

**Household access to resources requiring identification:
Relations with family process and cognitive development in low-income immigrant families
Proposal to Population Association of American March 2008 Meeting**

Little information exists about the developmental status of young children of lower-income immigrants in the U.S., despite the fact that children of immigrants are over-represented among families in and near poverty (Capps, Fix, Ost, Reardon-Anderson, & Passel, 2005). Recent data suggest that some groups are at particular risk. Young children (ages birth to five) of immigrants from Mexico, Central America, and the Dominican Republic, for example, are particularly disadvantaged, relative to both other immigrant children and native-born White children, on dimensions of family income, poverty status, parental employment, and parental education (Hernandez, Denton, & McCartney, in press). These all constitute developmental risks for lower levels of health, cognitive ability, and socio-emotional competence (Card, 1999; Fuligni & Yoshikawa, 2003; Yeung, Linver, & Brooks-Gunn, 2002). Research conducted with the Early Childhood Longitudinal Study – Kindergarten cohort (ECLS-K) shows that Mexican immigrant parents' relatively low levels of human capital and income appear to partially explain their children's lower first-grade reading and math scores, in comparisons to native-born White children (Han, 2005). Thus, income and human capital certainly do not tell the whole story, either in that study or others that predict school readiness or health among children of immigrants (Nord & Griffin, 1999).

We posit in this study that social exclusion is a neglected dimension of the experience of some immigrants that may affect family processes and child development, and one that may help explain disparities in cognitive development among different immigrant and native-born groups in the U.S. Social exclusion is a major focus of work on disadvantage among immigrants conducted by policy makers and researchers in Europe (Alba, 2005; Burchardt, LeGrand, & Piachaud, 2002; Centre for the Analysis of Social Exclusion, 2005; Glass, 1999; Lenoir, 1974; Saraceno, 2002). For example, the Deputy Prime Minister's office in the U.K. has a Social Exclusion Unit that coordinates policies on disadvantage in that country. The concept of social exclusion was developed in order to capture dimensions of the experience of immigrants that go beyond poverty to issues of lack of access to political, social, and health systems. Exclusion can occur with reference to public institutions, such as government policies and service systems, as well as social institutions, such as social networks or community organizations. Some have observed that the concept of social exclusion may be useful in the United States as a way to broaden debates beyond poverty as the major source of disadvantage that affects children's prospects (Micklewright, 2002). However, social exclusion has rarely been investigated with relevance to the development of children in the U.S., let alone children of immigrants to the U.S. (Kamerman & Kahn, 2003).

One population in the U.S. for which concepts of social exclusion may be particularly relevant is undocumented immigrant parents. This group is excluded from eligibility from many public institutions and policies, and due to fear of deportation may exclude themselves from others for which they are eligible. Almost no studies have examined the consequences for family process and child development of undocumented status among parents. This is because few developmental researchers ask parents their legal status, for ethical and confidentiality reasons. Social exclusion may provide a theoretical lens through which experiences associated with undocumented status can be studied. Although formal policy exclusion (ineligibility for benefits, e.g.) has been examined most often with regard to immigrants (e.g., Capps, Fix, Ost, Reardon-Anderson, & Passel, 2005; Yoshikawa, Lugo-Gil, Tamis-LeMonda, & Chaudry, 2005), other dimensions of social exclusion may be salient for this group.

Access to Institutional Resources that Require or Provide Identification: A Dimension of Social Exclusion

It has been observed anecdotally that many undocumented immigrants are reluctant to engage with institutions that require or provide identification. This is due to fears of deportation and uncertainty about the consequences of engaging governmental or other institutions, fears which have heightened in recent years (James, 2005). In this study, we examine access to such institutional resources -- drivers' licenses, savings or checking accounts, and financial credit -- as aspects of low-income immigrant parents' experience that may have consequences for their economic hardship or psychological well-being.

We choose these particular resources because they are obtained through contact with financial and government institutions that require forms of identification, and may therefore be shunned by undocumented parents. We hypothesize that levels of access to these resources may vary across groups that differ in likelihood of being undocumented (low-income Mexican, Dominican immigrant parents; and low-income, U.S.-born African American parents). Among the three groups, we hypothesize that African American parents will have the highest levels of access to our focal institutions because they are all U.S.-born. Among our two Latino immigrant groups, Mexicans are more likely to be undocumented; this is a very recent immigrant group to the New York City area, and one with relatively low levels of human capital and less developed social networks than the Dominicans, who have been emigrating to New York for several decades (Smith, 2005; Pessar & Graham, 2002).

One salient dimension of social exclusion among low-income immigrant parents may be access to and use of institutions that require or provide formal identification. Banks are one example of such institutions; government institutions such as departments of motor vehicles, that issue drivers' licenses, are another. Access to such institutions and their services, we argue, may be related to both economic and psychological well-being among parents. For example, having a checking or savings account can result in higher assets. Higher household assets, in turn, have been associated with long-term benefits for the life course including higher educational success and attainment among children in the household (Conley, 1999). The benefits of savings behavior for households in poverty are the basis for efforts to increase savings behavior such as Individual Development Account (IDA) programs (Grinstein-Weiss, Wagner, & Ssewamala, 2006; Sherraden, 1991).

Policies about documents required to obtain a driver's license, the most common form of identification in the United States, vary from state to state. Several states have recently made it more difficult for undocumented immigrants to obtain drivers' licenses (Preston, 2007). In New York State, the state of residence for all of the parents in the current sample, a social security card is required, or proof of reason for ineligibility for a social security card. That proof must be provided in the form of a document from the federal Citizenship and Immigration Services (USCIS). It is not hard to imagine that an undocumented parent may not wish to provide such documentation in order to obtain a drivers' license.

Access to institutional resources requiring or providing identification are likely to be higher among groups with lower proportions of undocumented parents. In New York City, Mexicans as a group are a recent and lower-income immigrant group, with lower levels of human capital and economic resources overall than Dominicans, who have a much longer history of emigration to the city (Smith, 2005). U.S.-born African Americans, in contrast, should have nearly full access to citizenship and therefore higher levels of access to such resources. We hypothesize, therefore, that levels of access to institutional resources may be highest among U.S.-born African Americans, then progressively lower for Dominicans and Mexicans.

Access to Institutional Resources: Links to Family Processes and Child Development

We also hypothesize in this study that access to institutional resources may affect family processes and children's cognitive development. We explore three potential mediators of associations of access with child cognitive development: economic hardship, psychological distress, and cognitive stimulation.

Having access to checking, savings accounts, or credit may in the short run be associated with lower economic hardship and higher levels of resources in the family for children. This is because such financial services can provide a "cushion" in times of particular financial need, and therefore mitigate fluctuations in economic stress in the household. In addition, such access may reduce worry and psychological distress among parents. A recent study found that higher economic resources in the household were indeed associated with both lower perceived economic hardship and psychological distress among low-income parents (Mistry, Vandewater, Huston, & McLoyd, 2002). Driver's licenses, are a commonly requested form of identification for a wide range of resources and jobs. Having access to a driver's license may therefore also be associated with lower economic and psychological distress.

Economic hardship and psychological distress among parents are in turn associated with lower levels of cognitive development in children in many studies (e.g., Gershoff, Aber, & Raver, in press; Jackson, Brooks-Gunn, Huang, & Glassman, 2000; McLoyd, 1990; Mistry et al., 2002; for a review see McLoyd, 1998). Several of these studies show that these factors are associated with less optimal parenting interactions with children, and that these features of parenting may explain effects on children. For example, hardship and distress are both associated with lower levels of cognitive stimulation of children, which in turn is associated with children's language, literacy, and general cognitive outcomes (Bradley, Corwyn, Burchinal, McAadoo, & Garcia Coll, 2001; Gershoff, Aber, & Raver, 2007).

Current Study

The research questions and hypotheses for this study are:

- 1) What levels of access to institutional resources are reported by low-income immigrant and ethnically diverse parents? We hypothesize that, in our urban, low-income sample, U.S.-born African Americans will report the highest levels of such access, followed by Dominicans and then by Mexicans.
- 2) Is more access to institutional resources related to lower levels of economic hardship and psychological distress, and higher levels of parent cognitive stimulation?
- 3) Are hardship, distress, and stimulation, in turn, related to indicators of children's early cognitive ability? We hypothesize that economic hardship and psychological distress are related to lower levels of cognitive ability, and that cognitive stimulation is related to higher levels of cognitive ability.

The conceptual models for this study (Figures 1 and 2) link access to institutional resources that require or provide identification to children's early cognitive and socio-emotional development, as mediated by material hardship, psychological distress, and parent engagement in cognitive stimulating learning activities. Two figures are provided: One that estimates differences among all three ethnic groups, with dummy variables for Mexican and Dominican (African American as reference group), and the second with differences between the two Latino groups (single variable for ethnic group of Mexican, with Dominican as the reference group).

Methods

Data for this study come from an ongoing longitudinal study investigating the lives of low-income and immigrant mothers and their newborn children, the Early Childhood Cohort (ECC) of the Center for Research on Culture, Development and Education (CRCDE). Researchers recruited mothers within two days after giving birth at postpartum wards in three large New York City hospitals during 2004-2005. These hospitals were selected because they drew patients from low-income neighborhoods with high concentrations of the four target ethnic groups. To participate in the study, mothers had to be over age 18, live in New York City, self-identify as Chinese, Mexican, Dominican, or African American and have healthy full-term infants. These ethnic groups were targeted for the study because together they represent over 80% of the population of New York City and include the largest immigrant groups in the city. The initial sample was comprised of 382 mothers recruited from hospital maternity wards shortly after giving birth. Chinese participants were dropped from the study after the 6-month wave due to high rates of their infants being sent to live in China to be raised by relatives. The initial sample of Dominican, Mexican and African-American mothers consisted of 324.

For the current study, the sample is limited to Dominican, Mexican and African-American mothers who completed the 24-month wave of data collection (N=198). Eighty percent of Dominican mothers and ninety-five percent of Mexican mothers are foreign-born; all African-American mothers are native-born. We conducted an attrition analysis using a set of baseline covariates to predict non-participation at the 24-month wave. 14 demographic variables served as predictors in this analysis: racial/ethnic group, maternal age, teen motherhood, maternal and paternal immigrant status, maternal-paternal marital status, maternal cohabiting status, mother has high school degree, mother has higher degree, maternal employment in the prior year, household income in the prior year, child age at recruitment and child gender. Of these, only mother has high school degree was a significant predictor of attrition ($b = -1.00 (.35)$, $p = .005$, $OR = .37$), indicating that mothers with a high school degree were significantly less likely to attrit than mothers without a high school degree. Select demographic characteristics of the sample are listed in Table 1.

Data used in this study were obtained from assessments at baseline, 14, and 24 months. Trained, bilingual researchers recruited families individually at hospitals shortly after the birth of their children, explaining that the study aimed to learn more about children's early years and about parents' experiences raising their children. After acquiring parents' consent, researchers conducted baseline survey interviews of 30- to 40-minutes duration. When infants were 14 months old, researchers interviewed mothers face-to-face in their homes and completed direct assessments of children's cognitive development.¹ At the 24-month data assessment, survey instruments were again administered in person through interview format and a child cognitive assessment was also completed. Trained, bilingual female graduate students collected all data in the mother's preferred language (English or Spanish). Participants were compensated \$25 for the baseline interview, \$50 for the 14-month interview / home visit, and \$75 for the 24-month interview / home visit. The institutional review boards at New York University and the three recruitment hospitals approved all study procedures.

Baseline covariates. Measures collected at the baseline interview include whether the mother has a high school education (dummy variable); the household's income in the year prior to the child's birth; and whether the father of the child and/or a partner co-resided in the mother's home (dummy variable).

Access to institutional resources. Household access to institutional resources was assessed through a 4-item index at the 14-month wave. Mothers were asked to indicate (yes/no) whether they or anyone in their household has: (1) a checking account; (2) a savings account; (3) a credit card; and (4) a driver's license. These items were then summed to create an index of household access to institutional resources (*mean* = 2.00 (1.50); *range* 0-4).

Economic hardship. Economic hardship was measured at both the 14- and 24-month waves using a 4-item index assessing whether there has been a time in the past 6 months (yes/no) when they and their family: (1) were without telephone service; (2) did not pay the full amount of the rent or mortgage; (3) were evicted from their home or apartment for not paying the rent or mortgage; or (4) lost service from the gas, electric or oil companies because payments were not made. These items were then summed to create an index of economic hardship (14-month wave: *mean* = 0.49 (0.75); *range* 0-3; 24-month wave: *mean* = 0.33 (0.61); *range* 0-3;).

Psychological distress. Psychological distress was measured at both the 14- and 24-month waves using the K6 (Kessler et al., 2002), a 6-item diagnostic scale measuring general psychological distress including depressive and anxious affect ($\alpha = .80$). Mothers were asked to report on the frequency of feelings of distress in the past 30 days on a 5-point scale ranging from 1 (none of the time) to 5 (all of the time). Sample items include: "During the past 30 days how often did you feel hopeless?" and "About how often in the past 30 days have you felt nervous?" The sample mean and standard deviation of psychological distress is 1.89 (0.72) at the 14-month wave and 1.81 (0.70) at the 24-month wave.

Daily cognitive stimulation. Mothers' reports of activities with their child were used to create an index of six cognitively stimulating activities at both the 14- and 24-month waves, including: singing songs; reading/looking at books; telling stories; listening or dancing to music; playing games that do not involve toys; and playing with building toys. To reduce the possibility of bias due to social desirability, mothers who reported engaging with their child every day in each activity were given a 1, those who reported anything less were given a 0. The six items were then summed to create an index of cognitive stimulation (14-month wave: *mean* = 2.65 (1.39); *range* 0-6; 24-month wave: *mean* = 2.08 (1.40); *range* 0-6).

Child cognitive development. The Mullen Scales of Early Learning (MSEL; Mullen, 1995) was used to capture children's cognitive development at the 24-month wave. The MSEL, an interviewer-administered standardized developmental test for children aged 3-60 months, consists of four subscales of cognitive development: visual reception, fine motor, receptive language and expressive language. Scores on each subscale are age-equivalent normed and can be combined to provide an index of overall developmental level, the Early Learning Composite. We report results for both the overall Early Learning

¹ For mothers who preferred to be interviewed away from their homes, researchers completed interviews and assessments in a private location on the university's campus.

Composite and each subscale below. Subscales have a mean of 50 and a standard deviation of 10; the early learning composite has a mean of 100 and a standard deviation of 15. The MSEL correlates highly with other measures of cognitive development in early childhood, including the Bayley Scales of Infant Development (Mullen, 1995). Sample means and standard deviations for each of the scales are: 43.4 (9.8) for visual reception; 37.8 (12.2) for fine motor; 44.9 (9.4) for receptive language; 37.7 (8.0) for expressive language; and 83.3 (13.7) for the early learning composite.

Results

Structural equation modeling techniques were used to estimate a path model representing the hypothesized set of relationships between institutional exclusion, economic hardship and parenting, and child cognitive development. Structural equation modeling is more flexible in its statistical assumptions than regression, provides indicators of overall model fit and has the ability to simultaneously estimate paths. Therefore, it is a useful tool for exploring multiple relationships at the same time and is often used to reduce bias in mediation analyses (Kline, 1998; Shrout & Bolger, 2002).

Two *a priori* path models were conceptualized, one in which African American mothers served as the reference group (see Figure 1) and one in which the sample is limited to Mexican and Dominican mothers and Dominican mothers served as the reference group (see Figure 2). The first model allows us to examine the hypothesized differences in access to institutional resources between the two immigrant groups (Mexicans and Dominicans) and the U.S.-born group (African Americans). The second model examines the hypothesized difference between the Mexicans and Dominicans. In both models, we included the hardship, distress, and stimulation constructs at two waves of measurement: 14 months and 24 months.

Both models were estimated using the sample covariance matrix and maximum likelihood estimation. Full information maximum likelihood was used using the Amos 6.0 statistical package to model and estimate all parameters (Arbuckle, 2005). Amos uses full information maximum likelihood estimates in the presence of missing data, a strategy that yields efficient and consistent estimates in the presence of data that are either missing completely at random or missing at random and produces less biased estimates in the case of nonignorable missing data (Schafer, 1996).

As recommended by Hu and Bentler (1995) and Kline (1998), models were evaluated using several indices of overall fit. These include the comparative fit index (CFI; adequate fit > .90), the non-normed fit index (NNFI; adequate fit > .90), and the root-mean-square-error of approximation (RMSEA; adequate fit < .05). We also report 90% confidence intervals for the RMSEA statistic. In addition, as recommended by Kline (1998), the correlation residual matrices were inspected for residuals over .10, which indicate a poorer fit for that portion of the model. Though the overall chi-square (χ^2) is reported in this paper, it is only used to create the chi-square difference (χ^2_{Δ}) test which compares the fit of one model to a nested model.² Direct paths between the baseline covariates and both the principal predictor (institutional resources) and child outcomes were estimated, along with covariances among the covariates and between each covariate and racial/ethnic group membership. Comparisons of models with and without additional covariates (including employment, number of children in household, and child gender) indicated few differences in obtained path coefficients; for reasons of statistical power, analyses with the reduced set of covariates are reported.

As suggested when testing structural equation models (Kline, 1998), alternative models were also examined. Analyses began by estimating the hypothesized models presented in Figures 1 and 2 and examining the fit statistics, residual correlation matrices and measurement equations. The hypothesized models were then trimmed on both theoretical and empirical grounds and the χ^2_{Δ} statistic was used to evaluate changes in model fit.

The finalized path model for our institutional resource model with the full sample of Mexicans, Dominicans and African Americans is presented in Figure 3. In this analysis, African-American mothers served as the reference group. The model was over-identified with 51 degrees of freedom and fit statistics

² The χ^2 test evaluates whether the fit of the simplified model is different from the fit of the saturated model. It is not often used as a fit measure because of its dependence of sample size.

indicated a good fit for the data: $\chi^2(51) = 58.86$, NNFI = 0.97, CFI = 0.98 and the RMSEA = .022 (CI₉₀ = .000 to .043). Mexican mothers reported lower access to institutional resources ($b = -.69$ (0.25); $p < .01$; $\beta = -0.21$) and lower economic hardship ($b = -.33$ (0.13); $p = .01$; $\beta = -0.20$) than African-American mothers. In addition, Dominican mothers reported significantly higher access to institutional resources ($b = .60$ (0.23); $p < .05$; $\beta = -0.19$) and higher economic hardship ($b = 0.21$ (0.12); $p < .10$; $\beta = 0.14$) than African-American mothers, although the difference for hardship was of marginal significance. Mexican mothers also reported fewer daily cognitively stimulating activities ($b = -.62$ (0.25); $p < .05$; $\beta = -0.20$) than their African American counterparts. Higher access to institutional resources, in turn, predicted lower levels of economic hardship ($b = -0.14$ (0.04); $p < .001$; $\beta = -0.28$), and lower economic hardship was related to lower psychological distress ($b = 0.20$ (0.07); $p < .01$; $\beta = 0.22$). We found moderate to high stability in our mediator constructs, with standardized coefficients of .46, .75, and .49 for economic hardship, psychological distress, and cognitive stimulation, respectively (all significant at the .05 level).

Finally, psychological distress was associated with lower scores on the Mullen Early Learning Composite ($b = -5.55$ (1.48); $p < .001$; $\beta = -0.28$). In the subscale-specific analyses (available from the authors), psychological distress was negatively related to visual reception ($b = -2.09$ (1.04); $p < .05$; $\beta = -0.15$), fine motor skills ($b = -2.93$ (1.31); $p < .05$; $\beta = -0.17$), receptive language ($b = -2.16$ (1.03); $p < .05$; $\beta = -0.16$) and expressive language ($b = -2.56$ (0.88); $p < .01$; $\beta = -0.22$). In addition, a significant negative association was found for economic hardship with visual reception ($b = -2.32$ (1.19); $p < .05$; $\beta = -0.14$).

The finalized path model for Mexicans and Dominicans is presented in Figure 4. In this analysis, Dominican mothers now served as the reference group. This model was also over-identified (43 degrees of freedom) and fit statistics indicated an adequate fit for the data: $\chi^2(43) = 29.10$, NNFI = 1.12, CFI = 1.00 and the RMSEA = .000 (CI = .000 to .004). Fit statistics were somewhat better for this model without covariates, but we report the model with covariates; there was little substantive difference in the pattern or magnitude of path coefficients. In this model, Mexican mothers reported lower access to institutional resources than Dominican mothers ($b = -1.25$ (0.25); $p < .001$; $\beta = -0.41$) as well as lower economic hardship ($b = -0.55$ (0.14); $p < .001$; $\beta = -0.37$). Higher access to institutional resources again predicted lower reports of economic hardship ($b = -0.14$ (0.05); $p < .01$; $\beta = -0.30$) and lower economic hardship was related to lower psychological distress ($b = 0.18$ (0.08); $p < .05$; $\beta = 0.18$). Compared to the model with the full sample, the relationship between psychological distress and child cognitive development was in the same direction and of similar magnitude ($b = -4.62$ (1.61); $p < .01$; $\beta = -0.25$). In the subscale-specific analyses, more psychological distress predicted lower scores on all subscales of the MSEL except for receptive language: visual reception ($b = -2.09$ (1.04); $p < .05$; $\beta = -0.19$), fine motor skills ($b = -2.93$ (1.31); $p < .05$; $\beta = -0.22$) and expressive language ($b = -2.56$ (0.88); $p < .01$; $\beta = -0.16$). In this analysis, the association between economic hardship and the visual reception subscale was no longer significant. However, daily cognitively stimulating activities did predict higher scores on the visual reception scale ($b = 0.21$ (0.10); $p < .05$; $\beta = 0.18$).

Due to the policy relevance of access to driver's licenses, we examined the models with just that item, separate from the savings, checking, and credit items. These models are presented in Figures 5 and 6. In the finalized path model for our driver's license model with the full sample of Mexicans, Dominicans and African Americans (Figure 5), African-American mothers served as the reference group. The model was over-identified with 51 degrees of freedom and fit statistics indicated a good fit for the data: $\chi^2(51) = 62.06$, NNFI = 0.95, CFI = 0.97 and the RMSEA = .026 (CI = .000 to .046). The paths between mother's ethnicity and the mediators were the same, except that the difference between Dominican and African American mothers' reports of economic hardship was no longer significant. In this model, access to a driver's license again predicted lower reports of economic hardship, but only at a marginal significance level ($b = -0.21$ (0.12); $p < .10$; $\beta = -0.14$), and economic hardship again predicted psychological distress ($b = 0.20$ (0.07); $p < .01$; $\beta = 0.22$). As in the institutional resources model with the full sample, psychological distress predicted child cognitive development (standardized coefficient of -.28). In the subscale-specific analyses, the paths between psychological distress and all four scales of the MSEL were in the same direction and of similar magnitude, compared to the institutional resources

model; higher psychological distress predicted lower scores on the visual reception ($b = -2.09$ (1.04); $p < .05$; $\beta = -0.15$), fine motor skills ($b = -2.93$ (1.31); $p < .05$; $\beta = -0.16$), receptive language ($b = -2.16$ (1.03); $p < .05$; $\beta = -0.16$) and expressive language ($b = -2.55$ (0.88); $p < .01$; $\beta = -0.22$) subscales of the MSEL. The path between economic hardship and the visual reception subscale was also similar in magnitude, when compared to the institutional resources model ($b = -2.32$ (1.19); $p = .05$; $\beta = -0.14$).

In the finalized driver's license model with the Mexicans and Dominicans (Figure 6), Dominican mothers served as the reference group. The model was over-identified with 43 degrees of freedom and fit statistics indicated a good fit for the data: $\chi^2(43) = 38.82$, NNFI = 1.04, CFI = 1.00 and the RMSEA = .000 ($CI = .000$ to .032). As in the institutional resources model with the reduced sample, economic hardship predicted psychological distress at a marginally significant level ($b = 0.15$ (0.08); $p < .10$; $\beta = 0.16$), and distress significantly predicted child cognitive development ($b = -4.61$ (1.61); $p < .01$; $\beta = -0.25$). In the subscale-specific analyses, the paths between psychological distress and the subscales of the MSEL were in the same direction and of similar magnitude as in the institutional resources model with the equivalent sample. Again, the path coefficient between daily cognitively stimulating activities and the visual reception scale of the MSEL was significant ($b = 1.04$ (0.58); $p < .10$; $\beta = 0.16$), though at a marginal level of significance.

Finally, a multi-sample path analysis was run to evaluate whether the relationships between the endogenous variables in the model differed by racial/ethnic group. In this analysis, racial/ethnic group was no longer used to predict the system of relationships. Instead, the system of relationships was compared across the Mexican, Dominican and African-American samples to determine whether the structural paths differed or remained the same across groups. A model in which all parameters were allowed to vary across groups was compared to models in which parameters were constrained to be equal across. Both the overall fit indices and χ^2_{Δ} statistics for these models indicated that the relationships between variables do not vary across racial/ethnic group.

Discussion

This study aimed to explore implications of social exclusion theory for the experience of low-income immigrant parents with young children in the U.S. Social exclusion is a construct applied (primarily in work outside the U.S.) to capture dimensions of disadvantage that standard economic constructs such as poverty or hardship to not capture (Burchardt et al., 2002). We applied social exclusion theory to the experiences of exclusion that might be related to undocumented status among low-income immigrants. Few studies have explored the ramifications for children of parents' undocumented status, because of difficulty in directly assessing legal status. Social exclusion provides a theory that can help us pinpoint the multiple experiences associated with this status.

More specifically, this study is the first to link institutional dimensions of social exclusion among immigrant parents to their family processes and children's development. We posited that low-income immigrant parents, due in part to variation in their legal status, might vary in their likelihood to access resources that require them to show identification. Thus, we sought to explore institutional access as one indicator of social exclusion that goes beyond the usual poverty-based definitions of exclusion.

In our models, we examined how access to institutions that require forms of identification (savings accounts, checking accounts, credit cards, and driver's licenses) related to economic hardship, psychological distress, and cognitive stimulation of children. We further examined how these three factors were related to a standardized assessment of children's cognitive abilities at 24 months.

In brief, our findings supported much of our theoretical model linking institutional access to children's development through our hypothesized mediators. That is, institutional resources were associated with lower economic hardship, which in turn was associated with higher psychological distress over time and lower levels of cognitive ability (see Figure 3). We had hypothesized that having access to checking or savings accounts and credit might provide a financial "cushion" during times of economic hardship. This appears to be reflected in our data, with a moderate negative relationship (standardized coefficient of $-.28$; Figure 3) between access to institutional resources and economic hardship (as represented by items such as having phone service cut off or not being able to meet bill deadlines). We also hypothesized that the process of saving for the future, together with the higher economic resources

such savings bring, would predict higher levels of resource-dependent investments in children, such as reading books to children. This part of the model, however, was not supported.

Mexicans consistently reported lower levels of daily cognitive stimulation with their children than Dominicans or African Americans; however, the measure of daily cognitive stimulation was not associated with the total score on our cognitive assessment.

In analyses separating our standardized assessment into its four component subscales (visual reception, fine motor skills, expressive language, and receptive language) we found some different patterns, depending on the particular predictor being examined. Economic hardship appeared to be most strongly related to visual reception, and less so to the other subscales. Psychological distress was related to all four subscales in the predicted direction (higher distress associated with lower levels of the particular ability). Finally, daily cognitive stimulation was related to higher visual perception, but not the other subscales. These differences are somewhat difficult to interpret, partly because the cognitive measure is taken quite early in early childhood (in the midst of the first vocabulary “spurt” that children experience), with still a bit of “noise” in these subscale measures. This is reflected in the fact that the associations of distress with these subscales were quite a bit weaker (standardized coefficients ranging from $-.15$ to $-.22$) than with the entire scale as a whole (standardized coefficient of $-.28$)

We were also interested in variation among our sample of Mexicans, Dominicans, and African Americans in institutional resources and the other constructs in our model. Although our groups were fairly similar in class (all being of low incomes), they varied in degree of political incorporation. The Mexican mothers were all first-generation; the Dominicans about 80% so. These differences, together with the fact that the Mexican group were by far the lowest in terms of parental human capital and income, drove our hypotheses that the Mexicans were likely to have the highest proportion of undocumented parents, followed by the Dominicans and then of course no parents of undocumented status among the African Americans. We therefore predicted that the Mexicans would report the lowest levels of institutional resources, followed by the Dominicans and then the African Americans. This hypothesis was only partially supported. That is, Dominican parents reported higher levels of household access to these resources than African American parents. Mexicans, as hypothesized, did report the lowest levels of these resources.

Why might it be that Dominican parents report higher levels of financial banking resources and driver’s licenses than African American parents? One reason may be the higher rates of young motherhood, and single parenthood, among the African American parents. This group was more likely to be living with grandmothers. Our qualitative data, for example, suggest that some of the younger African American single mothers in our sample left the financial responsibilities in the household to the grandparents. Another possibility is that the Dominican families may have had more extensive social networks. This possibility is now being explored through data we are collecting on social network size, availability, and support.

We also included paths in our model from ethnic group directly to economic hardship. Here again we encountered a somewhat counterintuitive finding: The Mexicans reported lower levels of economic hardship than both the African Americans and the Dominicans. This occurred despite their lower incomes and lower levels of human capital. Why might the poorest among our groups report the least hardship? Two principal reasons may explain this puzzling finding. First, as work by the Suarez-Orozcos and others indicates, immigrants often evince a “dual frame of reference” in their experience, one relevant to their context of reception and one relevant to their sending context. Our Mexican sample comes from a particularly poor state in Mexico, Puebla (Yoshikawa, McCartney, et al., 2006). These parents, in our qualitative study, reported more extreme reports of hardship in Puebla than our Dominican parents did when talking about sending contexts in the D.R.. The Mexicans also described government and public support for families in their home country as very sparse and unreliable (Yoshikawa, Lugo-Gil, Chaudry, & Tamis-LeMonda, 2005). Second, data from some of our other studies suggest that the Mexicans use a variety of survival strategies to live in New York City while managing to make ends meet as well as sending remittances back to Mexico. These include doubling up in apartments (they have higher numbers of people in the home than our Dominicans or African Americans), and participating in

informal lending pools (Yoshikawa & Rivera, 2007). These (sometimes called *tanda*) involve regular small “deposits” to a kitty of money that a group of relatives and friends pitch into, with access to relatively large sums on occasion to take care of big-ticket expenses or debts.

Driver’s licenses are currently the focus of much debate and new legislation. Questions being discussed in state legislature include whether undocumented immigrants should be allowed to have driver’s licenses, and what kinds of information (whether checks with the federal immigration service or checks with national terrorist databases) should be required in applications for licenses. We analyzed our models replacing the overall institutional resources measure with the item specific to whether anyone in the household had a driver’s license. We found that much of the original model was also supported for the item tapping access to a driver’s license in the household. That is, Mexicans reported the lowest likelihood of having a license in the household (Dominicans and African Americans did not significantly differ on this likelihood). Having a driver’s license, in turn, was associated with lower perceived economic hardship, which in turn related to higher psychological distress and lower scores on the cognitive Mullen assessment.

Several limitations of this study should be noted. Although we controlled for a range of household factors, including prior education, family structure, and income, there exist other family-level factors that might have influenced our results. We did run expanded models with a larger set of covariates, and results were very similar with regard to principal path coefficients, although significance levels were lower. Future work should examine the links we proposed with larger samples and also with other immigrant groups. Second, although we began our study with a low-income immigrant Chinese sample, in addition to the three groups reported on here, we were unable to continue to follow up that group due to high rates of sending infants back to China. Future work on institutional resources should include this important and largest Asian immigrant group.

Despite these limitations, this study represents a step forward in extending the social science literature on the experience of low-income and undocumented immigrants beyond notions of poverty and economic disadvantage. We demonstrate that institutional access and exclusion may make a difference for parents’ well-being and their children’s early cognitive development, among low-income immigrant families. Future work using this data set will incorporate other dimensions of parenting (including observed parenting quality from videotaped data) as well as longer-term assessment of children’s development (into the preschool years).

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Table 1
Participant Characteristics at Baseline: Survey Sample at 24-Month Follow-Up

	Full Sample (<i>n</i> = 181)	Mexicans (<i>n</i> = 62)	Dominicans (<i>n</i> = 64)	African Americans (<i>n</i> = 55)
<i>Percentage</i>				
Mother under 18 when 1 st child born	13%	13%	10%	18%
Mother married or cohabiting with partner	67%	85%	61%	53%
Mother has HS degree	37%	40%	31%	40%
<i>Mean (SD)</i>				
Total number of children in household	2.05 (1.19)	2.00 (1.17)	1.73 (0.84)	2.27 (1.84)
Household income in year prior to child's birth	\$20,206 (\$14,423)	\$17,498 (\$11,536)	\$23,192 (\$15,086)	\$19,983 (\$16,436)

Figures (note: all coefficients are standardized)

Figure 1. Hypothesized path model: Mexicans, Dominicans and African-Americans (reference)

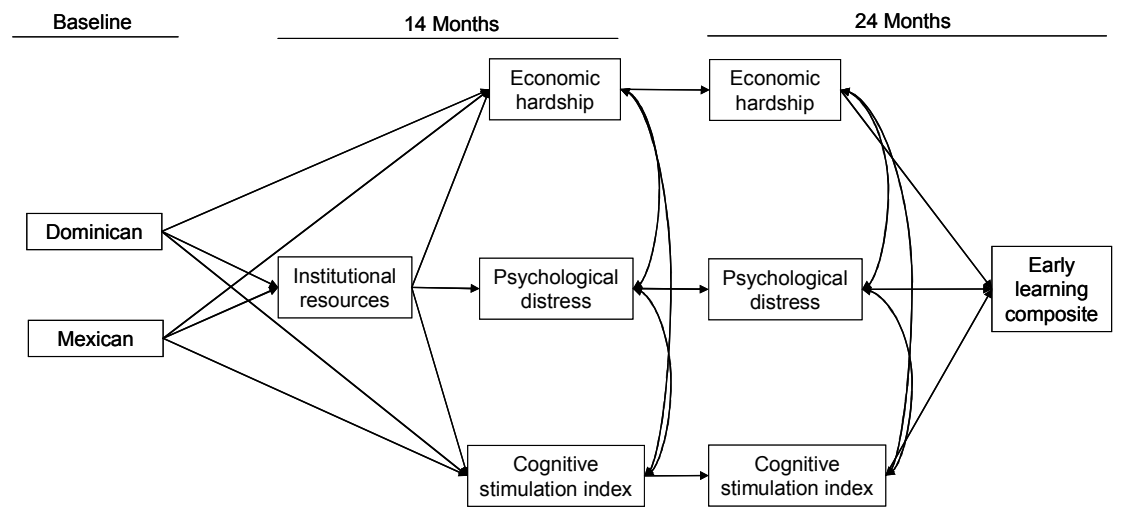


Figure 2. Hypothesized path model: Mexicans and Dominicans (reference)

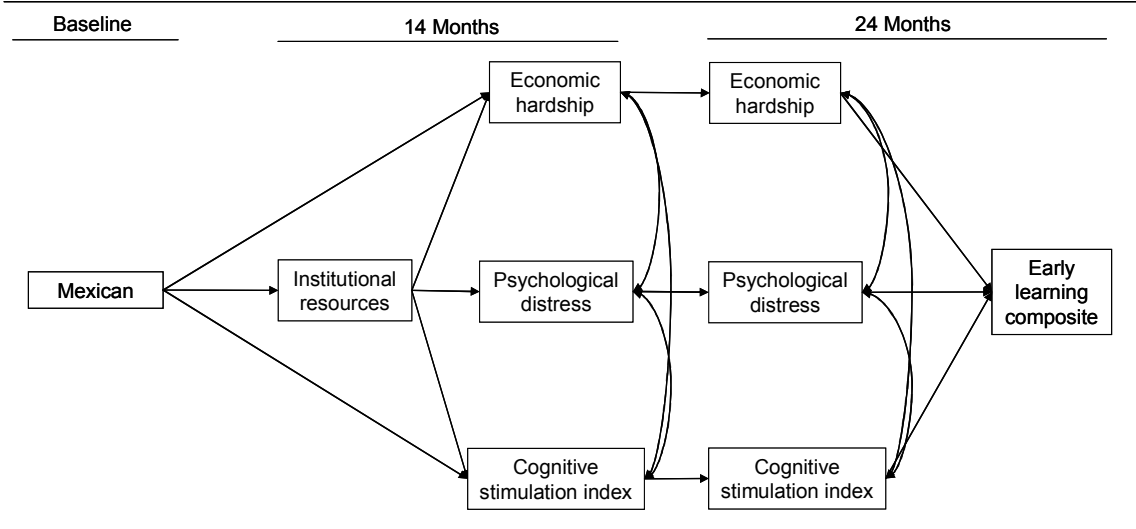


Figure 3. Institutional Resources Model: Full Sample

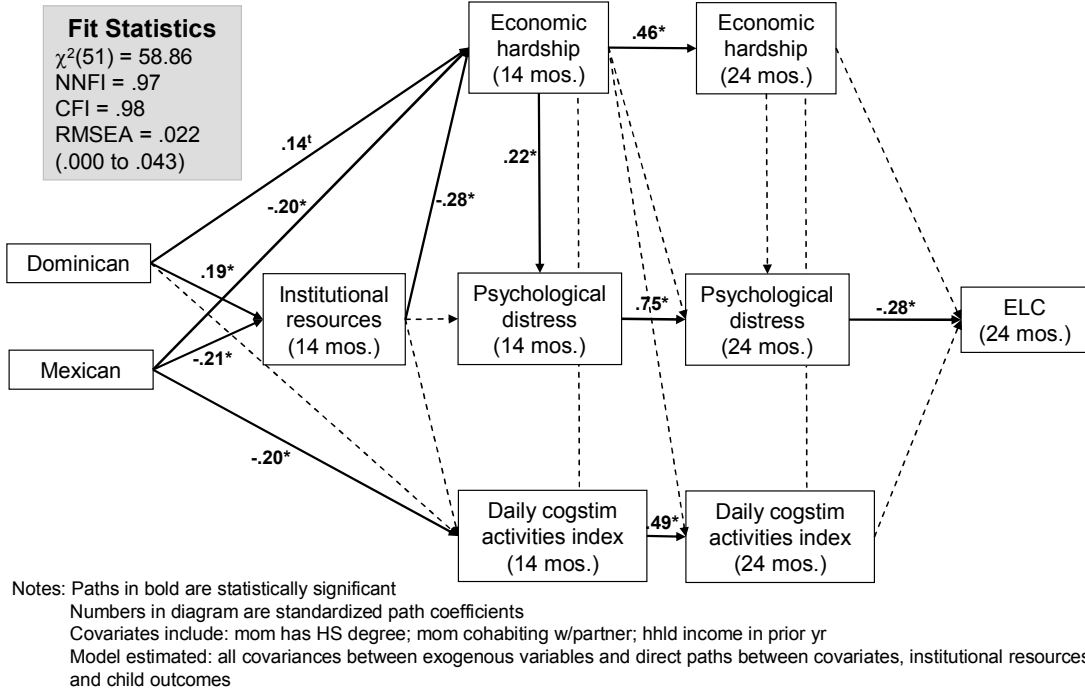


Figure 4. Institutional Resources Model: Mexicans and Dominicans

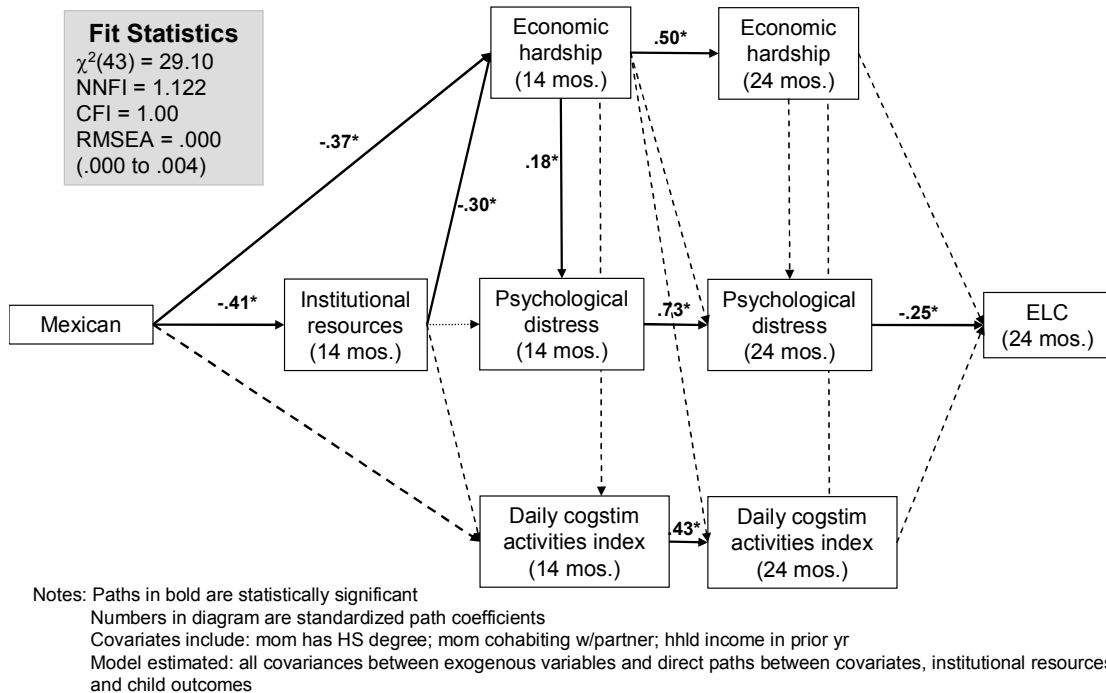
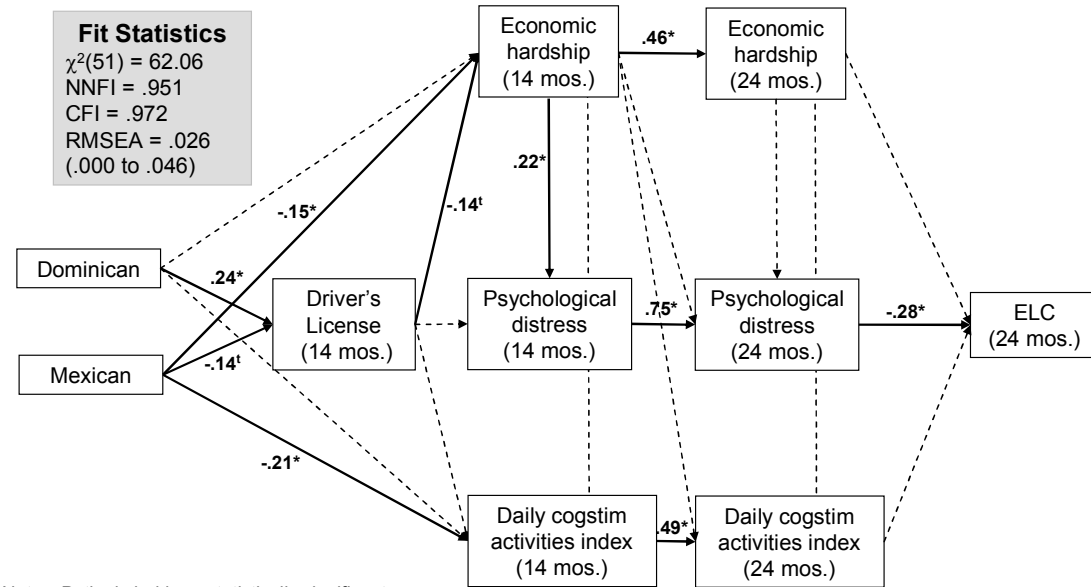
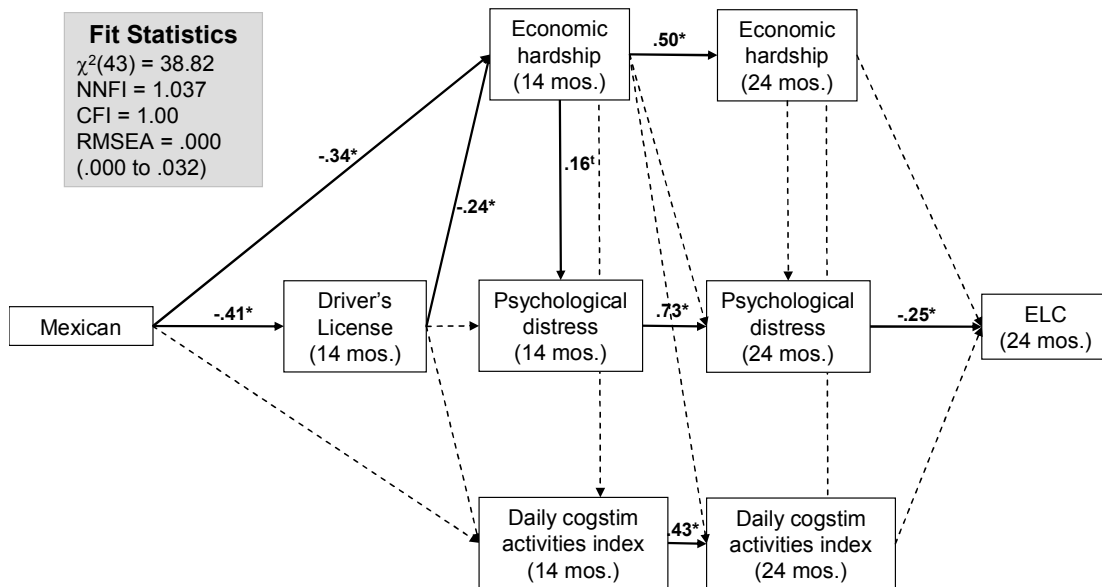


Figure 5. Driver's License Model: Full Sample



Notes: Paths in bold are statistically significant
 Numbers in diagram are standardized path coefficients
 Covariates include: mom has HS degree; mom cohabiting w/partner; hhld income in prior yr
 Model estimated: all covariances between exogenous variables and direct paths between covariates, institutional resources and child outcomes

Figure 6. Driver's License Model: Mexicans and Dominicans



Notes: Paths in bold are statistically significant
 Numbers in diagram are standardized path coefficients
 Covariates include: mom has HS degree; mom cohabiting w/partner; hhld income in prior yr
 Model estimated: all covariances between exogenous variables and direct paths between covariates, institutional resources and child outcomes