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Association Between Parental Barriers to Accessing a Usual Source of Care and Children's Receipt of Preventive Services

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Abstract

Objectives: Preventive health services are important for child development, and parents play a key role in facilitating access to services. This study examined how parents' reasons for not having a usual source of care were associated with their children's receipt of preventive services.

Methods: We used pooled data from the 2011-2014 National Health Interview Survey (n = 34 843 participants). Parents' reasons for not having a usual source of care were framed within the Penchansky and Thomas model of access and measured through 3 dichotomous indicators: financial barriers (affordability), attitudes and beliefs about health care (acceptability), and all other nonfinancial barriers (accessibility, accommodation, and availability). We used multivariable logistic regression models to test associations between parental barriers and children's receipt of past-year well-child care visits and influenza vaccinations, controlling for other child, family, and contextual factors.

Results: In 2014, 14.3% (weighted percentage) of children had at least 1 parent without a usual source of care. Children of parents without a usual source of care because they "don't need a doctor and/or haven't had any problems" or they "don't like, trust, or believe in doctors" had 35% lower odds of receiving well-child care (adjusted odds ratio = 0.65; 95% CI, 0.56-0.74) and 23% lower odds of receiving influenza vaccination (adjusted odds ratio = 0.77; 95% CI, 0.69-0.86) than children of parents without those attitudes and beliefs about health care. Financial and other nonfinancial parental barriers were not associated with children's receipt of preventive services. Results were independent of several factors relevant to children's access to preventive health care, including whether the child had a usual source of care.

Conclusions: Parents' attitudes and beliefs about having a usual source of care were strongly associated with their children's receipt of recommended preventive health services. Rates of receipt of child preventive services may be improved by addressing parents' attitudes and beliefs about having a usual source of care. Future studies should assess causes of these associations.

Keywords

child health care, usual source of care, health services research, nonfinancial barriers, family structure

Parental factors play a role in children's health service use.¹ For example, mothers' patterns of health service use are strongly linked with their children's patterns,² even after accounting for other determinants of access to care.³ Parents' access to health care is also related to their children's health care in that children of parents without a usual source of care are more likely to have unmet medical or prescription needs than children with at least 1 parent with a usual source of care.⁴ In view of rising rates of adults without a usual source of care (from 17.8% in 1999-2000 to 19.7% in 2012-2013), this latter finding is concerning.⁵

Two preventive health services that are particularly important for children are well-child care visits and annual

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influenza vaccinations. The American Academy of Pediatrics recommends at least 1 well-child care visit each year beginning at birth and 1 influenza vaccination each year beginning at age 6 months.^{6,7} In 2007-2008, just 58.9% of children had the recommended number of well-child care visits.⁸ During the 2011-2012 influenza season, just 52% of children received an influenza vaccine.⁹ Deficiencies in the receipt of these and other preventive services disproportionately occur among children in racial/ethnic minority groups and disadvantaged socioeconomic groups.¹⁰ Although several explanations for disparities in children's receipt of health services have been proposed,^{11,12} few studies have examined the barriers to accessing health care that parents report for themselves.

Barriers to health care can be assessed with the framework developed by Penchansky and Thomas, which defines access to health care as a multidimensional construct reflecting the fit between patients' expectations and the availability, accessibility, accommodation, affordability, and acceptability of services provided.¹³ Policy makers typically focus on the affordability of access¹⁴ (eg, via legislation such as the Affordable Care Act, which focuses on increasing health insurance coverage and reduces patients' out-of-pocket costs for preventive care).¹⁵ Health insurance coverage improves health care access.¹⁶ However, it does not address nonfinancial barriers (ie, availability, accessibility, accommodation, and acceptability),¹⁷ which also contribute to disparities and inequalities in access and may sometimes have stronger effects than financial barriers.¹⁸ For example, in a study that asked a nationally representative sample of parents for the primary reason why their children did not have a usual source of care, 10% of respondents reported financial barriers and 74% cited nonfinancial barriers. Among parents reporting nonfinancial barriers, most (89%) cited that the primary reason their children did not have a usual source of care was that they were "seldom or never sick."¹⁹ A study of a nationally representative sample of adults reported similar barriers when asked about their own usual source of care; only 14% cited financial barriers as the major reason why they were unable to access a usual source of care, whereas 86% identified nonfinancial barriers. Of those citing nonfinancial barriers, 77% reported that they did not have a usual source of care, because they were "seldom or never sick."²⁰ This attitude toward having a usual source of care (ie, not having a usual source of care because of not being sick) was the primary barrier reported by adults across all racial/ethnic groups and was independent of poverty status and health insurance status.²¹ Thus, although removing financial barriers to health care is critical for improving access to care and reducing health disparities, nonfinancial barriers to health care, particularly patient and family attitudes and beliefs toward care, should also be considered.

We examined whether parental barriers to accessing a usual source of care were associated with the receipt of 2 children's preventive services. We examined financial barriers, parental attitudes and beliefs toward health care, and

other nonfinancial barriers in relation to children's receipt of well-child care visits and influenza vaccination. To assess independent associations between parental barriers and children's receipt of preventive services, we controlled for several child, family, and contextual variables, including child's access to care (health insurance status and usual source of care status), nativity status, family size, family structure, marital status, and indicators of socioeconomic status (parents' education level and household income).

Methods

Data

This study used pooled data from the 2011-2014 National Health Interview Survey (NHIS). The NHIS is an annual household interview survey administered by the National Center for Health Statistics to better understand the health of the US civilian noninstitutionalized population.²² The NHIS uses a multistage probability sampling design and oversamples African American and Hispanic households. In-person interviews conducted by trained US Census Bureau interviewers address a range of health topics affecting the whole family. In-depth questions are also administered to 1 sample adult ("adult core interview") and 1 sample child ("child core interview") from each household. Questions about children are answered by a knowledgeable adult family member.

From 2011 to 2014, a total of 52 365 families completed a child core interview, and 35 773 of those included an adult core interview with a parent (biological, adoptive, step, in-law, or foster). Data from foster parents were excluded ($n = 32$) because information on foster parent status was unavailable in 2013 and 2014. Also excluded from our sample were 621 families in which the parent did not report usual source of care status or the parent identified an emergency department as the usual source of care. Emergency departments do not meet the standard definition of a usual source of care,²³ but they were treated as such in the NHIS; therefore, questions about barriers to accessing a usual source of care were skipped, making key data from these families unavailable. Because our study focused only on children living with at least 1 parent, we excluded 277 families without a mother or a father. Data from the remaining 34 843 families were used for this study. Listwise deletion for item missingness, which was $\leq 2\%$ for all variables, reduced the final analytic samples to 34 617 families for the model of well-child visits and 34 234 families for the model of influenza vaccinations.

Dependent Variables

We measured children's receipt of preventive health services with 2 dichotomous variables (coded yes = 1 and no = 0) derived from responses to the following questions: (1) "During the past 12 months, did the child receive a well-child check-up; that is, a general check-up when he/she was

not sick or injured?” and (2) “During the past 12 months, has the child had a flu vaccination?” We identified both H1N1 and seasonal flu vaccinations as influenza vaccinations.²⁴

Primary Independent Variables: Parental Barriers to Accessing a Usual Source of Care

We identified parents as having a usual source of care if they indicated that they had a place where they usually went when they were sick or in need of health advice; those who responded “no” were later asked to choose from 9 preselected options to indicate all reasons for not having a “regular source of medical care.”²⁵ Building on previous work,^{18,26,27} we classified parental barriers to accessing a usual source of care into financial barriers and nonfinancial barriers, with nonfinancial barriers separated into parental attitudes and beliefs and all other nonfinancial barriers. Financial barriers correlate with the affordability dimension of Penchansky and Thomas’s framework and indicate the relationship of service costs to the patient’s ability to pay (eg, not having a usual source of care because of a lack of health insurance).²⁵ Parental attitudes and beliefs correlate with the acceptability dimension of access and included the following reasons for not having a usual source of care: “don’t like/trust/believe in doctors” and “don’t need a doctor/haven’t had any health problems.” Other nonfinancial barriers included all other dimensions of access, such as availability (eg, “previous doctor not available/moved”), accommodation (eg, “put it off/didn’t get around to it”), and accessibility (eg, “care too far away/not convenient”).¹³ We operationalized these barriers with 3 nonexclusive dichotomous variables, all coded as 1 = yes and 0 = no.

Covariates

The selection of child, family, and contextual variables was guided by previous studies of parents’ impact on health service use⁴ and included children’s sex, race/ethnicity, age, nativity status (US born/foreign born), health insurance status (public/private/no), usual source of care status (yes/no), functional limitation status (yes/no), and health status (ordinal scale, where 4 = excellent, 3 = very good, 2 = good, and 1 = fair/poor). Children were considered to have a functional limitation if they had any limitation in normal play activities because of physical, mental, or emotional problems.²⁸ Family and contextual characteristics included in the analysis were family structure (1-parent/2-parent household), marital status (married/not married), reported household income as a percentage of the federal poverty level, household education level measured as a dichotomous variable indicating whether at least 1 parent completed high school, US Census region (Midwest, Northeast, South, or West), and the number of children aged <18.

Two-parent families included married parents, unmarried parents, and families with at least 1 parent and 1 stepparent or cohabiting partner; parents could be biological or

adoptive.²⁹ Family structure is particularly important because 1-parent families have higher rates of access-to-care barriers than 2-parent families.^{30,31} However, some studies show that children in 1-parent families have equal or higher rates of receipt of preventive care when compared with children in 2-parent families.^{31,32} Differences in the allocation of resources (eg, financial, time available to organize and execute daily tasks, social support) between 1- and 2-parent families likely require different strategies to overcome access barriers, supporting the hypothesis—which we tested—that relationships between parental barriers and receipt of child preventive services may vary depending on family structure.

Statistical Analysis

We merged household, family, and sample adult data with sample child data and used weights provided with child data to adjust for the complex study design and survey nonresponse.³³ We compared characteristics of families having at least 1 parent with a usual source of care with children of parents without a usual source of care, stratified by family structure, using Pearson’s χ^2 tests for categorical variables and *t* tests for continuous variables. We calculated the percentage of children living with at least 1 parent without a usual source of care for each parental barrier for the total sample and by family structure. We tested differences over time through simple logistic regression analysis, with 2014 as the referent year. We then used multivariable logistic regression models for each dependent variable to estimate associations with all primary independent variables, while including all aforementioned covariates. To account for temporal variation in receipt of preventive services, we included a categorical variable for survey year, with 2011 as the referent year. We examined whether associations between parental barriers and receipt of children’s preventive services varied by family structure by including an interaction term (parental barrier by family structure) in the multivariable logistic regression models. We computed variance inflation factors to test for multicollinearity in all models, and multicollinearity was not detected. We conducted all analyses with Stata version 14.1 *svy* procedures,³⁴ using survey weights and NHIS design characteristics to adjust standard errors through the Taylor linearized variance estimator.³⁵⁻³⁷ We adjusted survey weights to account for the pooled data.³⁸

The protocol for this secondary analysis was approved by the Institutional Review Board at San Diego State University.

Results

In 2014, 53.4% (708 of 1327) of parents without a usual source of care reported not having one because of attitudes and beliefs about health care; specifically, 51.2% (679 of 1327) of parents reported that they “don’t need a doctor/haven’t had any problems” and 2.9% (38 of 1327) reported

Table 1. Parental reasons for not having a usual source of medical care among parents without a usual source of care (n = 5975^a), by year, National Health Interview Survey, 2011-2014^b

Reason	Total Respondents, % ^c (n = 5975)	Year, % ^c (P Value) ^d			
		2011 (n = 1511)	2012 (n = 1618)	2013 (n = 1519)	2014 (n = 1327)
Financial					
Too expensive/no insurance/cost	44.2	50.7 (<.001)	46.7 (<.001)	41.9 (<.001)	36.4
Attitudes and beliefs					
Don't need a doctor/haven't had any problems	44.8	37.9 (<.001)	42.3 (<.001)	48.9 (.10)	51.2
Don't like/trust/believe in doctors	3.0	3.4 (.61)	3.2 (.87)	2.4 (.30)	2.9
Other nonfinancial					
Other	6.6	7.3 (.45)	6.2 (.02)	5.1 (.002)	8.1
Put it off/didn't get around to it	4.9	5.4 (.30)	5.2 (.49)	4.3 (.51)	4.5
Don't know where to go	2.4	2.3 (.89)	2.3 (.46)	2.7 (.42)	2.3
Previous doctor unavailable/moved	2.3	1.5 (.003)	2.0 (.05)	2.6 (.21)	3.2
No care available	0.7	0.6 (.90)	0.7 (.29)	0.9 (.30)	0.5
Speak a different language	0.4	0.3 (.66)	0.4 (.70)	0.5 (.84)	0.5

^aReported reasons for not having a usual source of care were missing for 11 parents.

^bData source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 2011-2014.²²

^cPercentages do not total to 100.0, because parents could report >1 reason.

^dMean differences between reasons reported in 2014 and reasons reported in 2011, 2012, and 2013 were tested with 2-sample t tests. P values compare differences between each year and 2014. Two-sample t tests were used, with P < .05 considered significant.

that they “don’t like, trust, or believe in doctors” (Table 1). Of the 34 843 children in the sample, 28 311 (weighted percentage = 82.6%) had a well-child visit, and 16 021 (weighted percentage = 46.4%) received an influenza vaccination during the year in which they were surveyed between 2011 and 2014 (Table 2). Among 2-parent families, fewer children of parents without a usual source of care received a well-child care visit (weighted percentage = 75.2% vs 84.4%) or influenza vaccination (weighted percentage = 43.3% vs 48.4%) than children of parents with a usual source of care; the same pattern was present among 1-parent families. Similarly, all characteristics except for sex, functional status, and marital status (for 1-parent families only) differed by whether parents had a usual source of care. The most notable difference was that children who did not have a usual source of care were >6 times more likely than children with a usual source of care to have a parent who did not have a usual source of care (weighted percentage = 2.2% vs 14.6%, respectively, for children in 1-parent families; weighted percentage = 1.8% vs 12.2%, respectively, for children in 2-parent families).

Between 2011 and 2014, 14.3% (95% CI, 13.3%-15.4%) to 17.5% (95% CI, 16.5%-18.6%) of children lived with at least 1 parent without a usual source of care (Table 3). Rates of children living with parents who had financial barriers to care were lower in 2014 than in 2011-2013 for both 1- and 2-parent families (all P values ≤ .01). We did not observe consistent temporal patterns for parental attitudes and beliefs or other nonfinancial barriers. The percentages of children living with a parent without a usual source of care were similar for 1- and 2-parent families (except for during 2012), although more 1- than 2-parent families reported financial barriers each year, and more 2- than 1-parent

families reported attitudes and beliefs toward health care as barriers each year.

Associations between parental barriers and children’s receipt of preventive services did not differ by family structure (all P values for interaction terms ≥ .22, data available upon request). Therefore, results from the multivariable models are reported for 1- and 2-parent families combined. Parents’ attitudes and beliefs about having a usual source of care were associated with their children’s receipt of preventive care; specifically, children of parents without a usual source of care because of attitudes and beliefs had 35% lower odds of receiving a well-child care visit (adjusted odds ratio = 0.65; 95% CI, 0.56-0.74) and 23% lower odds of receiving an influenza vaccination (adjusted odds ratio = 0.77; 95% CI, 0.69-0.86) than children of parents not reporting attitudes and beliefs, after controlling for relevant child, family, and contextual characteristics (Table 4). Other parental financial and nonfinancial barriers were not associated with children’s receipt of preventive services.

Discussion

This study was the first to examine how parental barriers to accessing a usual source of care were associated with children’s receipt of 2 recommended preventive health services. Parental financial barriers were not associated with children’s receipt of preventive services. Parents who reported that they did not have a usual source of care because they “don’t need a doctor and/or haven’t had any problems” or because “they don’t like/trust/or believe in doctors” had children with lower odds of receiving annual well-child care or influenza vaccination than children of parents who did not report these reasons. Children’s receipt of preventive

Table 2. Child and family characteristics of US children aged 0-17 from 1- and 2-parent families, by whether or not parents have a usual source of care, National Health Interview Survey, 2011-2014^a

Characteristics	Total Sample	1-Parent Families			2-Parent Families		
		Usual Source of Care	No Usual Source of Care	P Value ^b	Usual Source of Care	No Usual Source of Care	P Value ^b
No. of respondents (%)	34 843 (100)	7881 (100)	1627 (100)		20 976 (100)	4359 (100)	
Child received a well-child care visit	82.6	83.0	75.3	<.001	84.4	75.2	<.001
Child received an influenza vaccination	46.4	43.4	38.3	.003	48.4	43.3	<.001
Child characteristics							
Age, y				<.001			<.001
0-1	11.2	7.1	10.2		11.7	15.6	
2-5	23.0	20.1	25.2		23.1	27.0	
6-11	34.1	35.0	34.7		33.8	33.8	
12-17	31.7	37.8	30.0		31.5	23.7	
Female sex	48.7	49.2	47.7	.419	48.3	50.3	.086
Race/ethnicity				<.001			<.001
Non-Hispanic white	57.3	42.6	38.6		65.5	44.9	
Hispanic	23.0	21.6	34.1		19.1	41.6	
Non-Hispanic black	13.4	32.1	23.5		8.1	7.7	
Non-Hispanic other	6.3	3.7	3.9		7.3	5.7	
Health insurance				<.001			<.001
None	5.8	4.5	12.1		4.3	13.7	
Public	37.0	57.9	70.1		25.4	53.1	
Private	57.2	37.6	17.9		70.3	33.2	
Does not have usual source of care	3.7	2.2	14.6	<.001	1.8	12.2	<.001
Health status				.008			<.001
Fair or poor	1.7	3.1	3.7		1.1	2.2	
Good	12.8	16.8	21.0		10.3	16.7	
Very good	25.5	26.1	26.7		25.4	25.0	
Excellent	60.0	54.0	48.7		63.3	56.1	
Has a functional limitation ^c	8.3	11.6	10.6	.429	7.5	6.8	.237
Was not born in United States	3.9	2.3	3.3	.030	4.0	6.8	
Family characteristics							
Parents are married	70.7	4.6	4.2	.546	92.7	85.1	<.001
Income				<.001			<.001
<100% FPL	20.3	40.8	52.6		10.3	28.2	
100%-199% FPL	20.4	25.4	26.1		16.7	30.1	
200%-399% FPL	27.8	20.2	13.2		32.0	22.9	
≥400% FPL	25.7	9.1	3.2		34.8	12.7	
Unspecified	5.8	4.5	4.9		6.2	6.0	
Household education level	10.1	16.1	23.8	<.001	5.8	18.6	<.001
<high school							
US Census region				<.001			<.001
Northeast	15.2	16.3	7.2		16.6	9.1	
Midwest	24.0	24.2	19.4		25.4	17.9	
South	37.0	40.0	50.7		34.1	42.8	
West	23.8	19.5	22.7		23.9	30.2	
No. of family members aged <18 y, mean (SD)	2.4 (1.1)	2.2 (1.2)	2.4 (1.4)	.001	2.4 (1.0)	2.5 (1.2)	<.001

Abbreviation: FPL, federal poverty level.

^aAll values are weighted percentages, unless otherwise indicated. Column percentages may not total to 100.0 because of rounding. Data source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 2011-2014.²²^bDifferences in characteristics between children of parents with a usual source of care and children of parents without a usual source of care were tested separately with the Pearson χ^2 test for independence (categorical variables) and the 2-sample *t* test (continuous variables). *P* < .05 was considered significant.^cChildren were considered to have a functional limitation if they had any limitation in normal play activities because of physical, mental, or emotional problems.²⁸

Table 3. Percentage of children aged 0-17 living with at least 1 parent without a usual source of care, by parental barrier type, for the total sample, 1-parent families, and 2-parent families: National Health Interview Survey, 2011-2014^a

Barrier	Year, % (95% CI) [P Value ^b]			
	2011	2012	2013	2014
Total sample				
Financial	7.7 (7.1-8.4) [$<.001$]	7.9 (7.2-8.7) [$<.001$]	7.2 (6.5-7.9) [$<.001$]	4.9 (4.4-5.6)
Attitudes and beliefs	6.7 (6.1-7.4) [.08]	7.9 (7.2-8.6) [.68]	8.7 (7.9-9.6) [.04]	7.6 (6.9-8.4)
Nonfinancial other ^c	2.8 (2.4-3.3) [.80]	2.8 (2.4-3.3) [.87]	2.6 (2.1-3.1) [.61]	2.7 (2.3-3.3)
Total without a usual source of care	16.1 (15.1-17.2) [.01]	17.5 (16.5-18.6) [$<.001$]	17.1 (16.0-18.2) [$<.001$]	14.3 (13.3-15.4)
1-parent families				
Financial	9.2 (7.7-10.9) [.005]	11.4 (9.8-13.2) [$<.001$]	10.0 (8.5-11.8) [$<.001$]	6.4 (5.2-7.7)
Attitudes and beliefs	5.1 (4.0-6.3) [.19]	6.4 (5.2-8.0) [.85]	6.2 (5.1-7.5) [.97]	6.2 (5.1-7.7)
Nonfinancial other ^c	3.0 (2.2-4.1) [.25]	3.4 (2.7-4.4) [.06]	2.7 (2.0-3.6) [.42]	2.3 (1.6-3.2)
Total without a usual source of care	16.1 (14.3-18.2) [.17]	20.2 (18.2-22.3) [$<.001$]	17.5 (15.6-19.6) [.003]	14.2 (12.5-16.2)
2-parent families				
Financial	7.3 (6.6-8.0) [$<.001$]	6.8 (6.1-7.6) [$<.001$]	6.3 (5.6-7.1) [$<.001$]	4.5 (3.9-5.2)
Attitudes and beliefs	7.3 (6.5-8.1) [.18]	8.3 (7.5-9.2) [.71]	9.5 (8.5-10.6) [.03]	8.1 (7.2-9.0)
Nonfinancial other ^c	2.8 (2.3-3.3) [.77]	2.6 (2.1-3.2) [.51]	2.5 (2.0-3.1) [.36]	2.9 (2.4-3.5)
Total without a usual source of care	16.1 (15.0-17.3) [.03]	16.7 (15.5-17.9) [.008]	16.9 (15.7-18.3) [.003]	14.3 (13.1-15.5)

^aData source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 2011-2014.²²

^bProbabilities result from simple logistic regression models with 2014 as the referent. Wald χ^2 tests were used to test significance, with $P < .05$ considered significant. All tests were corrected for the National Health Interview Survey design through Stata version 14.1 svy procedures.³⁴

^cOther nonfinancial barriers included "other," "put it off/didn't get around to it," "don't know where to go," "previous doctor unavailable/moved," "no care available," and "speak a different language."²⁵

services was not related to other nonfinancial barriers. Our results were controlled for several factors relevant to child health service use, including whether children had health insurance and whether they had a usual source of care.

Attitudes and beliefs toward health care have been the predominant reason for not having a usual source of care for the whole noninstitutionalized US population,^{19,21,39} for adults only,²⁰ and for children only.⁴⁰ Parents' attitudes and beliefs about their children's preventive health care (specifically well-child care visits⁴¹ and influenza vaccinations⁴²) have previously been related to reduced rates of receipt of care. Our study provides the first evidence that parents' attitudes and beliefs about their own health care may play a role in their children's receipt of recommended preventive health services.

The results presented here corroborate previous findings that living with a parent who does not have a usual source of care is related to children's receipt of preventive health services.^{4,43} Our estimates for the prevalence of children living with a parent without a usual source of care (ranging from 14.3% to 17.5%) were lower than the 2009-2010 estimates for the total US population aged 18-44 (20.3%)⁵ and substantially lower than estimates by a study using 2002-2007 data from the Medical Expenditure Panel Survey; in those data, approximately 31.8% of children were identified as living with at least 1 parent without a usual source of care.⁵ Differences in the survey designs of the Medical Expenditure Panel Survey and NHIS likely contribute to some of this variance. However, as reflected in the NHIS data (Table 3), the number of parents without a usual source of care has decreased over time possibly because of efforts by policy makers and others to improve access to care.

Our study findings also indicate that a larger proportion of our total sample reported nonfinancial barriers than financial barriers to accessing care. These findings are consistent with previous research²⁰ and confirm the need for policy makers to consider more than affordability of care in efforts to address disparities in health care access and maximize family well-being.⁴⁴

Practice Implications

It is intuitive that parents' access to health care is related to their children's receipt of health care services. However, most children in our study received recommended well-child care visits regardless of whether their parents had a usual source of care. For the remaining children, addressing nonfinancial barriers to care may be critical to ensuring that recommended services are received. For families reporting nonfinancial barriers to accessing care, sick-child visits may serve as an important point of contact and represent an under-used opportunity to increase future receipt of preventive services by children and parents. For example, during these visits, physicians or other health care staff members could administer brief interventions, such as the Right Question Project (<http://rightquestion.org>), which are intended to improve adults' engagement in care by having them play a more active role in medical decision making.⁴⁵ This model of engaging parents during their children's health care visits can be seen as an extension of the opportunistic preventive care delivery model that has proven to be both efficient and effective at improving uptake of preventive services in other settings and populations.^{46,47}

Table 4. Multivariable logistic regression results for the associations between parental barriers for having a usual source of care and children's receipt of 2 preventive services in the past year: National Health Interview Survey, 2011-2014^a (n = 34 843^b)

Variable	Adjusted OR ^c (95% CI) [P Value] ^d	
	Past-Year Well-Child Care Visit ^e	Past-Year Influenza Vaccination ^f
Parental barriers to having a usual source of care		
Financial	0.97 (0.85-1.11) [.68]	1.05 (0.93-1.19) [.40]
Attitudes and beliefs	0.65 (0.56-0.74) [<.001]	0.77 (0.69-0.86) [<.001]
Other nonfinancial	0.94 (0.75-1.19) [.62]	0.96 (0.80-1.15) [.66]
Child characteristics		
Age, y		
0-1	1.28 (1.06-1.54) [.01]	0.63 (0.57-0.69) [<.001]
2-5	1 [Reference]	1 [Reference]
6-11	0.41 (0.37-0.46) [<.001]	0.69 (0.63-0.74) [<.001]
12-17	0.35 (0.31-0.40) [<.001]	0.50 (0.47-0.54) [<.001]
Sex		
Male	1 [Reference]	1 [Reference]
Female	0.97 (0.90-1.04) [.33]	0.99 (0.94-1.05) [.84]
Race/ethnicity		
Non-Hispanic white	1 [Reference]	1 [Reference]
Hispanic	1.08 (0.96-1.21) [.20]	1.32 (1.22-1.42) [<.001]
Non-Hispanic black	1.55 (1.36-1.76) [<.001]	1.07 (0.99-1.17) [.10]
Non-Hispanic other	1.12 (0.96-1.30) [.14]	1.59 (1.42-1.78) [<.001]
Insurance status		
None	1 [Reference]	1 [Reference]
Public	2.52 (2.17-2.92) [<.001]	1.98 (1.73-2.26) [<.001]
Private	2.06 (1.77-2.38) [<.001]	1.79 (1.56-2.04) [<.001]
Has usual source of care		
No	1 [Reference]	1 [Reference]
Yes	3.38 (2.88-3.98) [<.001]	1.71 (1.44-2.02) [<.001]
Health status		
Fair/poor	1.00 (0.74-1.35) [.99]	1.47 (1.17-1.85) [.001]
Good	0.85 (0.76-0.95) [.004]	1.05 (0.96-1.14) [.28]
Very good	0.97 (0.89-1.06) [.51]	0.97 (0.90-1.04) [.38]
Excellent	1 [Reference]	1 [Reference]
Functional status ^g		
No limitation	1 [Reference]	1 [Reference]
Functional limitation	1.50 (1.28-1.76) [<.001]	1.29 (1.16-1.44) [<.001]
US born		
Yes	1 [Reference]	1 [Reference]
No	0.89 (0.75-1.06) [.19]	1.19 (1.04-1.38) [.02]
Family characteristics		
Family status		
1-parent household	0.90 (0.81-0.99) [.03]	0.91 (0.84-0.98) [.02]
2-parent household (married/cohabiting)	1 [Reference]	1 [Reference]
Marital status		
Married	0.91 (0.82-1.01) [.07]	1.09 (1.00-1.19) [.06]
Not married	1 [Reference]	1 [Reference]
Income		
<100% FPL	0.98 (0.86-1.11) [.76]	1.09 (0.99-1.20) [.08]
100%-199% FPL	1 [Reference]	1 [Reference]
200%-399% FPL	1.09 (0.98-1.22) [.11]	1.14 (1.04-1.24) [.005]
≥400% FPL	1.79 (1.58-2.04) [<.001]	1.56 (1.41-1.71) [<.001]
Unspecified	1.31 (1.07-1.60) [.01]	1.14 (0.99-1.30) [.06]
Household education level		
<High school	0.69 (0.60-0.79) [<.001]	1.21 (1.09-1.33) [<.001]
≥High school	1 [Reference]	1 [Reference]
Census region		
West	1 [Reference]	1 [Reference]
Northeast	2.53 (2.14-3.00) [<.001]	1.43 (1.30-1.57) [<.001]
Midwest	1.12 (1.00-1.26) [.05]	1.11 (1.02-1.21) [.02]
South	1.16 (1.04-1.29) [.008]	1.04 (0.96-1.13) [.31]

(continued)

Table 4. (continued)

Variable	Adjusted OR ^c (95% CI) [P Value] ^d	
	Past-Year Well-Child Care Visit ^e	Past-Year Influenza Vaccination ^f
Survey year		
2011	1 [Reference]	1 [Reference]
2012	1.03 (0.92-1.16) [.56]	0.99 (0.92-1.07) [.82]
2013	1.22 (1.09-1.37) [.001]	1.09 (1.01-1.18) [.04]
2014	1.38 (1.24-1.53) [<.001]	1.21 (1.12-1.31) [<.001]
Family members aged <18 y living in household ^h	1.03 (0.98-1.08) [.20]	0.99 (0.96-1.02) [.36]

Abbreviations: FPL, federal poverty level; OR, odds ratio.

^aData source: Centers for Disease Control and Prevention, National Center for Health Statistics. National Health Interview Survey, 2011-2014.²²

^bSample size before listwise deletion.

^cORs calculated from models controlling for child characteristics (age, sex, race/ethnicity, health insurance status, usual source of care status, functional limitation status, and nativity status) and family characteristics (marital status, household income, census region, and number of children aged <18).

^dWald χ^2 tests were used to test significance, with $P < .05$ considered significant.

^e $n = 34\,617$ after listwise deletion.

^f $n = 34\,234$ after listwise deletion.

^gChildren were considered to have a functional limitation if they had any limitation in normal play activities because of physical, mental, or emotional problems.²⁸

^hModeled as a continuous variable.

Limitations

This study had several limitations. First, the cross-sectional design of the NHIS and this study allowed for identification of associations rather than causes. Our estimates relied on self-reports—the primary methods for assessing access barriers—and were subject to recall and social desirability biases.

Second, this study was a secondary analysis of publicly available data that limited analyses to information provided in the NHIS. We obtained data on parents' usual source of care and barriers with the sample adult questionnaire administered to 1 adult in each household. As a result, data on usual source of care were unavailable for the second parent in 2-parent families. Having data on usual source of care from both parents, when present, would provide a more complete picture of family dynamics that may influence children's access to care.³¹ Future research should examine these issues in more detail. Third, data on receipt of other preventive services and the participant's state of residence were also not available. Fourth, the adult questionnaire did not measure barriers for parents who classified emergency departments as their usual source of care. Consequently, this relatively small sample ($n = 458$) was excluded from analyses.

Fifth, we were limited to assessing the barriers listed in the NHIS, which may not encompass all barriers preventing parents from accessing a usual source of care. However, the financial barriers listed (ie, too expensive, no insurance, cost) were broad enough to depict the relationship between the total price of accessing a usual source of care and the respondents' ability to pay. Nonfinancial barriers could include a wide array of reasons for not accessing a usual source of care, and although only 7 unique categories were provided in the NHIS, nonfinancial barriers not fitting those preselected reasons were measured by the "other" response category.

Last, parents play a key role in ensuring that their children receive appropriate curative and preventive health care. Parents' attitudes and beliefs about accessing care may or may not be similar to their attitudes and beliefs toward their children's preventive care, which were not measured by the NHIS.

Conclusion

Parental attitudes and beliefs toward their own health care are associated with their children's receipt of recommended preventive services, but financial and other nonfinancial barriers were not. Future studies could investigate the degree to which parents' attitudes and beliefs toward their own care reflect their attitudes and beliefs about their children's care and, most important, whether changing parents' attitudes and beliefs results in improved rates of receipt of preventive services among their children.

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