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Does Immigration Help to Explain Child Stress?

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Abstract

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The impacts of childhood stressors are harmful to the emotional and physical well-being of children of all ages. Past research has suggested that children experience increased stress due to change. One subgroup of the United States population that experiences change, is immigrants. Research provides empirical evidence of adolescent immigrant stress but has failed to examine stress experienced by immigrant children at a young age. The present study investigates how immigration status and child immigration generation might impact child stress at a young age using OLS regression. I predict that immigrant children will experience more stress than non-immigrant children and that there will be significant differences in stress between non-immigrant, 1.5 generation immigrant, and 2nd generation immigrant children. Using the 1998 and 2010 cohorts of the Early Childhood Longitudinal Study (ECLS-K 1998 and ECLS-K 2010), I compare non-immigrant and immigrant children in the Kindergarten Wave. Results provide little support for my immigration hypotheses. However, findings suggest that increases in child stress are associated with parent and child health, family structure transitions, and residential movement. Implications of these findings are discussed.

Keywords: child stress, internalizing behavior problems, externalizing behavior problems, immigration, relocation, family transitions

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Does Immigration Help to Explain Child Stress?

In 2016 one in six youth experienced a mental health disorder (Whitney and Peterson 2019). According to the Centers for Disease Control and Prevention, suicide is the second leading cause of death in the United States for individuals ages 10-34 (Control 2018). These statistics are alarming and cause for serious thought about the environment in which children and youth are developing. The years before adulthood are important, a time that molds individuals into who they are. Children and youth are easily influenced by people in their lives and what they consume through media. The stress they internalize has a negative impact on behavior and physical health.

The impacts of child stress are harmful to the emotional and physical well-being of children of all ages and are manifested in a myriad of negative child outcomes. An accumulation of stress from family life is often manifested in child lifestyle. As these youth internalize and externalize the stress from family life, they struggle with emotional regulation, which contributes to negative lifestyle habits contributing to child obesity and mid-adolescent self-harm (Aparicio et al. 2016; Sourander et al. 2006). Children are developing habits and experiencing symptoms of stress such as stress eating, less physical activity, and poorer sleep quality (Michels et al. 2015; Sadeh, Raviv, and Gruber 2000). Research indicates that stressful events and life experiences can alter a child's neurobiology, as they are still developing (Thompson 2014).

Among these stressful events for children are changes. These changes can include changes in family life, residence, and school. Immigrant children are a subgroup in the United States population that experience all of these changes in a more extreme manner. They are completely uprooted from their native country and move to a foreign land with new laws, often a new language, and a new culture.

Literature suggests that change is a component in child stress. Immigrant children experience extreme change through the process of relocation. The following hypotheses guide the analysis:

1. Immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
2. 1.5 generation immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
3. 2nd generation immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
4. 2nd generation immigrant children will experience less stress than 1.5 generation immigrant children.
5. Immigrant children (both 1.5 and 2nd generation) in 2010 will have worse stress outcomes than immigrant children in 1998 due to the heightened political climate associated with immigration post-September 11, 2001.

BACKGROUND

Child Stress and Change

From birth, children depend on another human being in order to survive. During crucial years of development, learning, and maturation, the lives and well-being of children are in the hands of others. The dependence of children on adults can result in life-altering changes that induce unhealthy stress levels in children. These stressful changes have the potential to create

negative child outcomes. Some of these changes include family structure transitions, residential relocation, and school enrollment changes.

One challenging change some children experience is family structure changes, which are associated with greater child stress (Cavanagh and Fomby 2019; Field, Diego, and Sanders 2001; Raley and Sweeney 2020). Children experience direct emotional stress from family transitions such as divorce and remarriage (Cavanagh and Fomby 2019). Furthermore, children who experience one disruption are more likely to experience ensuing transitions and collateral stressors (Wu and Martinson 1993). Responses to these stressors can include premarital pregnancy, drug use, depression, and worse academic outcomes (Field et al. 2001; Jelleyman and Spencer 2008; Wu and Martinson 1993). Additionally, family structure changes are often the cause of additional childhood stressors such as residential relocation and school changes (Cavanagh and Fomby 2019).

Relocation heightens stress due to separation from extended family and childhood friendships as well as uprooting children from their neighborhood and school connections (Cavanagh and Fomby 2019; McLanahan and Sandefur 1994). Research has found that frequent residential movement is associated with increased behavioral and emotional problems in addition to extreme stress in children (Jelleyman and Spencer 2008).

Further, a change in school due to relocation and/or family disruptions can be an additional stress-inducing situation for young children (Cavanagh and Fomby 2019; McLanahan and Sandefur 1994). A decline in social relationships is an aspect of school movement which can trigger stress and stress-related negative outcomes (Pribesh and Downey 1999). Additionally, the stress from an increase in school-to-school transitions is manifested in higher levels of school

dropouts (Alspaugh 1998), lower educational outcomes, and lower levels of engagement in school (Fall and Roberts 2012).

Adolescent Immigration and Stress

Immigrants are a subgroup population of the United States that experience heightened stress exacerbated by residential relocation across borders. Many immigrants come to the U.S. seeking a better quality of life, looking for better employment, escaping dangerous situations, and seeking better education opportunities for their children. However, the residential relocation, change in schools, and family disruption that are associated with child stress (Cavanagh and Fomby 2019; McLanahan and Sandefur 1994) may be magnified by immigration. Surprisingly, given how clear the theoretical connections between immigration and child stress are, we know little about those connections empirically. However, evidence from studies of adolescents is suggestive that moving across borders enhances stress by exposing children to other additional stress points such as new culture, new language, and new laws and policies.

Relocation is a source of stress for children due to residential, school, and relationship changes; however, relocation across borders brings the stress of a new culture and lifestyle in addition. High school a stressful experience due to developmental and societal pressures of growing up, but immigrant adolescents experience added stressors with pressures of assimilation. Processes of assimilation, though not always a conscious decision, cause stress (Alba 2005). For example, adolescents experience pressure from the mainstream to assimilate. However, some assimilation processes create boundaries that introduce emotional distance between adolescent immigrants and their families (Alba 2005). In some situations, a young person's assimilation into the mainstream culture creates dissonance in their identity and feelings of disloyalty to their family, culture and heritage, alienating them from their immigrant family (Alba 2005; Portes and

Rumbaut 2001). This alienation is stressful and may cause many immigrant youth to not assimilate to the mainstream culture; this may include rejecting as mainstream culture education as an upward mobility strategy (Alba 2005; Portes and Zhou 1993). Research finds that adolescents who are able to maintain both cultures of the mainstream and of their heritage, often referred to as selective acculturation, are less stressed, perhaps in part because this strategy leads to better economic and cultural incorporation (Bean and Stevens 2004; Gibson 1988; Portes and Rumbaut 2001).

In addition to having cultural stressors, many immigrants experience challenging language barriers. Research suggests that being bilingual gives young individuals self-confidence and helps them feel confident and powerful (Kasinitz et al. 2008), but bilingualism is something that takes time to acquire. Adolescents who immigrate are in a difficult position where attending school is mandatory but instruction is in English. The heightened possibility of miscommunication due to a language barrier and lack of cooperative teachers and translators in the education system causes stress to these young immigrants and can make school a traumatizing experience (Kasinitz et al. 2008). Additionally, many young immigrants cannot bring their parents to school because their parents speak little English (Kasinitz et al. 2008). Other language challenges arise as youth experience pressure from their parents to learn English to help the family. For example, translating for family members can become a source of stress if immigrant youth are exposed to adult problems or are asked to engage in deception (Kasinitz et al. 2008). However, immigrant youth who successfully learn English sometimes lose facility in their native language, which results in alienation from heritage and older generations like their grandparents (Kasinitz et al. 2008; Portes and Rumbaut 2001).

New laws and policies concerning citizenship status are also the root of many of the stressors that come from immigration. The citizenship status of parents, children, and mixed status families has an impact on financial security, education, occupation, and family relationships for the adolescent children (Castañeda 2019). As laws and policies concerning citizenship become more restrictive in the U.S. (Rosenblum 2011), concerns about citizenship status bleed into every facet of immigrants' lives. Immigrant children observe their parents' stress and internalize it, acquiring fear of deportation, fear of police and immigration enforcement personnel, and lack of access to services (Castañeda 2019; Golash-Boza 2018; Gonzales 2016). While citizenship status issues can also be stressful for documented immigrants, these stressors may be exacerbated for undocumented immigrants. In addition to worries about deportation, laws and policies that block employment for undocumented immigrants mean that undocumented parents have access to low-income jobs, often in manual labor or agricultural industries. As a result, immigrant youth often feel the stress of having to "grow up" fast, feeling they need to provide for their family at a young age. Consequently, some immigrant children who are not protected by citizenship become early exiters, dropping out of high school to get a job to provide for their families (Castañeda 2019; Gonzales 2016). In addition to the stress of having to help provide for families, this pathway potentially cuts off educational achievement for these immigrant youth, leading to greater stress in their adult lives when they lack the educational credentials to move into more desirable labor markets (Castañeda 2019; Gonzales 2016). Similarly, changes to laws and policies concerning educational opportunities for immigrant youth, such as Deferred Action for Childhood Arrivals (DACA), can cause stress as adolescents fear their pathways to educational and financial success are being damaged (Castañeda 2019; Gonzales 2016).

1.5 and 2nd Generation Immigrants

Literature targeting adolescent immigrants finds similarities and differences based on immigrant generation. Some children immigrate with their parents; children who were born outside of the United States and immigrated with their parents before the age of 15 are often referred to as 1.5 generation immigrants. Children in immigrant families born in the United States to one or more immigrant parent are referred to as 2nd generation immigrants. Literature suggests that their experiences of immigration are different in areas such as language, culture and citizenship status.

Second generation adolescent immigrants have a clear advantage being born into citizenship; however, they still experience additional stressors due to loss of culture, language challenges, and parents' citizenship status. Some young immigrants born into the U.S. have an advantage of being bilingual; however, this skill can have stressful side effects. Bilingual immigrant youth might translate for their family members, this can be stressful due to exposure to adult issues and engagement in deceptive situations (Kasinitz et al. 2008). Additionally, 2nd generation immigrant youth who successfully learn English sometimes lose their ability to use their native language, which results in alienation from heritage and older generations like their grandparents (Kasinitz et al. 2008; Portes and Rumbaut 2001). Another stress that 2nd generation adolescents can experience is being the only member of the family with a social security number; pressures arise as they become the face of the family in legal matters due to having the proper documentation (Castañeda 2019).

The stressors that 1.5 generation adolescent immigrants experience are different from those of 2nd generation immigrants. Learning and attending a school in a new language is traumatizing for young 1.5 generation immigrants (Kasinitz et al. 2008). The inability to

communicate can result in harsh treatment from teachers and cause these children emotional stress (Kasinitz et al. 2008). Additionally, 1.5 generation immigrants experience stress due to citizenship status. Some 1.5 generation children immigrate to the United States as legal permanent residents or on other visas, giving their family a legal status in the U.S. Though these children are authorized, immigration stressors can be exacerbated by non-citizen status. Some 1.5 generation youth who immigrate to the U.S. are unauthorized and have access to DACA, which protects them from immediate deportation once they reach adulthood; though this may bring immediate relief, some do not qualify and are denied this resource. Additionally, some simply do not apply for DACA status out of fear. With limited resources available to 1.5 generation immigrants, educational achievement varies greatly. Some adolescent immigrants graduate high school and have limited opportunities. Other 1.5 generation adolescents immigrants drop out of high school when they find out that their opportunities post-high school are limited due to their citizenship status; their disappointment leads them to give up on their dreams and start manual labor occupations (Castañeda 2019; Gonzales 2016). Low education levels and low-income jobs contribute to greater stress entering into adulthood (Portes and Zhou 1993; Telles and Ortiz 2008). Those who do have access to DACA have more resources and better opportunities, but still experience stress from the uncertainty of possible deportation. Ultimately, 1.5 generation adolescent immigrants seem to experience similar stressors from citizenship status as adult immigrants, with fear driving their lifestyle choices (Castañeda 2019).

Stressors vary depending on immigrant generation. Due to the research discussed, I argue that 1.5 generation adolescents immigrants experience more stress than 2nd generation immigrants. Though 2nd generation adolescent immigrants experience their own challenges, due to access to more government resources and better opportunities for education, language

advantages, and the stability of their citizenship status, these youth appear to have less stress than immigrants of the 1.5 generation.

Immigration Era

In addition to the comparison of 1.5- and second-generation immigrants, it is important to compare across time frames. After the terrorist attacks on September 11, 2001, the United States Congress passed restrictive immigration measures to heighten national security. For example, this derailed important and inclusive immigration policies between the United States and Mexico (Rosenblum 2011). Instead, policies were put in place to enforce greater border security, allowing the government greater control over travelers and the detention and deportation of immigrants (Rosenblum 2011). Due to these policy changes, immigrants today live in fear of deportation (Gonzales 2016). In addition to policy changes, this attack on America caused for a shift in the mindset of many. Immigrants were on the path to becoming integrated members of society and overnight became foreigners to fear. Immigrants now often experience heightened stress from prejudice and profiling (Bayoumi 2009). Unfortunately, leaders today continue to participate in this rhetoric causing divisiveness in our nation and fear of new policy changes for immigrants. I argue that immigrant respondents post-9/11 will experience more stress due to the increased political climate.

Current Study

The literature on adolescent immigrant outcomes leaves an intriguing question. How does immigration affect the stress of young children? Literature does demonstrate, however, that children experience stress from change (Field et al. 2001; Wu and Martinson 1993). In the process of residential relocation across borders, children experience many life changes. Furthermore, children are receptive to the stressors their parents experience in immigration

(Castañeda 2019). Therefore, I argue that young immigrant children will experience increased levels of stress.

Hypotheses

1. Immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
2. 1.5 generation immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
3. 2nd generation immigrant children will experience more stress in the form of school stress, internalizing behavior problems, and externalizing behavior problems than will non-immigrant children.
4. 2nd generation immigrant children will experience less stress than 1.5 generation immigrant children.
5. Immigrant children (both 1.5 and 2nd generation) in 2010 will have worse outcomes than immigrant children in 1998 due to the heightened political climate associated with immigration post-September 11, 2001.

METHODS AND MEASURES

Data

In this research I use the Early Childhood Longitudinal Study Kindergarten 1998 and 2010-11 cohorts, which are collections of data from the United States that follow children from their entry into kindergarten up until the 8th grade. In this comparative cross-sectional study, I use information from Waves 1 and 2 for each cohort, which were collected in the fall and spring

of the child's kindergarten year. The purpose of using data collected at a young age is to properly test child stress before children are introduced to additional school stressors. Missing data were dropped from the variables containing 3% or less missing and those containing higher than 3% were imputed. Once multiple imputations were complete, the sample sizes increased to N = 15,472 (1998) and N = 12,259 (2010). The immigrant sample sizes are N = 465 (1998) and N = 331 (2010).

Measures

The key outcome variables in this study are child school stress, internalizing behavior problem, and externalizing behavior problems. Scales were constructed for child school stress in both data sets using a series of six questions asked during Wave 1 (Fall of Kindergarten year) about the school experience of the respondent's child. The scale includes the following questions about behaviors in a week: How often child is upset to go to school? How often child fakes sick to stay home? How often child complains about school? How often child praises school? How often child says they like their teacher? And, how often child is eager to go to school? Responses are coded from 1-3. The first three questions, which would indicate a negative reaction to school, were reverse coded to match the outcomes of the other three positive indicators; therefore, the scale moves from low scores being positive to high scores being negative. The items included to construct this scale have a scale reliability coefficient of α = .711 (1998) and α = .694 (2010). Finally, I standardize all scales in order to facilitate comparison across datasets. Internalizing and externalizing behavior problems are social skills scales developed from teachers' observations of the students in Wave 1 (Fall of Kindergarten)(example of internalizing behavior problems: "Child feels ashamed when they make a mistake at school", example of externalizing behavior

problems: “child often argues with other kids”). Higher scores indicate the child exhibiting problem behaviors more frequently.

The main independent variables in this study are child’s immigrant status and child’s immigrant generation. For both data sets, the child’s immigrant status variable was created from a citizenship question asked in Wave 2 (Spring of Kindergarten year), which specifically asks if the child was a citizen. This question was presented only to those who were born outside of the US. Thus, using this variable I generated a new variable, recoding “-1= not applicable” to “0 = US born, Non-immigrant” and “1= Foreign born, Immigrant”.

In constructing the child’s immigrant generation variable there were slight differences due to which questions were asked in the two cohorts. Using the 1998 data set, I constructed the child’s immigrant generation variable with the child’s immigrant status variable and the mother and father immigrant status from Wave 4 (both generated in the same manner as the child’s immigrant status). From these three variables, I derive the child’s immigrant generation. This variable is categorical allowing the data to show if the child is US born and not an immigrant, a 1.5 generation immigrant (children born outside of the United States that immigrate as a child or young teen) or 2nd generation immigrant (children born in the United States to at least one immigrant parent). The variable is thus coded “0 = non-immigrant” (1998 N = 12,626; 2010 N = 8,383), “1 = 1.5 generation immigrant” (1998 N = 602; 2010 N = 401), and “2 = 2nd generation immigrant” (1998 N = 2,244; 2010 N = 3,475).

Using the 2010 data I constructed the variable slightly differently. Along with child’s immigrant status, the other two variables used were the country of origin for the mother and father from Wave 2 (“0 = non-immigrant, US born” and “1 = immigrant, born in Mexico or

other"). The child's immigrant generation variable was derived from these three variables and coded the same as the 1998 data.

Several controls are included in the analysis to account for family stability, resources, health and child demographics. To account for family stability, I included two variables, family structure and residential mobility. The family structure variable (Wave 1) was constructed from the main parent's marital status at the time of survey and includes married, separated, divorced or widowed, never married, no bio/ adoptive parent (1998) or civil union/domestic partnership (2010). The residential mobility variable (Wave 1) indicates the number of places the child has moved in their lifetime; the original variable in 1998 ranged from 1-20 and in 2010 it ranged from 1-6. Both variables were truncated to four as the maximum value.

To account for the child's resources, I included parental education, maternal and paternal employment, income, and home language variables. The parent education variable (Wave 1) was constructed by taking the highest level of education between the mother and father and is coded as "1 = less than high school diploma", "2 = high school diploma", "3 = some college", "4 = college degree", "5 = post graduate schooling". The employment variables (Wave 1) for both parents are coded as "1 = 35 or more hours per week", "2 = less than 35 hours per week", "3 = looking for work", and "4 = not in labor force". The two variables in the 1998 data included a fifth category that indicated if it was a single parent household, and those respondents were coded as missing for fathers so that I could impute those cases. This creates cohesiveness with the 2010 data. The income variable (Wave 2) is a continuous variable measuring annual family household income that ranges from 5,000 – 200,000. Finally, the home language variable (Wave 1) was constructed to identify the languages used at home to identify language barriers. This variable was coded as "0 = English" and "1 = non-English".

To account for health, I included parental health status, child's health status, and a parental depression score. The overall global health of the child (Wave 1) and their responding parent (Wave 2) were included to control for stress from poor health; these scales were coded as "excellent, very good, good, fair or poor" and are treated as a continuous variable. Higher scores indicate poorer health. The parental depression scale was constructed using a series of mental health questions provided in Wave 2 (Spring of Kindergarten year). The questions included are as follows: How often respondent is unusually bothered? How often respondent has a poor appetite? How often respondent can't shake blues? How often respondent has trouble focusing? How often respondent felt depressed? How often respondent felt everything is an effort? How often respondent felt fearful? How often respondent sleeps restless? How often respondent felt they could not get going? Respondents are asked to indicate if they experience various symptoms of depression none of the time, a little of the time, some of the time, most of the time, or all of the time. The depression scale has a scale reliability coefficient of $\alpha = .831$ (1998) and $\alpha = .890$ (2010). Finally, the scales were standardized in order to facilitate comparison across datasets.

Lastly, to account for child demographics, I included child race, gender, and age. The child race variable (Wave 1) was categorized as "1 = White", "2 = Black", "3 = Hispanic", "4 = Asian", and "5 = other". The variable indicating the biological sex of the child (Wave 1) was coded as "0 = male" and "1 = female". Child's age (Wave 1) was reported in months ranging from 44-93 (1998) and 54-79 (2010).

[Table 1 about here]

Analytic Strategy

To assess the impact of child immigration status and child immigrant generation on child stress, I run 24 OLS regression models predicting the three stress outcomes. The first three tables test the first two hypotheses, measuring the significance of child immigration status on child stress. These tables include bivariate models and models including controls for each cohort. Table 1 presents descriptive statistics. Table 2 includes child's immigrant status and school stress. Table 3 includes child's immigrant status and child internalizing behavior problems. Table 4 includes child's immigrant status and externalizing behavior problems.

The last three tables address immigrant generation Hypotheses 2-4. Tables 5-7 lay out the same models described above using the child immigration generation variable that includes categories of non-immigrant children, 1.5 generation immigrant children, and 2nd generation immigrant children. Table 5 is a regression for school stress. Table 6 is a regression for internalizing behavior problems. Table 7 is a regression for externalizing behavior problems.

RESULTS

School Stress and Child Immigration Status

My first set of models test the association between whether a child has immigrated to the United States from another country (1998 $N = 465$; 2010 $N = 331$) and three indicators of child stress: schools stress, internalizing behavior problems, and externalizing behavior problems. I note that measuring immigration in this way is essentially also a test of how 1.5 generation status is associated with child stress. I turn first to school stress. Table 2 shows there is no significant difference between school stress of non-immigrant children and immigrant children. However, when looking at the variables addressing stability, living in a non-traditional family structure is significantly associated with higher child stress across both data sets. The ECLS 1998 data findings show that children with separated or widowed parents score .103 points higher on the

child school stress scale on average compared to children with married parents ($p < 0.001$). Similarly, the ECLS-K 2010 data shows that children with separated or widowed parents score .125 points higher on the child school stress scale on average compared to children with married parents ($p < 0.001$). Additionally, in ECLS-K 2010, children with a parent who never married score .080 points higher on the child school stress scale on average compared to children with married parents ($p < 0.01$).

Both the ECLS 1998 and ECLS-K 2010 also demonstrated the importance of resources. ECLS 1998 findings indicate children with parents who have less than a high school diploma education score .091 points lower on average on the child school stress scale than children whose parents have a high school diploma education ($p < 0.01$). Additionally, ECLS 1998 shows that, on average, children with fathers who work less than 35 hours per week score .110 points higher on the school stress scale than children with fathers who work 35 hours per week or more ($p < 0.05$). Interestingly, I found that ECLS-K 2010 shows a change in direction, children with fathers who work less than 35 hours per week score .096 score lower on the school stress scale than children with fathers who work 35 hours per week or more ($p < 0.05$). This change in direction of stress could indicate that shared childcare responsibilities were more common in 2010 than in 1998.

All variables controlling for child and parent health are significantly associated with child stress. The 1998 findings show that a one-unit increase on the parent health scale is associated with a .041-point increase in school stress ($p < 0.001$), while a one-unit increase on the parental depression scale is associated with a .031-point increase in school stress ($p < 0.001$). A one-unit increase on the child health scale is associated with a .079-point increase in school stress ($p <$

0.001). The 2010 findings are very similar. All findings suggest that parental and child health play a significant role in child stress.

The final variables in the model control for child demographics. In the 1998 data. children in the "other" race category score .163 points higher on average on the school stress scale compared to White children ($p < 0.001$). On average, female children score .162 points lower on the school stress scale compared to male children ($p < 0.001$). Finally, a one-unit increase in child age is associated with a .005 decrease in school stress ($p < 0.05$). The 2010 data shows Black children on average score .061 points lower on the school stress scale compared to White children ($p < 0.05$), a perhaps surprising finding given recent research on race differences in school disciplinary strategies (Morris 2005). Asian children, on average, score .103 points lower on the school stress scale compared to White children ($p < 0.05$). Results from models predicting school stress do not provide evidence for Hypotheses 1 and 2 predicting that immigrant status or being a 1.5 generation immigrant would be associated with greater stress.

[Table 2 about here]

Internalizing Behavior Problems and Child Immigration Status

Table 3 is an OLS regression of the child internalizing behavior problems scale on child immigration status. This table consists of four models, two for each data set. Model 1 for ECLS 1998 shows that immigrant children on average score .057 points lower on the internalizing behavior problems scale compared to non-immigrant children ($p < 0.05$). This means immigrant children exhibit fewer internalizing symptoms of stress, which seems surprising, as there is good reason to believe that the immigrant experience should increase stress (Castañeda 2019). However, once controlling for stability, resources, health and child demographics, the coefficient for child immigrant is no longer significant. There is no significant relationship between

immigrant status and internalizing behavior problems in the 2010 data. Table 3 indicates null findings, providing no support for Hypotheses 1 predicting that immigrant children will experience more stress than non-immigrant children or for Hypothesis 2 predicting 1.5 generation immigrant children will experience more stress than non-immigrant children.

Inclusion of additional controls suggests that family stability plays a role in child stress, at least as expressed through internalizing behavior problems. ECLS 1998 indicates children of separated/widowed parents score, on average, .043 points higher on the internalizing behavior problems scale compared to children of married parents ($p < 0.01$) and children of a never married parent score .042 points higher on average compared to children of married parents ($p < 0.01$). On average, a one-unit increase in times a child has moved is associated with a .020 increase on the internalizing behavior problems scale ($p < 0.001$). Similarly, the 2010 data shows that on average, children with parents who are separated/widowed score .065 points higher on the internalizing behavior problems scale compared to children who have married parents ($p < 0.001$), and children who have a parent who has never been married score .039 higher on the internalizing behavior problems scale compared to children with married parents ($p < 0.01$). Residential mobility did not have a significant association with internalizing behavior problems in the 2010 cohort.

Resources continue to be significant predictors of child stress. ECLS 1998 data reports that, compared to children of parents with a high school education, on average, children of parents with a less than high school diploma education, score .056 points higher ($p < 0.01$), children of parents with some college score .026 points lower ($p < 0.01$), children of parents with a college degree score .027 points lower ($p < 0.05$), and children of parents with post graduate schooling score .035 points lower ($p < 0.05$) on the internalizing behavior problems scale.

Interestingly, these relationships do not reach the level of statistical significant in the 2010 data. ECLS 1998 data show that compared to children of mothers who work 35 hours or more a week, children of mothers who are looking for work on average score .083 points higher on the internalizing behavior problems scale ($p < 0.001$), while in the 2010 data children of mothers not in the labor force score .032 higher ($p < 0.05$). These findings are different than what would be expected. Perhaps the increase in child stress outcomes suggests that a mother looking for work or who has given up looking for work is stressed and the child is feeling the effects of that. ECLS 1998 data also shows that compared to children of fathers who work 35 hour or more per week, children of fathers who are not in the labor force score .077 points higher, on average, on the internalizing behavior problems scale ($p < 0.01$). These findings support the idea that a parent could have additional stress from not being in the labor force that trickles down to their child. In both the 1998 and 2010 data, on average, a one-unit increase in family income is associated with a decrease in child internalizing behavior problems (1998: b = -3.40e-07, $p < 0.01$; 2010: b = -4.26e-07, $p < 0.01$). Model 2 in both ECLS data sets suggests significant relationships between the language spoken in the child's home and internalizing behavior problems. In the 1998 cohort, compared to children who speak only English at home, children who primarily speak another language at home score, on average, .065 points lower on average on the internalizing behavior problems scale ($p < 0.01$); the coefficient is very similar for children in the 2010 cohort. These results are unexpected and suggest perhaps the language variable is sensitive to cultural differences that the scale is not picking up.

Family health issues continue to be significantly associated with child stress. On average, a one-unit increase in the parent's health status is associated with a .020-point increase in internalizing behavior problems in the 1998 data ($p < 0.001$), and in the 2010 data a one-unit

increase is associated with a .011-point increase on the child internalizing behavior problems scale ($p < 0.05$). In the 1998 data, on average a one-unit increase in child's health status is associated with a .032-point increase on the child internalizing behavior problems scale ($p < 0.001$), while in the 2010 data a one-unit increase on the child health scale is associated with a .023-point increase in internalizing behavior problems ($p < 0.001$). These findings continue to indicate that as parent and child health worsen, child stress increases.

Lastly, there are small differences in the effects of child demographics across the 1998 and 2010 cohorts. Interestingly, in the 2010 data Black children score on average .056 points lower on the internalizing behavior problems scale compared to White children ($p < 0.01$), while no other racial coefficient is significant in the 2010 data and no racial coefficient is significant in the 1998 data. However, only the 1998 data present significant coefficients for child gender and age. On average, a female child scores .033 points lower on the internalizing behavior problems scale than a male child ($p < 0.001$) in the 1998 cohort, while a one-unit increase in child age is associated with a .003-point decrease on the internalizing behavior problems scale ($p < 0.01$). Even in the presence of a number of controls for resources and demographics, immigrant status is not associated with child stress as indicated by the presence of internalizing behavior problems. This presents a challenge to Hypothesis 1 and 2, which predicted that immigrant status or being a 1.5 generation immigrant is associated with increased levels of stress in children.

[Table 3 about here]

Externalizing Behavior Problems and Child Immigration Status

Table 4 is an OLS regression of the externalizing behavior problems scale and child immigration status. Model 1 is the OLS regression of externalizing behavior problems on child immigration status; Model 2 adds control variables.

In Model 1, the coefficients for the immigrant status variable indicate no significant association between immigration status for children and stress as indicated by externalizing behavior problems. This null finding persists once controls are added in Model 2, providing no support for Hypotheses 1, which predicted immigrant status is associated with increased child stress, or Hypothesis 2, which predicted being a 1.5 generation immigrant is associated with increased child stress.

However, Model 2 for both the 1998 and 2010 data shows significant relationships between a number of control variables and externalizing behavior problems. Living in a non-traditional family structure is associated with externalizing behavior problems in both the 1998 and 2010 cohorts. 1998 outcomes indicate children of a parent who never married score .091 points higher on the externalizing behavior problems scale, on average, compared to children of married parents ($p < 0.001$). Similarly, the 2010 data indicates that children of a parent who never married score .084 points higher on average ($p < 0.001$) than children of married parents. Additionally, 2010 data indicates that children of separated/widowed parents score .112 points higher ($p < 0.001$) compared to children of married parents, on average. Findings also show that residential mobility has a significant impact. 1998 data indicates, on average, a one-unit increase in residential moves a child has experienced is associated with a .045 point increase on the externalizing behavior problems scale ($p < 0.001$), while in 2010 a one-unit increase in residential moves a child experiences, on average, is associated with a .030 point increase on the externalizing behavior problems scale ($p < 0.001$).

As was true for models predicting school stress and internalizing behavior problems, family resources have an impact on child externalizing behavior problems as well. The 1998 data shows, on average, that children of mothers who work less than 35 hours per week score .105

points lower on the externalizing behavior problems scale compared to children of mothers who work 35 hours a week or more ($p < 0.001$). Children of mothers who are looking for work score .107 points lower, on average, on the externalizing behavior problems scale than children with mothers who work 35 hours or more a week ($p < 0.001$) and children of mothers who are not in the labor force score .124 points lower, on average, on the externalizing behavior problems scale than children with mothers who work 35 hours or more a week ($p < 0.001$). In the 2010 data the only statistically significant coefficient indicates that children of mothers who work less than 35 hours per week score .052 points lower, on average, on the externalizing behavior problems scale than children of mothers who work 35 hours a week or more ($p < 0.01$). These findings suggest that children act out less when they have more time at home with a parent.

On average, as income increases child externalizing behavior problems decrease (1998: b = -4.13e-07, $p < 0.01$; 2010: b = -4.57e-07, $p < 0.01$). As was true for models looking at internalizing behavior problems, on average, children who primarily speak a language other than English at home score .077 points lower on the externalizing behavior problems scale compared to children who primarily speak English at home ($p < 0.001$) in the 1998 data set, with similar findings from the 2010 data.

Interestingly, the variables controlling for child and parent health in Model 2 for both 1998 and 2010 differ slightly from the patterns previously found in models predicting school stress and internalizing behavior problems. None of these variables are significantly associated with externalizing behavior problems in the 1998 data. 2010 data indicates, on average, a one-unit increase in parental health status is associated with a .016-point increase on the externalizing behavior problems scale ($p < 0.05$) and a one-unit increase in the child's health status is associated with a .020-point increase on the externalizing behavior problems scale ($p < 0.01$).

Taken together, these findings suggest family health issues are associated with child stress, but that the associations are slightly weaker when considering externalizing behavior problems.

Lastly, the child demographics variables, child race, gender, and age, behaved differently when predicting externalizing behavior problems as well. On average, Black children score .119 points higher in the 1998 data and .081 points higher in the 2010 data on the externalizing behavior problems scale compared to White children ($p < 0.001$). Black children scored lower on the internalizing behavior problems scale, so this is a notable difference. Models predicting externalizing behavior problems are the only ones that show stress increasing for Black children, suggesting that this particular measurement of stress could indicates racism or racial profiling on account of the teacher (Morris 2005). On average, Asian children score .110 points lower in 1998 ($p < 0.001$) and .078 points lower in 2010 ($p < 0.01$) on the externalizing behavior problems scale compared to White children. The 1998 data indicates the children of the "Other" race score .065 points higher on the externalizing behavior problems scale than White children ($p < 0.01$), though it is important to note that this category comprises a small number of children. On average, female children score .250 points lower in 1998 and .280 points lower in 2010 on the externalizing behavior problems scale compared to male children ($p < 0.001$), consistent with previous research. Lastly, on average, a one-unit increase in age is associated with a .003-point decrease on the externalizing behavior problems scale in both 1998 ($p < 0.01$) and 2010 ($p < 0.05$).

Taken together, these models show that my data are consistent with previous research on child stress; while there are occasional small differences between the 1998 and 2010 cohorts, overall family resources and instability, family health challenges, and child demographics are all significant predictors of child stress across three indicators. This increases confidence that my

data can appropriately predict child stress, which is important because of the null findings concerning child immigrant status. Immigration was not a significant predictor for any of any of my measures of child stress net of controls, proving a challenge to my hypotheses that predicted that the challenges associated with immigrant status in the United States would increase a child's stress.

[Table 4 about here]

School Stress and Child Immigrant Generation

I now turn to the question of immigrant generation. Hypotheses 2-4 suggest a significant difference in the child stress indicators between non-immigrant, 1.5 generation immigrant, and 2nd generation immigrant children. I repeat the models reported above using the trichotomous variable, immigration generation, which is measured 0= non-immigrant (1998 $N = 12{,}626$; 2010 $N = 8{,}383$), 1 = 1.5 generation immigrant (1998 $N = 602$; 2010 $N = 401$) and 2 = 2nd generation immigrant (1998 $N = 2{,}244$; 2010 $N = 3{,}475$). Readers should note that the comparison of 1.5 generation immigrant children to non-immigrant children is essentially a repeated test of Hypothesis 1 and 2 reported in Tables 2-4 above, but these new tests also include comparisons between 2nd generation immigrant children and non-immigrant children (Hypothesis 3) and between 1.5 and 2nd generation immigrant children (Hypothesis 4). Table 5 is an OLS regression of the school stress scale and child immigrant generation. As was true when examining models measuring immigration status solely by whether the child was born outside the U.S., immigration generation is not a significant predictor of school stress. Any small differences in stress between non-immigrants, 1.5 generation immigrants, and 2nd generation immigrants are not statistically significant.

Controls in Model 2 behave in ways very similar to models measuring immigrant status only looking at the target child, with resources decreasing school stress and non-traditional family structure and health problems associated with greater school stress. This presents a challenge to Hypotheses 2 and 3 that predict that immigrant status is associated with increased levels of stress in children for children in both immigrant generations compared to native-born children and Hypothesis 4 that predicts significant differences in the stress levels between 1.5 and 2nd generation immigrant children.

[Table 5 about here]

Internalizing Behavior Problems and Child Immigrant Generation

Table 6 repeats this approach with an OLS regression of the child internalizing behavior problems scale on the child immigration generation variable. As was true when using the child immigrant variable, child immigration generation is not associated with internalizing behavior problems in either the 1998 or the 2010 cohorts. As was true for all models predicting school stress and previous models using only child's immigration status to predict internalizing behavior problems, the fact that there is no statistically significant association between child immigration generation and internalizing behavior problems suggests hypotheses linking the immigration experience to child stress may be incorrect.

Controls in Model 2 of Table 6 behave similarly to those in Table 3 which measures immigration status only looking at the target child, showing that increases in child stress are associated with health problems and non-traditional family structure and alleviated by family resources. This presents a challenge to Hypotheses 2 and 3 that predict that immigrant status is associated with increased levels of stress in children for children in both immigrant generations

compared to native-born children and Hypothesis 4 that predicts significant differences in the stress levels between 1.5 and 2nd generation immigrant children.

[Table 6 about here]

Externalizing Behavior Problems and Child Immigrant Generation

However, the distinction between examining child immigration status and child immigration generation does appear to be an important one when examining externalizing behavior problems. When looking solely at whether the target child was born elsewhere and immigrated to the U.S. prior to starting kindergarten, child immigration status was not associated with externalizing behavior problems. Table 7 returns to externalizing behavior problems as an indicator of child stress, but this time regressing it on child immigration generation.

Findings from the bivariate model using the ECLS 1998 data suggest that on average 2nd generation immigrant children score .118-points *lower* on the externalizing behavior problems scale compared to non-immigrant children, and that this difference is statistically significant ($p < 0.001$). For the 2010 cohort, 2nd generation immigrant children score .046 points *lower* on the externalizing behavior problems scale, on average, compared to non-immigrant children ($p < 0.01$). For both groups, then, these findings suggest that perhaps being a part of multiple cultures, the mainstream and close ties to family heritage and perhaps having bilingual capabilities could decrease child stress. These findings are surprising, providing evidence that is contrary to Hypothesis 3 that predicts that 2nd generation immigrant children will have more stress than non-immigrant children. This pattern is sensitive to differences across family stability, resources, health and child demographics in the 2010 cohort, where inclusion of such variables renders the relationships between immigrant generation and externalizing behavior problems nonsignificant. But in the ECLS 1998 cohort, the statistically significant association between being a 2nd

generation immigrant persists and remains negative, where 2nd generation children score .063 points *lower* on the externalizing behavior problems scale compared to non-immigrant children ($p < 0.01$).

To test Hypothesis 4, which predicts that 2nd generation immigrant children are less stressed than 1.5 generation children, I reran the models above using 2nd generation immigrant as the reference category. 2nd generation and 1.5 generation immigrant children did not differ significantly on school stress and internalizing behavior problems. For externalizing behavior problems, results show that 1.5 generation immigrant children, on average, score .093 points higher on the externalizing behavior problems scale compared to 2nd generation immigrant children ($p < 0.05$), providing support for Hypothesis 4. However, this finding applied only to externalizing behavior problems and was not true for the other two child stress outcomes, so the support for Hypothesis 4 is weak. Effects of control variables on externalizing behavior problems are similar to those reported in Table 4, which measures immigration status only looking at the target child. Controls show that increases in child stress, as indicated by the presence of externalizing behavior problems, are associated with non-traditional family structures, family resources and race.

[Table 7 about here]

My final hypothesis predicts that immigrant children in 2010 will have worse outcomes than immigrant children in 1998 due to the heightened political climate associated with immigration. Looking across all the analyses described above, there were almost no differences between the 1998 and 2010 cohorts. The one difference was the persistence of being a 2nd generation immigrant on externalizing behavior problems in the 1998 cohort but not the 2010 cohort. However, this was the only difference across multiple tests of the idea that immigration is

related to child stress. Though surprising due to the changes made to immigration policies post-9/11, I found no statistically significant evidence to support Hypothesis 5, which predicts that immigrant children will have worse outcomes in 2010 than in 1998.

These findings concerning immigrant generation and externalizing behavior problems present an interesting puzzle. On one hand, these findings suggest the possibility that the immigrant experience could introduce unique challenges that might be associated with a specific form of child stress (externalizing behavior problems), and that looking at nuanced ways of measuring both immigration and child stress are important. On the other hand, across six comparisons (three separate indicators of child stress and two indicators of immigration, the latter of which included three group per model), the relationship between being a 2nd generation immigrant and externalizing behavior problems is the only relationship that persists. This suggests that there is little evidence to support any of my hypotheses predicting a connection between child immigrant status and stress.

DISCUSSION AND CONCLUSIONS

I hypothesized that immigrant children would exhibit higher stress levels than non-immigrant children because of additional stressful events associated with immigration, particularly stressful events associated with change as immigrant families move across borders to new locations and experience new cultures. My assumptions were based on literature arguing that immigration is a stressful experience for adolescents and their families due to extreme changes. Additionally, I hypothesized that immigrant generation will predict child stress. Lastly, I hypothesized that immigrant children in 2010 will have worse outcomes than immigrant children in 1998 due to the heightened political climate associated with immigration. However, my results show null findings with the exception of weak support when looking at externalizing

behavior problems for the assertion that 2nd generation immigrant children are less stressed than 1.5 generation immigrant children.

These findings are surprising. One possible explanation for them is that the stressors of immigration are in fact related to change, so when explicit measures of change are included in models, the effect of immigration is spurious. In this study, I found results consistent with literature showing that change has strong effects on child stress. My findings support the idea that changes like family transitions and residential moves are a source of stress for children. Perhaps the most important effects of immigration on child stress operate through residential mobility and family structure changes. Immigrant children by definition experience residential mobility changes. While beyond the scope of my data, it is also not unusual for immigrant children to experience family separation where family members immigrate at different times (Gonzales 2016). Both of these factors play a role in child stress for all children; while immigrant children may be more often exposed to these stressors, the stressors themselves may act in similar ways for both immigrant and native-born children. Since I am able to measure variables like residential mobility, I can identify the specific events that increase child stress rather than relying on measures of immigration status to serve as proxies for those events.

Another possible explanation is that current data lack appropriate measures of immigration-specific stressors that might increase immigrant children's stress. I would argue that the Early Childhood Longitudinal Survey does not gather ideal information about immigration and child stress, especially for the youngest age group in the data set, kindergarteners. The ideal data set would have a much larger sample of immigrant children to allow for a more robust comparison to non-immigrant children, questions inquiring about family separation and documentation, questions asking if parents discuss citizenship and documentation challenges

with their young children, and questions specifically asking about the processes of immigration and the stressors associated with this extreme change. Additionally, the data would include more questions answered by the children to adequately assess child stress at a young age. In the ECLS data kindergarteners do not answer stress questions themselves; instead, these questions are answered by parent or teacher respondents. I suspect the data is missing valuable information about child stress levels because of this limitation. I also acknowledge that it is difficult to ask such intimate information about a sensitive topic like this one; future data collection efforts need to include thorough security and anonymizing processes to help immigrant parents and children feel absolutely secure that their information will not be shared with another party, such as government agencies seeking to deport immigrants.

Another possible explanation for my counterintuitive findings is the age group I study. I selected Wave 1, where the children were first entering kindergarten, to be able to rule out additional school stressors like peer pressure and bullying so as to better narrow my inquiry to the stressors of immigration. However, literature suggests that many of the stressors associated with immigration for adolescents and adults, like language barriers, prejudice, awareness of family status and deportation, and so forth are learned and experienced in school (Castañeda 2019; Gonzales 2016). One of the purposes of my study is to identify if child immigrants as young as kindergarten are experiencing more stress, but my findings suggest that perhaps these young immigrant children in their first year of grade school have not yet been exposed to the stressors associated with immigration they will experience as they age and are exposed to these stressors.

I also expected to find that immigration was more strongly associated with child stress in the 2010 cohort because the political rhetoric around immigration policy has grown more heated

over time (Rosenblum 2011). However, I found no evidence for this idea. One possible explanation is that the data I selected for the later timeline is in 2010, which does not capture data during the Trump administration, an administration that has increased focus on blocking immigration and used political rhetoric that scapegoats immigrants. Another possible explanation for this is the lack of immigrant-specific questions within the data. Future research should gather information that focuses on the stressors of immigration such as questions about how respondents feel about current immigration policies and political leaders and how these laws and processes impact their daily life.

This study does include some limitations. The sample size of immigrant children within the data set was small compared to non-immigrant children. Additionally, the survey questions asked about immigration were minimal without attempting to gain a more in-depth understanding of the child's family situation like citizenship status, family separation, and additional stressors caused by immigrating. Still these data do include a nationally representative group of children just entering school, along with measures of both immigration and child stress, making them appropriate for an initial exploration of whether young children experience stressors associated with immigration in similar ways to adolescents and adults. Future quantitative data collection could ask more detailed questions about both immigration experiences and different forms of child stress; in addition, qualitative approaches could ask parents more detailed questions about their observations of how young children react to the changes associated with immigration.

Literature addresses the stressors that adolescent immigrants experience mainly in high school and beyond yet neglects to assess the stressors and the experiences of younger immigrant children. To find that immigrant children just entering the school system do not display more

symptoms of stress than non-immigrant children is a surprise; however, this study provides valuable information about how change is associated with child stress for both immigrant and native-born children. By shedding light on the hole in academic literature around younger children, these findings provide a pathway for further research into when children begin to feel the stressors of immigration. I suggest gathering data with a focus on immigrants and child stress to more adequately address the issue. Additionally, I suggest a cross-sectional study for age groups prior to previously studied high school students such as early elementary, middle elementary, late elementary, early junior high, and late junior high to isolate the age at which children begin to experience stress associated with immigration.

Ultimately, this study illuminated the impacts that, change has on child stress. Though findings provided little support for my immigration hypotheses, I found valuable truths about child stress. First, parent and child's overall health are strongly associated with child stress, and second, as supported by child stress literature, changes such as family structure transitions and residential movement cause great stress for children.

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Table 1. Descriptive Statistics ECLS ’98 and ECLS-K ’10

Variable	Description	Mean/Prop	SD	Range
Independent				
Child immigrant status	(0= US born; 1= foreign born)	ECLS '98 = 0.030 ECLS '10 = 0.027		ECLS '98 = 0-1 ECLS '10 = 0-1
Child's immigrant generation	child immigrant generation			ECLS '98 = 1-3 ECLS '10 = 1-3
non-immigrant		ECLS '98 = 0 .816 ECLS '10 = 0.684		
1.5 gen – foreign born- one or more immigrant parent		ECLS '98 = 0.038 ECLS '10 = 0.033		
2nd gen – US born- one or more immigrant parent		ECLS '98 = 0.145 ECLS '10 = 0.283		
Dependent				
Child's school stress	child school stress scale (standardized)	ECLS '98 = 0.000 ECLS '10 = 0.000	ECLS '98 = 1.000 ECLS '10 = 1.000	
Externalizing problem behaviors	externalizing problems behaviors scale	ECLS '98 = 1.612 ECLS '10 = 1.610	ECLS '98 = 0.628 ECLS '10 = 0.621	ECLS '98 = 1-4 ECLS '10 = 1-4
Internalizing problem behaviors	internalizing problems behaviors scale	ECLS '98 = 1.532 ECLS '10 = 1.471	ECLS '98 = 0.521 ECLS '10 = 0.484	ECLS '98 = 1-4 ECLS '10 = 1-4
Controls				
Child age	child age - in months	ECLS '98 = 68.461 ECLS '10 = 67.494	ECLS '98 = 4.323 ECLS '10 = 4.440	ECLS '98 = 44-93 ECLS '10 = 54-79
Child gender	(0= male; 1=female)	ECLS '98 = 0.495 ECLS '10 = 0.488		ECLS '98 = 0-1 ECLS '10 = 0-1
Child race	child race			ECLS '98 = 1-5 ECLS '10 = 1-5
White		ECLS '98 = 0.582 ECLS '10 = 0.529		
Black		ECLS '98 = 0.140 ECLS '10 = 0.125		
Hispanic		ECLS '98 = 0.171 ECLS '10 = 0.218		
Asian		ECLS '98 = 0.053 ECLS '10 = 0.064		
other		ECLS '98 = 0.054 ECLS '10 = 0.063		

Family structure	parent marital status			ECLS '98 = 1-3 ECLS '10 = 1-3
married		ECLS '98 = 0.748 ECLS '10 = 0.723		
divorced or widowed		ECLS '98 = 0.128 ECLS '10 = 0.118		
never married		ECLS '98 = 0.123 ECLS '10 = 0.158		
Residential mobility	number of places child has lived	ECLS '98 = 2.034 ECLS '10 = 1.962	ECLS '98 = 1.009 ECLS '10 = 0.998	ECLS '98 = 1-4 ECLS '10 = 1-4
Home language	language spoken in the home (0 = English; 1= non-English)	ECLS '98 = 0.262 ECLS '10 = 0.142		ECLS '98 = 0-1 ECLS '10 = 0-1
Mother's employment	mother's employment status			ECLS '98 = 1-4 ECLS '10 = 1-4
35 or more hours/week		ECLS '98 = 0 .456 ECLS '10 = 0.615		
less than 35 hours/week		ECLS '98 = 0.221 ECLS '10 = 0.140		
looking for work		ECLS '98 = 0.037 ECLS '10 = 0.066		
not in labor force		ECLS '98 = 0.287 ECLS '10 = 0.179		
Father's employment	father's employment status			ECLS '98 = 1-4 ECLS '10 = 1-4
35 or more hours/week		ECLS '98 = 0.877 ECLS '10 = 0.652		
less than 35 hours/week		ECLS '98 = 0.041 ECLS '10 = 0.117		
looking for work		ECLS '98 = 0.028 ECLS '10 = 0.073		
not in labor force		ECLS '98 = 0.054 ECLS '10 = 0.159		
Income		ECLS '98 = 51186.34 ECLS '10 = 67527.38	ECLS '98 = 41000.02 ECLS '10 = 55019.54	ECLS '98 = 5K-200K ECLS '10 = 5K-200K

Parent education	parent's highest level of education			ECLS '98 = 1-5 ECLS '10 = 1-5
less than high school diploma		ECLS '98 = 0.088 ECLS '10 = 0.109		
high school diploma		ECLS '98 = 0.306 ECLS '10 = 0.161		
some college		ECLS '98 = 0.270 ECLS '10 = 0.320		
college degree		ECLS '98 = 0.189 ECLS '10 = 0.214		
post graduate schooling		ECLS '98 = 0.147 ECLS '10 = 0.197		
Child's health	child health scale	ECLS '98 = 1.675 ECLS '10 = 1.583	ECLS '98 = 0.812 ECLS '10 = 0.793	ECLS '98 = 1-4 ECLS '10 = 1-4
Parent's health status	main parent's health scale	ECLS '98 = 2.158 ECLS '10 = 2.229	ECLS '98 = 0.908 ECLS '10 = 0.943	ECLS '98 = 1-4 ECLS '10 = 1-4
Parental depression	standardized parental depression scale	ECLS '98 = 0.000 ECLS '10 = 0.000	ECLS '98 = 1.000 ECLS '10 = 1.000	

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259

Table 2. OLS Models Predicting School Stress by Child Immigration Status, ECLS ’98 and ECLS-K ’10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Status				
child immigrant	-0.063	-0.060	-0.093	-0.038
Stability				
Family Structure				
separated/ widowed		0.103***		0.125***
never married		0.052		0.080**
Residential Mobility		-0.015		0.012
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		-0.091**		0.055
some college		-0.004		0.011
college degree		-0.016		0.065
post graduate schooling		0.037		0.043
Mother's Employment				
less than 35 hours per week		0.007		0.017
looking for work		0.022		0.006
not in the labor force		0.014		0.054
Father's Employment				
less than 35 hours per week		0.110*		-0.096*
looking for work		-0.119		0.027
not in the labor force		-0.016		-0.030
Income		1.93e-07		2.03e-07
Home Language				
non-English		-0.002		-0.026
Health				
Parent's Health Status		0.041***		0.056***
Parental Depression		0.031***		0.030**
Child's Health Status		0.079***		0.114***
Child Demographics				
Child Race				
Black or African American		-0.036		-0.061*
Hispanic		0.040		0.037
Asian		-0.046		-0.103*
other		0.163***		-0.036
Child Gender				
female		-0.162***		-0.133***
Child Age		-0.005*		-0.009***

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259
* *p< .05; ** p<.01; *** p<.001*

Table 3. OLS Models Predicting Internalizing Behavior Problems by Child Immigration Status, ECLS ’98 and ECLS-K ’10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Status				
child immigrant	-0.057*	-0.050	-0.055	-0.017
Stability				
Family Structure				
separated/ widowed		0.043**		0.065***
never married		0.042**		0.039**
Residential Mobility		0.020***		0.006
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		0.056**		0.025
some college		-0.026*		-0.022
college degree		-0.027*		-0.031
post graduate schooling		-0.035*		-0.016
Mother's Employment				
less than 35 hours per week		-0.014		-0.009
looking for work		0.083***		-0.021
not in the labor force		0.013		0.032*
Father's Employment				
less than 35 hours per week		0.029		-0.002
looking for work		0.027		0.032
not in the labor force		0.077**		-0.012
Income		-3.40e-07**		-4.26e-07**
Home Language				
non-English		-0.065**		-0.063***
Health				
Parent's Health Status		0.020***		0.011*
Parental Depression		-0.007		0.003
Child's Health Status		0.032***		0.023***
Child Demographics				
Child Race				
Black or African American		-0.024		-0.056**
Hispanic		0.011		-0.005
Asian		-0.023		-0.028
other		0.022		0.017
Child Gender				
female		-0.033***		-0.021
Child Age		-0.003**		-0.002

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259
* *p< .05;* ** *p<.01;* *** *p<.001*

Table 4. OLS Models Predicting Externalizing Behavior Problems by Child Immigration Status, ECLS '98 and ECLS-K '10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Status				
child immigrant	-0.057	0.022	-0.011	0.075
Stability				
Family Structure				
separated/ widowed		0.020		0.112***
never married		0.091***		0.084***
Residential Mobility		0.045***		0.030***
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		0.028		0.011
some college		-0.015		0.025
college degree		-0.025		-0.023
post graduate schooling		-0.030		-0.043
Mother's Employment				
less than 35 hours per week		-0.105***		-0.052**
looking for work		-0.107***		-0.011
not in the labor force		-0.124***		-0.029
Father's Employment				
less than 35 hours per week		-0.022		0.026
looking for work		0.006		0.051
not in the labor force		0.044		0.064
Income		-4.13e-07**		-4.57e-07**
Home Language				
non-English		-0.077***		-0.050*
Health				
Parent's Health Status		0.006		0.016*
Parental Depression		0.007		-0.001
Child's Health Status		0.010		0.020**
Child Demographics				
Child Race				
Black or African American		0.119***		0.081***
Hispanic		-0.013		-0.029
Asian		-0.110***		-0.078**
other		0.065**		0.019
Child Gender				
female		-0.250***		-0.280***
Child Age		-0.003**		-0.003*

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259
* *p< .05; ** p<.01; *** p<.001*
significantly different than the p <.05 level from second generation immigrant

Table 5. OLS Models Predicting School Stress by Child Immigration Generation Status, ECLS ’98 and ECLS-K ’10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Generation (reference group: non-immigrant)				
1.5 gen (foreign-born - at least one immigrant parent)	-0.048	-0.086	-0.059	-0.042
2nd gen (US born - at least one immigrant parent)	0.024	-0.039	0.029	-0.010
Stability				
Family Structure				
separated/ widowed		0.100***		0.128***
never married		0.050		0.081**
Residential Mobility		-0.015		0.012
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		0.093**		0.054
some college		-0.005		0.010
college degree		-0.015		0.062
post graduate schooling		0.039		0.041
Mother's Employment				
less than 35 hours per week		0.007		0.014
looking for work		0.020		0.006
not in the labor force		0.015		0.053
Father's Employment				
less than 35 hours per week		0.088		-0.103*
looking for work		-0.117		0.029
not in the labor force		-0.010		-0.044
Income		1.89e-07		-1.82e-07
Home Language				
non-English		0.016		-0.021
Health				
Parent's Health Status		0.040***		0.057***
Parental Depression		0.031***		0.030**
Child's Health Status		0.079***		0.114***
Child Demographics				
Child Race				
Black or African American		-0.034		-0.058
Hispanic		0.049		0.041
Asian		-0.028		-0.096*
other		0.169***		-0.032
Child Gender				
female		-0.162***		-0.132***
Child Age		-0.005*		-0.009***

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259
* *p< .05;* ** *p<.01;* *** *p<.001*
† significantly different than the p <.05 level from second generation immigrant

Table 6. OLS Models Predicting Internalizing Behavior Problems by Child Immigration Generation Status, ECLS ’98 and ECLS-K ’10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Generation (reference group: non-immigrant)				
1.5 gen (foreign-born - at least one immigrant parent)	-0.036	-0.043	-0.037	-0.017
2nd gen (US born - at least one immigrant parent)	-0.018	-0.026	-0.003	-0.002
Stability				
Family Structure				
separated/ widowed		0.044**		0.066***
never married		0.042**		0.039**
Residential Mobility		0.020***		0.006
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		0.057**		0.025
some college		-0.026*		-0.023
college degree		-0.027*		-0.030
post graduate schooling		-0.035*		-0.016
Mother's Employment				
less than 35 hours per week		-0.014		-0.009
looking for work		0.082***		-0.021
not in the labor force		0.013		0.031*
Father's Employment				
less than 35 hours per week		0.025		0.002
looking for work		0.024		0.022
not in the labor force		0.074**		-0.010
Income		-3.35e-07*		-4.15e-07**
Home Language				
non-English		-0.047*		-0.060**
Health				
Parent's Health Status		0.020***		0.012*
Parental Depression		-0.0007		0.003
Child's Health Status		0.032***		0.022***
Child Demographics				
Child Race				
Black or African American		-0.023		-0.053**
Hispanic		0.013		-0.002
Asian		-0.016		-0.025
other		0.026		0.021
Child Gender				
female		-0.033***		-0.022
Child Age		-0.003**		-0.002

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010 Data
1998 n= 15,472; 2010 n= 12,259
* *p< .05;* ** *p<.01;* *** *p<.001*
† significantly different than the p <.05 level from second generation immigrant

Table 7. OLS Models Predicting Externalizing Behavior Problems by Child Immigration Generation Status, ECLS '98 and ECLS-K '10

Variable	ECLS '98		ECLS-K '10	
	Model 1	Model 2	Model 1	Model 2
Child's Immigration Generation (reference group: non-immigrant)				
1.5 gen (foreign-born - at least one immigrant parent)	-0.040†	0.022†	0.021	0.057†
2nd gen (US born - at least one immigrant parent)	-0.118***	-0.063**	-0.046**	-0.036
Stability				
Family Structure				
separated/ widowed		0.022		0.116***
never married		0.086***		0.082***
Residential Mobility		0.044***		0.030***
Resources				
Parent Education (reference group: high school diploma)				
less than high school diploma		0.032		0.014
some college		-0.015		0.022
college degree		-0.025		-0.023
post graduate schooling		-0.030		-0.043
Mother's Employment				
less than 35 hours per week		-0.106***		-0.051**
looking for work		-0.108***		-0.005
not in the labor force		-0.124***		-0.027
Father's Employment				
less than 35 hours per week		-0.006		0.032
looking for work		0.009		0.049
not in the labor force		0.020		0.065*
Income		-4.05e-07**		-4.29e-07**
Home Language				
non-English		-0.042		-0.035
Health				
Parent's Health Status		0.006		0.017*
Parental Depression		0.007		-0.001
Child's Health Status		0.010		0.019**
Child Demographics				
Child Race				
Black or African American		0.124***		0.085***
Hispanic		-0.007		-0.013
Asian		-0.090**		-0.057
other		0.073**		0.029
Child Gender				
female		-0.250***		-0.282***
Child Age		-0.003**		-0.003*

Notes: Using Early Childhood Longitudinal Study 1998 and Early Childhood Longitudinal Study– Kindergarten Cohort 2010
1998 n= 15,472; 2010 n= 12,259
* *p< .05;* ** *p<.01;* *** *p<.001*
† significantly different than the p <.05 level from second generation immigrant