Access and Use of Health Care Services by Mothers and Children in the Texas-Mexico Border Region: Preliminary Findings from the 2006 Rio Grande Valley Health Survey

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Abstract

Background: Latino/a children have the highest rate of uninsurance among all ethnic/racial groups. There is some evidence that patterns of health care use between parents and their children are interrelated. Children are also more likely to have health insurance coverage if their parents are insured but public insurance programs do not cover all parents of participating children. The objective of this study was to assess whether there is a relation between patterns of health care utilization between Latina mothers and their children who reside in the South Texas-Mexico border region. Survey data on 495 Latina women with children from the 2006 Rio Grande Valley Health Survey were used to estimate bivariate probit models of the determinants of five health care access

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and utilization indicators. Patterns of health care utilization between Latina mothers and their children were positively related for having a usual place of care, visiting a doctor, visiting an emergency room, and having delayed health care needed. Both desirable and undesirable parental and child health care access/utilization patterns for Latinos/as are interrelated. Interventions that promote good health care utilization behavior for Latina mothers seem to spillover to their children. Public health insurance programs that focus on covering uninsured children but leave their parents uninsured may end up not taking full advantage of the positive spillover effects of health care access/utilization from mothers to their children.

Key Words
Uninsured; Latino/a; Hispanic; Children; Health Care

Resumen
Los niños latinos tienen la más alta tasa de no aseguramiento médico entre todos los grupos raciales. Hay evidencia de la interrelación padres – hijos en los patrones de cuidados de la salud. Los niños tienen mayor probabilidad de estar cubiertos si sus padres lo están pero los programas públicos de seguridad no cubren a todos los padres de los niños partici-pantes. El objetivo de este estudio fue evaluar la interrelación entre los patrones de utilización de cuidados de la salud entre madres latinas y sus hijos para residentes en la región de Texas fronteriza con México. Se utiliza la Encuesta de Salud del Valle de Río Grande 2006 con datos muestrales de 495 mujeres latinas con hijos y se estiman modelos Probit para cinco indicadores de acceso a los cuidados de salud. Los patrones de la utilización de los cuidados de la salud para madres latinas y sus hijos estuvieron positivamente relacionados para los indicadores de: lugar habitual de cuidado de la salud, visita al médico, visita a salas de emergencia y posposición en los cuidados. Los patrones de utilización de los cuidados de salud entre padres e hijos están interrelacionados tanto en formas deseadas como no deseadas. Las intervenciones que promueven una conducta de utilización de cuidados de la salud para madres latinas parecen extenderse a sus hijos por lo que los programas públicos de salud que se enfocan en los niños no cubiertos dejando de lado a los padres pierden este beneficio.

Palabras clave

Asegurados, Latino/a, Hispánico, Niños, Cuidados de la salud.

Introduction

Many communities in the U.S.-Mexico border region are characterized by high poverty rates and, not surprisingly, high uninsurance rates and low access to health care (Bastida, Brown and Pagán, 2007). About one of every four children and adults in Texas do not have health insurance coverage—the highest proportion in the U.S.—and access disparities are even higher in counties bordering Mexico. Slightly over one of every three children and adults in the Rio Grande Valley—which includes Cameron, Hidalgo, Starr and Willacy counties—are uninsured (U.S. Census Bureau, 2005).

Lack of health insurance coverage has important negative consequences in terms of access to health care and health outcomes not only for individuals but also for entire families (Institute of Medicine, 2002; Institute of Medicine, 2004). A recent report from the Institute of Medicine *(Health Insurance is a Family Matter)* concluded that children are more likely to have health insurance coverage if their parents are insured (Institute of Medicine, 2002). Many uninsured children are eligible for public programs such as Medicaid and the State Children's Health Insurance Program (SCHIP), yet, many uninsured children remain without health insurance coverage and there are several reasons for this. For example, many children become ineligible for some public health programs after a certain age and, thus, become uninsured as they get older. Employer-sponsored health insurance coverage is also important because the linkage between employment and health insurance coverage increases the chances that children become uninsured when parents transition from employment to unemployment, and vice versa.

Recent research also has shown that patterns of health care use between parents and their children are interrelated (Minkovitz et al., 2002). Parental age, ethnicity, race, education, socioeconomic status and the family unit structure are all connected to a child's use of health care services (Newacheck et al., 1998; Weinick, Weigers and Cohen, 1998). There is also some evidence that the self-reported health status of moth-

ers and their children are correlated (Minkovitz et al., 2002). What is not known is whether some of these results extend to low income mothers and children, particularly of Latino descent. Hispanics have the highest rate of uninsurance in the U.S. and a better understanding of the patterns of health care access and use between parents and children is an important health policy concern if we are interested in substantially reducing health disparities.

In this study, we report preliminary results from the 2006 Rio Grande Valley Health Survey (RGVHS), a telephone survey of 908 women between the ages of 19 and 55 residing in Cameron, Hidalgo, Starr and Willacy counties. More specifically, we collected extensive socioeconomic, demographic, health status and health care utilization data on mothers and one randomly-selected child from each household. The preliminary results reported here pertain to 495 mother-child pairs for which we had complete data.

The main objective of our study is to assess whether there is a relationship between patterns of health care utilization between border-dwelling Latina mothers and their children. This is an important policy-relevant issue because if good (and/or bad) health care utilization patterns of parents spillover to their children then it may make sense to facilitate health insurance coverage to all parents regardless of the health insurance status of their children. Current SCHIP policy in Texas provides health coverage to some—but not all—parents of insured children participating in this public health insurance program (Task Force on Access to Health Care in Texas, 2006).

Methods
Data Description

The 2006 Rio Grande Valley Health Survey includes socioeconomic, demographic, health status and health utilization data from 908 women between the ages of 19 and 55 that reside in Cameron, Hidalgo, Starr and Willacy counties in South Texas. The sample is representative of the estimated 290,811 women that resided in the RGV in 2006. Communities along this U.S.-Mexico border region have among the highest rates of poverty and uninsurance in the U.S. The most recent U.S. Census

estimates show that 323,852 people (32.4 percent) were uninsured in the four-county RGV area in 2000, 120,269 of them were children. About 32 percent of children/adults (34 percent of children) in this region were uninsured in 2000 (U.S. Census Bureau, 2005). Thirty-one percent of the population in this region lived below the poverty line in 2003 (42.5 percent of children ages 0-17) (U.S. Census Bureau, 2006).

Telephone interviews were conducted in English or Spanish depending on the preference of the respondent from January to September 2006. The survey included sections with questions on demographics, immigration, health status, employment, health insurance, health care utilization and participation in social programs. Mothers also answered questions in these seven areas about one randomly-selected child between the ages of one to 13 years of age residing in the same household.

Sampling weight adjustments were developed to account for households without a telephone and households with multiple residential telephone lines. Post-stratification adjustments were also conducted based on age, county of residence, education and income. The weighted sample is representative of women 19-55 residing in the four RGV counties (290,811 in 2006, based on our own projections from the 2000 U.S. Census and the 2004 American Community Survey).

Dependent Variables

We constructed five mother-child pairs of dichotomous dependent variables based on the mothers' answers to the following questions: (1) "Is there a place that you usually go to when you are sick or need advice about your health?" and "Is there a place where you usually take him/her when he/she is sick or you need advice about his/her health?; (2) "During the past 12 months, how many times have you seen a medical doctor about your own health? and "During the past 12 months, how many times has he/she seen any kind of medical doctor?"; (3) "During the past 12 months, did you visit a hospital emergency room for your own health?" and "During the past 12 months, did he/she visit a hospital emergency room?"; (4) "During the past 12 months, did you visit a dentist?" and "During the past 12 months, did he/she visit a dentist?; and (5) "During the past 12 months, did you delay getting any other medical care you

felt you needed, such as seeing a doctor, a specialist or other health professional?" and "During the past 12 months, did you delay getting any other medical care for your son/daughter you felt he/she needed, such as seeing a doctor, a specialist or other health professional?". The mother-child questions on (2) above about the number of visits to a doctor were coded as one for one or more visits, and zero otherwise.

We hypothesize that health care access/utilization patterns across these five dimensions—usual place of care, visiting the doctor, emergency room or dentist, and delaying medical care needed—are positively related between mother-child pairs, even after controlling for other factors that may be related to health care access/utilization.

Independent Variables

The determinants of health care access/utilization in a U.S.-Mexico border context for both mothers and children were selected based on the precept that access/utilization varies with the perceived need for health care services, individual predisposing characteristics and factors that enable access to and utilization of health care services (Andersen and Davidson, 2001; Andersen et al., 2002). The independent variables explaining the health care access/utilization patterns of children were years of age, gender, self-reported health status (fair/poor vs. good/very good/excellent), yearly household income (less than $10,000, between $10,000 and $30,000, between $30,000 and $50,000, and more than $50,000) and health insurance status (insured vs. uninsured). For mothers, the independent variables explaining health care access/utilization patterns were years of age, marital status (married vs. otherwise), immigrant status (immigrant vs. otherwise), self-reported health status (fair/poor vs. good/very good/excellent), education (less than high school, high school and some college, and college graduate), yearly household income (less than $10,000, between $10,000 and $30,000, between $30,000 and $50,000, and more than $50,000) and health insurance status (insured vs. uninsured).

Statistical Model

We estimated five bivariate probit regression models to analyze how

health care access/utilization varied for child-mother pairs across the independent variables included above (Greene, 2003). We used a bivariate probit specification because we are interested in evaluating the sign and statistical significance of the correlation coefficient of the residuals from the two jointly-estimated probit models. This coefficient tells us whether the health care access/utilization patterns of mothers and children are related even after controlling for all the factors posited to be related to access/utilization (i.e., perceived need for health care services, individual predisposing characteristics and factors that enable access to and utilization of health care services). The bivariate probit models were estimated using Stata 9.2 (StataCorp, 2005).

Results

Table 1 presents the weighted means and standard errors for all the child-mother variables. Ninety-six percent of children had a usual place where they obtained health care services but only 81.40 percent of mothers had a usual place for medical care. Ninety-three percent of children had at least one visit to a doctor in the last 12 months before the interview but only 80.44 percent of mothers had visited a doctor during the same time period. Only 12.00 percent of children had visited an emergency room in the last year compared to 16.08 percent of mothers. Seventy-four percent of children had visited a dentist within the previous year compared to only 34.77 percent of mothers. Only 4.00 percent of children report to have had any delays in health care within the past year compared to 7.60 percent of mothers.

TABLE 1: Sample Means

	Mean	SE	[95%	CI]
Child-Usual Place Care	.9636	.0103	.9433	.9839
Mother-Usual Place Care	.8140	.0230	.7688	.8593
Child-Doctor Visit	.9340	.0134	.9076	.9605
Mother-Doctor Visit	.8044	.0227	.7597	.8491
Child-ER Visit	.1200	.0196	.0834	.1565
Mother-ER Visit	.1608	.0221	.1174	.2042
Child-Dentist Visit	.7371	.0251	.6878	.7865
Mother-Dentist Visit	.3477	.0267	.2952	.4003
Child-Delayed Care	.0400	.0124	.0157	.0643
Mother-Delayed Care	.0760	.0159	.0446	.1074
Child-Age	5.2338	.1990	4.8425	5.6251
Mother-Age	33.2197	.4777	32.2801	34.1591
Child-Female	.4570	.0285	.4010	.5131
Mother-Immigrant	.7265	.0247	.6778	.7751
Child-Fair/Poor Health	.1058	.0177	.0710	.1406
Mother-Fair/Poor Health	.2769	.0254	.2270	.3269
Child-Insured	.7943	.0225	.7501	.8387
Mother-Insured	.2881	.0251	.2387	.3376
Married	.6908	.0274	.6370	.7447
Less than HS	.5433	.0281	.4880	.5986
HS & Some College	.3552	.0266	.3028	.4075
College Graduate	.1015	.0148	.0725	.1306
HH Income <$10K	.4490	.0288	.3925	.5056
HH Income $10K-$30K	.3945	.0275	.3404	.4487
HH Income $30K-$50K	.0872	.0148	.0580	.1163
HH Income >$50K	.0692	.0133	.0430	.0955

The mean age of children and their mothers was 5.23 years and 33.22 years, respectively. Almost three quarters of the mothers surveyed (72.65%) were immigrants. About 10.58 percent of the mothers reported that their children were in fair or poor health whereas 27.69 percent of mothers reported their own health to be fair/poor. Almost four-fifths of children (79.43 percent) were covered by any type of health insurance coverage compared to only 28.81 percent of mothers. This health insurance coverage rates are relatively low compared to what is typically reported for the U.S.-Mexico border region. The 2006 RGVHS only includes women between the ages of 19 and 55 and, consequently, the

health insurance coverage rates are likely to be much lower for this relatively younger population than for the overall population. Sixty-nine percent of women in the sample were married at the time of the interview. More than half of the mothers (54.33 percent) had less than a high school education, 35.52 percent had a high school education or some college, and 10.15 percent were college graduates. Almost 45 percent had a household income of less than $10,000 per year, 39.45 percent had a household income between $10,000 and $30,000 per year, 8.72 percent earned between $30,000 and $50,000, and only 6.92 percent had a household income of more than $50,000.

Tables 2 to 6 report the coefficients for the five bivariate probit models of child-mother health care access/utilization. Before proceeding with the main results based on the correlation coefficient of the estimated residuals, it is worth noting a few of the statistically significant determinants of health care access/utilization for both mothers and children. Table 2 shows that girls were less likely to have a usual place of health care than boys in our sample. Also, insured children were more likely to have a usual source of care. Children residing in households with income levels greater than $50,000 had a higher probability of having a usual place for obtaining health care than those earning less. Insured mothers were more likely to have a usual source of care than uninsured mothers.

TABLE 2: Bivariate Probit Model for Having a Usual Place of Care

	Coef.	SE
Child has Usual Place of Care		
Age	0.004	(0.026)
Female	- 0.370*	(0.199)
Fair or poor health	- 0.194	(0.278)
HH Income $10K-$30K	0.016	(0.196)
HH Income $30K-$50K	0.273	(0.328)
HH Income >$50K	5.751***	(0.244)
Insured	1.021***	(0.179)
Constant	1.051***	(0.245)
Mother has Usual Place of Care		
Age	0.010	(0.009)
Married	0.199	(0.150)
Immigrant	0.179	(0.165)
Fair or Poor Health	0.008	(0.153)
HS & Some College	- 0.100	(0.145)
College Graduate	0.153	(0.237)
HH Income $10K-$30K	0.169	(0.147)
HH Income $30K-$50K	0.003	(0.281)
HH Income >$50K	0.065	(0.333)
Insured	0.560***	(0.187)
Constant	-0.114	(0.385)
Rho	0.569***	(0.144)
Chi2		15.602
Observations	495	

Standard errors in parentheses
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

TABLE 3: Bivariate Probit Model for Having Visited a Doctor

	Coef.	SE
Child-Doctor Visit		
Age	- 0.029	(0.025)
Female	0.341*	(0.194)
Fair or Poor Health	0.101	(0.254)
HH Income $10K-$30K	- 0.054	(0.202)
HH Income $30K-$50K	0.060	(0.328)
HH Income >$50K	- 0.106	(0.345)
Insured	1.017***	(0.189)
Constant	0.770***	(0.250)
Mother-Doctor Visit		
Age	0.002	(0.010)
Married	0.205	(0.154)
Immigrant	- 0.017	(0.169)
Fair or Poor Health	- 0.016	(0.154)
HS & Some College	- 0.154	(0.149)
College Graduate	- 0.053	(0.226)
HH Income $10K-$30K	0.023	(0.151)
HH Income $30K-$50K	- 0.412	(0.259)
HH Income >$50K	- 0.005	(0.321)
Insured	0.552***	(0.178)
Constant	0.350	(0.383)
Rho	0.236*	(0.126)
Chi2	3.525	
Observations	465	

Standard errors in parentheses
* $p<0.10$, ** $p<0.05$, *** $p<0.01$

TABLE 4: Bivariate Probit Model for Having an Emergency Room Visit

	Coef.	SE
Child-ER Visit		
Age	- 0.051**	(0.024)
Female	0.035	(0.162)
Fair or Poor Health	0.366	(0.224)
HH Income $10K-$30K	- 0.236	(0.181)
HH Income $30K-$50K	0.306	(0.279)
HH Income >$50K	0.272	(0.283)
Insured	0.197	(0.202)
Constant	-1.161***	(0.243)
Mother-ER Visit		
Age	- 0.016	(0.012)
Married	0.038	(0.186)
Immigrant	0.016	(0.213)
Fair or Poor Health	0.558***	(0.184)
HS & Some College	0.105	(0.183)
College Graduate	- 0.222	(0.273)
HH Income $10K-$30K	- 0.429**	(0.184)
HH Income $30K-$50K	- 0.693*	(0.375)
HH Income >$50K	- 0.316	(0.363)
Insured	0.336	(0.209)
Constant	- 0.674	(0.440)
Rho	0.218*	(0.121)
Chi2	3.241	
Observations	489	

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

TABLE 5: Bivariate Probit Model for Having Visited a Dentist

	Coef.	SE
Child-Dentist Visit		
Age	0.038**	(0.019)
Female	- 0.060	(0.134)
Fair or Poor Health	- 0.234	(0.201)
HH Income $10K-$30K	0.007	(0.145)
HH Income $30K-$50K	- 0.133	(0.235)
HH Income >$50K	0.256	(0.294)
Insured	0.714***	(0.153)
Constant	-0.134	(0.204)
Mother-Dentist Visit		
Age	0.017*	(0.009)
Married	0.281*	(0.152)
Immigrant	- 0.057	(0.158)
Fair or Poor Health	- 0.301**	(0.148)
HS & Some College	0.173	(0.147)
College Graduate	0.326	(0.213)
HH Income $10K-$30K	0.416***	(0.148)
HH Income $30K-$50K	0.211	(0.242)
HH Income >$50K	0.815***	(0.287)
Insured	0.582***	(0.158)
Constant	-1.698***	(0.359)
Rho	0.069	(0.092)
chi2_c	0.569	
Observations	488	

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

TABLE 6: Bivariate Probit Model for Having Delayed Care

	Coef.	SE
Child-Delayed Care		
Age	0.000	(0.032)
Female	- 0.733**	(0.330)
Fair or Poor Health	0.366	(0.367)
HH Income $10K-$30K	- 0.932**	(0.419)
HH Income $30K-$50K	- 0.631	(0.441)
HH Income >$50K	- 0.561	(0.461)
Insured	- 0.656**	(0.290)
Constant	-0.782**	(0.347)
Mother-Delayed Care		
Age	0.002	(0.014)
Married	0.059	(0.269)
Immigrant	- 0.006	(0.251)
Fair or Poor Health	- 0.093	(0.251)
HS & Some College	- 0.119	(0.225)
College Graduate	-5.773***	(0.511)
HH Income $10K-$30K	0.088	(0.248)
HH Income $30K-$50K	- 0.256	(0.520)
HH Income >$50K	0.585	(0.528)
Insured	- 0.040	(0.296)
Constant	-1.509***	(0.500)
Rho	0.424*	(0.217)

Chi2	3.825	
Observations	388	

Standard errors in parentheses
* p<0.10, ** p<0.05, *** p<0.01

Table 3 reports the results for having visited a doctor at least once within the previous year. Girls were more likely to have visited a doctor than boys. Health insurance was a statistically significant determinant of doctor visits for both children and their mothers. Table 4 reports the results for visiting an emergency room within the previous year. The child's years of age was negatively related to having visited an emergency room. Mothers in fair/poor health were more likely to have visited an emergency room than those in good, very good or excellent health. Household income was negatively related to visiting an emergency room within the last year.

Table 5 shows that, for both the child and the mother, years of age were positively related to having visited a dentist within the last year. Insured children and mothers had a higher propensity of having visited a dentist than uninsured children and mothers. Married mothers were more likely to have visited a dentist than non-married mothers. Mothers in fair/poor health were less likely to have visited a dentist than those in good, very good or excellent health. Household income was positively related to having visited a dentist.

Table 6 shows the results for whether the child or the mother delayed needed health care within the last year. Girls were less likely to have delayed care than boys. Children with household income between $10,000 and $30,000 were less likely to report that they had delayed care than all others. Insured children were less likely to have delayed needed health care than uninsured children. Mothers with a college degree were less likely to report that they had delayed care than those that did not have a college degree.

Tables 2-6 also report the correlation coefficient for the residuals of the bivariate probit models. The residual correlation coefficients between the child and the mother probit equations were positive and statistically significant for having a usual place of care, visiting a doctor, visiting an emergency room, and having delayed health care needed. The coefficient was positive but statistically insignificant for having visited a dentist.

Discussion

Using survey data from the 2006 RGVHS we found that the residual correlation coefficients of child and mother bivariate probit equations of four health care access/utilization indicators were highly correlated. Regression-adjusted patterns of health care utilization between Latina mothers and their children were positively related for having a usual place of care, visiting a doctor, visiting an emergency room, and having delayed health care needed. The child-mother patterns were not statistically significant for having visited a dentist.

The results presented above are consistent with the premise that both desirable and undesirable parental and child health care access/utilization patterns for Latinos/as are interrelated. That is, good health care utilization behavior from Latina mothers—such as having a usual source of care and visiting a doctor—are strongly related to the health care utilization behavior of their children. However, poor health care utilization and access patterns for Latina mothers—in the form of visits to the emergency room and delaying needed medical care—are also strongly related to the health care utilization and access patterns of their children.

The results presented here have important health policy implications because they suggest that interventions that promote good health care utilization behavior for Latina mothers spillover to their children. Thus, for example, public health insurance programs that focus on covering uninsured children but leave their parents uninsured may end up not taking full advantage of the positive spillover effects of health care access/utilization from mothers to their children.

SCHIP was created as part of the Balanced Budget Act of 1997 with the goal of providing health insurance coverage to uninsured children of families who did not qualify for Medicaid and at the same time could not to purchase private health insurance coverage. The federal government pays for almost three-fourths of the Texas SCHIP and, still, Texas has returned money to the federal government every year since SCHIP began that could have been used to expand coverage to more families (Task Force on Access to Health Care in Texas, 2006). The results presented above provide further support to the idea that relaxing the eligibility

rules for uninsured parents of children covered by public health insurance programs may make sense if we want to promote a better use of the health care system by Latina mothers and their children.

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