

Hispanic Children With Special Health Care Needs From Spanish-Language Households

abstract

OBJECTIVES: We examined the specific health care needs of Hispanic children with special health care needs (CSHCN) from Spanish-language households, and we compared the needs for children in this group to those for Hispanic and non-Hispanic white CSHCN from English-language households.

METHODS: We estimated the prevalence of parent-reported health care needs, health conditions, and functional characteristics by using data from the 2001 and 2005–2006 National Survey of Children With Special Health Care Needs. We used bivariate and multivariate methods to describe the relationship between ethnicity, language, and the demographic, socioeconomic, and health characteristics of CSHCN.

RESULTS: Between 2001 and 2005–2006, the prevalence of special health care needs increased significantly among Hispanic and non-Hispanic white children from English-language households but not among Hispanic children from Spanish-language households. In 2005–2006, Hispanic children from Spanish-language households were only one-third as likely as other children to be identified as CSHCN. Relative to both Hispanic and non-Hispanic white CSHCN from English-language households, Hispanic CSHCN from Spanish-language households had a higher prevalence of several developmentally related conditions and of functional difficulties related to gross and fine motor coordination, self-care, speech, and communication but had a lower prevalence of attention-deficit/hyperactivity disorder. Lower use of prescription medications was significantly associated with Hispanic ethnicity (regardless of household language) even after we controlled for demographic and socioeconomic differences.

CONCLUSIONS: Hispanic CSHCN from Spanish-language households are distinct from other CSHCN, and stratifying the Hispanic population by using primary household language can reveal important differences in the health and functioning characteristics of Hispanic CSHCN. *Pediatrics* 2010;126:S120–S128

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KEY WORDS

children with special health care needs, language, ethnicity

ABBREVIATIONS

CSHCN—children with special health care needs

NS-CSHCN—National Survey of Children With Special Health Care Needs

OR—odds ratio

ADHD—attention-deficit/hyperactivity disorder

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By 2020, it is projected that nearly 1 in 4 children in the United States will be of Hispanic origin.¹ Hispanic children are more likely to be without health insurance, live in households with incomes below the poverty level, and have lower levels of health care utilization and access than non-Hispanic children.^{2,3} However, the Hispanic child population has the lowest estimated prevalence of special health care needs relative to all other ethnic and racial groups except Asian children.^{4,5} The lower estimated prevalence of special health care needs in the Hispanic population is driven primarily by the substantially lower proportion of children with special health care needs (CSHCN) identified among Hispanic children from households with limited English proficiency. In 2001, the prevalence of CSHCN among Hispanic children whose parents responded to the National Survey of Children With Special Health Care Needs (NS-CSHCN) interview in Spanish (5%) was less than half that of Hispanic children whose parents responded in English (12%).^{4,6} Similarly, the 2003 National Survey of Children's Health and the 2004 Medical Expenditure Panel Survey revealed lower special-needs prevalence estimates (odds ratios [ORs]: <0.5) for children with Spanish (compared with English) as the primary language at home.⁵

This observed disparity could be real (eg, if immigrant Hispanic children are indeed healthier^{7,8}), or it could result from underidentification of existing special needs as a result of health care access and communication barriers.^{9–11} The observed disparity could also raise concerns about the linguistic and cultural validity of the screening questions used to identify CSHCN in these surveys.¹² Results of cognitive testing, however, indicate that the Spanish translations of the questions are well understood both culturally

and linguistically by parents whose primary spoken language is Spanish.⁴ Psychometric assessment of the screening instrument also did not reveal any measurement bias when comparing Hispanic children from Spanish-speaking households to other groups of children.¹³

To better understand the nature of this disparity in CSHCN prevalence, we used data from the 2005–2006 NS-CSHCN to examine the health care needs of Hispanic children and focused on those who live in households in which Spanish is the primary language spoken. We also compared the health care needs of Hispanic children in 2005–2006 with estimates from 2001. In 2005–2006, for the first time, the NS-CSHCN collected information about the current conditions and health-related functional difficulties experienced by CSHCN. The availability of these data provided a unique opportunity to examine the health and functional status of Hispanic CSHCN from Spanish-language households relative to other population subgroups.

METHODS

The National Center for Health Statistics conducted the 2001 and 2005–2006 NS-CSHCN with funding from, and in collaboration with, the Maternal and Child Health Bureau (MCHB). The design and administration of these surveys are described in detail elsewhere.^{6,14} In brief, the NS-CSHCN is a cross-sectional survey that uses random-digit dialing to identify households with children younger than 18 years. A telephone interview is conducted with a parent or other guardian who is knowledgeable about the children's health. The interview uses a 5-item screening tool, the CSHCN Screener, to identify children who meet the MCHB definition of CSHCN.¹²

The parent-reported data we used to produce CSHCN prevalence estimates are from the "screener" data files for

the 2 surveys. The 2005–2006 data file includes screening data for 363 183 children from 191 640 households; 55 767 CSHCN were identified. The 2001 data file includes screening data for 372 174 children from 196 888 households; 47 371 CSHCN were identified. The overall weighted response rate for the screening interview was 62.4% in 2001 and 57.8% in 2005–2006.

In households identified as having 1 or more CSHCN, 1 child with special health care needs was randomly selected to be the subject of the detailed health interview. We used data from these interviews to compare the socio-demographic, health care, health status, and functional characteristics of Hispanic and non-Hispanic CSHCN. The interview-completion rate among households with known CSHCN was 96.2% in 2005–2006 ($N = 40\,723$).⁶

Key Variables

The NS-CSHCN collects data on Hispanic ethnicity and child race separately. To protect respondent confidentiality, the primary household language information in the 2005–2006 survey is released as a dichotomous variable that indicates household language as English or non-English. Respondents from 8.4% of the households in the 2005–2006 sample named a language other than English when asked "what is the primary language spoken in your home."⁶

We used the information described above to develop a proxy indicator for identifying Hispanic and non-Hispanic children from households that had English or Spanish as the primary language. Among the Hispanic children whom we defined for this article as living in "Spanish-language households," 1.9% lived in households in which another language was the primary language and could not be excluded from the analyses on the basis of the available dichotomous primary-language variable. We excluded 2.5% ($n =$

10 201) of the total 2005–2006 screener sample and 0.5% ($n = 211$) of the detailed interview sample because of unknown or missing responses to questions about race, Hispanic ethnicity, primary household language, or some combination of these factors. Because of the focus of this analysis, we did not include the relatively small group of non-Hispanic children from households with primary languages other than English. Our final analytic samples for the 2005–2006 NS-CSHCN included 345 892 children from the screener file and 40 246 CSHCN with detailed interviews.

In 2001, the NS-CSHCN did not collect primary household language information. To compare prevalence estimates from this survey with those from the 2005–2006 NS-CSHCN, we used the language-of-interview indicator from the 2001 publicly released data files to group children according to Hispanic ethnicity, race, and household language.

We examined 6 dichotomous outcomes involved in the identification of CSHCN: overall CSHCN Screener results and qualifying responses on each of the 5 screening criteria. To qualify as having special health care needs, a child must have been currently experiencing ≥ 1 of 5 health consequences attributable to a medical, behavioral, or other health condition that had lasted or was expected to last for ≥ 12 months. These consequences were (1) ongoing need for prescription medications, (2) ongoing need for more medical, mental health, or educational services than are usual for most children of the same age, (3) ongoing limitations in the ability to perform activities typical for children of the same age, (4) ongoing need for specialized therapies, and (5) ongoing need for treatment or counseling for an emotional, behavioral or developmental condition.¹²

TABLE 1 Prevalence of 0-to 17-Year-Old CSHCN, According to Child Ethnicity and Primary Household Language: United States, 2005–2006

	Hispanic, Spanish-Language Household, % (95% CI)	Hispanic, English-Language Household, % (95% CI)	Non-Hispanic White, English-Language Household, % (95% CI)
Prevalence of CSHCN	4.6 (4.2–5.0)	13.1 (12.2–14.0) ^a	15.6 (15.3–15.9) ^{a,b}
Prevalence of children who met CSHCN Screener criteria			
Prescription-medication criterion	2.9 (2.6–3.2)	9.4 (8.7–10.2) ^a	12.6 (12.3–12.8) ^{a,b}
Elevated-service-needs/use criterion	1.7 (1.5–1.9)	5.3 (4.8–5.8) ^a	6.2 (6.0–6.4) ^{a,b}
Functional-limitations criterion	1.0 (0.9–1.2)	3.1 (2.6–3.7) ^a	3.2 (3.1–3.3) ^a
Specialized-therapies criterion	1.2 (1.0–1.4)	2.6 (2.2–2.9) ^a	2.6 (2.5–2.7) ^a
Counseling or mental-health-treatment criterion	1.5 (1.2–1.7)	4.0 (3.6–4.4) ^a	4.3 (4.2–4.5) ^a

CI indicates confidence interval.

^a Differs significantly from estimate for Hispanic children in households with Spanish as the primary language ($P < .05$).

^b Differs significantly from estimate for Hispanic children in households with English as the primary language ($P < .05$).

The 2005–2006 NS-CSHCN asked parents whether, to the best of their knowledge, the child currently had any of 16 different health conditions or 14 specific functional difficulties. We included counts of parent-reported conditions or difficulties dichotomized into 0 and ≥ 1 as dependent variables for some analyses.

Data Analysis

We used bivariate methods to describe the relationship between race/ethnicity, primary household language, and demographic, socioeconomic, health insurance, and health characteristics (including CSHCN prevalence). We used a design-based F statistic to test row and column independence. We evaluated the pairwise differences by using 2-tailed t tests at the .05 level of significance. No adjustments were made for multiple comparisons.

We used multivariate logistic regression to control for demographic and socioeconomic factors to better understand overall differences in health characteristics across the CSHCN groups in our study. Covariates in the logistic model were child age and gender, poverty status and highest education level in child's household, and child's health insurance status. We weighted the analyses to represent the

noninstitutionalized US child population, and we used SPSS 17.0 with the complex-samples module¹⁵ to appropriately adjust variance estimates for the survey design.

RESULTS

Nearly half of the 51 488 Hispanic children screened for special health care needs in 2005–2006 were from households in which Spanish was the primary language (Table 1). Hispanic children in these households were only approximately one-third as likely to be identified as having special health care needs compared with both Hispanic and non-Hispanic white children from English-language households (Table 1). In addition, Hispanic children in Spanish-language households were one-half to one-third as likely to meet each screening criterion (on the basis of parent report) compared with both Hispanic and non-Hispanic white children from English-language households.

In contrast, Hispanic and non-Hispanic white children from English-language households had similar probabilities of being identified as having a special health care need by each of the 5 screening criteria, with 1 exception (Table 1): Hispanic children from English-language households were signifi-

TABLE 2 Prevalence of 0- to 17-Year-Old CSHCN, According to Child Ethnicity and Language of Interview: United States, 2001

	Hispanic, Spanish-Language Household, % (95% CI)	Hispanic, English-Language Household, % (95% CI)	Non-Hispanic White, English-Language Household, % (95% CI)
Prevalence of CSHCN	5.1 (4.6–5.7)	11.7 (11.0–12.5) ^a	14.2 (14.0–14.5) ^a
Prevalence of children who met CSHCN Screener criteria			
Prescription-medication criterion	2.4 (2.0–2.7)	8.4 (7.7–9.0)	10.9 (10.7–11.1) ^a
Elevated-service-needs/use criterion	2.6 (2.2–3.0) ^a	5.9 (5.9–6.4)	6.4 (6.2–6.6)
Functional-limitations criterion	0.9 (0.7–1.2)	2.8 (2.5–3.2)	2.9 (2.8–3.0) ^a
Specialized-therapies criterion	1.1 (0.9–1.4)	2.1 (1.8–2.4) ^a	2.4 (2.3–2.5) ^a
Counseling or mental-health-treatment criterion	1.8 (1.5–2.2)	3.2 (2.9–3.7) ^a	4.0 (3.9–4.2) ^a

CI indicates confidence interval.

^a Differs significantly from the estimate obtained in 2005–2006 ($P < .05$) (the 2005–2006 estimates are listed in Table 1).

cantly less likely (9.4%) than non-Hispanic children (12.6%) to meet the prescription-medication criterion for special health care needs. This single factor accounts for the majority of the 2.5 percentage-point differences in CSHCN prevalence between Hispanic and non-Hispanic white children from English-language households in 2005–2006.

Compared with estimates from 2001, the prevalence of CSHCN had increased significantly in 2005–2006 for all groups except Hispanic children from Spanish-language households (Table 2). Among non-Hispanic white children from English-language households, this increase was largely a result of a significant rise in the proportion of children who met the prescription-medication screening criterion in 2005–2006. The growth in CSHCN prevalence for Hispanic children from English-language households is also explained by small but significant increases in the proportions of children who met the specialized-therapies criterion and the screening criterion for emotional, developmental, or behavioral problems in 2005–2006.

Demographic and Socioeconomic Differences

As shown in Table 3, Hispanic CSHCN from Spanish-language households

were younger and poorer than the other CSHCN subgroups and were at least 4 times as likely to be uninsured. Hispanic CSHCN from Spanish-language households were also more likely to lack regular sources for health care and to have not visited a doctor in the previous year. Although Hispanic CSHCN from English-language households had higher levels of health insurance coverage and doctor visits, they used the hospital emergency department nearly as often as Hispanic CSHCN from Spanish-language households.

Screening Criteria

Hispanic CSHCN (regardless of household language) experienced similar levels of treatment or counseling needs for emotional, developmental, or behavioral health issues and similar levels of functional limitations to those of non-Hispanic white CSHCN from English-language households (Table 4). Hispanic CSHCN from Spanish-language households were substantially more likely than other CSHCN to require specialized therapies for their health conditions. Hispanic CSHCN from Spanish-language households were less likely than Hispanic CSHCN from English-language households, and both Hispanic CSHCN groups were less likely than non-Hispanic white CSHCN from English-

language households, to use prescription medications to manage ongoing health conditions.

Current Health Conditions and Functional Difficulties

On the basis of parent report, Hispanic CSHCN from Spanish-language households were less likely than other CSHCN to have ≥ 1 of the 16 health conditions included in the NS-CSHCN (Table 4). In particular, they had the lowest prevalence of attention-deficit/hyperactivity disorder (ADHD) and allergies (Table 4). However, they had the highest prevalence of mental retardation or developmental delay, Down syndrome, and seizure disorders.

Non-Hispanic white CSHCN were less likely to experience ≥ 1 health-related functional difficulty than both Hispanic CSHCN subgroups (Table 4). Hispanic CSHCN from Spanish-language households had significantly higher levels of difficulties involving gross or fine motor coordination, self-care, blood circulation, communication, or speech. Hispanic CSHCN from Spanish-language households also seemed to have a higher prevalence of hearing aid use; however, the estimate lacked reliability because of the small sample size.

Multivariate Results

After we controlled for differences in age, gender, health insurance status, household poverty level, and educational attainment, Hispanic ethnicity remained significantly and strongly associated with a lower use of prescription medication for health conditions (ORs: 0.58 and 0.69 for Hispanic CSHCN from Spanish- and English-language households, respectively, relative to non-Hispanic white CSHCN from English-language households; see Table 5). Hispanic CSHCN from Spanish-language households were signifi-

TABLE 3 Sociodemographic and Health Care Utilization Characteristics of 0- to 17-Year-Old CSHCN, According to Child Ethnicity and Primary Household Language: United States, 2005–2006

	Hispanic, Spanish-Language Household, % (SE)	Hispanic, English-Language Household, % (SE)	Non-Hispanic White, English-Language Household, % (SE)
Gender, male	60.8 (2.5)	61.6 (1.7)	59.1 (0.5)
Age, y			
0–5	30.9 (2.5)	23.2 (1.5) ^a	19.4 (0.4) ^{a,b}
6–11	37.1 (2.5)	38.9 (1.7)	36.6 (0.5)
12–17	32.1 (2.3)	37.9 (1.7) ^a	44.0 (0.5) ^a
Household income, % of federal poverty level			
<100	50.1 (2.6)	25.2 (1.5) ^a	11.8 (0.4) ^{a,b}
100 to <200	36.2 (2.6)	26.0 (1.6) ^a	19.4 (0.4) ^{a,b}
200 to <400	9.6 (1.4)	27.6 (1.5) ^a	33.5 (0.5) ^{a,b}
≥400	4.1 (0.9)	21.2 (1.3) ^a	35.2 (0.5) ^{a,b}
Family structure			
2-parent family	47.5 (2.6)	57.8 (1.8) ^a	74.2 (0.4) ^{a,b}
Mother-only family	46.6 (2.6)	37.2 (1.7) ^a	20.8 (0.4) ^{a,b}
Other family structure	5.9 (1.3)	5.0 (0.7)	4.9 (0.2)
Language of interview			
English	23.8 (2.1)	96.5 (0.6) ^a	99.6 (.05) ^a
Highest education in child's household			
Did not graduate high school	35.8 (2.5)	9.6 (1.1) ^a	3.4 (0.2) ^{a,b}
High school graduate	34.1 (2.5)	27.7 (1.7) ^a	20.7 (0.4) ^{a,b}
At least some college	30.0 (2.3)	62.8 (1.7) ^a	75.9 (0.4) ^{a,b}
Health insurance status			
Privately insured	16.7 (1.7)	52.7 (1.7) ^a	70.9 (0.5) ^{a,b}
Publicly insured	59.3 (2.5)	36.7 (1.7) ^a	20.1 (0.4) ^{a,b}
Both public and private	8.8 (1.4)	6.6 (0.8)	6.2 (0.2)
Uninsured	15.2 (1.7)	3.9 (0.5) ^a	2.8 (0.1) ^{a,b}
Usual source of care			
Doctor's office	38.7 (2.5)	73.4 (1.5) ^a	83.8 (0.3) ^{a,b}
Clinic or health center	48.9 (2.6)	19.9 (1.4) ^a	12.0 (0.3) ^{a,b}
No regular place or relies on ED	12.4 (1.7)	6.8 (0.8) ^a	4.1 (0.2) ^{a,b}
No. of doctor visits in previous 12 mo			
0	16.2 (2.1)	5.5 (0.8) ^a	3.1 (0.2) ^{a,b}
1–5	52.5 (2.6)	60.3 (1.7) ^a	57.9 (0.5) ^a
6–10	20.1 (2.1)	18.1 (1.2)	21.2 (0.4) ^b
≥11	11.2 (1.6)	16.1 (1.2) ^a	17.8 (0.4) ^a
No. of ED visits in previous 12 mo			
0	59.9 (2.5)	58.4 (1.7)	66.8 (0.5) ^{a,b}
1	14.9 (1.7)	18.1 (1.3)	17.8 (0.4)
≥2	25.2 (2.3)	23.5 (1.6)	15.4 (0.4) ^{a,b}

ED indicates emergency department.

^a Differs significantly from estimate for Hispanic children in households with Spanish as the primary language ($P < .05$).

^b Differs significantly from estimate for Hispanic children in households with English as the primary language ($P < .05$).

cantly more likely than the other CSHCN groups to require specialized therapies (OR: 1.38, relative to non-Hispanic white CSHCN from English-language households). Among Hispanic CSHCN, however, differences in the use of prescription medication and need for specialized therapies associated with Spanish language were non-significant after we controlled for vari-

ation in children's characteristics (Table 5).

After adjustment, the odds that Hispanic CSHCN from Spanish-language households had ≥ 1 of the 16 conditions were less than half those of non-Hispanic white CSHCN or Hispanic CSHCN from English-language households (ORs: 0.41 and 0.49, respectively; see Table 5). Hispanic CSHCN from

Spanish-language households had significantly lower adjusted odds than Hispanic CSHCN from English-language households of having ≥ 1 of 14 functional difficulties.

DISCUSSION

Between 2001 and 2005–2006, the prevalence of CSHCN from the NS-CSHCN increased significantly for all groups in our study except Hispanic children from Spanish-language households. The prevalence of CSHCN among Hispanic children from English-language households remained slightly lower than among non-Hispanic children. At the same time, the broad differential in CSHCN prevalence associated with language within the Hispanic child population^{3,9,16} persisted and even widened.

Results of our analyses indicate that Hispanic CSHCN from Spanish-language households were distinct from other CSHCN. They were younger, poorer, and less likely to be insured. Relative to other CSHCN, Hispanic CSHCN from Spanish-language households had a higher prevalence of mental retardation or developmental delay, Down syndrome, and epilepsy or other seizure disorders. Such conditions are neurodevelopmental and often diagnosed at birth or early in childhood; these conditions frequently have symptoms that unequivocally signal the need for medical care. The higher prevalence of several of these conditions is consistent with the significantly younger age of Hispanic CSHCN from Spanish-language households. The higher prevalence of functional difficulties related to gross and fine motor coordination, self-care, speech, or communication observed in the same population is congruent with limitations associated with these types of developmental conditions.

In contrast, Hispanic CSHCN from Spanish-language households had a

TABLE 4 Health Status of 0- to 17-Year-Old CSHCN, According to Child Ethnicity and Primary Household Language: United States, 2005–2006

	Hispanic, Spanish-Language Household, % (SE)	Hispanic, English-Language Household, % (SE)	Non-Hispanic White, English-Language Household, % (SE)
CSHCN Screener criteria			
Prescription-medication criterion	62.6 (2.5)	71.3 (1.6) ^a	80.6 (0.4) ^{a,b}
Elevated-service-needs/use criterion	36.3 (2.4)	40.6 (1.7)	39.7 (0.5)
Functional-limitations criterion	23.1 (2.2)	22.8 (1.5)	20.4 (0.4)
Specialized-therapies criterion	28.0 (2.2)	19.2 (1.3) ^a	16.9 (0.4) ^a
Counseling or mental-health-treatment criterion	31.0 (2.4)	31.2 (1.6)	27.7 (0.4) ^b
Health conditions			
Asthma	39.2 (2.6)	41.7 (1.7)	34.8 (0.5) ^b
ADD/ADHD	18.6 (2.1)	29.9 (1.7) ^a	30.4 (0.4) ^a
Autism or autism spectrum disorder	5.7 (1.1)	5.7 (0.8)	5.5 (0.2)
Down syndrome	2.5 (0.7)	1.1 (0.3)	0.8 (0.1) ^a
Mental retardation or developmental delay	20.9 (2.2)	12.2 (1.1) ^a	10.2 (0.3) ^a
Depression, anxiety, eating disorder, or other emotional problem	22.7 (2.0)	22.8 (1.4)	21.2 (0.4)
Diabetes	1.0 (0.3) ^c	1.8 (0.4)	1.6 (0.1)
Heart problem; congenital heart disease	2.9 (0.8)	3.5 (0.6)	3.9 (0.2)
Blood problem; anemia or sickle cell disease	2.3 (0.7) ^c	2.8 (0.5)	1.4 (0.1) ^b
Cystic fibrosis	0.4 (0.4) ^c	0.5 (0.4) ^c	0.3 (0.1)
Cerebral palsy	2.9 (1.0) ^c	1.7 (0.5)	1.7 (0.1)
Muscular dystrophy	1.8 (0.6) ^c	0.2 (0.1) ^{a,c}	0.2 (0.0) ^a
Epilepsy or seizure disorder	6.0 (1.1)	3.4 (0.6) ^a	3.5 (0.2) ^a
Migraines or frequent headaches	17.5 (2.0)	16.7 (1.2)	13.8 (0.3) ^b
Arthritis or other joint problems	3.6 (0.9)	4.2 (0.7)	4.0 (0.2)
Allergies	33.5 (2.4)	53.8 (1.7) ^a	53.9 (0.5) ^a
Child has ≥1 condition listed above	82.7 (1.9)	90.3 (1.1) ^a	91.1 (0.3) ^a
Functional difficulties experienced as result of health conditions			
Problems seeing, even when wearing glasses or contacts	5.3 (1.2)	3.2 (0.5)	3.5 (0.2)
Uses hearing aids	2.3 (0.8) ^c	0.7 (0.2) ^a	0.9 (0.1) ^a
Breathing/other respiratory problems	40.8 (2.6)	46.8 (1.7)	38.7 (0.5) ^b
Swallowing, digestion, or metabolism problems	11.5 (1.4)	11.0 (1.0)	10.5 (0.3)
Blood circulation problems	3.7 (0.9)	1.7 (0.4) ^a	1.9 (0.1) ^a
Repeated or chronic pain	21.9 (2.1)	20.7 (1.4)	15.7 (0.4) ^{a,b}
Self-care problems (eg, problems eating, dressing, bathing, etc)	22.5 (2.1)	13.1 (1.2) ^a	10.7 (0.3) ^a
Problems with coordination or moving around	20.0 (2.1)	14.9 (1.2) ^a	13.6 (0.4) ^a
Difficulty using hands or fingers	15.8 (1.7)	10.3 (1.0) ^a	11.0 (0.3) ^a
Problems with learning, understanding, or paying attention	44.2 (2.6)	44.5 (1.8)	39.9 (0.5) ^b
Problems with speaking, communication, or being understood	37.1 (2.5)	28.7 (1.6) ^a	19.9 (0.4) ^{a,b}
Feeling anxious or depressed	27.3 (2.1)	32.6 (1.6)	27.7 (0.4) ^b
Behavior problems such as acting out, fighting, bullying, or arguing	29.9 (2.4)	33.7 (1.7)	25.1 (0.4) ^{a,b}
Difficulty making or keeping friends	20.4 (1.9)	22.1 (1.5)	19.8 (0.4)
Child has ≥1 functional difficulty listed above	86.4 (1.8)	88.7 (1.1)	82.6 (0.4) ^{a,b}

The 0.0 value is >0.00 but <0.05. ADD indicates attention-deficit disorder.

^a Differs significantly from estimate for Hispanic children in households with Spanish as the primary language ($P < .05$).

^b Differs significantly from estimate for Hispanic children in households with English as the primary language ($P < .05$).

^c Estimate does not meet National Center for Health Statistics standards for reliability. The relative SE is >30%.

lower prevalence of ADHD than other CSHCN. The corresponding finding that ADHD prevalence was the same for Hispanic and non-Hispanic white CSHCN from English-language households suggests several interpretations. Conditions such as ADHD are typically not diagnosed until children reach school age. It is possible that ADHD symptoms are not as readily recognized in the school setting when children are bilingual or English-language learners. Language and cultural barriers may hamper effective communication of health concerns to children’s parents. Cultural differences may also play a role in how parents respond to the behavioral cues of their children. The data available from our study are insufficient to determine the extent to which cultural differences or other factors explain the lower ADHD prevalence associated with language in the Hispanic CSHCN population.

Lower Use of Prescription Medication by Hispanic CSHCN

The significantly lower use of prescription medications by Hispanic CSHCN is consistent with patterns in the broader child population. Previous studies associated lower parent-reported prevalence of asthma and ADHD among Hispanic children with lower overall rates of medication use by that population. Results of other studies have indicated that prescription-medication use in Hispanic children increases with family acculturation level and length of residency in the United States.¹⁷ We observed somewhat different patterns: Hispanic CSHCN from English-language households in our study had the same levels of ADHD and allergies as non-Hispanic white CSHCN and a higher prevalence of asthma, yet they were significantly less likely to be using prescription medicine for any health condition. In fact, after we adjusted for demographic and socioeconomic dif-

TABLE 5 Adjusted ORs From Logistic Regressions Predicting Health Status on the Basis of Child Ethnicity and Primary Household Language for 0- to 17-Year-Old CSHCN: United States, 2005–2006

Dependent Variable	Hispanic, Spanish-Language Household	Hispanic, English-Language Household	Non-Hispanic White, English-Language Household
Prescription-medication criterion			
Referent: non-Hispanic white, English-language household	0.58 (0.47–0.73) ^a	0.69 (0.57–0.78) ^a	1.00
Referent: Hispanic, English-language household	0.93 (0.70–1.23)	1.00	—
Elevated-service-needs/use criterion			
Referent: non-Hispanic white, English-language household	0.76 (0.61–0.94) ^a	0.99 (0.86–1.14)	1.00
Referent: Hispanic, English-language household	0.79 (0.60–1.04)	1.00	—
Functional-limitations criterion			
Referent: non-Hispanic white, English-language household	0.84 (0.66–1.06)	1.02 (0.86–1.21)	1.00
Referent: Hispanic, English-language household	0.86 (0.64–1.16)	1.00	—
Specialized-therapies criterion			
Referent: non-Hispanic white, English-language household	1.38 (1.09–1.75) ^a	1.02 (0.85–1.22)	1.00
Referent: Hispanic, English-language household	1.33 (0.98–1.80)	1.00	—
Counseling or mental-health-treatment criterion			
Referent: non-Hispanic white, English-language household	0.90 (0.71–1.15)	1.08 (0.92–1.27)	1.00
Referent: Hispanic, English-language household	0.86 (0.86–1.16)	1.00	—
≥1 condition on list asked			
Referent: non-Hispanic white, English-language household	0.41 (0.31–0.56) ^a	0.85 (0.66–1.11)	1.00
Referent: Hispanic, English-language household	0.49 (0.33–0.72) ^a	1.00	—
≥1 functional difficulty on list asked			
Referent: non-Hispanic white, English-language household	0.79 (0.58–1.08)	1.41 (1.13–1.77) ^a	1.00
Referent: Hispanic, English-language household	0.53 (0.36–0.79) ^a	1.00	—

A multivariate logistic model was adjusted for the following covariates: child age; gender; poverty status of child's household; highest education level of anyone in child's household; and child's insurance status. Models in which non-Hispanic white CSHCN from English-language households were the referent included non-Hispanic non-white CSHCN as an additional comparison group. Results are not discussed because of limited space but are available from the authors.

^a The OR differs from 1.00 ($P < .05$).

ferences between the groups, Hispanic CSHCN from both language backgrounds had the same odds of using prescription medication for health conditions. This finding is particularly striking given the much lower prevalence of ADHD and allergies (2 conditions with a high likelihood of medication management) among Hispanic CSHCN from Spanish-language households. The patterns suggest cultural differences in parental perceptions regarding the appropriateness or effec-

tiveness of certain types of treatment for childhood health conditions experienced by CSHCN.

Our study also provides insights into the influence of prescription-medication use for health conditions on CSHCN prevalence estimates in general. Results of a recent study revealed that medication use in the US child population increased from 2002 to 2005. Use of prescription medicine for type 2 diabetes doubled, asthma-

medication use rose by >46%, and medicine use for ADHD increased by >40%.¹⁸ Our analyses identified the significant growth in use of prescription medication for health conditions by non-Hispanic white children as the primary explanation for the rise in CSHCN prevalence in that group from 2001 to 2005–2006. During the same time period, prescription-medicine use for health conditions in Hispanic children remained stable, and factors other than increased medication use explained the significant growth in CSHCN prevalence among Hispanic children from English-language households.

Limitations

All of the estimates presented here are subject to the usual limitations of random-digit-dial telephone surveys, including exclusion of households without landlines and problems obtaining cooperation from eligible households. We adjusted our sampling weights to minimize undercoverage and nonresponse bias, and results discussed in an unpublished report available from the National Center for Health Statistics (B. J. Skalland, MS, Non-response bias analysis: 2005–2006 National Survey of Children With Special Health Care Needs, unpublished report, March 2008) suggest that such bias is generally minimal. However, coverage and response biases may have been greater for Spanish-language households than for other subgroups.

Our study results do not indicate whether the lower prevalence of special health care needs among Hispanic children from Spanish-language households is a valid estimate of special health care needs for that population. Psychometric assessment of the CSHCN Screener has not revealed any measurement bias for this population,¹³ and the lower prevalence rates

are also consistent with lower rates of health conditions or disabilities found in other studies for Hispanic children from Spanish-language households.^{19–22} An earlier study identified reluctance on the part of Hispanic parents who have limited English proficiency to disclose details about their children's health to anonymous telephone interviewers,⁴ yet we found that the parents of Hispanic CSHCN living in Spanish-language households were as likely as parents of non-Hispanic white CSHCN to report the functional difficulties of their children.

Preferred language and primary household language can be considered robust indicators for level of acculturation at both the individual and population levels. However, our results are insufficient to identify whether associations with language in the Hispanic CSHCN population reflect differ-

ences in acculturation. The NS-CSHCN did not collect data on topics such as country of origin, legal residence status, length of time living in the United States, local presence of extended family, strength of religious/cultural affiliations, or other community supports.

CONCLUSIONS

Nationally, approximately half of the Hispanic children, or 11% of the US child population overall, live in households in which the primary language spoken is Spanish.^{4,23} Hispanic children from Spanish-language households are less likely to be identified as CSHCN, and Hispanic CSHCN from Spanish-language households are distinct from other CSHCN. We have described these differences here, but the reasons for them could not be tested. As suggested earlier, language may be a marker for access and communication barriers^{9–11} as well as culturally

determined perceptions of health and preferences related to seeking and using medical care,^{24–26} all of which may contribute to the key findings.

Child health researchers should continue to address language variations in the Hispanic population by including this stratification variable in their analyses. In our study, stratifying the Hispanic population by using primary household language revealed important differences in the health and functioning characteristics of Hispanic CSHCN. The granularity of this information has relevance for policy and practice.

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