-30	0%	0%	0%	50%	50%	0%

Table 22

Child's Age at First Child-Led Interaction with Each Language Continued

Age (in months)	Preschool/Daycare			Kindergarten		
	Native Language	Country Language	Other Language	Native Language	Country Language	Other Language
	N=2	N=5	N=1	N=1	N=3	N=1
Birth- 3	0%	0%	0%	0%	0%	0%
4-6	0%	40%	0%	0%	66.66%	0%
7-9	0%	0%	0%	0%	0%	0%
10-12	0%	0%	0%	0%	0%	0%
13-15	50%	0%	0%	0%	0%	0%
16-18	50%	0%	100%	0%	0%	0%
19-21	0%	0%	0%	0%	0%	0%
22-24	0%	20%	0%	0%	0%	0%
25-27	0%	0%	0%	100%	33.33%	0%
28-30	0%	20%	0%	0%	0%	0%
31-33	0%	0%	0%	0%	0%	0%
34-36	0%	20%	0%	0%	0%	0%
37-48	0%	0%	0%	0%	0%	0%
49-60	0%	0%	0%	0%	0%	100%

Participants were asked to provide information regarding the frequency with which their child communicated in each language with their friends. 38.46% of children Very Often communicate with their friends in their native language, while 66.66% do so in their country

language and 0% communicate in another language. Additionally, 23.08% rarely communicate in their native language. This data is displayed in Table 23.

Table 23

Languages Spoken Between Child and Friends

Rating	Native Language N=13	Country Language N=12	Other Language N=8
Very Often	38.46%	66.66%	0%
Usually	7.69%	0%	0%
Sometimes	15.38%	16.66%	25%
Rarely	23.08%	16.66%	0%
Never	15.38%	0%	75%

Participants were asked to provide information regarding the number of hours per week that their child engages in one-to-one interactions with others, in each language. This information is displayed in Tables 24 and 25. According to their responses, most children do not engage in any one-to-one interactions in their native language, and rather engage in 6-10 hours of one-to-one interactions in their country language. Most mothers engage in minimal interactions in their country language and mostly engage in 1-25 hours of one-to-one interactions in their native language. Most fathers engage in either their native language or country language but engage in more one-to-one interactions in their native language for 1-10 hours per week.

Participants were also asked to provide information regarding the hours of group interactions their child engages in per week. However, no participants provided a response to this item.

Table 24*Hours of One-to-One Interactions the Child Engages In*

Hours (per week)	Native Language				Country Language			
	Mother N=12	Father N=12	Siblings N=3	Other Adults N=7	Mother N=11	Father N=11	Siblings N=4	Other Adults N=6
0	8.33%	16.66%	66.66%	14.29%	36.36%	18.18%	25%	16.67%
1-5	16.66%	25%	0%	42.86%	36.36%	18.18%	0%	33.33%
6-10	25%	33.33%	33.33%	14.29%	0%	27.27%	50%	16.67%
11-15	8.33%	0%	0%	14.29%	9.09%	9.09%	0%	16.67%
16-20	8.33%	0%	0%	14.29%	0%	9.09%	0%	16.67%
21-25	16.66%	16.66%	0%	0%	18.18%	18.18%	25%	0%
26-30	8.33%	0%	0%	0%	0%	0%	0%	0%
31-35	0%	0%	0%	0%	0%	0%	0%	0%
36-40	0%	0%	0%	0%	0%	0%	0%	0%
41-45	0%	0%	0%	0%	0%	0%	0%	0%
46-50	8.33%	0%	0%	0%	0%	0%	0%	0%
51-55	0%	0%	0%	0%	0%	0%	0%	0%
56-60	0%	8.33%	0%	0%	0%	0%	0%	0%

Table 25*Hours of One-to-One Interactions the Child Engages In Continued*

Hours (per week)	Other Language			
	Mother N=3	Father N=1	Siblings N=0	Other Adults N=1
0	0%	0%	0%	0%
1-5	33.33%	100%	0%	0%
6-10	0%	0%	0%	0%
11-15	0%	0%	0%	0%
16-20	33.33%	0%	0%	0%
21-25	0%	0%	0%	0%
26-30	0%	0%	0%	0%
31-35	0%	0%	0%	0%
36-40	0%	0%	0%	100%
41-45	0%	0%	0%	0%
46-50	0%	0%	0%	0%
51-55	0%	0%	0%	0%
56-60	33.33%	0%	0%	0%

Table 26 displays the number of hours per week that participants' children engage in peer interactions. Most participants (25%) indicated that their child engages in 11-15 hours of peer interactions. The number of hours of peer interactions significantly varied for each participant. Some children engaged in less than 10 hours per week, while others engaged in more than 30 hours.

Table 26

Hours of Peer Interactions the Child Engages In

Hours (per week)	Peer Interactions N=12
1-5	8.33%
6-10	16.66%
11-15	25%
16-20	0%
21-25	8.33%
26-30	16.66%
31-35	8.33%
36-40	16.66%

Parental Education

As discussed previously in Table 4, all participants indicated that both parents attended primary and secondary school. Additionally, 69.23% of mothers and 61.54% of fathers attended a university, and 30.77% of mothers and 15.38% of fathers attended other professional training.

Parent/Child Relationships (Acculturation)

Participants were asked to describe their beliefs and traditions including those related to language-based activities. Of the 13 participants, only 9 provided a response to this item. Based on their responses, 6 participants expressed the importance of singing, 5 expressed the importance of reading, and 3 expressed the importance of exposure and practice of conversational skills in each language. Participants were also asked to describe their involvement

or role in their child’s education. 6 participants indicated that they were heavily involved, 5 indicated “typical” or average involvement, and 2 indicated that involvement was shared with the other parent, described as 50/50 involvement.

Tables 27-29 display the language activities participants’ children engage in independently in each language and how often they do so. Most children read, watch television, storytell, and sing in their native language at least once a week (almost half of them do so every day). Additionally, most children read, watch television, and sing in their country language at least once a week (also about half of them do so every day). Finally, of the children who speak a third language, most read, watch television, storytell and sing every day. Rarely any children engage in poetry or spiritual service on a regular basis.

Table 27

Native Language Activities the Child Does Independently

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
Every day	53.86%	38.46%	46.15%	0%	46.15%	0%
At least once a week	7.69%	38.46%	23.08%	30.77%	38.46%	23.08%
Never/Almost never	38.46%	23.08%	30.77%	69.23%	15.38%	76.92%

Table 28

Country Language Activities the Child Does Independently

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
	N=12	N=11	N=12	N=12	N=12	N=12
Every day	50%	63.63%	50%	8.33%	41.66%	0%
At least once a week	33.33%	0%	25%	16.66%	50%	25%
Never/Almost never	16.66%	36.36%	25%	75%	8.33%	75%

Table 29*Other Language Activities the Child Does Independently*

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
	N=5	N=5	N=5	N=5	N=5	N=5
Every day	60%	40%	60%	20%	60%	0%
At least once a week	0%	20%	0%	0%	20%	20%
Never/Almost never	40%	40%	40%	80%	20%	80%

Participants were asked to provide information regarding the language activities their child engages in with someone else in each language and frequency. Similarly, to their individual engagement, most children engage in reading, watching television, storytelling and singing in each language, at least once a week and very rarely do they engage in poetry or spiritual service.

This data is displayed in Tables 30-32.

Table 30*Native Language Activities the Child Does With Someone Else*

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
Every day	53.85%	53.85%	38.46%	0%	46.15%	0%
At least once a week	23.08%	23.08%	30.77%	38.46%	30.77%	23.08%
Never/Almost never	23.08%	23.08%	30.77%	61.54%	23.08%	76.92%

Table 31*Country Language Activities the Child Does With Someone Else*

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
	N=12	N=12	N=12	N=12	N=12	N=11
Every day	41.66%	25%	41.66%	8.33%	33.33%	0%
At least once a week	33.33%	16.66%	25%	25%	41.66%	27.27%
Never/Almost never	25%	58.33%	33.33%	66.66%	25%	72.72%

Table 32*Other Language Activities the Child Does With Someone Else*

Activity	Reading	Television	Storytelling	Poetry	Singing	Spiritual Service
	N=5	N=5	N=5	N=5	N=5	N=5
Every day	40%	40%	40%	20%	40%	0%
At least once a week	0%	0%	20%	0%	0%	40%
Never/Almost never	60%	60%	40%	80%	60%	60%

Current Proficiency

Participants were asked to provide information regarding each parents', caregivers, siblings', and peers' level of language proficiency in each language as well as their child's level of language proficiency in each language based on their expressed level of frustration and in comparison to their same aged peers.

Table 33 displays parental level of language proficiency. According to their responses, most parents speak their country language the best, followed by their native language. Additionally, more than 50% of mothers and about 50% of fathers speak their native language very well. Of the participants that speak a third language, 40% of mothers speak it very well and 25% of fathers speak it well while 40% of mothers and 50% of fathers only know a few words.

Table 33*Parents' Language Proficiency*

Rating	Mother			Father		
	Native Language N=13	Country Language N=12	Other Language N=5	Native Language N=13	Country Language N=12	Other Language N=4
Very Well	69.23%	83.33%	40%	46.15%	83.33%	0%
Well	23.08%	8.33%	0%	23.08%	0%	25%
Gets Along	0%	0%	20%	15.38%	16.66%	0%
Basic Abilities	7.29%	8.33%	0%	0%	0%	25%
Only a few words	0%	0%	40%	15.38%	0%	50%

Tables 34 and 35 displays caregiver, sibling, and peer level of language proficiency. Most caregivers speak their native, country, and other language very well. Most siblings get along or speak their native language well and only speak a few words in their country language. Additionally, all of the siblings exposed to a third language only speak a few words. Finally, most peers either speak their native language well or only speak a few words, most speak their country language very well and get along in a third or other language.

Table 34

Other's Language Proficiency

Rating	Caregiver			Siblings		
	Native Language N=10	Country Language N=9	Other Language N=4	Native Language N=8	Country Language N=8	Other Language N=2
Very Well	70%	66.66%	75%	12.5%	12.5%	0%
Well	20%	11.11%	0%	25%	25%	0%
Gets Along	0%	11.11%	0%	25%	0%	0%
Basic Abilities	0%	11.11%	0%	0%	12.5%	0%
Only a few words	10%	0%	25%	37.5%	50%	100%

Table 35

Other's Language Proficiency Continued

Rating	Peers		
	Native Language N=13	Country Language N=12	Other Language N=3
Very Well	7.79%	58.33%	0%
Well	38.46%	33.33%	0%
Gets Along	0%	0%	66.66%
Basic Abilities	15.38%	0%	0%
Only a few words	38.46%	8.33%	33.33%

Tables 36-39 display each child's level of current proficiency, as rated by their parents, in comparison to their same aged peers. Based on their responses, most children demonstrate higher

levels of language proficiency in regards to self-expression, language proficiency in comparison to their monolingual peers, less difficulty making correct sentences, less levels of frustration when communicating and their parents are more satisfied with their child’s language proficiency in their country language, than in their native language.

Table 36

Child’s Current Language Proficiency in Comparison to Other Children

Rating	Self-Expression			Comparison to Monolingual Child		
	Native Language N=13	Country Language N=12	Other Language N=5	Native Language N=13	Country Language N=12	Other Language N=5
Very Well	38.46%	58.33%	20%	38.46%	50%	20%
The Same	30.77%	33.33%	0%	7.69%	25%	0%
A Little Less Well	30.77%	0%	20%	38.46%	8.33%	20%
Not Very Well	0%	8.33%	60%	15.38%	16.66%	60%

Table 37

Difficulty Making Correct Sentences in Comparison to Other Children

Rating	Native Language N=13	Country Language N=12	Other Language N=5
No Difficulties	30.77%	41.66%	20%
Same Difficulties	30.77%	41.66%	0%
Some Difficulties	30.77%	0%	20%
Many Difficulties	7.69%	16.66%	60%

Table 38

Parental Satisfaction with Child’s Self-Expression

Rating	Native Language N=13	Country Language N=12	Other Language N=5
Very Satisfied	23.08%	58.33%	20%
Generally Satisfied	53.85%	25%	20%
Not Very Satisfied	23.08%	0%	0%

Rating	Native Language N=13	Country Language N=12	Other Language N=5
Not At All Satisfied	0%	16.66%	60%

Table 39

Child's Frustration When Unable to Communicate

Rating	Native Language N=13	Country Language N=12	Other Language N=4
Almost Never Frustrated	30.77%	41.66%	25%
Sometimes Frustrated	30.77%	25%	25%
Often Frustrated	23.08%	16.66%	0%
Almost Always Frustrated	15.38%	16.66%	50%

DISCUSSION

This study was intended to investigate various factors that influence language proficiency in bilingual children, including the quantity of child directed speech children are exposed to, the number of opportunities for child engagement in early social interactions, parental level of language proficiency, and parent/child relationships in relevance to acculturation and beliefs. Due to a limited participation rate, hypotheses were analyzed through descriptive data rather than any statistical analyses.

Participants included parents of bilingual children or children exposed to multiple languages. Four out of thirteen participants indicated having concerns regarding their child's language before their child was three or four. This indicates that most of the participants in this study did not have concerns about their child's language development. Additionally, one participant indicated that their child had hearing problems or frequent ear infections. Most participants identified their child's primary language as English. Most children were exposed to multiple language from a young age (prior to 3 months of age) and most parents reported frequently using child-directed speech with their child, in each language. This is consistent with the U.S. statistics on bilingualism.

In regards to parental education, all participants indicated that both parents attended primary and secondary school and most also attended a university. Additionally, some parents attended other professional trainings. Since these participants were very similar in terms of parental education, it was not possible to make any inferences regarding immediate impact on the child's level of current language proficiency as hypothesized by some researchers.

The majority of children met language milestones within expected ranges, such as babbling between 4-7 months, speaking their first words between 8-15 months, and

demonstrating understanding of questions between 12-15 months. This is consistent with previous studies indicating that bilingual children meet language milestones at the same time as their monolingual peers (Conboy & Thal, 2006; Parra et al., 2011). While most children met these milestones at similar ages, variability in milestones was greater with using short sentences, initiating conversations, and using adjectives. A small number (3) of the respondent's children met these milestones outside of the typical or expected age. This indicates that the progression at which some participant's children met language milestones plateaued with higher level language skills.

Child directed speech was utilized by most parents beginning in infancy. The majority of parents (63.64%-72.73%) very often/usually used child directed speech in their native language while 60% did so in their country language. The majority of children had their first contact with their native language between birth and the age of 3 months. More than half of them had their first contact with their country language and another language at this age too. Prior to the age of four, all children were very often/always exposed to their native language, 75% were exposed to their country language, and 25% were exposed to another language. Additionally, parents, grandparents, caregivers, other adults, and siblings typically initiated language exposure in each language within the child's first three months of life. This indicated that most children were simultaneous bilinguals who were exposed to two or more languages at a very young age, or from birth. Additionally, parents who very often engaged in child directed speech with their children indicated that their child had greater levels of language proficiency, which is consistent with research that hypothesizes that the quantity of child directed speech influences a bilingual child's level of language proficiency.

According to parental responses in this survey, their children exhibited varied levels of initiation of interactions. Almost half of participant's children indicated that their child very often initiated interactions in their native language or country language prior to the age of four. No specific patterns were evident regarding the age at which the children in this survey, initiated interactions in each language with their parents, grandparents, caregivers, other adults, siblings, daycare, or kindergarten. This information is consistent with research that hypothesizes that higher levels of initiation of interactions influence bilingual children's level of language proficiency.

In regards to interactions with others, most children very often communicate with their mother in their native language (53.85%) rather than their country language (33.33%) and they communicate more or less equally in each language with father. Most children very often communicate with their peers in their country language rather than their native language. Most children engage in 6-10 hours of one-to-one interactions with their peers in their country language per week and most do not engage in these interactions in their native language. On the contrary, when engaging with their parents, children tended to engage in more interactions in their native language and interaction times varied. Based on this information, the children in this study demonstrate understanding of language differences and who they can interact in each language with based on their level of comprehension and fluency in each language. This information is consistent with research that hypothesizes that the number of opportunities for child engagement in early social interactions influence bilingual children's level of language proficiency.

In the area of beliefs and traditions, including those related to language-based activities, most participants emphasized the importance of singing, reading and practicing conversational

skills in the child's multiple languages. The level of parental involvement in their child's education varied among participants. Some described themselves as being heavily involved in their child's education, others identified having typical involvement and a few shared involvements equally with the other parent. Most children partake in activities such as reading, watching television, storytelling, and singing in their native and country languages, by themselves and with others, on a daily basis. Most children rarely engage in activities such as poetry or attending spiritual services. This variability in parental involvement was expected based on the review of literature and previous studies showing contrary results that parents are highly involved vs less involved (Gonzalez et al., 2019; Rogoff et al., 2015). Despite the variability in parental involvement, it was evident that parents whose children engaged in more language-based activities reported greater levels of language proficiency which is consistent with research that hypothesizes that parent acculturation beliefs and related activities influence a bilingual child's level of language proficiency.

The majority of children were rated by their parents as demonstrating higher levels of proficiency in self-expression and language skills compared to monolingual peers. Additionally, they were rated as demonstrating less difficulty in forming correct sentences and were observed to show lower levels of frustration when communicating. Finally, parents reported feeling more satisfied with their child's proficiency in their country language, than their native language. This level of proficiency was expected as most parents also rated themselves as being more proficient in the child's native language, reported receiving higher levels of education in the native language, more often exposed their children to both languages (with more exposure to their native language), engaged in child directed speech in their native language, provided opportunities for their children to engage in frequent one-to-one and group interactions with

peers and siblings in their country language, and spent more time interacting in their native language than in their country language.

Despite having a limited participation rate, the participants in this study appeared to match the demographics of typical bilingual children. In addition, descriptive data revealed insights into various factors affecting language proficiency in bilingual children. The factors identified when reviewing the results of this survey included the quantity of child directed speech that children are exposed to, the number of opportunities for child engagement in early social interactions, and parent/child relationships in regards to acculturation and beliefs. These results are consistent with other research on language proficiency in bilingual children. Parental education as a factor was not as supported within this study primarily due to the limitations of the study.

Limitations

Several limitations should be considered when interpreting the findings of this study. Participants were recruited online, on Facebook groups/pages. This limits the participant pool solely to families who have access to internet connection and those with Facebook accounts. Many participant (112) began the survey but only 85 participants continued it after the second item. Of those 85 participants, only 13 completed the survey from beginning to end. Despite completing the survey entirely, some items were composed of multiple parts, and not all participants provided responses for all sections within each item. It is unknown why participants chose to withdraw from the survey, however a suggestion for future studies would be to word items at a lower reading level and/or reduce the number of items included. Due to the limited number of participants and responses received the results of this study cannot be analyzed through the use of statistical analyses and rather were analyzed as descriptive data. Additionally,

although the study was originally intended for participants within the United States, six out of the thirteen participants who completed the survey indicated that they resided in a country other than the United States. Finally, Self-reporting methods increase the possibility of participant bias and over or under reporting skills.

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