

Cross-Generational Effects of Discrimination Among Immigrant Mothers: Perceived Discrimination Predicts Child's Healthcare Visits for Illness

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Objective: This study tested whether an immigrant mother's perception of ethnic and language-based discrimination affects the health of her child (indexed by the child's frequency of sick visits to the doctor, adjusting for well-visits), as a function of her ethnic-group attachment and length of U.S. residency. **Method:** A community-based sample of 98 immigrant Dominican and Mexican mothers of normally developing 14-month-old children were interviewed. Mothers reported their perceived ethnic and language-based discrimination, degree of ethnic-group attachment, length of time in the United States, and frequency of their child's doctor visits for both illness and routine (healthy) exams. **Results:** Among more recent immigrants, greater perceived ethnic and language-based discrimination were associated with more frequent sick-child visits, but only among those reporting low ethnic-group attachment. The associations between both forms of perceived discrimination and sick-child visits were not observed among mothers reporting high ethnic-group attachment. Among more established immigrants, perceived language-based discrimination was associated with more frequent sick-child visits regardless of ethnic-group attachment. **Conclusion:** These results suggest that a Latina mother's experience with ethnic and language-based discrimination is associated with her child's health, as indicated by doctor visits for illness, but that strong ethnic-group attachment may mitigate this association among recent immigrants.

Keywords: immigration, stigma, ethnic attachment, health, prejudice

Immigrants often face several challenges as they attempt to integrate with members of their host country. One of these is discrimination, which may be based on the color of their skin, the way they speak, or their membership in a particular ethnic or national group (Deaux, 2006). Regardless of its basis, discrimination is a major component of the acculturative stressors that immigrants typically experience when they move to a new country

(de Snyder, 1987). Importantly, these types of discrimination have been associated with a host of negative mental and physical health outcomes, such as increased psychological distress (e.g., Moradi & Risco, 2006), worse physical health (Finch, Hummer, Kolody, & Vega, 2001), and increased rates of risky health behaviors (e.g., Yoshikawa, Wilson, Chae, & Cheng, 2004).

Although much past research has found a link between discrimination and health (Pascoe & Richman, 2009), emerging research suggests that a mother's psychological response to discrimination may also have implications for the health of her child. High levels of perceived stress during pregnancy are associated with health risks for infants (Rich-Edwards & Grizzard, 2005; Wright, 2011). Given the link between discrimination and stress, these findings raise the possibility that the negative health implications of discrimination may extend beyond the mother to her child as early as the first year of life—a pernicious example of how discrimination may have enduring effects on its victims across generations. Indeed, racial and ethnic discrimination has been identified as a risk factor for low-weight or premature births, even after adjusting for socioeconomic status (Giscombe & Lobel, 2005). Among African American mothers, stress responses associated with perceived discrimination predicted newborn low birth weight (Dominguez, Dunkel-Schetter, Glynn, Hobel, & Sandman, 2008). Low birth weight, in turn, is associated with many health risks and developmental problems across the life span (McCormick,

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Brooks-Gunn, Workman-Daniels, Turner, & Peckham, 1992). These findings suggest that greater perceived discrimination in a mother may be associated with poorer health in her child.

The current study examined this hypothesized relationship among Latina immigrants. Latinos are the largest and fastest growing ethnic minority group in the United States (U.S. Census, 2011), and the need for research on the health of Latino children has been named an urgent public health priority (Flores et al., 2002). Yet few studies have examined the effects of perceived discrimination on health among Latino samples (exceptions: Finch et al., 2001; Finch & Vega, 2003; Gee, Ryan, LaFlamme, & Holt, 2006; Stuber, Galea, Ahern, Blaney, & Fuller, 2003). Like African Americans, Latinos often experience discrimination on the basis of their ethnicity. However, because Latino immigrants come from Spanish-speaking countries, they also experience discrimination due to their difficulty with spoken and written English. Although past work has examined the relation between language proficiency and access to medical care (Timmins, 2002), language-based *discrimination* is an understudied, yet potent, form of discrimination that is particularly relevant to this population. Past research suggests that language-based discrimination is conceptually distinct from ethnic discrimination, as it has been linked independently to negative health outcomes (Spencer & Chen, 2004; Yoo, Gee, & Takeuchi, 2009). Therefore, it was important in the present research to investigate the effects of language-based discrimination in addition to ethnic discrimination.

For new immigrants, connections with other members of their ethnic group provide an important source of social support, and thus an immigrant's sense of attachment to her ethnic group may moderate the effect of perceived discrimination on child health in Latina immigrant mothers. Ethnic attachment refers to an individual's sense of belonging and engagement with members of her own ethnic group (Phinney, 1992).¹ In the present study, ethnic attachment was expected to attenuate the effect of perceived discrimination on a child's health for two reasons. First, stronger ethnic-group attachment has been associated with greater social support and connectedness to other members of one's ethnic group (Kim, 1999), especially among Latina women (Deaux & Martin, 2003). The salubrious and protective role of social support has been shown in other samples, too, such as in former Soviet Union immigrants to Finland (Jasinskaja-Lahti, Liebkind, Jaakkola, & Reuter, 2006). Second, individuals with stronger ethnic attachment are more likely to possess traditional Latino cultural values, such as *familism* (an emphasis on family and kinship), religiosity, and more traditional norms, which are related to better health practices (Hayes-Bautista, 2002). Given these findings, a mother's strong ethnic attachment was hypothesized to buffer the effects of perceived discrimination on her child's health.

The attenuation of the effects of perceived discrimination on children's health due to a mother's ethnic attachment may be more or less pronounced depending on the mother's length of U.S. residency. Indeed, greater social support has been associated with higher infant birth weight for foreign-born, but not for U.S.-born, Latina women (Campos et al., 2008). Ethnic attachment has also been shown to decrease general acculturative stress, particularly among recent immigrants (Deaux, 2006). Because language issues and ethnic-group attachment are especially important among newer immigrants, the effects of these factors on a child's health were expected to be more pronounced among mothers who had

more recently moved to the United States. Thus, strong ethnic-group attachment was hypothesized to mitigate the effects of perceived discrimination on health primarily among newer immigrants.

The current study examined the effects of mothers' perceived ethnic and language-based discrimination on the health of their children, as a function of ethnic-group attachment and length of residency in the United States. The sample included immigrant mothers from Mexico and the Dominican Republic who had 14-month-old children. These mothers were interviewed about their perceptions of discrimination, their ethnic-group attachment, and the number of doctor visits made in the previous year for both regular check-ups and for their child's illness. The frequency of the sick-child visits, after adjusting for well-child visits (i.e., regular check-ups), was used as a proxy for child's health. Sick-child visits have been used as an objective indicator of children's health in intervention-based research (Phillips-Howard et al., 2003) and have been correlated with children's actual illnesses (e.g., Wright et al., 1981). Greater discrimination was hypothesized to predict more sick-child visits, after adjusting for well-child visits, but high ethnic attachment was hypothesized to attenuate this relation, especially among recent immigrants. Both ethnic and language-based discrimination were expected to be associated with sick-child visits, but given the specific challenges of Latina immigrants, language-based discrimination was expected to be especially relevant.

Method

Participants and Procedure

Participants included 98 mothers (M age = 27.19 years, SD = 5.56) of normally developing 14-month-olds who were born as healthy, full-term infants (M = 14.73 months, SD = 1.25; 51 girls, 44 boys). All participants were first generation immigrants (i.e., foreign-born) from Mexico (n = 53) or the Dominican Republic (n = 42), two of the largest Latino immigrant groups in the United States, and the two largest in New York City. Participants were recruited at the maternity wards of New York City hospitals to take part in a larger study on culture and learning. Participants were eligible if they (1) were 18+ years of age, (2) were not living in a shelter, and (3) self-identified as Mexican or Dominican. In the recruiting phase of this project, researchers approached a total of 560 Dominican and Mexican women. Of these, 32% agreed to participate, 43% were not interested, 15% were ineligible, and 10% were unable to be reached after initial contact. By the time children were 14 months, the attrition rate of mothers was 47%. Attrition analyses examining a number of characteristics found no significant differences between mothers with and without data at baseline versus at 14 months.

Data were excluded from 3 mothers of children with an extreme number of sick-child visits (10 or more; greater than 3 SD s from

¹ Ethnic attachment is distinct from the more widely-studied construct of ethnic identity centrality (i.e., the importance one's ethnic identity; see Pascoe & Richman, 2009), for which there is more debate concerning the moderating effect on the link between discrimination and health (Yip, Gee, & Takeuchi, 2008).

mean), leaving 95 families for analysis. Of these excluded participants, two mothers reported 15 visits and one reported 14 visits. Although the inclusion of these outliers did not change the pattern of results, these were special cases of chronic illness and deemed inappropriate for inclusion.

A female researcher (European American or Latina) interviewed participants in their preferred language. Although all participants were native Spanish speakers, 84.2% preferred to be interviewed in Spanish, whereas 15.8% preferred to be interviewed in English. Bilingual staff translated all instruments into Spanish, and then back-translated them into English. Multiple meetings were held with a team of researchers to make sure that all questions were understandable and that the meaning of each question was intact across languages. Scores on measures did not differ as a function of language, with the unsurprising exception of language-based discrimination; interviews conducted in Spanish ($n = 80$, $M = .59$, $SD = .59$) yielded greater reported language-based discrimination than those conducted in English ($n = 13$, $M = .22$, $SD = .50$), $t(91) = 2.13$, $p < .05$, $d = .45$.

Measures

Child's doctor visits. To assess the extent to which mothers took their child to the doctor for concerns about illness (*sick visits*), interviewers asked mothers, "How many times in the past year did you take [your baby] to a doctor because he or she was sick?" To adjust for differences in health care utilization, the frequency of *well-child visits* to the doctor was also assessed by asking mothers, "How many times since your child was born did you take him/her when he or she was well (not sick) to a doctor for a regular check-up (well-baby visit)?"

Perceived ethnic discrimination. Mothers' perceptions of ethnic discrimination were assessed using six items adapted from the Everyday Discrimination Scale (Williams, Yu, Jackson, & Anderson, 1997), including, "How often have you (*been treated with less courtesy than other people/had trouble finding a job/received poorer service than other people at stores, restaurants, or banks/been treated poorly at work by coworkers/been treated poorly at work by supervisors/been treated poorly by the police*) because you are (*ethnicity*)?" (0, *Never*, to 3, *Often*; $\alpha = .75$). Item

wording was adapted slightly to be more sensitive to ethnic discrimination experiences and stereotypes of Latina immigrant women in the sample.

Perceived language-based discrimination. Mothers' perceptions of language discrimination were assessed using six items adapted from the perceived everyday ethnic discrimination items, with the substitution of "...because of how you wrote or spoke English" for "...because you are (*ethnicity*)" (e.g., "How often have you been treated with less courtesy than other people because of how you wrote or spoke English?") ($\alpha = .78$). Perceived language-based discrimination was positively correlated with perceived ethnic discrimination, $r(93) = .71$, $p < .001$. Data from two mothers were missing on this measure and thus not included in analyses involving this variable.

Mother's ethnic-group attachment. Mothers' ethnic-group attachment was measured using a scale of two items: "I have a strong sense of belonging to my ethnic group," and "I feel a strong attachment to my ethnic group", $r(94) = .68$, $p < .001$. These two items were taken from the affirmation and belonging subscale of the Ethnic Identity Scale (Phinney, 1992).

Years of U.S. residency. The length of time since mothers' initial immigration to the United States was assessed by asking, "How many years have you been in the U.S.?"

Demographic variables. Indicators of socioeconomic status were collected at the time of the child's birth, by interviewers as described above, to be included as covariates. Mothers reported annual household income and education level. See Table 1. Mother's education level was treated as a categorical variable (completed some college vs. only completed high school or received a GED vs. did not complete high school) and dummy coded into two variables, with those reporting less than a high school education as the reference group. Additional covariates included marital status, "well-child" visits (i.e., healthy visits) to the doctor, and child age in months. Ethnic group was included as a dummy variable in all analyses with Mexican families as the reference group, although this difference was not expected to account for the hypothesized effects.

Mother's response to her child's illness. To clarify the meaning of sick-child doctor visits, interviewers asked mothers,

Table 1
Descriptive Statistics for Key Variables

Measure	Full sample M (SD)	Dominican M (SD)	Mexican M (SD)	Range (full sample)
Sick-child visits	3.14 (2.36)	3.38 (2.56)	2.94 (2.20)	.00–10.00
Mother variables				
Perceived ethnic discrimination*	.48 (.52)	.31 (.35)	.61 (.58)	.00–2.00
Perceived language-based discrimination	.54 (.59)	.46 (.56)	.60 (.61)	.00–2.17
Ethnic-group attachment	3.45 (.59)	3.46 (.46)	3.43 (.67)	1.00–4.00
Years of U.S. residency	8.42 (5.71)	9.12 (6.03)	7.87 (5.44)	.00–24.00
Covariates				
Well-child visits	6.36 (2.20)	6.60 (2.25)	6.17 (2.17)	2.00–14.00
Average annual household income	\$22,190 (\$15,382)	\$21,884 (\$12,216)	\$22,432 (\$17,604)	\$0–\$96,000
Married	45%	43%	47%	N/A
Mother high school education or beyond*	57%	74%	47%	N/A
Other demographic variables				
Preferred interview to be conducted in Spanish*	84%	71%	94%	N/A

Note. Asterisks (*) indicate a significant difference between Dominican and Mexican participants at the $p < .05$ level.

“What did you do the last time your child was sick?” Their response options included: (1) brought child to the hospital or ER or to a clinic at a hospital, (2) brought child to a clinic not in a hospital, (3) brought child to a private doctor’s office not in a clinic, (4) gave home remedies, and (5) kept child home. Responses 1–3 were categorized as going to a doctor and 4–5 together as giving home remedies or staying at home.

Statistical Analysis Approach

Generalized estimating equations (GEE; Zeger, Liang, & Albert, 1988) were used to test the hypotheses predicting sick-child visits because this dependent measure represents a count variable (i.e., number of sick visits). GEEs permit a regression model to be analyzed with a Poisson distribution, which is characteristic of many count variables, using a log link function. Predictor variables included mother’s perceived discrimination (ethnic and language-based discrimination in two separate equations), mother’s ethnic-group attachment, mother’s length of stay in the United States, and all higher-level interactions among these three variables, entered simultaneously in the regression model. Adjustment variables (income, education, marital status, number of well-child visits, child age, and ethnicity) were included as covariates. All continuous predictor variables were mean-centered.

To test whether there were differences between Mexican and Dominican families in the relations among key variables of interest, interaction predictor variables involving ethnicity were included in the GEEs (ethnicity \times discrimination, ethnicity \times ethnic-group attachment, etc., and all three- and four-way interactions). These analyses revealed no significant interactions with ethnicity; thus, data from the two groups were combined for the final set of analyses.

Results

Means and standard deviations for all variables of interest are reported in Table 1, and intercorrelations among all measures are reported in Table 2. An examination of demographic variables indicated that Mexican and Dominican families did not differ significantly in annual household income, proportion of married parents, generational status, or number of well-child visits. How-

ever, Mexican mothers were more likely than Dominican mothers to report that Spanish was their dominant language, $\chi^2(1, N = 95) = 9.25, p < .01, \phi = .31$. Also, average education level was higher among Dominican mothers than Mexican mothers, $\chi^2(1, N = 95) = 16.56, p < .001, \phi = .42$. See Table 1.

Dominican and Mexican mothers did not differ in their reported frequency of sick-child doctor visits, perceived language-based discrimination, level of ethnic-group attachment, or length of U.S. residency (see Table 1). However, Mexican mothers reported a higher degree of ethnic discrimination than did Dominican mothers, $t(93) = 3.00, p < .01, d = .62$.

Mothers’ Perceived Ethnic Discrimination and Children’s Health

It was hypothesized that greater perceived ethnic discrimination among mothers would predict more children’s sick visits to the doctor, but that ethnic-group attachment would attenuate this relation, especially among recent immigrants. The GEE analysis revealed a significant main effect for ethnic-group attachment, as well as a significant ethnic-group attachment by years in U.S. interaction. However, these effects were qualified by the predicted significant three-way interaction (see Table 3).

To interpret the three-way interaction, the effects of perceived ethnic discrimination and ethnic-group attachment were examined separately for recent versus established immigrants (at $+/-1$ SD relative to the mean values). For recent immigrants, this two-way interaction was significant, $B = -1.02, \beta = -.31, t(82) = 7.66, p < .01$. Supporting the central prediction, simple slope analyses indicated that greater perceived discrimination predicted more frequent sick-child visits among those with low ethnic-group attachment, $B = .61, \beta = .32, t(82) = 10.00, p < .01$. This relationship was marginally significant among mothers with high ethnic-group attachment, $B = -.58, \beta = -.30, t(82) = 2.92, p = .088$, trending in the opposite direction (see Figure 1). This pattern suggests that, among newer immigrants, ethnic attachment may buffer the harmful effects of ethnic discrimination on child’s health. By comparison, among established immigrant mothers, no significant effects emerged for perceived ethnic discrimination, ethnic-group attachment, or their interaction (see Figure 1).

Table 2
Correlations Between Variables

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Sick-child visits	—										
2. Ethnic discrimination	.06	—									
3. Language-based discrimination	.20*	.71***	—								
4. Ethnic-group attachment	-.21*	-.12	-.14	—							
5. Years in U.S.	-.05	-.10	-.21*	-.13	—						
6. Well-child visits	-.22*	.16	.22*	.02	-.13	—					
7. Income	-.06	.09	-.07	-.00	.19	.12	—				
8. H.S. education only	-.01	-.01	.12	.10	-.26*	.01	-.07	—			
9. College education	-.11	-.13	-.14	.05	.17	.18	.19	-.39***	—		
10. Married	-.07	-.09	-.04	-.08	.11	.05	.16	.00	-.03	—	
11. Child age	.07	.09	.09	.06	-.05	.09	.22*	.01	-.04	-.15	—

Note. Education variables were categorical variables with mothers who did not complete a high school education coded as 0s. Marital status was a categorical variable as well, with mothers not married to the child’s father coded as 0s and mothers married to the child’s father coded as 1s.

* $p < .05$. *** $p < .001$.

Table 3

Generalized Estimating Equation Analysis Results Predicting Number of Doctor Visits for Child's Sickness

Variable	β	<i>B</i>	<i>SE</i>	χ^2	β	<i>B</i>	<i>SE</i>	χ^2
	Ethnic Discrimination				Language-Based Discrimination			
<i>Predictor variables</i>								
(Intercept)		1.068	0.129			1.057	0.148	
Discrimination	0.109	0.211	0.170	1.54	0.170	0.287	0.128	5.05*
Ethnic-group attachment	-0.147	-0.251	0.123	4.15*	-0.078	-0.133	0.134	0.99
Years in U.S.	-0.028	-0.005	0.012	0.19	-0.020	-0.003	0.012	0.08
Discrimination \times Ethnic-group attachment	-0.123	-0.406	0.217	3.51	-0.170	-0.493	0.206	5.72*
Discrimination \times Years in U.S.	0.101	0.034	0.025	1.93	0.022	0.007	0.020	0.12
Ethnic-group attachment \times Years in U.S.	0.108	0.032	0.021	2.44	0.098	0.029	0.023	1.57
Discrimination \times Ethnic-group attachment \times Years in U.S.	0.187	0.108	0.032	11.39***	0.183	0.093	0.029	10.46***
<i>Adjustment variables</i>								
Income	-0.037	0.000	0.000	0.31	-0.009	0.000	0.000	0.01
HS education	0.114	-0.093	0.166	0.31	0.114	-0.138	0.161	0.73
Some college education	0.306	-0.222	0.211	1.10	0.306	-0.267	0.225	1.42
Married	-0.142	-0.073	0.152	0.23	-0.142	-0.110	0.142	0.59
Child doctor visits for wellness	-0.201	-0.091	0.034	7.04**	-0.240	-0.109	0.038	8.09**
Child age	0.031	0.001	0.002	0.22	0.021	0.001	0.002	0.07
Ethnicity	0.186	0.357	0.166	4.63*	0.186	0.390	0.177	4.85*

Note. Coefficients are based on two separate equations, one with ethnic discrimination as a predictor, the other with language-based discrimination as a predictor. For both equations all other variables were the same. Mexican mothers who did not complete high school and were not married to the child's father were the reference group. All variables except for the specified child variables refer to mothers. Significant effects are in boldface.

* $p < 0.5$. ** $p < .01$. *** $p < .001$.

Mothers' Perceived Language-Based Discrimination and Children's Health

To test the effects of mothers' language-based discrimination on sick-child visits, the model described above was tested again, but with language-based discrimination replacing ethnic discrimination as the main predictor of interest. The GEE analysis revealed a significant main effect for language-based discrimination, indicating that greater perceived discrimination was associated with more frequent sick-child visits. A significant effect also emerged for the discrimination by ethnic-group attachment interaction, but these effects were qualified by the predicted significant three-way interaction (see Table 3).

To interpret the observed three-way interaction, the simple interactive effects of perceived language-based discrimination and ethnic-group attachment were again examined separately for recent and established immigrants (i.e., at ± 1 SD relative to the mean values). Among recent immigrants, the expected two-way

interaction was significant, $B = -1.02$, $\beta = -.34$, $t(80) = 8.76$, $p < .01$. That is, greater perceived language-based discrimination predicted more frequent sick-child visits to the doctor among mothers with low ethnic-group attachment, $B = .85$, $\beta = .49$, $t(80) = 10.55$, $p = .001$, but not for those with high ethnic-group attachment, $B = -.35$, $\beta = -.19$, $t(80) = 1.60$, $p = .21$.

Among more established immigrants, only the main effect of language-based discrimination was significant, indicating that more perceived language-based discrimination was associated with an increased number of sick-child visits to the doctor, adjusting for the number of well-child visits, $B = .32$, $\beta = .20$, $t(80) = 4.05$, $p < .05$. See Figure 2.

Supplementary Analyses

A set of supplementary analyses were conducted to address potential limitations. First, the extent to which the two types of

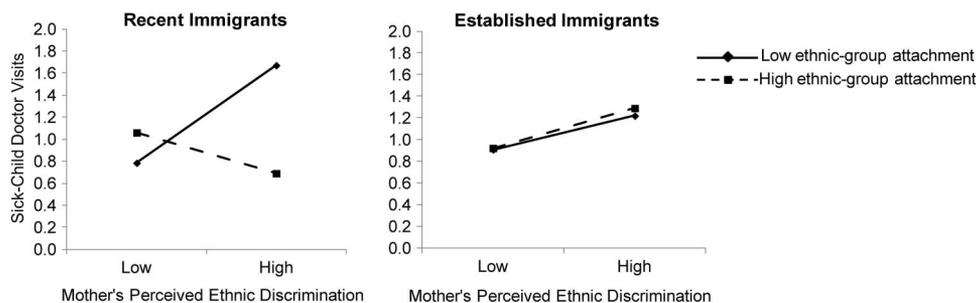


Figure 1. Predicted number of sick-child doctor visits as a function of mother's perceived ethnic discrimination, length of U.S. residency, and ethnic-group attachment. Recent and established immigrants are 1 SD above and below the mean of length of U.S. residency. Perceived ethnic discrimination and ethnic-group attachment are plotted at 1 SD above and below their respective means.

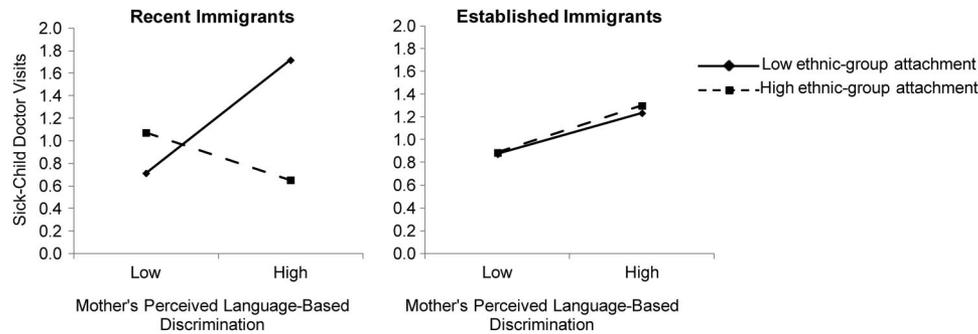


Figure 2. Predicted number of sick-child doctor visits as a function of mother's perceived language-based discrimination, length of U.S. residency, and ethnic-group attachment. Recent and established immigrants are 1 *SD* above and below the mean of length of U.S. residency. Perceived language-based discrimination and ethnic-group attachment are plotted at 1 *SD* above and below their respective means.

discrimination independently predicted sick-child doctor visits was examined. To this end, the main regression analyses described above were repeated for each form of perceived discrimination while adjusting for the complementary form of perceived discrimination. When language-based discrimination was covaried, the three-way interaction among ethnic discrimination, ethnic-group attachment, and years in the United States predicting sick-child doctor visits remained significant, $B = .102$, $t(82) = 9.63$, $p = .002$. Similarly, when ethnic-based discrimination was covaried, the three-way interaction among language-based discrimination, ethnic-group attachment, and years in the United States predicting sick-child doctor visits remained significant, $B = .102$, $t(82) = 10.01$, $p = .002$.

Analyses were also conducted to demonstrate that the effects of language-based discrimination were not due simply to the participants' actual degree of English language proficiency. To address this issue, the main regression analyses were repeated while adjusting for language use preference (sum of 3 items: "In what language do you *sing songs with/read books to/tell stories to* your child?"; 0, *Spanish only*; 1, *English and Spanish or English only*). Although participants' language proficiency was not assessed directly, this measure provided a proxy. When language use preference was included as a covariate, the three-way interaction among language-based discrimination, ethnic-group attachment, and length of U.S. residency remained a significant predictor of sick-child visits, $B = .091$, $t(80) = 10.52$, $p = .001$. Thus, the results did not appear to be driven by differences in English language proficiency.

Third, analyses were conducted to further validate that the primary outcome variable—number of sick-child doctor visits—could be interpreted as an indicator of the child's health. To this end, it was important to show that this variable did not simply reflect the mother's utilization of health care services. This issue was addressed in the main analyses by including the number of child's well visits as an adjustment variable. Furthermore, a higher frequency of routine well-child visits, which, in the first year of life, involve receiving vaccines and immunizations, as well as monitoring by a pediatrician, was associated with fewer sick-child visits (see Table 3). It is also notable that greater perceived discrimination has been shown to predict less utilization of health services (Casagrande, Gary, LaVeist, Gaskin, & Cooper, 2007),

but results showed that greater perceived discrimination predicted more sick visits to the doctor. As a complementary approach, mothers' reports of how they typically respond when their child is ill were examined. When asked to consider the child's most recent incident of illness, 18% of mothers reported that they stayed at home and/or gave home remedies, whereas 82% reported that they brought their child to see a doctor. Importantly, the tendency to use health care services was not associated with the predictor variables of interest when logistic regressions were conducted with the type of response to illness as the outcome. These results suggest that the outcome variable did indeed provide a valid indicator of children's health and not the mothers' utilization of health care services.

Discussion

A growing body of research shows that social discrimination has a negative impact on the health of its perceiver (Pascoe & Richman, 2009). The present findings show that it can also affect on the health of the perceiver's 14-month-old child. Perceptions of discrimination on the basis of language was found to be particularly impactful among the Mexican and Dominican immigrant mothers included in this research, in addition to the perception of ethnicity-based discrimination. Furthermore, the effects of both forms of discrimination on children's health were strongest among more recent immigrants who reported low attachment to their ethnic group. Hence, the deleterious effects of perceived discrimination appear to be mitigated by one's engagement and sense of belonging with other members of one's ethnic group, particularly for newer immigrants. These results provide the first evidence that perceptions of discrimination by a mother could have a negative effect on the health of her child within the first 14 months of her child's life. These findings highlight the impact of social factors on public health while also providing suggestions for how their effects may be ameliorated.

The effects of perceived discrimination on a child's health varied as a function of the mother's degree of ethnic-group attachment and the length of time since her immigration. Ethnic-group attachment was most relevant to recent immigrants, as it strongly moderated the effect of discrimination on children's health among this group. Although the present research did not probe the specific mechanisms underlying this pattern, it is possible that recent

immigrants are especially dependent on the support of other members of their ethnic group, including family members and neighbors, to cope with discrimination and improve parenting practices and childcare. Indeed, research has found that among Latino women, stronger ethnic identification was associated with stronger familial relations (Deaux & Martin, 2003).

Among more established immigrants, the impact of perceived discrimination on children's health was weaker, when based on language, or nonsignificant, when based on ethnicity, and the mothers' degree of ethnic attachment did not affect either relationship. The more established immigrants may have had time to build a support network beyond their ethnic group, making this variable less critical. However, the diminished effect of discrimination on children's health among established immigrant mothers is interesting given research showing that, for other health-related variables in other immigrant groups, longer lengths of time in the United States can be a risk factor. For example, in one study, the association between ethnic discrimination and obesity strengthened with increasing years in the United States for Asian immigrants (Gee, Ro, Gavin, & Takeuchi, 2008). Other research observed a similar pattern for African and Latino immigrants on a range of health outcomes (Gee et al., 2006). In these cases, health risk appeared to increase with their enculturation as minority group members in American society.

A potentially intriguing finding was observed for recent immigrant mothers who reported stronger ethnic-group attachment. Among these mothers, greater perceived discrimination was marginally associated with *fewer* sick-child doctor visits. A possible explanation for this trend is that for these individuals, experiences of perceived discrimination were met with an outpouring of social support from ingroup members that promoted their child's health. Because this trend was not significant, it should be interpreted with caution. However, it is conceptually consistent with research showing a negative association between perceived ethnic discrimination and alcohol disorders when levels of ethnic identification were high (Chae et al., 2008). Further research is needed to replicate these trends and investigate these explanations.

Although previous work has connected African American mothers' perceived ethnic discrimination with risk for a premature or very low birth weight infant (Giscombe & Lobel, 2005), the present work suggests that additional research is needed to understand how social factors affect the health of Latino Americans. Latinos represent the fastest-growing segment of ethnic and racial minorities in America (U.S. Census Bureau, 2011), and a recent study found that 30–35% report experiences with discrimination (Perez, Fortuna, & Alegria, 2008). The emerging literature linking discrimination with health suggests that a better understanding of discrimination effects among Latino Americans will be critical to addressing public health among a major segment of society.

In addition, this research highlights the importance of language-based discrimination and suggests it to be a phenomenon distinct from the more frequently studied ethnic discrimination. Language-based discrimination is especially relevant to the experience of minority-group immigrants who do not speak the host country's dominant language. This study is the first to link greater language-based discrimination perceived by mothers to poorer health in their children and to show that the significant effects of language-based and ethnicity-based forms of discrimination are distinct. Thus, language-based and ethnic-based forms of discrimination appear to

reflect two related yet unique constructs, at least for Latina U.S. immigrants. It is notable that although the current sample was primarily Spanish-speaking, some mothers were proficient speakers of English (albeit with an accent). Yet, despite their proficiency, these mothers also reported language-based discrimination on average. Although actual discrimination could not be assessed in this study, this pattern suggests that even immigrants who speak the host language may be affected by language-based discrimination.

The present findings are relevant to policymakers and health care providers, as they suggest that system-wide discrimination, and the consequent perceptions of discrimination, put children's health at risk, but that ethnic-group attachment may buffer this effect. Thus, interventions should focus on two broad issues: reducing system-wide discrimination (e.g., by increasing the diversity of the health care workforce and promoting cultural competence training) and promoting the building of strong community ties among recent immigrants.

The finding that the effects of discrimination can be passed on from mother to child raises questions about the psychological and biological mechanisms through which this occurs. One possibility is that the mother's stress response to perceived discrimination affected the biological development of the child in a way that weakened the child's immune response. Although the present effects on children's health were observed at 14 months, this process could have begun during pregnancy or around the time of birth. A heightened chronic stress response may have influenced children's health prenatally, whether through the levels of stress-related hormones surrounding the fetus (Rich-Edwards & Grizzard, 2005) or through teratogens caused by risky health behaviors during pregnancy (Bennett et al., 2010). For example, low birth weight, an outcome of these teratogens, has been associated with increased health risks and developmental problems (McCormick et al., 1992). It follows, then, that children who are less healthy as newborns may continue to be less healthy at 14-months of age and beyond—a hypothesis requiring a longitudinal investigation.

It is also possible that increased stress caused by discrimination could interfere with good parenting practices. Perceived discrimination has been associated with increased negative mood in parents and negative parent-child interactions characterized by less parental warmth, communication, monitoring, and use of reasoning with the child (Broudy et al., 2007; Murry et al., 2001). Concerns about discrimination could distract mothers from caregiving activities that promote good health in the child or make them less likely to seek health care for themselves, which could, in turn, influence the child's health. A different possibility is that perceived discrimination may increase the mother's sensitivity to signs of illness in her child. Although the current study cannot determine the specific underlying mechanism (or mechanisms), it sets the stage for future research on these potential explanations.

A potential limitation in this study was the reliance on mothers' retrospective reports of sick-child visits to indicate their child's health. Such reports could be subject to memory errors. Although there were several factors supporting the validity of this index, a direct objective measure of health, such as data obtained from medical records, would have been more precise. Moreover, the measures used in this study did not assess more nuanced variables, such as the threshold at which a mother decided her child's physical symptoms indicated illness or warranted a doctor's visit.

It is also possible that the distinction between sick- and well-child visits may have been somewhat unclear to mothers and/or health care providers, although there was no evidence for such confusion in the sample. Nevertheless, to the extent that the reported index of child-sick visits was imprecise, it would have obscured the relation between perceived discrimination and child's health, reducing the strength of the present results. Despite these potential limitations, the current research revealed a novel and meaningful relationship between a mother's perception of discrimination and the health of her offspring.

Another potential limitation was that information on mothers' immigrant documentation status and possession of health care insurance was unavailable.² These factors could affect child doctor visits for illness through their associations with the variables of interest. For example, undocumented immigrants may feel ethnic and language-based discrimination more keenly if they have fewer resources to cope with the challenges of immigration, relative to documented immigrants. However, documentation would likely have affected the frequency of healthy checkups in addition to doctor visits for illness. Given that the results remained significant after adjusting for the frequency of well-child visits, it is unlikely that these findings are attributable to participants' documentation or health care status.

As immigrant families continue to arrive in the United States and elsewhere worldwide, it is increasingly important to study the links between discrimination and health. The findings of the present study suggest that when immigrant women face discrimination based on their ethnicity or the way they speak, their children's health can be at risk. However, feeling a close attachment to an ethnic community may be particularly important for newly arrived immigrant women in buffering the health risks associated with discrimination. The current findings are relevant to the health of Latino immigrant families, an important and urgent topic in the health field (Flores et al., 2002). More broadly, these findings demonstrate the strong link between social factors and health.

² Documentation status was assessed indirectly, as opposed to directly, (in compliance with IRB protocol) by asking whether anyone in participants' households had possessed or could obtain a savings account, checking account, credit card, and drivers' license (Yoshikawa & Kholoptseva, 2012). About 24% of the sample were from households that did not and could not possess any of the 4 items, which can be inferred to represent undocumented immigrant status; another 10% only possessed 1 item; 10% possessed 2 items, 20% possessed 3 items. About 38% possessed all 4 items, which can be inferred to represent documented immigrant status. Mexican families ($M = 1.70$, $SD = 1.71$) lacked more resources requiring identification than did Dominican families ($M = 3.21$, $SD = 1.05$), $t(93) = 5.05$, $p < .001$. Also, qualitative interviews with a few families in the current study suggest that most of the Mexican mothers were undocumented and most of the Dominican mothers were documented (see Yoshikawa & Kholoptseva, 2012).

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