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Parent and Child Language Profiles and their Family and Clinical Predictors

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Parent and Child Language Profiles and their Family and Clinical Predictors

A Thesis

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Requirements for the Degree of

Master of Arts

By

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Biography

The author was born in Chicago, Illinois, on September 6, 1993. He graduated from James B. Conant High School and received his Bachelor of Arts degree in Psychology from the University of Illinois at Chicago in 2015.

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Abstract

A large number of households in the United States include linguistic minority and immigrant parents. These include parents of Latinx backgrounds and their children who have varying levels of English and Spanish proficiency. Research is needed to examine the nature of parent-child language proficiency patterns and differences and their links to family processes and mental health. To address this gap, a sample of 294 Latinx parent-child dyads of predominantly low-income and immigrant backgrounds were interviewed and reported their English and Spanish language proficiency levels. Latent Profile Analysis (LPA) uncovered four parent-child language profiles including three in which there was a language gap (Large English Gap - LEG, Medium English Gap - MEG, and Medium Spanish Gap - MSG) and one in which parent and children matched in their language proficiency (No Language Gap - NLG). Multinomial logistic regression analyses controlling for key demographic variables revealed that youth who reported higher maternal and paternal alienation, lower paternal communication and higher depressive symptoms were more likely to belong to the NLG profile, compared to the LEG profile. Further, youth who reported higher maternal and paternal alienation, and lower maternal trust were more likely to belong to the MSG profile relative to the LEG profile. Findings point to the vital importance of incorporating multiple reporters of language proficiency and the potential protective value of youth Spanish proficiency, in particular.

Keywords: Latinx, language proficiency, depression, latent profile analyses

Language Proficiency in Latinx Youth and Adults

Latinxs are the largest ethnic minority group in the United States (U.S.), totaling 58.5 million people and 18 percent of the U.S. population (U.S. Census Bureau, 2019). According to the 2017 American Community Survey, more than one in five U.S. residents (22%) speak a language other than English. Spanish is spoken by about 41 million people in the U.S., making it the second most spoken language in the country (U.S. Census Bureau, 2019). National surveys have found wide differences in English and Spanish language proficiency levels between Latinx adults and Latinx youth. Data show that 89% of Latinx youth, compared to only 32% of their adult counterparts, endorse speaking English “very well.” In sharp contrast, 57% of Latinx adults, compared to only 25% of Latinx youth, endorse speaking Spanish “very well” (Krogstad et al., 2015). Furthermore, data show that among Latinx ethnic subgroups, only 21% of Guatemalan, 24% of Honduran, 24% of Mexican, 25% of Salvadorian, 31% of Dominican Republic, 32 % of Ecuadorian and 34% of Cuban immigrant background individuals report high levels of English proficiency (Portes & Rumbaut, 2014). Among these Latinxs, higher levels of education have been found to be strongly associated with English proficiency. In terms of nativity, national data has found that compared to 47% of first-generation individuals who report heritage language proficiency, only 34% of second, 21% of third and 2% of fourth and beyond generations report that level of proficiency (Portes & Rumbaut, 2014). For English, national data show that among Latinxs ages 5 and older, 90% U.S.-born while 36% foreign-born are considered English proficient (U.S. Census Bureau, 2019).

Language Proficiency and Mental Health. Language has been identified as playing a vital role in the mental health of children (Toppelberg & Collins, 2010). In particular, language has been linked to emotional development in children through the production of speech which is directly

related to emotion regulation. Research has examined the relation between language and an array of social and psychological outcomes in ethnic minority samples. Among Latinx parents and children, evidence supports the general finding that the latter group tends to acquire English language proficiency at a quicker rate as a result of greater contextual exposure to English (e.g., school and peers) (Portes & Rumbaut, 2014). Although Latinx youth generally show higher levels of English proficiency compared to their adult counterparts, Latinx youth have varying levels of English proficiency that have been linked to a variety of outcomes. Specifically, evidence for the negative effects of limited English proficiency (LEP) has been observed in youth samples.

In one study with a sample of 8th grade students of native and foreign-born parents from Europe, Asia, Central and South America, it was found that those who were identified as being limited English proficient in kindergarten and first grade and through teacher reports at 8th grade, endorsed greater rates of depression as well as heightened school anxiety compared to native English speakers (Kremer & House, 2020). In another study that examined the link between youth English proficiency and teacher reports of behavioral problems, results provided evidence for the link between LEP and externalizing symptoms in a sample of Latinx 3rd grade youth (Dawson & Williams, 2008). One drawback with the studies that have linked LEP to mental health problems in Latinx samples is the lack of focus on an equally important variable, Spanish language proficiency, to assess for its relation to mental health.

Very few studies have examined the role that both English and Spanish have on the mental health of Latinx youth. In a study with children from Latinx backgrounds in kindergarten and first grade, children were assessed for their English language proficiency and reported on Spanish language use at home with their parent (Han, 2010). Using these two indicators, five

categories were formed: English Monolinguals, English-Dominant Monolinguals, Fluent Bilinguals, Non-English-Dominant Bilinguals, and Non-English Monolinguals. Results showed that at kindergarten, children in the Fluent Bilingual group displayed significantly fewer internalizing problems compared to White English Monolingual children and had an overall slower rate of increases in internalizing problems from kindergarten to the fifth grade (Han, 2010). Furthermore, by the fifth grade, Fluent Bilingual and Non-English-Dominant Bilingual children exhibited the lowest levels of internalizing problems compared to all other groups. In this study, having high levels of English proficiency coupled with Spanish language use in their home was linked to less internalizing problems in children.

Although informative, assessing for Spanish language use, rather than proficiency, to identify youth as bilingual and examine the impact that Spanish proficiency has on mental health outcomes in Latinx children has shortcomings given that use and proficiency are two different language domains. Furthermore, factors such as comfort with the language, preference, and contextual factors (e.g., neighborhood and school demographics) could be influencing reports of language use. Therefore, including reports of English and Spanish language proficiency is needed to truly assess their impact on the lives of Latinx families. Extant research exists that has incorporated data on both English and Spanish proficiency and examined their link to mental health in children.

In a study with a Mexican American sample, parents reported on their child's English and Spanish language proficiencies and results highlighted that lower English language proficiency was associated with higher levels of internalizing problems, depressive symptoms and loneliness (Polo & Lopez, 2009). In this study, Spanish proficiency was not significantly associated with children's internalizing problems. In contrast, a research study with 5th-7th grade Latinx students

found a significant association between Spanish language proficiency and harm avoidance (Martinez et al., 2012). In another study with a Latinx kindergarten sample, both English and Spanish proficiency were significantly associated with interpersonal strength, intrapersonal strength, and affective strength, pointing to better overall emotional and behavioral well-being for children proficient in both languages (Collins et al., 2011). These contrasting findings as it relates to the association between English and Spanish and mental health call for a dyadic approach to further elucidate the mechanisms responsible for the link between language and mental health.

Most of the aforementioned research points to limited English proficiency as having negative impacts on youth mental health such as higher internalizing and externalizing problems (Polo & Lopez, 2009; Kremer & House, 2020; Dawson & Williams, 2008). When Spanish has been included and examined in the link to mental health in Latinx youth, findings tend to lend support to another type of pattern. Namely, research has found that when children are equipped with higher English and Spanish language proficiency, they tend to fare off better in regard to internalizing problems and overall emotional and behavioral well-being compared to youth with low levels of Spanish use/proficiency (Han, 2010; Collins et al., 2011).

The link between language proficiency and mental health has also been observed in the Latinx adult population. As was the case in studies focused on youth samples, most of the research on language proficiency among Latinx adults has focused on the association between English proficiency and mental health. Higher levels of English proficiency among Latinx adults have been linked with higher prevalence of psychiatric disorders (Cook et al., 2009), higher rates of suicidal ideation (Fortuna et al. 2007), higher rates of anxiety disorders (among women) and higher rates of depressive disorders (among men) (Alegría et al., 2007). Although there is a

general trend connecting higher English proficiency in Latinx adults to negative mental health, one study found the opposite trend in that those without a psychiatric disorder and with high levels of English proficiency were linked to better self-rated mental health (Kato, 2018). These contrasting findings require further investigation to elucidate the relation between English language proficiency and mental health in Latinx adults.

Some research has incorporated and explored the links between English and/or Spanish language proficiencies and adult mental health. First, in a sample of Latinx adults, higher English proficiency and lower Spanish proficiency were associated with higher lifetime risk for social anxiety disorder (Polo et al., 2011). Another study with a sample of Latinx adults from Mexican backgrounds found that in individuals with no psychiatric disorders, Spanish proficiency was protective for self-rated mental health only when coupled with low levels of English proficiency (Kato, 2018). A third study assessed for language proficiency in a sample of Latinx adults by asking them to report on how well they spoke Spanish as well as whether they used English or Spanish when thinking (Mulvaney-Day et al., 2007). They found that Latinx adults who self-reported “poor” or “fair” Spanish proficiency levels and thinking in Spanish were associated with higher rates of negative self-rated mental health. In this study, “good” or “excellent” Spanish proficiency levels, coupled with thinking in English or English and Spanish equally, were associated with better self-reported mental health (Mulvaney-Day et al., 2007). One shortcoming of this study was the lack of self-reports of English proficiency to assess the link between bilingual language proficiency and/or English proficiency and mental health in this Latinx adult population.

The findings on the relation between language proficiency and mental health in ethnic minority samples tend to look different between Latinx children and adults. For Latinx adults,

the general trend finds that higher English proficiency is associated with higher mental health problems. In contrast, lower English proficiency is associated with higher mental health problems among Latinx youth. In regard to Spanish, the findings are less clear, but the available evidence suggests that Spanish proficiency may be associated with better mental health. Limited research on the link between Spanish proficiency and adult mental health prevents from drawing a conclusion of this link and further research is warranted.

The observed differences in English language proficiency in adults and children from ethnic minority backgrounds and links to contradictory mental health findings for each group warrant further investigation to uncover the mechanism responsible for these findings. Furthermore, the limited research examining the link between Spanish proficiency and mental health in Latinx adults warrant further attention. One approach to examining differences in language proficiencies and associated outcomes in children and adults of ethnic minority backgrounds is by employing a dyadic approach. In other words, studies that include data on both adult and child language proficiencies could shed light on the interplay between language and mental health in populations from ethnic minority backgrounds.

Dyadic Language Proficiency and Mental Health

Given the documented evidence that Latinx children of immigrant families tend to acquire English language proficiency at a faster rate compared to their parents, language gaps within households may arise (Portes & Rumbaut, 2014). These language proficiency gaps also occur in the heritage language as research has found that children of immigrant families rarely reach proficiency in their parents' heritage language (Portes & Rumbaut, 2001). To better conceptualize and measure these language gaps and their impact on children and parental mental health, it is imperative to include both parent and child reports of language proficiency. Limited

extant research exists that has incorporated reports of child and parent language proficiency levels and their relation to mental health problems (see Table 1). Only five studies could be identified that linked parent and child language proficiency levels to mental health. In all cases, the samples were of Chinese backgrounds (Chinese American or Chinese Canadian) and all measured depressive symptoms and/or externalizing problems as the mental health variable of interest. First, in one study researchers examined the link between language proficiency and mental health in 7th and 8th grade Chinese Canadian adolescents and their parents through self-reports (Lee & Chen, 2000). Youth and parents self-reported on English and Chinese language proficiency as part of a larger Host and Native Communication Competence Scale, as well as youth's depressive symptoms. English language proficiency was significantly and negatively associated with adolescents' and mothers' reports of adolescents' depressive symptoms (Lee & Chen, 2000). Chinese language proficiency in this study was not found to be significantly associated with psychological adjustment in adolescents.

In a research study with a Chinese American sample, adolescents and their mothers self-reported on their own language proficiency, Chinese and English, and maternal reports were used to predict emotional adjustment in youth (Liu et al., 2009). Results showed that mothers' English proficiency was negatively and significantly associated with adolescent depressive symptoms. Further, fewer adolescent depressive symptoms were reported in parent-child dyads who had a match in Chinese language proficiency (i.e., parents and adolescents with high levels of Chinese proficiency). Regarding dyadic parent-adolescent English language proficiency, no significant associations with adolescent depressive symptoms were found (Liu et al., 2009). Relatedly, another study that incorporated heritage (e.g., Chinese) and English language proficiency in parents and youth found that when a gap in language proficiency existed between

them (i.e., adolescents high on English proficiency, low on heritage language proficiency and vice versa for parents), youth endorsed the greatest levels internalizing and externalizing symptoms (Weaver & Kim, 2008).

A fourth study included parent reports of child and parent English and Chinese language proficiency levels (Chen et al., 2014). This study found that larger Chinese language proficiency gaps between the parent and child was associated with poorer child adjustment as evidenced by greater externalizing problems in children. In particular, poorer child adjustment was found when children were low in Chinese proficiency while parents had high Chinese proficiency. Furthermore, children with higher levels of Chinese proficiency were associated with lower levels of externalizing problems when parents also had high levels of Chinese proficiency (Chen et al., 2014). In regard to dyadic parent-child English proficiencies, no significant associations with children's internalizing or externalizing problems were found.

Most of the research that has incorporated a dyadic approach to study the link between language and mental health in ethnic minority populations has primarily focused on youth mental health outcomes. As can be seen in Table 1, of the limited studies that have incorporated data on parent and youth language proficiency, only one study included parental depressive symptoms as a mental health variable of interest. In a sample of Chinese American families, mothers and youth completed self-report measures on acculturative family distancing (AFD), family conflict, depressive symptoms as well language proficiency in host and heritage language. To assess for language proficiency, mothers and youth self-reported, on a Likert-type scale, two items: how well they spoke English and their heritage language. It was found that both youth and mother-reported family conflict predicted higher rates of youth depressive symptoms (Hwang et al., 2010). Results also showed that mother-reported AFD was directly associated with an increase in

maternal depressive symptoms. Finally, using the method of difference scores, it was found that language gaps in English and/or Chinese between parents and youth were not predictive of difficulties in communication or youth or maternal depressive symptoms (Hwang et al., 2010). Although this study was one of the first to include parental depression as a variable in the link between dyadic parent-child language proficiencies and mental health, the study failed to include information on individual parent and youth language proficiencies and their links to youth and maternal depressive symptoms. Instead, this study focused on parent-child language gaps. Without examining or reporting on individual youth and maternal language proficiencies, it becomes difficult to ascertain the unique impact that English and/or heritage language proficiency has on depressive symptoms in this population.

The research findings on the relation between dyadic language proficiency levels and mental health suggest that when there is a language gap between parents and youth, youth tend to fare off worse in regard to mental health problems, such as depression, in comparison to parent-youth dyads who share similar levels of language proficiencies in either host or heritage language. However, the findings have been inconsistent in that some studies have found that matches in heritage language proficiency (e.g., Chinese) have been linked to better youth mental health (Liu et al., 2009; Chen et al., 2014), while others have found that language gaps between parents and youth have not been associated with children or parental mental health (Hwang et al., 2010). Various factors such as the measurement and conceptualization of these language proficiency gaps, language proficiency as a domain of a larger cultural acculturation measure, and the inclusion of parent and child language proficiency reports could be playing a role in the inconsistent language proficiency-mental health findings.

Although telling of specific trends associated with parent-youth language proficiencies, the literature incorporating reports of both parent and youth language proficiency levels and links to mental health is scarce (see Table 1). No study could be identified that has linked dyadic English and Spanish language proficiencies in Latinx families to youth and parent mental health. Furthermore, and as shown in Table 1, only one study to date has incorporated parent and youth reports on language proficiencies and their relation to parental mental health.

The current study will aim to address these gaps and will be guided by incorporating components from two theoretical frameworks. First, the theory of Dyadic Cultural Adaptation (DCA) (Portes & Rumbaut, 2014) has been used to primarily explore links between parental and youth English and Spanish proficiencies and family processes and social/academic outcomes in youth with limited research focusing on youth mental health. To help complement the theory of DCA and guide the current research focusing on mental health, the Acculturative Family Distancing (AFD) model is incorporated. The AFD model has empirically examined associations between communication difficulties, a domain closely related to language proficiency, and mental health outcomes in individuals from immigrant backgrounds (Hwang, 2006). The current research study is guided by domains from both frameworks by focusing on families from Latinx backgrounds, language proficiency in parents and children, family processes, and mental health.

Theory of Dyadic Cultural Adaptation (DCA)

As data point to differing levels of English and Spanish language proficiencies between Latinx youth and adults, theories have been put forth to examine the mechanisms through which this occurs as well as the implications of these language differences in the lives of Latinx families. These differences in language proficiencies between parents and children serve as the foundation for the theory of Dyadic Cultural Adaptation (DCA), which posits that parents and

children who share similar levels of English proficiency will have increased communication, low levels of family conflict, preservation of parental authority, and ultimately better child social and academic outcomes (Portes & Rumbaut, 1996). According to this model, parent-child dyads that share similar levels of cultural adaptation, such as host and heritage language proficiency, will display a *selective acculturation* pattern (2014). In contrast, the model describes that parent-child dyads experience *consonant acculturation* when there is an "...abandonment of the home language and culture at roughly the same pace..." (p. 54). Lastly, parent-child dyads who have a mismatch in English language proficiency, with the latter group having higher English language proficiency coupled with the loss of their parent's language, would display *dissonant acculturation* which would lead to a decrease in parent-child communication, increased parent-child conflict, and ultimately increase risk for child academic and social problems (Portes & Rumbaut, 2014). Hence, according to the DCA theory, better family processes and child outcomes are expected when parents and their children share similar levels of language proficiency.

Through their research, Schofield and colleagues (2012) extended the DCA theory by incorporating both heritage language proficiency (i.e., Spanish) and parental language proficiency as predictors of family processes and child outcomes. In a sample of Mexican-origin parents and their children, they found that both parental English and Spanish proficiency levels were positively associated with parent-child communication (Schofield et al., 2012). This finding also held for children as higher proficiency levels in either English or Spanish was associated with higher child-parent communication. In regard to role reversal (operationalized as parent passivity and child dominance towards parent), parental English and/or Spanish proficiency was negatively associated with parent passivity which highlighted that when parents were able to

express themselves in either language, this helped preserve parental authority. Concerning child dominance towards their parent, dual parental and child Spanish proficiency, not English, predicted less instances of child dominant behavior and parent passivity. Relatedly, results showed that higher parental Spanish proficiency predicted less parent-child conflict, highlighting the potential protective role of Spanish in this sample. This study also found the unique, protective effect of dual Spanish language proficiency (i.e., both parents and children reporting proficiency in Spanish) in that it significantly reduced family conflict, role reversals, and increased communication, which, in result, led to better child academic outcomes (Schofield et al., 2012). This study extended Portes and Rumbaut's (2001) work on the DCA theory by highlighting that shared child and parental proficiency in either language, English or Spanish, was related to better youth academic outcomes through less family conflict, role reversals, and increased communication between parents and children.

In a similar domain, research has been conducted to test the DCA theory to a variable closely related to youth academic outcomes: maternal school involvement. In one study, 7th grade Latinx children reported on their own English language proficiency, their mother's English language proficiency, and their mother's maternal school involvement (Anderson et al., 2020). Results showed that the children in the group characterized by a parent-child English language proficiency gap reported significantly lower maternal involvement in school. These findings, to a degree, align with the original formulation of the DCA theory that predicted that differences in English language proficiency in parents and children would be associated with negative youth academic outcomes (Portes & Rumbaut, 1996). One significant shortcoming of Anderson et al (2020) is that this study failed to incorporate Spanish proficiency, a vital component in the

refined DCA theory, to assess the impact that Spanish language has on outcomes in Latinx youth.

The observed protective effect of shared language proficiency between parents and children has also been extended to other domains of family processes as originally posited by the DCA theory. Using child and parent English and heritage language proficiency levels, studies have found that fluent bilingual children (i.e., high proficiency in both host and heritage languages) from Latinx and Asian backgrounds, as well as foreign monolinguals, report significantly less family conflict and greater family unity compared to parent-child dyads with English and heritage language gaps (Portes & Hao, 2002). The work by Portes & Hao (2002) included a different family process variable, family unity, as a domain that is directly impacted by parent-child language proficiency and highlighted the protective effect that heritage language proficiency in particular has on the lives of ethnic minority families.

Originally concerned with youth academic and social outcomes, the DCA theory has been extended to evaluate mental health as an outcome. Specifically, some research studies have tested the DCA theory by examining whether parent-child differences in acculturation levels, rather than language proficiency differences, would affect youth mental health (i.e., depression). In these studies, differences in acculturation levels between parents and youth, particularly in American orientation, have been linked to unsupportive parenting and ultimately lower academic achievement and greater youth depressive symptoms in Chinese American youth (Kim et al., 2009; Kim et al., 2013). Although language is one domain of the acculturation process, by focusing broadly on acculturation discrepancies, rather than on parent-child language proficiency levels, these studies fall short of directly evaluating the effect that language has on the mental health of ethnic minority families.

The DCA theory is a theoretical framework that originally posited that joint proficiency in the English language for both parents and children would lead to lower levels family conflict, a preservation of parental authority, and ultimately to children's positive academic and social outcomes (Portes & Rumbaut, 1996). Empirical work has supported this theory and extended it by including parental language proficiency and heritage language proficiency (e.g., Spanish), as predictors of family processes and youth social and academic outcomes (Schofield et al., 2012). Consistent with the DCA theory, research has found that matches in language proficiency between parents and children have been linked to increased communication, better child academic outcomes, higher maternal school involvement, less family conflict, and greater family unity (Schofield et al., 2012; Anderson et al., 2020; Portes & Hao, 2002). Although some work has been done to evaluate the DCA theory with mental health as an outcome, research is lacking in the examining the direct links between parental and child English and Spanish language proficiency levels, family processes, and mental health in Latinx populations.

The Acculturative Family Distancing (AFD) Model

One model that has linked language, family processes, and mental health in immigrant families is the Acculturative Family Distancing (AFD) model. AFD is defined as “The distancing that occurs between immigrant parents and children that is a result of immigration, cultural differences, and differing rates of acculturation” (Hwang, 2006, p. 397). This acculturative family distancing between parents and children acts across two dimensions: incongruence in cultural values and communication breakdown. In his developed AFD scale, Dr. Wei-Chin Hwang operationalized AFD as both differences in cultural values between parents and children as well as difficulties in communication through amount of disclosure, ability to communicate feelings and linguistic barriers (Hwang & Wood, 2009). Relevant to the current study, AFD is

directly affected by parent and child host and heritage language proficiencies (Hwang, 2006; Hwang & Wood, 2009). Specifically, the communication subscale of the AFD measure includes items on youth's ability to communicate with their parents, their parents' ability to communicate with children, disclosure, ability to communicate emotional needs, and linguistic barriers (Hwang, 2006).

By focusing on specific mechanisms in the acculturative process, the AFD model allows for a more proximal measure of the distal construct of acculturation gaps. This theory posits that if the ability to communicate deteriorates over time, this will lead to barriers in passing down cultural values which may result in increased rates of family conflict and depressive symptoms. As it relates to the acculturative distancing between parents and youth, it has been noted that these differences can be particularly salient once children enter the adolescent years and that the AFD-depression link may be explained by youth's lack of bicultural competency (host and heritage) (Hwang, 2006).

To tease apart the specific mechanisms behind the acculturative family distancing in the AFD model, particularly the communication breakdown domain, studies have explored factors closely related to communication between parents and children: language. Hwang and colleagues (2010) tested the AFD model with a sample of Chinese American families and using Rasch analyses uncovered that the AFD scale more effectively measured the construct through four dimensions instead of two. These four dimensions included: effective communication, communication barriers, values agreement, and values disagreement. This research study extended the understanding of AFD as it elucidated variables that are relevant to the AFD construct (language gaps).

The AFD model is a framework that has been used to assess how communication breakdown, family processes and psychological symptoms may be linked. The notion that breakdown in communication and incongruent values between youth and their parents leads to acculturative family distancing, family conflict and in turn lead to higher rates of depressive symptoms in mostly adult samples has been supported by recent research (Hwang & Wood, 2009; Hwang et al., 2010; Lee & Friedlander, 2014). Much of this research, however, has focused on primarily young adult samples and few have incorporated both parent and youth report data on these constructs. Further, limited studies have incorporated measures of language proficiency, a variable closely related to one of the domains of the AFD model (communication breakdown) and how they may be related to family processes and psychological outcomes, particularly parental mental health. Future work warrants research that assesses the impact that language proficiency in both Latinx children and parents has on family processes and mental health outcomes, particularly for parents.

Language Proficiency and Family Processes

Both the DCA theory (Portes & Rumbaut, 1996) and the AFD model (Hwang, 2006) have linked language to family processes such as parent-youth conflict and communication in families from ethnic minority backgrounds. Another related family processes domain is parenting. First, in a study with Mexican families, shared language proficiency between fifth-grade adolescents and their mothers in English or Spanish, was associated with warm parenting (Schofield et al., 2017). Another study with pre-school children of Mexican and Chinese immigrant families found that children's heritage expressive language proficiency and parent's American and heritage orientations were associated with authoritative parenting (Collins et al., 2011). In a third study, a match in high heritage language proficiency between parents and

children was linked to higher authoritative parenting, consistent with previous research linking heritage language maintenance in children and parents to authoritative parenting (Chen et al., 2014; Collins et al., 2011).

In addition to parenting, other related variables have been explored in the link between language and family processes. In a sample of 271 Latinx female adolescent-mother dyads, researchers examined the links between parent-adolescent conflict, acculturation dissonance (language-related cultural orientation; English language use, proficiency, and media use) and maternal supportive parenting (Bámaca-Colbert et al., 2012). This study employed the use of difference scores on the acculturation dissonance measure to determine the language gap between parents and adolescents. Findings revealed that as acculturation dissonance (English language use, proficiency, media use) between parents and middle adolescents (10th graders) increased, this predicted greater mother-daughter conflict. No direct link between acculturation dissonance and maternal supportive parenting was found.

Given the scant research examining the link between language proficiency and family processes variables, an examination of a related variable, language use, is presented here. In his study with Latinx parents and children, Martinez (2006) assessed families' involvement with American host and native culture (e.g., comfort with and use of language). Specifically, this study sought to address differential acculturation (i.e., youth's higher degree of acculturation in host culture relative to parents). Using the method of difference scores, a child-parent Americanism gap was calculated. Martinez (2006) found that as acculturation gaps between parents and children increased, this resulted in increases in family stress and decreased effective parenting (e.g., positive involvement with child, monitoring, homework engagement, skill encouragement, appropriate discipline, and general parenting).

In addition to highlighting the difficulties associated with language differences between children and their parents, the literature has also shed light on the positive outcomes present when parents and youth share the same language. In a study with Chinese Canadian families, parents and children completed self-report measures on Chinese and Canadian culture (e.g., language use) and family conflict and found that Chinese mothers who reported high Chinese language use was negatively related to parent-child conflict (Costigan & Dokis, 2006). In a study with East Asians, Filipinos and Latinxs, researchers examined the link between language use and parent-adolescent relationship dynamics (Tseng & Fuligni, 2000). It was found that parent-adolescent dyads who spoke the same language reported greater cohesion and discussion while adolescents who communicated with their parents in different languages tended to report feeling more emotionally distant from them (Tseng & Fuligni, 2000).

Qualitative research has also highlighted the negative impact that limited English proficiency has on family processes in Latinx families. A research study with 16 Latinx mothers and fathers were interviewed to unravel the difficulties that arise when language difficulties, particularly English, are present (Worthy, 2006). In this qualitative study, participants revealed that their inability to proficiently speak English hindered their ability to communicate with their children and the wider community. As a result of this, parents expressed distress, discomfort, frustration, as well as parent-youth conflict as expressed by children's frustrations with being the constant "go-to" for basic help. Similarly, research by Usita and Blieszner (2002) revealed that communication difficulties (defined by language use) were related to an array of family dysfunction. Specifically, after interviewing a sample of 10 mother-daughter dyads, it was found that differences in language use and communication difficulties were related to emotional distancing between mothers and daughters, frustration, annoyance, and impatience.

To the best of my knowledge, no studies have examined the direct link between parent and/or youth language proficiencies to the current study's family processes variables such as parental attachment and parenting stress. To help fill this gap in the literature, the current study will examine family processes such as parenting stress and parental attachment. Specifically, the current study will examine the relation between parent and child English and Spanish proficiency levels and their links to parenting stress and parental attachment.

Family Processes and Mental Health

A family variable that has been identified as being impactful in the parent-youth dynamic, especially during the preadolescent/adolescent years, is parental attachment. Attachment can be defined as an emotional bond that a child forms with an individual (Ainsworth, 1989). Various factors such as parental availability, sensitivity, and responsiveness, contribute to a secure attachment between a child and their attachment figure. In the absence of these factors, children may experience insecure and low levels of attachment towards their attachment figure (Ainsworth, 1989). Ample evidence exists that shows that greater levels of attachment is associated with lower levels of internalizing symptoms in children (Brumariu & Kerns, 2010). Specific to preadolescents and adolescents, evidence from 18 studies that examined parental attachment and youth internalizing problems point to higher and secure attachment being negatively associated with youth depression and anxiety (Brumariu & Kerns, 2010).

In addition to parental attachment, parenting stress is another family variable that is examined in the current study. Parenting stress can be defined as the stress that parents experience in the parenting dynamic that occurs between the parent and child. Extensive research has documented the deleterious effects that parenting stress has on both paternal and youth

mental health such as associations with parental depression, and child externalizing and internalizing problems (Tan & Rey, 2005; Farmer & Lee, 2011; Dubois-Comtois et al., 2013; Rodriguez, 2011). Furthermore, a recent meta-analysis of peer-reviewed empirical studies on parenting stress and its relation to children's mental health problems (externalizing and internalizing) found support for the significant and positive association between parenting stress and elevated levels of child externalizing or internalizing problems (Barroso et al., 2018).

As parenting stress has been linked to both negative mental health in parents and children, some research has attempted to examine the links between parenting stress, parent-child dynamics, and mental health. In their study, researchers examined the relation between mother and father levels of parenting stress and depressive symptoms (Ponnet et al., 2013). They found that greater paternal and maternal parenting stress were associated with lower levels of parent-child communication (Ponnet et al., 2013). As it relates to depressive symptoms, parents' own depressive symptoms were not significantly associated with parent-child communication but higher depressive symptoms in one parent was associated with less open communication between the other parent and child. Taken together, these findings suggest that parent-child communication was more directly impacted by one's own parenting stress and depressive symptoms of their partner's (Ponnet et al., 2013).

Although research exists linking parental attachment to youth internalizing problems and parenting stress to parental and child depression and parent-child communication, there is a lack of scientific evidence linking these relevant constructs. In particular, and closely aligned with communication, language proficiency in parents and children has been largely ignored in the link between attachment, parenting stress, and mental health for both children and parents.

Research Gaps and Methodological Limitations

Research has revealed that differences in language proficiency in Latinx families are linked to negative mental health in parents and children. The mechanism through which this occurs, however, is not widely understood, and much of the research surrounding the link between language, family processes and mental health has not been guided by a theoretical framework. The DCA theory identifies language proficiency as a core adaptation domain among families of immigrant backgrounds and proposes that a successful adaptation is associated with positive family processes and youth outcomes. To date, however, much of the research on the DCA theory has focused on youth language proficiency and primarily on youth academic outcomes. Other more recently proposed models, such as the AFD model, have specifically incorporated mental health as an outcome and proposed that language and cultural differences between parents and youth lead to communication difficulties, which, in turn, result in mental health problems (Hwang, 2006). However, studies that have evaluated the AFD model have mostly failed to incorporate both youth and parent language proficiency reports to assess for communication difficulties and have not been conducted with children.

When research that has examined differences in language proficiency between parents and youth and included both reporters, researchers have resorted to methods that present serious interpretability challenges. Specifically, the use of difference scores is made up of two different components (different reporters) and the variable of interest (Laird & De Los Reyes, 2013). Hence, any correlation using the difference score and variables incorporates different components which gives rise to a variety of potential patterns making it difficult to truly unravel the relation between a study's variables of interest. To address this limitation, the current study will use latent profile analysis (LPA) to test the differences in language proficiency between Latinx parents and their children. Furthermore, to my knowledge, this study will be the first to

incorporate a dyadic language approach to examine parent and child language proficiencies as they relate to both family processes and parent and child mental health variables in a sample of Latinx families.

Study Rationale.

Current Study. There is a dearth of research that has examined Latinx parent and child reports of English and Spanish language proficiency and their relation to family processes and both child and parent mental health. While most of the language-mental health research has focused on youth outcomes, this study will add to the literature by also assessing for parental depressive symptoms. Furthermore, this study will evaluate whether different parent-child language profiles (PCLP) are associated with demographic, family processes, and clinical variables. While much of the language-family process research has focused on relevant variables such as parent-child conflict, family cohesion, effective parenting, this study will be the first to examine three domains of parental attachment (trust, communication, alienation) and parenting stress and their association to the derived PCLP profiles.

To guide this research, the current study builds on existing theoretical frameworks, including the DCA theory and the AFD model (Hwang, 2006). Consistent with Schofield et al.'s (2012) DCA theory extension, this study will incorporate both parent and child reports of English and Spanish proficiency in the link between language proficiency and family processes. Specifically, parental attachment and parenting stress will be examined to test for associations with PCLP profiles characterized by varying levels of parental and child language proficiencies. In regard to mental health, the AFD model will help guide the current research by examining clinical predictors (child and parental depression) of PCLP profile memberships.

Aims and Hypotheses

This study aims to:

1. Derive PCLP profiles using latent profile analyses (LPA) from parent and child reports of English and Spanish proficiency. It is expected that more than one PCLP profile will emerge and that at least one of the profiles will include differences in language proficiency between parents and their children.
2. Explore predictors of PLCP profile membership. These include demographic variables (e.g., age, gender, parental education), family processes variables such as parenting stress and parental attachment, and parent and child depressive symptoms (see Figure 1). It is hypothesized that higher parenting stress and lower parental attachment will predict membership in profiles that are characterized by language proficiency differences between children and their parents. Similarly, children and parents who report higher depressive symptoms are predicted to be in profiles in which there are larger parent-child language proficiency differences.

Method

Participants

The sample for this study includes 294 Latinx parent-child dyads recruited from nine Chicago Public Schools. Demographic information was obtained from youth during a classroom survey and from parents during an in-person interview. The sample consisted of slightly more females ($n = 163$; 55.4%) than males ($n = 129$; 44.6%), who were between 10-14 years old ($M_{age} = 11.45$, $SD = .95$), and who were enrolled in 5th (22.8%), 6th (38.1%), 7th (38.4%) and 8th grade (1.7%). Children in this study were of Latinx only (89.8%), mixed Latinx and European American (5.4%), mixed Latinx and African American (2.7%), and Latinx and two or more other (1.4%) ethnic backgrounds. Further, children were of Mexican American ($n = 207$; 70.4%),

Puerto Rican (n = 31; 10.5%), Central or South American (n = 17; 5.8%), mixed Mexican and Puerto Rican (n = 17; 5.8%), mixed Mexican and Central or South American (n = 11; 3.7%), and other Latinx backgrounds (n = 11; 3.8%). In regard to nativity, children in this study were primarily second generation youth (child U.S.-born, either or both parents foreign-born) (n = 224; 76.2%), but the sample also included first generation youth (child foreign-born) (n = 22; 7.5%), third generation youth (child U.S.-born, both parents U.S.-born, one or more grandparents foreign-born) (n = 30; 10.2%), and youth who were not of immigrant background (child, both parents, and all grandparents U.S.-born) (n = 18; 6.1%).

Most caregiver respondents¹ were the child's mother (n = 261; 88.8%) but fathers (n = 28; 9.5%) or other relatives/guardians were interviewed, instead, if the child's biological mother was not available. Other caregiver respondents included the child's grandmother (n = 4; 1.4%) and stepfather (n = 1; 0.3%). Parents were predominantly of low socio-economic backgrounds, most reporting incomes of less than \$40,000 a year (82.0%). Some parents reported an annual income of \$40,000-\$75,000 (14.1%) while few reported an annual income of over \$75,000 (3.8%). More than half of the parents in this study reported less than 12th grade level of education (n = 189; 64.3%) while the rest reported receiving a high school degree (or equivalent) or higher (n = 105; 35.7%).

Measures

Language Proficiency. Parallel measures were used to assess language proficiency. During individual interviews (Time 2), youth and parents completed the *Youth and Parent Language Proficiency Scales* (YLPS and PLPS; Polo, 2002), which ask respondents to rate how well they speak, read, and write in Spanish (3 items) and English (3 items) using a scale from 1

¹ Henceforth, the term "parent" is used to describe all caregivers in the sample

(*very well*) to 4 (*not well at all*). A sample item includes: “How well are you able to speak English.” The internal consistency for these scales was found to be good to excellent in this sample for the youth Spanish ($\alpha = .86$), parent Spanish ($\alpha = .88$), youth English ($\alpha = .82$), and parent English ($\alpha = .97$) items. Items for the YLPS and PLPS were recoded so that higher scores in this measure reflected higher language proficiency.

Parent-Child Attachment. During their individual interview, youth completed the parent items of the *Inventory of Parents and Peer Attachment-Revised* (IPPA-R; Gullone & Robinson, 2005) for both their mother and father. The three subscales in the parent IPPA-R include: *trust* (10 items, including “my mother respects my feelings”), *communication* (9 items, including “I tell my mother about my problems and troubles”) and *alienation* (6 items, including “I get upset easily around my mother”). Youth rated their responses on a scale of 1 (*almost never or never true*) to 5 (*almost always or always true*). Internal consistency was good to excellent for the mother ($\alpha = 0.90$) and father ($\alpha = 0.91$) *trust* subscales, the mother ($\alpha = 0.84$) and father ($\alpha = 0.86$) *communication* subscales, and the mother ($\alpha = 0.74$) and father ($\alpha = 0.75$) *alienation* subscales.

Parenting Stress. During their individual interview, parents completed the Parenting Stress Index – Short Form (PSI – SF; Abidin 1995) which included 36 items that assessed for stress associated with parenting in the caregiver-youth relationship. Using a 5-point Likert scale from 1 (*strongly agree*) to 5 (*strongly disagree*), parents rated items such as, “I feel trapped by my responsibilities as a parent”. The internal consistency was high for the parenting stress measure in this sample ($\alpha = 0.94$). Items for the PSI were recoded so that higher scores in this measure reflected higher parenting stress.

Parental Depressive Symptoms. The *Center for Epidemiological Studies Depression-Adult* (CES-D; Radloff, 1977) was used to evaluate parental depressive symptoms during the parent interview. The CES-D is a well-validated 20-item self-report measure of depressive symptoms experienced in the prior week. Parents rated each item (e.g., “I felt depressed”) in this scale from 1 (*rarely or none of the time, less than one day*) to 4 (*most or all of the time, 5-7 days*). The CES-D scale had good internal consistency ($\alpha = .86$) in this sample.

Child Depressive Symptoms. The Children’s Depression Inventory (CDI; Kovacs, 1992) is a commonly used depression scale for children and adolescents aged 7 to 18 years. This self-report measure comprises 27 items and assesses cognitive, behavioral, and affective symptoms of depression. For each item, children selected one of three statements describing how they felt during the past two weeks (e.g., “I am sad once in a while, I am sad many times, I am sad all the time”). Items are rated on a 0-2 scale, and the range of possible scores is 0-54. Item nine, which assesses suicidality, was eliminated from the questionnaires due to concerns that the research team would not be able to evaluate risk among those who endorsed suicidality. The CDI was collected from youth during their individual interview and had excellent internal consistency for this sample ($\alpha = .90$).

Procedure

The data used in this study are drawn from a larger study which had, as one of its aims, to deliver a school-based intervention to youth identified as being at-risk for depression. All the schools were part of the Chicago Public Schools (CPS) district and were selected because they had a significant enrollment of Latinx youth. The data that are examined for this study were collected from classroom surveys (Time 1) and from individual youth and parent interviews (Time 2). Parental consent and student assent were separately obtained at each time point. For

the classroom surveys, DePaul staff visited CPS schools and gave a presentation to classrooms to introduce the study and provide information about the surveys and distributed recruitment packets that included parental consent forms. Students took the consent forms home to their parents/guardians, who were asked to fill them out and return them to the student. The students brought the consent forms back to school and received a pen as a ‘thank you’ for returning the consent form, regardless of the parents’ decision. DePaul staff collected all signed consent forms and coordinated with CPS staff to choose the best times to conduct the surveys with the students whose parents had consented and who had, themselves, assented to participate. DePaul staff distributed the paper surveys to each student and administered them by reading the questions and items aloud as students filled them out in their individual surveys. The classroom survey took about 45 minutes to complete. For each classroom that participated in this survey, students were given raffle tickets for small prizes for one of every eight students.

After the surveys were completed, parents were contacted to invite them to participate in an interview and to consent for their child to participate in a child interview. These individual interviews, which lasted approximately 90 minutes, were conducted after school at a time that was convenient for the parent and child. At the agreed upon time, interviewers first read and went over parental consent and youth assent forms. The interviews were conducted simultaneously with the parent and the child dyad, but in separate rooms. Students were given a \$25 gift card and parents received \$30 in cash for completing the interviews. The study oversampled students who were at risk for depression, in part because the goal was to identify those who may have chronic depression and may be good candidates for a school-based coping skills program.

Results

Latent Profile Analysis – Model Selection

The current study employed Latent Profile Analysis (LPA) using Mplus version 8.4 (Muthén & Muthén, 1998-2017) to identify groups within this sample based on the latent variable of the YLPS and PLPS language proficiency items. This person-centered approach identifies related groups based on continuous observable variables (McCutcheon, 1987). Within these groups, individuals share similar characteristics in terms of their language proficiencies. The LPA incorporated respondents' raw scores on the English and Spanish language proficiency measures as the 12 indicators for language proficiency (i.e., child and parent levels of English and Spanish proficiency in speaking, reading, writing in each respective language). Raw language proficiency scores, rather than means, were used as indicators for the LPA given previous work supporting that more indicators lead to better overall model fit (Wurpts & Geiser, 2014). Model retention decisions were based on model fitting indices such as the Akaike Information Criterion (AIC), Bayesian Information Criterion (BIC), and sample-size adjusted BIC (ssaBIC). Entropy, a statistical measure that provides information on how well the LPA distributes data across the derived profiles, with values of 0.80 or higher indicating good classification, was also used to aid in model retention. Lastly, the Lo-Mendell-Rubens Test (LMRT) was used to determine whether additional profiles significantly improved model fit (Nylund et al., 2007). Models were evaluated by sequentially adding one more profile than the previous model (Masyn, 2013), evaluating the statistical indices to evaluate model fit (see Table 2).

As predicted, results from the LPA revealed that more than one profile emerged from the data set. Through an iterative process, results supported a 4-profile solution for this LPA (see Figure 2). Fit indices, including the AIC, BIC, and ssaBIC improved as number of profiles in the

model increased from two to five. Entropy values all fit the 0.80 or higher criterion, as all profiles were above .95. The LMR test (LMRT) was conducted sequentially with the addition of profiles to examine relative model fit. The LMRT is a likelihood ratio test of model fit in which the estimated model is compared to another model with one less profile by statistically analyzing the number of profiles that best fit the data (Lo et al., 2001). In this study, adding profiles 2, 3, and 4 yielded a significant LMRT p-value, indicating that the model with more profiles (4 versus 3) fit the data better. The LMR test did not yield a significant p-value for the 5 ($p = .679$) profile solution. Lastly, the latent profile membership probabilities in the 4-profile solution were high as values closer to 1.0 have been linked to higher probability of specific profile membership: 0.975 for profile 1, 0.980 for profile 2, 0.990 for profile 3, 0.974 for profile 4 (Ferguson et al., 2020). The 4-profile solution was selected due to appropriate distribution within profiles and better interpretability.

The results revealed that there were two groups whose profiles revealed English proficiency gaps between parents and children. Profile 1 ($n = 113$; 38.4%), labeled as Medium English Gap (MEG), is characterized by children with medium to low Spanish proficiency whose parents had high Spanish proficiency. For English proficiency, children in this profile reported high English, while their parents reported medium to low English proficiency. Profile 4 ($n = 67$; 22.8%), labeled as Large English Gap (LEG), included children and parents with medium to high Spanish proficiency. For English, however, parents had low levels of English while children had medium to high levels of proficiency. Profile 3 ($n = 90$; 30.6%), was also characterized by a difference in parent and child proficiency. In this profile, labeled Medium Spanish Gap (MSG), children and parents had high English proficiency. For Spanish, however, parents in this profile had high proficiency, while children had medium to low Spanish proficiency. Finally, dyads in

Profile 2 ($n = 24$; 8.2%), labeled as No Language Gap (NLG) were characterized by children and parents who generally matched across both languages in proficiency. Both had high English and low Spanish proficiency.

Language Differences across Profile Groups

A one-way analysis of variance (ANOVA) was conducted to evaluate differences in language proficiency across the four parent-child language profiles. Post hoc comparisons were conducted using the Least Significant Difference test (LSD) when significant mean differences in language proficiency were found across profiles (see Table 3). Child English proficiency was found to vary across members of the profiles, $F(3, 286) = 10.052, p < .000$ and all comparisons yielded statistically significant differences across the groups, except for the MEG vs. NLG and NLG vs. MSG groups. Child Spanish proficiency was also found to vary across members of the profiles $F(3, 286) = 33.80, p < .000$ and all post-hoc comparisons yielded statistically significant group differences, with the exception of MEG vs LEG. Parent English proficiency was found to vary across members of the profiles $F(3, 293) = 981.51, p < .000$ and all post-hoc comparisons were statistically different, with the exception of NLG vs MSG. Finally, parent Spanish proficiency varied across members of the profiles $F(3, 292) = 109.48, p < .000$ and all group comparison revealed statistically significant differences, except for the MEG vs. MSG groups.

Demographic, Family Process, and Clinical Predictors

Profile membership predictors were evaluated using multinomial logistic regressions using one of the profiles as the reference group and examining the resulting odds ratios to indicate the likelihood of profile membership in the target profile relative to the reference group. The LEG group (Profile 4) was selected as the reference group for the multinomial logistic regression analyses. This profile was selected as the reference group since it had the largest

English proficiency gap between parents and children and, based on the study hypotheses, was important to compare to the other sample profiles.

Demographic Predictors. Demographic predictors examined included age, gender, parental education, ethnicity/Latinx subgroup, along with the caregiver interviewed. Dummy codes were used for gender (male = 1, female = 2) parent education (low – below High School = 1, high - High School or beyond = 2), ethnicity/Latinx subgroup (Mixed Latinx and Mixed Latinx/Non-Latinx = 1; Other Latinx only = 2; Mexican American only = 3), and caregiver interviewed (biological father/other relative = 1; biological mother = 2). As shown in Table 4, age and gender were not found to be associated with profile membership. In contrast, parents with lower parental education had lower odds of belonging to the MEG, NLG, and MSG profiles, relative to the LEG (Profile 4) profile. In regard to the ethnicity/Latinx subgroup predictor, relative to the Mexican American only group, it was found that the Mixed Latinx and Mixed Latinx/Non Latinx along with the Other Latinx only groups, both had higher odds of belonging in the NLG and MSG profiles, relative to the LEG profile. A statistical trend was found for caregiver interviewed as a predictor of profile membership in that relative to biological mothers, biological fathers/other relative was associated with higher odds of belonging in the MSG profile relative to the LEG profile ($p = .051$). Nativity could not be evaluated as a predictor because of the large overlap between nativity and latent profile membership. Specifically, no first-generation participants were found in the NLG (Profile 2) profile. Further, no third or fourth generation participants were found in the MEG (Profile 1) or the LEG (Profile 4) profiles. Given these results with nativity and latent profiles being confounded, nativity was dropped as a profile predictor.

Based on these results, the multinomial regressions for family process and clinical variables were run with and without demographic covariates. The covariates selected were those that significantly predicted profile membership and those in which a statistically significant trend emerged, including parental education, ethnicity/Latinx background, and caregiver interviewed.

Family Process Predictors – Without Covariates. As Table 5 indicates, mother and father trust and communication did not emerge as significant predictors of parent-child language proficiency profile membership. Youth who reported higher alienation from their mothers, however, had higher odds of belonging to the MSG profile relative to the LEG profile. Similarly, youth reporting higher alienation from their fathers had higher odds of belonging to the NLG profile relative to the LEG profile. In contrast, parents who reported higher parenting stress had lower odds of membership to the both the MEG and MSG profiles, relative to the LEG profile.

Family Process Predictors – With Covariates. Table 6 shows the family process predictors with the demographic covariates included. Youth reporting higher maternal trust had less odds of belonging in the MSG profile relative to the LEG profile. Youth reporting higher paternal communication were less likely to belong to the NLG profile, relative to the LEG profile. Similarly, those with higher maternal and paternal alienation were more likely to belong to the NLG profile and MSG profiles, relative to the LEG profile. A trend was found for youth reporting more maternal ($p = .086$) and paternal communication ($p = .086$) to be less likely to belong to the MSG profile, relative to the LEG profile.

Clinical Predictors – Without Covariates. In terms of clinical predictors, no associations were found between child depression and parent-child language proficiency profile membership, which was contrary to the study hypotheses. For parents, a trend was found such

that higher parental depression scores were associated with lower odds of belonging to the MEG profile ($p = .055$), relative to the LEG profile.

Clinical Predictors – With Covariates. In the models with the demographic covariates, the youth who reported higher depression symptoms were more likely to belong to the NLG profile, relative to the LEG profile. A trend for youth with higher depression to belong to the MSG profile ($p = .071$), relative to the LEG profile, also emerged. No other significant predictors of profile membership emerged for child or parent depression.

Discussion

Guided by the AFD model and the DCA theory, the current study examined English and Spanish language proficiency levels in Latinx children and their parents through a novel, person-centered statistical approach; latent profile analysis (LPA). LPA results confirmed our hypothesis that more than one profile would emerge and that they would be characterized by various levels of English and Spanish language proficiency levels (see Figure 2). This study was one of the first to incorporate child and parent English and Spanish language proficiencies as indicators of latent profiles.

Four distinct and mutually exhaustive profiles categorized by varying levels of language proficiency were uncovered: Profile 1 – Medium English Gap (MEG) characterized by children with high levels of English proficiency and medium levels of Spanish proficiency and parents with medium levels of English proficiency and high levels of Spanish proficiency; Profile 2 – No Language Gap (NLG) where children and parents matched on high levels of English proficiency and low levels of Spanish proficiency; Profile 3 – Medium Spanish Gap (MSG) where children displayed high levels of English proficiency and medium levels of Spanish proficiency while parents displayed high levels of proficiency in both languages; Profile 4 – Large English Gap

(LEG) where children had high levels of English proficiency and medium levels of Spanish proficiency while parents displayed the opposite pattern in that they reported low levels of English proficiency and high levels of Spanish proficiency.

The two largest profiles, accounting for almost 70% of the sample, were made up of families in which there was a medium gap in English or Spanish language proficiency. More than 1 in 5 youth were found to be in a profile with a large English language proficiency gap with their parents. All profiles, with the exception of the NLG profile, were characterized by either an English or Spanish proficiency gap between parents and children. In fact, fewer than 10% of the sample were in a profile that did not include an English or Spanish language gap between parents and their children. Furthermore, none of the parent-child language profiles in this study were categorized as bilingual (i.e., parents and children with high levels of English and Spanish language proficiencies). This is consistent with another study that examined the relation between language proficiency and depression in a sample of Latinx families (Colón-Quintana et al., 2020). Of note, the profiles found in this study were composed of Latinx parent-child dyads primarily of low income and immigrant backgrounds. Other studies are needed that include Latinx families of other backgrounds, higher income and education levels to assess the relation between parent-child dyadic language proficiency levels and mental health and family processes.

Future research should also examine the impact that language proficiency gaps between parents and children have on family processes and clinical outcomes in other age groups (e.g., high school students). This is particularly important as language has been directly linked to social communication, school, and friendships, all of which may be even more crucial during Latinx adolescents' high school and above years. Similarly for parents, as youth are exposed to neighborhood stressors, it becomes imperative for them to be able to communicate with their

children to help navigate these contextual stressors. In turn, as parents are able to communicate with their children, parents may feel empowered which may also result in decreases in parenting stress, parental depression, and overall increase in closeness between them and their children. This pattern is consistent with previous work linking matches in parent and child language proficiency to positive outcomes (Portes & Rumbaut, 2001; Chen et al., 2014).

Through multinomial logistic regression analyses, various demographic, family processes, and clinical variables were tested as predictors of PCLP profiles categorized by varying degrees of language proficiency. Findings from the multinomial logistic regressions revealed that child age and gender, and caregiver interviewed were not significant predictors of profile membership. Parent education, however, emerged as a significant predictor of profile membership. Specifically, compared to parents with high education levels, those with a lower education level had lower odds of being in profile 1 (MEG), profile 2 (NLG), and profile 3 (MSG) relative to profile 4 (LEG). The LEG profile was characterized by lower levels of parental English proficiency and the parental education finding in this study is consistent with previous research documenting positive associations between English language proficiency and higher levels of education in adults from immigrant backgrounds (Portes & Rumbaut, 2014).

In regard to family processes predictors, and consistent with the study's predictions, parents reporting higher rates of parenting stress had lower odds of being in profile 1 (MEG) and profile 3 (MSG) relative to profile 4 (LEG). These findings were present only in the models without controlling for covariates (parental education, ethnicity/Latinx subgroup, caregiver interviewed). The finding on parenting stress associated with lower odds of belonging in profiles with less of a language gap could be linked to there being an increased risk of a disruption to family cohesion and family dysfunction when a larger English gap exists (Tseng & Fuligni,

2000; Usita & Blieszner, 2002). Without a shared understanding of English, given the large English proficiency gap between parents and children, a role reversal may be at play.

Specifically, as children have higher English proficiencies in the LEG group compared to their parents, the former group may take more of an active role in making important decisions for the family given their English language skills (Morales & Hanson, 2005). As such, parents may feel less in control through the role reversal given that their children may become more dominant in the parent-child dynamic. This role reversal, in turn, increases risk for family conflict, further contributing to parenting stress (Portes & Rumbaut, 2014).

Without controlling for covariates, the maternal and paternal alienation subscales of the IPPA-R measure also emerged as a significant family processes predictors of profile membership. Specifically, youth reporting a greater degree of alienation from their maternal caregiver were more than 1.5 times more likely of belonging in profile 3 (MSG) relative to profile 4 (LEG). Similarly, children who reported a greater degree of alienation from their paternal caregiver were two times more likely of belonging in profile 2 (NLG) relative to profile 4 (LEG). One possible explanation behind this may be that when children and parents match in language proficiency, in this case high English and low Spanish, parents may be more intrusive towards their children's lives given that parents are better able to understand their children's everyday conversations, practices, and beliefs. As such, parents may become critical of their children's decisions and practices which may increase risk of parent-child conflict. Furthermore, the potential for child-parent conflict may increase as a result of having shared language proficiency given that both are able to understand each other and hence may increase likelihood of verbal arguments in the event of parent-child conflict.

Consistent with the study's hypotheses that language gaps between parents and children would be associated with mental health problems, a statistical trend was found in that caregivers reporting greater level of parental depression had less odds of being in profile 1 (MEG) relative to profile 4 (LEG) without controlling for study covariates. The large English gap that is present between parents and children in profile 4 (LEG) may be associated with significant communication barriers between parents and children. These linguistic barriers may ultimately be linked to mental health distress given the potential for a breakdown in communication between parents and their children (Hwang, 2006). With communication hindered, this could severely limit parents' ability to form trusting and comforting relationships with their children. In turn, this may cause parents to feel as though they may not be able to fully support their children, feel less empowered, and ultimately experience higher depressive symptoms.

Results from the multinomial logistic regression analyses with and without covariates revealed the greater child-reported alienation was associated with less odds of belonging in the LEG profile. Specifically, children reporting both higher maternal and paternal alienation were about two to three times more likely of belonging in the NLG and MSG profiles, relative to the LEG profile. Children reporting greater maternal trust were associated with less odds of belonging in the MSG profile, relative to the LEG profile. Further, children reporting greater paternal communication were associated with less odds of belonging the NLG profile relative to the LEG profile. These parental attachment findings were contrary to the current study's hypotheses. In particular, lower parental attachment, as evidenced by greater maternal and paternal alienation, was associated with membership in profiles characterized by a match in high English and low Spanish proficiency in parent-child dyads (NLG profile) relative to the LEG profile. Similarly, higher paternal attachment, through greater maternal trust and greater paternal

communication, was associated with decreased odds of membership in profiles characterized by a medium Spanish gap (MSG profile) and the NLG profile, relative to the LEG profile. In regard to the clinical predictors, child depression emerged as a significant predictor in that children reporting greater depression were more than 8 times more likely to be in the NLG profile relative to the LEG profile.

These findings related to parental attachment and child depression could be linked to the language proficiency and related gaps. In particular, evidence in this study pointed to children in profiles characterized by the lowest level of Spanish proficiencies (NLG and MSG) as faring off the worst in light of lower reported parental attachment and higher depressive symptoms. The findings from this study linking parent-child dyads with a medium Spanish gap, as well as children with the lowest levels of Spanish proficiency, to lower parental attachment and higher mental health problems is consistent with previous research linking gaps in heritage parent-child language proficiencies to poorer child adjustment (Chen et al., 2014).

In this study, low levels of Spanish proficiency and medium Spanish gaps in parent-child language profiles (NLG and MSG) were associated with lower reports of parental attachment and higher child depression. Although contrary to this study's hypotheses, one explanation behind this important finding could be related to evidence behind the "immigrant paradox" which has found that recent immigrants, compared to U.S.-born Latinxs, fare off better in various areas of health (Alegría et al., 2007; Portes & Schauffler, 1994). In particular and linked to this study, evidence for better mental health, such as lower depression and anxiety, has been found in foreign-born Latinx immigrants compared to their U.S.-born Latinx counterparts (Portes & Rumbaut, 2001; Tilley et al., 2021). In this study, stronger adherence to the heritage culture, as

evidenced by higher levels of Spanish proficiency in children, seems to play a protective role in family processes and mental health in this Latinx sample.

As Spanish proficiency emerged as a potential protective factor for Latinx families, particularly for Latinx children, the DCA theory allows for a closer examination of the patterns at play. Specifically, the parent-child language profile characterized by a match in both high English proficiency and low Spanish proficiency (NLG) falls in line with previous research describing families as undergoing consonant acculturation as they abandon heritage language generally at the same pace (Portes & Rumbaut, 2014). The other three profiles in this study (MEG, MSG, LEG) were parent-child dyads with mismatches in English as evidenced by higher English proficiency in children compared to their parents. This pattern has been described as families undergoing dissonant acculturation and being at high risk for communication difficulties, family conflict, and youth maladjustment (Portes & Rumbaut, 2014). The results from this study were contrary to the DCA theory as the NLG and MSG profiles, rather than profiles with medium to large English proficiency gaps, were associated with the worst family processes and mental health problems in children.

The findings from this study provides insight into the association between language differences in parents and children in this Latinx sample and family and clinical domains. Expansive research has attempted to gauge the degree and impact of parent-child differences in a variety of cultural domains, such as language, in Latinx samples. One framework that has been used to explore this area, and that aligns with the DCA theory, is the acculturation gap-distress model. This model posits that children of immigrant families tend to acculturate to the host culture at faster rates compared to their parents, which, in turn, leads to family conflict and youth maladjustment (Szapocznik & Kurtines, 1993). Empirical support for this model has been done

mostly with Latinx and Asian immigrant families and findings have been mixed and largely inconclusive (Telzer, 2010).

The original formulation of both the acculturation gap distress model and the DCA theory emphasized the role that parent-child differences in acculturating to the U.S. culture has on family processes and youth adjustment without much emphasis on the heritage culture. However, recent research, as well as findings from this study, point to the vital impact that differences in heritage culture, rather than host culture, has on the well-being of families from ethnic minority backgrounds (Liu et al., 2009; Chen et al., 2014; Wiesner et al., 2015). These research findings call for both a bidimensional approach in assessing for cultural gaps (e.g., language gaps) in parent-child dyads as well as a reconceptualization of the acculturation-gap distress model and the theory of Dyadic Cultural Adaptation.

Limitations and Implications

There are some limitations in this study that are worth noting. First, the cross-sectional nature of this data does not allow for the examination of causality between parent and child language proficiencies and family processes and mental health outcomes. It is not possible to determine, for example, if lower attachment and higher youth depression are the result of language proficiency gaps between parents and their children. It is possible that, alternatively, lower communication, lower trust, and higher alienation cause lower child Spanish proficiency. A bidirectional relation between language proficiency and youth depression has been established (Colón-Quintana et al., 2020), so it is possible that both processes are operating. Research investigating these associations utilizing a longitudinal design is needed. Lastly, most caregivers in this study included children's mothers and less than 10% of caregivers were the children's

fathers. Given that parent-child relationships vary depending on the caregiver, future studies would benefit from including a higher representation of fathers and other caregivers.

The current study adds significant value to the literature on parent-child language proficiency levels and their links to family processes and mental health in ethnic minority populations. First, this study is one of the few studies to include both parent and child English and Spanish language proficiency levels through self-reports to examine links to family processes and mental health. Using a person-centered data analytical approach, the study employed LPA to uncover parent-child dyads categorized by varying levels of language proficiency and in doing so, addressed concerns with previous methodological approaches to measuring language gaps such as the use of difference scores. By including both parent and child reporters on English and Spanish language proficiency levels, this study was able to further support the DCA theory by highlighting the significant association between language proficiency and family variables such as parental attachment and parenting stress. Using the AFD model as one of the guiding frameworks in this study, the current research was also able to link language proficiency to mental health in a sample of Latinx families. Notably, this study was one of the first to shed light on the relation between parent-child language proficiency levels and mental health in both children and parental mental health.

With these findings in mind, clinical professionals can help tailor treatment by addressing differences in language proficiency as a contributing factor to family dysfunction (e.g., parenting stress). Furthermore, our findings point to a lack of child Spanish proficiency as a potential risk factor for family processes and mental health. As such, fluent bilingualism can provide protective effects in the lives of Latinx families. At the policy level, it is a worthwhile mission to advocate for English and Spanish training programs in community settings such as schools,

particularly for children. By including both child and parent reports of language proficiency, the current study identified existing language proficiency differences in a predominantly low-income, community-based Latinx sample. By identifying these differences, targeting specific communication strategies becomes more feasible which would help decrease parenting stress and depression and in turn increase family cohesion and improve mental health outcomes in children and their parents.

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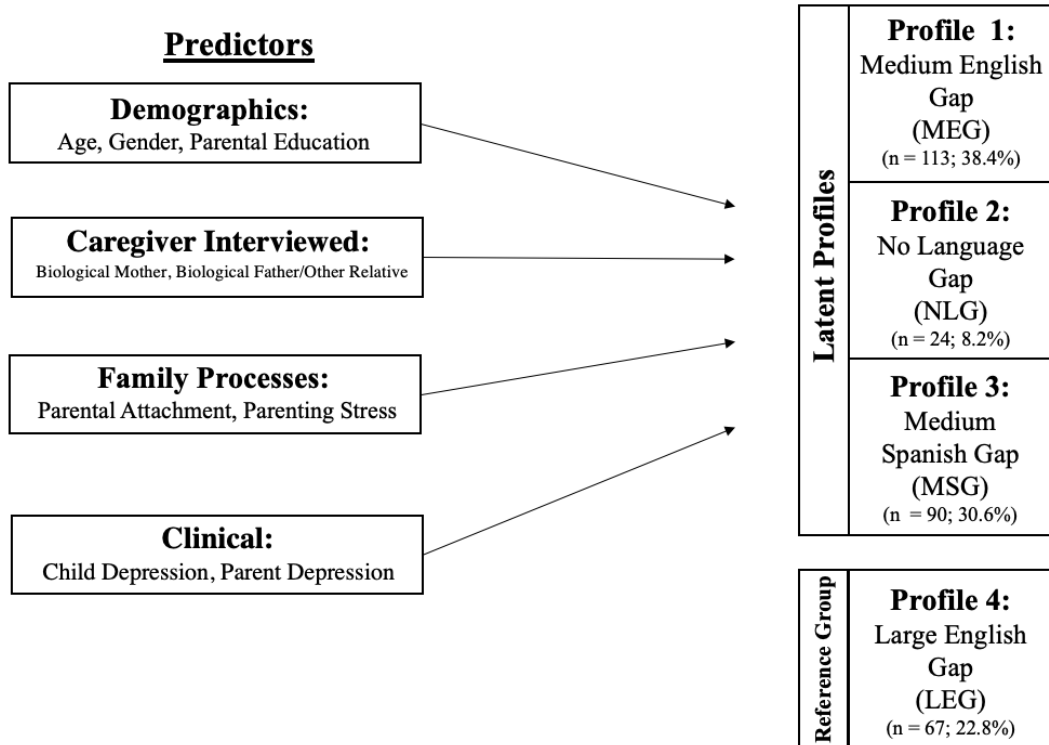


Figure 1. Multinomial logistic regressions testing caregiver interviewed, demographic, family processes, and clinical variables as predictors of latent profile membership. *Note.* Profile 4 – Large English Gap (LEG) is the reference group profile.

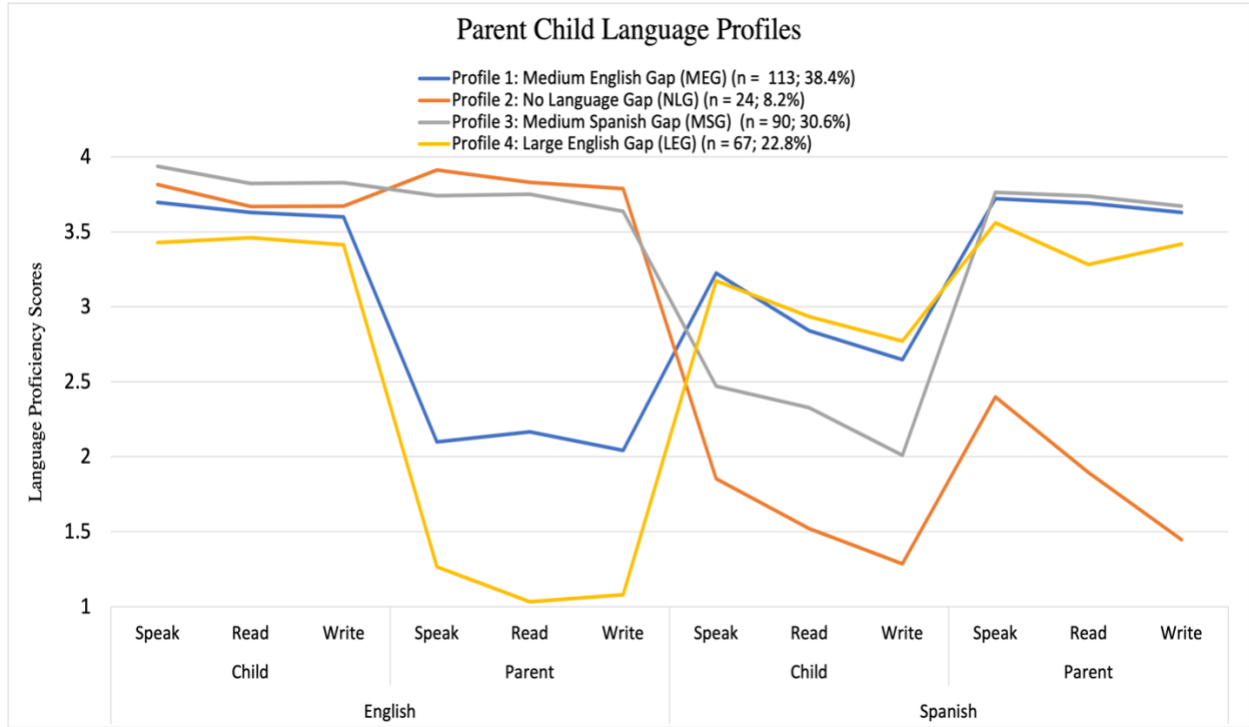


Figure 2. Latent profile analysis of four-profile solution distribution of means.

Table 1.

Summary of Studies of Parent-Child Language Proficiency and links to Mental Health Outcomes

Study	Reporter	Language/s Assessed	Ethnicity	Mental Health Variables
Lee & Chen, 2000	Parent & Adolescent	English & Chinese	Chinese/Chinese Canadians	Adolescent depressive symptoms
Weaver & Kim, 2008	Parent & Adolescent	English & Chinese	Chinese/Chinese Americans	Adolescent depressive symptoms
Liu et al., 2009	Parent & Adolescent	English & Chinese	Chinese/Chinese Americans	Adolescent depressive symptoms
Hwang et al., 2010	Parent & Adolescent	English & Chinese	Chinese American	Adolescent and parental depressive symptoms
Chen et al., 2014	Parent	English and Chinese	Chinese American	Children externalizing and internalizing problems

Table 2.

Latent Profile Models and Fit Indices

Model	Log Likelihood	AIC	BIC	ssaBIC	Entropy	LMRT p-value
2 profiles	-3678.466	7430.931	7567.224	7449.887	0.980	** .000
3 profiles	-3479.233	7058.465	7242.644	7084.081	0.984	** .002
4 profiles	-3316.496	6758.993	6991.058	6791.268	0.960	*.011
5 profiles	-3241.969	6635.938	6915.890	6674.873	0.958	.679

Note. AIC = Akaike Information Criterion. BIC = Bayesian Information Criterion. ssaBIC = sample size-adjusted BIC. LMRT = Lo-Mendell-Rubin Test. ** = $p < .01$, * = $p < .05$

Table 3.

Post-Hoc Analyses Comparing Language Proficiency Mean Scores across Profiles

Parent-Child Language Profiles		Profile 1 (MEG)	Profile 2 (NLG)	Profile 3 (MSG)	Profile 4 (LEG)
Child English LP	Profile 1 (MEG)	-	NS	**	*
	Profile 2 (NLG)		-	NS	*
	Profile 3 (MSG)			-	***
	Profile 4 (LEG)				-
Child Spanish LP	Profile 1 (MEG)	-	***	***	NS
	Profile 2 (NLG)		-	***	***
	Profile 3 (MSG)			-	***
	Profile 4 (LEG)				-
Parent English LP	Profile 1 (MEG)	-	***	***	***
	Profile 2 (NLG)		-	NS	***
	Profile 3 (MSG)			-	***
	Profile 4 (LEG)				-
Parent Spanish LP	Profile 1 (MEG)	-	***	NS	***
	Profile 2 (NLG)		-	***	***
	Profile 3 (MSG)			-	***
	Profile 4 (LEG)				-

Note. LP = Language Proficiency. MEG = Medium English Gap. NLG = No Language Gap.

MSG = Medium Spanish Gap. LEG = Large English Gap. NS = Not significant. *** = $p < .001$,

** = $p < .01$, * = $p < .05$.

Table 4.

Multinomial Logistic Regressions Models Evaluating Demographic Predictors of Language

Proficiency Profile Membership

Profile Predictors	Profile 1 - MEG OR (95% CI)	Profile 2 - NLG OR (95% CI)	Profile 3 - MSG OR (95% CI)
Demographic			
Age	1.31 (0.95-1.81)	1.15 (0.70-1.88)	1.06 (0.75-1.48)
Gender (Male)	0.63 (0.34-1.18)	1.02 (0.40-2.60)	1.47 (0.78-2.79)
Parent Education (Low)	0.21** (0.07-0.64)	0.05** (0.02-0.20)	0.03** (0.01-0.09)
Ethnicity/Latinx Subgroup			
Mixed Latinx and Mixed Latinx/Non-Latinx	7.84 [†] (0.99-62.30)	351.33** (34.32-3596.26)	46.50** (6.10-354.63)
Other Latinx only	3.56 [†] (0.99-12.84)	27.56** (4.15-182.94)	9.82** (2.73-35.34)
Caregiver interviewed (Biological Father/Other)	1.87 (0.58-6.06)	1.43 (0.25-8.37)	3.15 [†] (1.00-9.98)

Note. MEG = Medium English Gap, NLG = No Language Gap, and MSG = Medium Spanish

Gap; Profile 4 – Large English Gap (LEG) is the reference group profile; M = Mother and F =

Father; * $p < .05$; ** $p < .01$, [†] $p < .10$. Reference group for gender is Female; for parent

education is High; for Ethnicity/Latinx subgroup is Mexican American (only); and for caregiver

interviewed is Biological Mother.

Table 5.

Multinomial Logistic Regressions Models Evaluating Family Process and Clinical Predictors of Language Proficiency Profile Membership (without covariates)

Profile Predictors	Profile 1 - MEG	Profile 2 - NLG	Profile 3 - MSG
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Family Processes			
M - Trust	0.91 (0.56-1.47)	0.84 (0.41-1.71)	0.70 (0.43-1.14)
F - Trust	0.87 (0.55-1.35)	0.67 (0.35-1.31)	0.87 (0.55-1.39)
M - Communication	0.87 (0.58-1.30)	0.91 (0.49-1.69)	0.70 (0.46-1.07)
F- Communication	0.80 (0.53-1.19)	0.56 (0.30-1.05)	0.84 (0.55-1.29)
M- Alienation	1.21 (0.79-1.85)	1.76 (0.95-3.27)	1.59*(1.02-2.47)
F - Alienation	1.19 (0.76-1.87)	2.03*(1.04-3.96)	1.30 (0.81-2.08)
Parenting Stress	0.56*(0.33-0.93)	0.69 (0.31-1.54)	0.50*(0.29-0.86)
Clinical			
Child Depression	0.96 (0.35-2.64)	2.89 (0.72-11.67)	1.20 (0.42-3.43)
Parental Depression	0.51 [†] (0.25-1.02)	0.75 (0.26-2.11)	0.57 (0.28-1.18)

Note. MEG = Medium English Gap, NLG = No Language Gap, and MSG = Medium Spanish Gap; Profile 4 – Large English Gap (LEG) is the reference group profile; M = Mother and F = Father; * $p < .05$; ** $p < .01$, [†] $p < .10$.

Table 6.

Multinomial Logistic Regressions Models Evaluating Family Process and Clinical Predictors of Language Proficiency Profile Membership (with demographic covariates)

Profile Predictors	Profile 1 - MEG	Profile 2 - NLG	Profile 3 - MSG
	OR (95% CI)	OR (95% CI)	OR (95% CI)
Family Processes			
M - Trust	0.84 (0.50-1.41)	0.53 (0.23-1.23)	0.53* (0.29-0.96)
F - Trust	0.78 (0.49-1.24)	0.52 (0.23-1.15)	0.63 (0.35-1.14)
M - Communication	0.84 (0.55-1.28)	0.72 (0.34-1.50)	0.63 [†] (0.37-1.07)
F - Communication	0.74 (0.49-1.12)	0.37* (0.17-0.84)	0.62 [†] (0.36-1.08)
M - Alienation	1.38 (0.85-2.23)	2.43* (1.15-5.15)	1.97* (1.11-3.48)
F - Alienation	1.44 (0.87-2.38)	2.91* (1.29-6.56)	1.92* (1.03-3.56)
Parenting Stress	0.66 (0.38-1.15)	1.15 (0.45-2.93)	0.79 (0.40-1.55)
Clinical			
Child Depression	1.37 (0.46-4.07)	8.36* (1.48-47.31)	3.33 [†] (0.90-12.26)
Parental Depression	0.56 (0.25-1.23)	1.00 (0.29-3.50)	0.85 (0.33-2.16)

Note. MEG = Medium English Gap, NLG = No Language Gap, and MSG = Medium Spanish Gap; Profile 4 – Large English Gap (LEG) is the reference group profile; M = Mother and F = Father; * $p < .05$; ** $p < .01$, [†] $p < .10$.