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The Effect of Parental Immigration Authorization on Health Insurance Coverage for Migrant Latino Children

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Abstract *Objective*: To examine if immigration authorization among parents is associated with health insurance coverage for migrant Latino children. *Data Source*: A cross-sectional household survey of 300 migrant families for which one child, aged <13 years, was randomly selected. *Results*: Most children lacked insurance (73%) and had unauthorized parents (77%). Having an authorized parent or parental stay of more than 5 years in the US were each positively associated with children's health insurance coverage [OR: 4.9; 95% CI: (2.7–8.7) and [OR = 6.7; 95% CI: (3.8–12.0), respectively]. The effect of parental authorization did not persist in multivariable logistic regression analysis; however, more than 5 years of parental stay in the US remained associated with children's insurance coverage [OR = 4.8; 95% CI (1.8–12.2)], regardless of parental authorization. *Conclusion*: Increased parental familiarity with US health and/or social services agencies, rather than parental authorization status, is important to obtaining health insurance for migrant children. Efforts to insure eligible migrant children should focus on recently arrived families.

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Children in the US are more likely to lack health insurance when either they or their parents lack US citizenship [1–5]. However, few reports describe children's insurance coverage by whether or not their non-citizen parents are unauthorized or authorized migrants. Unauthorized migrants include persons who entered the US "without inspection" (and therefore lack documentation), overstay their visas, have an unresolved immigration status, or have temporary permission to remain in the US [6]. Authorized migrants include legal permanent residents, persons admitted for humanitarian reasons (i.e., refugees and asylees), or those with temporary authorization to work or live in the US [6]. Unauthorized migrants now are a sizeable population, and account for approximately 30% of the 37 million foreign-born US residents [6, 7]. Children and families are important components of the unauthorized population: two-fifths (41%) of unauthorized families contain children, and nearly two-thirds (64%) of children in unauthorized families are US citizens from birth [6]. Because health insurance is a key correlate of improved child health and access to care [8–13], if children's insurance coverage depends upon parental authorization, then even otherwise eligible US-born children may not receive needed health care.

Health services research studies rarely report findings for children in unauthorized families [14, 15]. One such study reported no effect of either parental authorization or duration of US residence on the prevalence or continuity of

children's insurance coverage [16]. This study examined Latino children in inner-city areas of Los Angeles, California who were between the ages of 12 and 36 months. Another such study that included children did not report results regarding insurance coverage or access to care for them [14]. A third study neither reported parental immigration authorization status nor examined the effect of parental duration of US residence on children's health insurance coverage [17]. Unfortunately, we lack other studies for children, from which to infer trends. Moreover, we cannot extrapolate inferences for children from studies of adults, where equivocal results reveal those unauthorized to be both more [18] and equally likely [19] to lack insurance compared to citizens or those authorized.
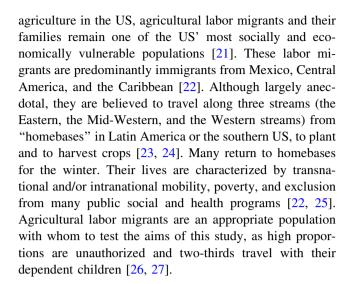
This analysis tests the independent association between insurance coverage for children and parental immigration authorization status. Our study differs from the LA study in two key ways. First, we analyze data from children of migratory agricultural laborers who work in rural areas of the eastern rather than western US coast. Second, the sampled children range in age from newborn through 12 years, an age range much wider than that in the prior study. These between study differences may affect variation in outcomes for insurance coverage by influencing health need as well as the availability of and access to health and social services.

We pose two research questions: (1) Which factors related to health services use are associated with children's insurance coverage and parental authorization? and (2) Is there an effect of parental authorization on children's health insurance coverage after accounting for the parent's length of stay in the US, and factors associated with health services use (children's health status, family enabling resources, and socio-demographic characteristics)? To address these questions, we used a modified Behavioral Model of Health Services Use [20] to consider need for care, enabling resources, and socio-demographic characteristics. Parental immigration status and length of stay in the US are newly included in the model as socio-demographic characteristics. We expected insured children and those with authorized parents to have less need for care, more enabling resources, and more favorable socio-demographic characteristics. We also expected children whose parents were unauthorized to be less likely to have health insurance coverage.

Methods

Study Population

Our study population is the children of agricultural labor migrants. Despite their longstanding importance to agriculture in the US, agricultural labor migrants and their families remain one of the US' most socially and economically vulnerable populations [21]. These labor migrants are predominantly immigrants from Mexico, Central America, and the Caribbean [22]. Although largely anecdotal, they are believed to travel along three streams (the Eastern, the Mid-Western, and the Western streams) from "homebases" in Latin America or the southern US, to plant and to harvest crops [23, 24]. Many return to homebases for the winter. Their lives are characterized by transnational and/or intranational mobility, poverty, and exclusion from many public social and health programs [22, 25]. Agricultural labor migrants are an appropriate population with whom to test the aims of this study, as high proportions are unauthorized and two-thirds travel with their dependent children [26, 27].

Sampling

Descriptions of the methodology used for this study have been previously published [28]. These data are from a cross-sectional, household survey of 300 migrant families in four eastern North Carolina counties. Each county had high or very high density for agricultural labor migrants; each also had either a hospital with an emergency department or a community/migrant health center available to migrant families. The school-based lists of the North Carolina Migrant Education Program provided the sample frame. The extensive outreach of this agency over the past 20 years to families, farmers, camps, and service agencies resulted in a comprehensive sampling frame for identifying *addresses* where migratory *families with children* are known to live. Random numbers from a hand-held calculator generated selected addresses in three of the four counties. No list was available for the 4th county; therefore, the interviewer was instructed to sample several noncontiguous addresses across the county.

Field Procedures

Data collection occurred over 2-½ weeks (8/9/1999 through 8/26/1999) during "peak harvest season", when the highest numbers of migrant workers are in North Carolina. Interviews were conducted by outreach workers fluent in Spanish and English, who were blinded to the study's hypotheses, and who completed a 4 h structured training session. Morning, afternoon, and evening interview times maximized respondent participation. Upon interview completion, respondents were remunerated with either a phone card to Mexico or a grocery voucher, both of $10 value. Voluntary informed consent preceded each interview.

Respondent and Child Selection

All households were screened, prior to interview, for migrant workers using the following definition: "an individual whose principal employment is in agriculture on a seasonal basis, who has been so employed within the last 24 months, and who establishes for the purpose of such employment a temporary abode" [29]. One child under 13 years old, per family, was selected as the unit of analysis using the "last birth date" method of selection [30]. The adult parent who knew the most about the selected child was interviewed.

Questionnaire Development

A 40-item questionnaire was developed for face-to-face interviews. In several cases, we used validated questions from the 1997 NHIS [31] and the 1999 National Agricultural Workers survey [32]. The questionnaire was translated into Spanish, and then independently translated back into English by professionals skilled in survey and document translation for Spanish speakers in general and migrant workers specifically. Cognitive testing of each question, via a focus group and a pre-test among Latina migrant mothers, refined the content and the syntax of the survey. All participants chose to be interviewed in Spanish.

Human Subjects Review

The Institutional Review Board of the University of North Carolina at Chapel Hill approved this analysis; the Johns Hopkins University Committee on Human Research approved the original study.

Variable Measurement and Coding

Dependent Variable

One dependent variable was examined—health insurance coverage. Children covered by any health insurance plan at any time over the 3 months prior to the interview were categorized as having insurance coverage.

Independent Variables

The primary covariate of interest was the immigration status of parents as authorized or unauthorized. Absence of an affirmative response to authorized immigration categories (US citizenship, green or resident card, temporary work visa—H2A, H2B, work permit or authorization) or an open-ended other category indicated unauthorized status [32]. Other covariates operationalized the components of

the Behavioral Model. Need for care was assessed by the parent's perception of the child's general health status over the prior year (excellent, very good, good, fair or poor). Enabling resources included interpreter availability for the child's medical visits, transportation for the child's medical visits (independent versus dependent upon others or walk), and the presence of any family member currently receiving benefits from the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Predisposing socio-demographic factors included the child's country of birth, gender, age, and mobility (number of address changes in the past year). For parents, these included their cumulative length of time in the US, the combined family income at the last paycheck, marital status, educational level, and ability to take time from work for medical attention for the child. Parental length of stay in the US captured the total number of years that the parent had lived in the US (dichotomized for analysis as more than 5 years versus 5 years or less). The difficulty or ease in taking time from work (very difficult, difficult, easy, very easy, do not work) was dichotomized for analysis (very difficult versus less than very difficult).

Statistical Procedures and Analysis, Sample Size, and Study Power

Statistical Procedures

Initially, descriptive statistics were used to examine frequency distributions of all study variables. Chi Square statistics and bivariate logistic regression analyses tested bivariate associations; relationships with ordinal variables were tested for trends. Among study variables, only one observation had missing data (difficulty leaving work for medical appointments), and only five had incomplete or "Don't Know" responses. Cold-deck imputation [30] of central tendency values was performed for these 6 values in order to retain the observations. Stata version 9.2 was used for data analysis [33]. Correlation matrices of all study variables assessed multi-collinearity (defined as $r > =0.8$). If multi-collinearity resulted in unstable estimates, a decision was made to omit one of the multi-collinear pair. Insurance coverage was found to be multi-collinear with children's birth in the US ($\rho = 0.83$; tetrachoric $\rho = 0.97$). Parental authorization and duration of US residence also were multicollinear (tetrachoric $\rho = 0.78$). The child's age was coded using a cut-point of 2 years, because age was not linearly associated with the logit of insurance coverage, and because very unstable age estimates resulted from all other and more commonly used categories (for example, using pre-school as a cut-point). For all analyses, the significance level was set at 0.05, and was two-tailed.

Statistical Analysis

We first investigated the unadjusted associations between each covariate and both parental authorization and insurance coverage. Multiple logistic regression analysis then examined the odds of children's insurance. We identified a parsimonious model by evaluating reduced models.

Sample Size and Study Power

Parents of 300 children, of 313 approached, were interviewed (95%). Study power to detect differences in characteristics between those insured and uninsured, with an alpha level of 0.05, was 99% or greater to detect differences of at least 20%, and greater than 80% to detect differences of at least 15%.

Results

Sample Descriptive Statistics

Sample characteristics previously have been reported [34]. Most study children lacked insurance (73%). Sixty children (20%) reported coverage by North Carolina's Medicaid program; only thirteen children (4%) reported coverage by North Carolina's State Children's Health Insurance Program. Few respondents (23%) were authorized workers (2% US citizens, 20% green or resident card, 1% work authorization or other temporary visa). Therefore, unauthorized migrants in this sample represent those entering the US without inspection. Moreover, few respondents had been in the US for more than 5 years (24%). Most respondents were married (86%) mothers (79%) who were born in Mexico (90%), and had less than a high school education (49%). Most also depended upon others for transportation to the child's medical appointments (56%), and indicated that it was difficult (34%) or very difficult (39%) to leave work for their child's medical care. The children included slightly more females (53%), and most were 2 years or older (86%), foreign born (69%, of whom 90% were born in Mexico), and were reported to have very good (64%) or excellent (20%) general health.

Factors Associated with Children's Insurance Coverage and Having an Authorized Parent

Prior to adjustment, more enabling resources and socio-demographic advantages were reported for insured, rather than uninsured children, as well as for children with authorized, rather than unauthorized parents (Table 1). Insured children were more likely to have authorized parents (OR: 4.9; 2.7–8.7) and worse perceived health (OR: 2.6; 1.4–4.8).

After adjustment, parental authorization showed no statistically significant effect on children's health insurance coverage (Table 2). However, parents who had been in the US for more than 5 years were more likely (OR: 4.8; 1.8–12.2) to have an insured child, compared to parents with five or fewer years in the US. Other factors independently associated with insurance coverage among children include having a family member with WIC, female gender, an age younger than 2 years, and having parents for whom it is not very difficult to leave work to seek medical attention for a child (all $P < 0.05$). Despite multicollinearity, stable estimates were observed in the full model for parental authorization and duration of US residence. In order to further investigate the lack of effect of parental authorization, we explored two separate full models—the first included an interaction term for authorization and duration of US residence, and the second included with a variable which combined the two covariates to jointly summarize parental authorization and duration of US residence. No statistically significant interaction was observed between a parent's immigration authorization and length of stay (OR: 1.03; 0.19–5.63, $P = 0.97$). Using the combined variable, children had significantly higher odds of being insured if their parents had been in the US for more than 5 years, regardless of the parent's immigration authorization ($P < 0.05$ for both groups of children whose parents had been in the US for more than 5 years, as compared to children whose parents were in the US for less time).

We developed a reduced (i.e., more parsimonious) model by removing from the full model (Table 2) all non-statistically significant covariates. Differences in log likelihoods between the full and reduced model were not statistically significant ($P > 0.45$). The reduced model accounted for 42% of the variability in children's insurance coverage.

Discussion

These analyses provide an important contribution to the health services research literature regarding characteristics of children with unauthorized parents, the effect of parental authorization on children's health insurance coverage, and factors associated with insurance coverage by migrant Latino children. Key findings indicate: (1) a lack of independent effect of parental authorization on children's health insurance coverage; however, a positive effect of longer parental residency in the US regardless of parental authorization, and (2) more health-related enabling resources and longer duration of US residence among

Table 1 Factors associated with insurance coverage and having an authorized parent for migrant Latino children

Characteristics	Authorized parent			Insurance coverage		
	N	Yes	No	Yes	No	OR, 95% CI[a]
Need for care indicators						
Less than very good health, past 3 months	55	23%	17%	30%	14%[†]	2.61 (1.42–4.81)
Enabling resources						
Insured, past 3 months	80	53%	19%[‡]	–	–	–
Interpreter for medical visits	104	79%	21%[‡]	65%	24%[‡]	6.00 (3.44–10.45)
Independent transportation	132	81%	33%[‡]	64%	37%[‡]	3.02 (1.77–5.13)
Family member with WIC	93	54%	24%[‡]	70%	17%[‡]	11.54 (6.36–20.91)
Socio-demographic factors						
Authorized parent	70	–	–	46%	15%[‡]	4.87 (2.74 –8.66)
Parent US stay more than 5 years	73	67%	11%[‡]	53%	15%[‡]	6.73 (3.77–12.04)
Female gender	160	46%	56%	64%	50%[*]	1.79 (1.05–3.03)
>$500 last pay check	107	54%	30%[‡]	44%	33%	1.59 (0.94–2.69)
Age (years) <2	43	14%	86%	40%	60%[‡]	12.67 (5.96–26.91)
Number of moves, past year[b]						
Three/four	49	10%	18%[†]	5%	20%[‡]	0.13 (0.44–0.39)
Two	132	34%	47%[†]	35%	47%[‡]	0.39 (0.23–0.69)
One or less	119	56%	35%[†]	60%	32%	1.00
Very difficult to leave work for						
Child's medical care	117	26%	43%[†]	14%	48%[‡]	0.17 (0.08–0.34)
Parent married	259	89%	86%	84%	87%	0.75 (0.36–1.53)
Parent education < High school	146	29%	55%[‡]	45%	50%	0.82 (0.48–1.36)

Total sample size = 300

[a] Unadjusted odds of insurance coverage

[b] trend: $P < 0.01$

χ^2 statistics tested categorical associations

Bivariate logistic regression models produced odds ratios

[*] $P < .05$; [†] $P < .01$; [‡] $P < 001$

parents of insured children, as well as those with authorized rather than unauthorized parents.

Increased familiarity of migrant parents with US health and/or social service agencies, rather than their immigration authorization, appears to be a key factor associated with obtaining insurance for migrant children. Parents with longer lengths of stay in the US may be more knowledgeable about the benefits of or how to obtain insurance for children. This could result from increased acculturation [35–37], or increased knowledge independent of acculturation. The positive effect of longer parental length of stay, regardless of parental authorization, suggests that fear of discovery and/or of the later inability to obtain citizenship are not deciding factors in obtaining health insurance for migrant children [38]. For similar reasons, it is unlikely that parental lengths of stay of more than 5 years reflect an effect of the transition of legal permanent residents to eligibility for public benefits.

Unique characteristics of health systems available to migrant families also may have influenced these results. Nationally, a system of federally-funded community health centers provides care to migrant workers and their families. Health-related enabling resources—such as interpreters, outreach professionals, and on-site pharmacies—are often important components of these centers. Such supportive settings may diminish fear of discovery among migrant workers [39], may be important sources of information about public health insurance programs, or may even promote enrollment of eligible children. Recent immigrants or those with fewer years of contact with US health systems may lack connection to or knowledge of these centers.

Insured migrant children have more need for care than those uninsured, despite their otherwise relatively greater resource and socio-demographic advantages. This finding differs from reports of improved health among insured,

Table 2 Multivariable logistic regression analyses of the odds of migrant Latino children's insurance coverage

Characteristics	Insured full model[a]		Insured reduced model[b]	
	OR	95% CI	OR	95% CI
Authorized parent	2.16	0.80–5.81	–	
Parent US stay more than 5 years	4.75[‡]	1.84–12.24	8.94[‡]	4.04–19.76
Family member with WIC	5.75[‡]	2.51–13.20	6.68[‡]	3.15–14.13
Female gender	3.84[‡]	1.68–8.76	3.41[†]	1.56–7.32
Age < 2 years	8.95[‡]	3.13–25.60	7.01[‡]	2.62–18.75
Very difficult to leave work for child's medical care	0.26[†]	0.10–0.65	0.26[†]	0.11–0.63
Pearson χ^2	161.90		43.42	
$P\chi^2$	0.96		0.004	
Log likelihood	–96.56		–100.48	
Lrtest full and reduced models				
LR χ^2	–		7.84	
$P > \chi^2$	–		0.45	
Pseudo R-squared	0.45		0.42	

[*] $P < 0.05$; [†] $P < =0.01$; [‡] $P < =0.001$

[a] Full model adjusted for health status, medical translators, transportation, income, mobility, parental marital and educational status—all of which lack statistical significance

[b] Reduced model adjusted for covariates in the reduced model

non-migrant US children, and appears counterintuitive; however, there are at least two plausible explanations. First, higher proportions of insured migrant children are of pre-school age, a time period of generally increased respiratory and gastrointestinal illnesses, as well as specifically of higher unmet medical need among migrant children [28]. Parents may perceive these children as less healthy and/or more vulnerable, and therefore be more likely to seek health insurance for them. Second, most uninsured migrant children are foreign-born, and may be selected for migration on the basis of good health [40]. Without the benefit of selection, those US -born would exhibit a wider range of health statuses, including poorer health.

Similar factors may underlie the observed association between children's age and insurance possession (and the resulting estimate instability). Specifically, older children may be selected for migration based upon their better health in order to assist with farmwork. If so, their perceived health needs may result from work-related injures that could be treated in emergency departments and without the need for insurance coverage. This association may be compounded by the higher prevalence of foreign birth and likely undocumented immigration status among older migrant children. In other words, because the majority of sampled parents are undocumented, their foreign-born children also are most likely undocumented, and therefore ineligible for public health insurance by law. Notwithstanding that all migrant children are members of one of the US' most vulnerable populations, however, those

children lacking insurance, with unauthorized parents, and with parents who are recent immigrants are especially vulnerable.

Limitations

Results from this study are strengthened by use of population sampling to capture a hard to reach and rarely studied population, high study power to detect between group differences, use of qualitative information from migrant mothers to refine the survey, use of outreach workers to interface with the respondents, and use of respondent anonymity. Despite these strengths, limitations to consider include use of a cross-sectional study design and use of self-report for parental authorization. We acknowledge the inability to ascribe cause from cross-sectional data; however, because insurance coverage cannot lead to a parent's authorization, we can be confident of the direction of the unadjusted association between parental authorization and children's health insurance coverage. Second, authorization is self-reported, and could be misclassified as a result of recall bias. This bias is less likely for migrant workers, who fit into a very limited set of temporary or unauthorized statuses. Moreover, the effect of misclassification of authorization due to its nature as a sensitive outcome is likely lessened, as bias would be expected to produce a lower than expected prevalence of the outcome. In this case, a large majority indicated (vol-

unteered) having the more sensitive outcome. Use of anonymity likely further reduced misclassification of this sensitive outcome.

Generalizability of these results should be considered. Our sample included migrants at one point in the Eastern Migrant Stream; therefore, results may not apply to migrants in other streams. In addition, these data were obtained in 1999 and prior to Welfare Reform legislation. However, we believe these associations remain relevant today for migrant children given the consistent policy environment related to public benefits for unauthorized US residents [15].

Conclusions

Migrant children are members of one of the US' most vulnerable populations; however, those insured or with authorized caretakers are advantaged with regards to resources and socio-demographic characteristics that generally promote health services use. Parental acculturation likely plays a key role in migrant children's insurance coverage. Foreign-born children, however, remain highly vulnerable to lack of insurance. These findings suggest that efforts to increase insurance coverage for eligible migrant children should focus on parents who are recent immigrants.

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