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Shared Decision Making in the Care of Children with Developmental and Behavioral Disorders

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Abstract

Objective—Shared decision making (SDM) is most needed when there are multiple treatment options and no “right” choice. As with quality and experience of care, frequency of SDM may vary by health condition. The objectives of this study were (1) to compare parent report of SDM between a physical and a behavioral health condition and; (2) to compare parent report of SDM between two different behavioral health conditions.

Methods—Data on children age 3–17 years with asthma, attention deficit/ hyperactivity disorder (ADHD), and /or autism spectrum disorder (ASD) were drawn from the 2009/10 National Survey of Children with Special Health Care Needs. Weighted logistic regression was used to compare a parent-reported, composite measure of SDM. Analyses controlled for sociodemographic factors that may influence experience of SDM.

Results—Compared to parents of children with asthma, parents of children with ADHD were significantly less likely to report experiencing consistent SDM (aOR 0.73). Compared to parents of children with ADHD, those of children with ASD had significantly lower odds of experiencing

consistent SDM (aOR 0.59). Those with both ADHD and ASD had the same odds as those with ASD alone of experiencing consistent SDM.

Conclusion—Use of SDM is particularly limited in developmental and behavioral conditions, such as ADHD and ASD. These data suggest that challenges to implementing SDM may include disease type, complexity, and use of specialty care. Research to identify specific barriers and facilitators of SDM is needed to inform interventions that will promote SDM in developmental and behavioral conditions.

Keywords

shared decision making; chronic conditions; asthma; attention deficit/hyperactivity disorder; autism

INTRODUCTION

Medical decision making for pediatric chronic conditions often involves choosing among multiple treatment options, sometimes with limited evidence. Decision making can be particularly complex in developmental and behavioral pediatric conditions, such as attention-deficit/hyperactivity disorder (ADHD) and autism spectrum disorder (ASD). In these conditions, multiple treatment modalities have varying levels of evidence and treatment preferences may be strongly influenced by individual family, cultural, and societal values.(1) Such treatment decisions, with no “best” option or with multiple valid choices are ideal for shared decision making (SDM).

SDM is a process in which family members and healthcare providers use a bi-directional exchange of information about treatment options and families’ preferences to make decisions together.(2) It includes components such as the physician discussing a range of treatment options and respecting parents’ treatment choices. SDM may facilitate high-quality decision making and ensure that any variation in treatment occurs for the “right reasons,” specifically families’ preferences and values.(3) SDM has been encouraged by the Affordable Care Act and is part of the Maternal Child Health Bureau’s (MCHB) System of Care for Children with Special Health Care Needs (CSHCN) Core Outcomes.

This study focuses on 3 health conditions that exemplify different challenges for SDM in pediatrics: asthma, ADHD and ASD. Use of SDM in pediatric health conditions such as asthma and ADHD is particularly important to consider, since these conditions are prevalent and impact many children, adolescents and families. For both asthma and ADHD, treatment decisions can be made in the context of well-established evidence-based guidelines.(4, 5) However, the use of SDM may nonetheless differ; for instance, there may be more stigma attached to the use of medications for ADHD and the consequences of not treating ADHD may seem less medically serious to families than for asthma.(1) Both asthma and ADHD further vary from ASD, another relatively common condition, in that pharmacological treatments for ASD can address challenging behaviors but have limited supporting evidence.(6) Additionally, in both ASD and ADHD the option of non-pharmacological treatments adds further complexity to treatment decisions.

The most recent National Survey of Children with Special Health Care Needs (NS-CSHCN) included a measure of SDM, allowing the direct comparison of parental perceptions of SDM among children with different conditions.⁽⁷⁾ We hypothesized that parents of children with asthma (a physical condition) would perceive more consistent SDM than parents of children with ADHD (a behavioral condition). We further hypothesized that SDM would be less consistent in ASD than in ADHD, given the more pervasive nature of ASD symptoms, the greater diagnostic and treatment complexity and the higher levels of functional impairment associated with ASD.

METHODS

Data Source

Data came from the 2009–2010 NS-CSHCN, a random-digit dial telephone survey designed and sponsored by the MCHB and administered by the Centers for Disease Control's National Center for Health Statistics.⁽⁷⁾ A household is included if it has at least one child <18 years with special health care needs. The CSHCN Screener, a non-condition-specific, consequences-based measure,⁽⁸⁾ is used to assess special health care needs status.

A parent or guardian (subsequently referred to as “parent”) is interviewed about one CSHCN per household. If more than one CSHCN is present in a household, one is randomly selected. The combined landline and cell phone response rate in the 2009–2010 NS-CSHCN was 25.5%; the completed interview response rate was 80.8%.⁽⁹⁾

Sample

This analysis compared CSHCN having one or more of the following current conditions: asthma, ADHD, or ASD. The 09/10 NS-CSHCN defines CSHCN with current asthma as those answering “yes” to the item, “Has a doctor or other health care provider ever told you that [your child] had Asthma?” and “yes” to the item “Does [your child] currently have asthma?” The survey defines CSHCN with current ADHD as those answering “yes” to the item, “Has a doctor or other health care provider ever told you that [your child] had Attention Deficit Disorder or Attention Deficit Hyperactivity Disorder, that is, ADD or ADHD?” and “yes” to the item “Does [your child] currently have ADD or ADHD?” CSHCN with current ASD are defined as those answering “yes” to the item, “Has a doctor or other health care provider ever told you that [your child] had Autism, Asperger's Disorder, pervasive developmental disorder, or other autism spectrum disorder?” and “yes” to the item “Does [your child] currently have autism or an autism spectrum disorder?”

Since it was possible for children to have multiple conditions (e.g. ADHD and ASD), three groups were defined for each of our analyses. For the first comparison (asthma versus ADHD), we created three mutually exclusive groups of CSHCN age 3–17 years: asthma without ADHD (asthma), ADHD without Asthma (ADHD), and Asthma with ADHD (asthma+ADHD). For the second comparison (ADHD versus ASD), we defined three additional mutually exclusive groups: ADHD without ASD (ADHD), ASD without ADHD (ASD), and ASD with ADHD (ASD+ADHD).

Measures

SDM, a composite survey measure, and its four subcomponents are not condition-specific but reflect overall experience during the preceding 12 months. The subcomponents include “Child's doctors discuss a range of health care/treatment options,” “Child's doctors encourage parents to ask questions or raise concerns,” “Child's doctors make it easy for parents to ask questions or raise questions,” and “Child's doctors respect parent's treatment choices.” Each subcomponent is rated by parents on a four-point scale (never/sometimes/usually/always). Measure items showed acceptable internal consistency for both of our study samples (asthma/ADHD sample = 0.822; ADHD/ASD sample = 0.831) and item-total (item with rest) correlations from 0.609 to 0.724, similar to results previously reported for this survey's total CSHCN sample.(10) A child was considered to have received each subcomponent if the parent reported presence of the subcomponent “usually” or “always.” Families were considered to have received *consistent SDM*, based on conventional scoring for the composite measure, if parents reported receiving all four subcomponent measures “usually” or “always.”(11, 12)

Data Analysis

All analyses were performed in SPSS version 22.0 (Armonk, NY), using the Complex Samples module to weight the data according to the NS-CSHCN's sampling structure.

Descriptive statistics and chi-square tests compared socio-demographic factors, as well as type and number of health conditions between the asthma/ADHD subgroups and between the ADHD/ASD subgroups.

Chi-square test results were used to compare receipt of each SDM subcomponent as well as the composite SDM measure between the asthma/ADHD subgroups and between the ADHD/ASD subgroups. To reduce the likelihood of type I error, given that multiple comparisons were made, a more stringent alpha of 0.01 was used to determine statistical significance. We fit two multiple logistic regression models to estimate the adjusted odds of consistent SDM. In each model, the SDM composite measure (consistent SDM) was the dependent variable and the condition groups (e.g. asthma, ADHD, and ADHD+asthma) were the main independent variables. Models controlled for socio-demographic factors that might confound the relationships between the main explanatory and outcome variables through their association with differences in health status, health care quality (including shared decision making) or condition severity.(10, 13–15) These included: child age, gender, race/ethnicity, household language, household income relative to the federal poverty level (FPL), health insurance status and type, highest parental education level, family structure, and geographic region. We also examined the total number of co-morbid health conditions. However, models did not control for the presence of functional limitations or comorbidities, due to their direct relationship with our hypotheses.

The Bonferroni correction was made to determine if statistically significant differences between subgroups remained after accounting for the multiple comparisons made in these models. Variance inflation factors (VIFs) were obtained for the variables in each model. All

VIFs were <2 indicating estimates were unlikely to have been substantively biased by multicollinearity.

RESULTS

Study samples

Of the 37,561 CSHCN age 3–17 years, 21,788 had asthma and/or ADHD (Table 1). Compared to CSHCN with asthma (28.6% of all CSCHN, $n=10,413$), those with ADHD (24.1% of all CSCHN, $n=9267$) or with ADHD+asthma (6.8% of all CSCHN, $n=2108$) were older, more likely to be male, less likely to be Spanish-speaking, more likely to have public health insurance and more likely to have 4 comorbid conditions.

Among all CSHCN age 3–17 years in the survey, 13,083 had ADHD and/or ASD. Compared to those with ADHD (27.2% of all CSCHN, $n=10,087$), those with ASD (4.5% of all CSCHN, $n=1756$) or those with ASD+ADHD (3.5% of all CSCHN, $n=1240$) were younger, more likely to be male, more likely to have 4 comorbid conditions, more likely to live in a two parent household and had parents with more education.

Shared Decision Making—Physical vs Behavioral Chronic Condition

We first compared a physical condition (asthma) to a common behavioral condition (ADHD). For the composite SDM measure, in all groups of this unadjusted analysis (asthma, ADHD, ADHD+asthma), $<75\%$ of respondents reported consistent SDM (Table 2). Compared to those with asthma, those with ADHD or ADHD+asthma were less likely to report consistent SDM. Among those with ADHD there was no statistically significant difference between those with or without asthma.

Across the three subgroups the percent of respondents usually or always experiencing each SDM subcomponent was greater than 80%, with one exception: only 77.7% of children with ADHD+asthma had doctors who encouraged parents to raise concerns. Comparing ADHD to asthma, fewer parents of children with ADHD experienced doctors discussing a range of options or making it easy to ask questions. Parents of children with ADHD+asthma, compared to those with asthma, were less likely to report each subcomponent, except that doctors discussed a range of options. Comparing ADHD to ADHD+asthma there was no statistically significant difference for any subcomponent (Table 2).

Adjusted analyses showed that parents of children with ADHD or ADHD+asthma had significantly lower odds of having experienced consistent SDM relative to parents of children with asthma (table 3). These statistically significant differences remained after applying the Bonferroni correction for multiple comparisons ($P = .030$). No statistically significant difference was found in the adjusted odds of consistent SDM when comparing parents of children with ADHD to those with ADHD+asthma.

Shared Decision Making—Comparing Two Behavioral Conditions

For our second analysis, we compared SDM receipt in 2 behavioral conditions, ADHD and ASD. Across the three subgroups (ADHD, ASD, ASD+ADHD), $<70\%$ of respondents reported consistent SDM (Table 4). The group experiencing the least SDM was parents of

children with ASD+ADHD. In that group <60% reported consistent SDM. For all 4 subcomponents of SDM, fewer parents of children with ASD or ASD+ADHD reported usually or always experiencing each subcomponent, compared to parents of children with ADHD. Among those with ASD there was no statistical difference in any subcomponent between those with or without ADHD.

Results from adjusted multivariable logistic regression models further demonstrated that parents of children with ASD or ASD+ADHD had significantly lower odds of experiencing consistent SDM than parents of children with ADHD (table 5). These statistically significant differences in the adjusted odds of consistent SDM between those with ASD or ASD +ADHD and those ADHD remained after applying the Bonferroni correction for multiple comparisons ($P < .001$). No statistically significant differences in the adjusted odds of consistent SDM between parents of children with ASD and those with ASD+ADHD were found.

DISCUSSION

Although receipt of consistent SDM was suboptimal in all conditions we examined, it was particularly poor for developmental and behavioral conditions. Within the developmental and behavioral conditions examined, consistent SDM was less often experienced for families of children with ASD than with ADHD. Our results are consistent with 2 recent studies. The first examined SDM as a component of family centered care and found lower rates of SDM among children with ASD compared to other CSHCN, but did not examine specific diagnoses or SDM components.(16) The second used NS-CSHCN to compare SDM among children with physical conditions to those with mental health conditions, not including ASD.(17) However, our results contrast with a study, using the Medical Expenditure Panel Survey (MEPS), which showed similar SDM patterns for children with asthma or ADHD but had no direct comparison between groups.(18) Given that parents of children with ADHD+asthma reported SDM receipt more similar to that of parents of children with ADHD than of parents of children with asthma, we suspect that our ability to disentangle the two conditions allowed us to see differences that may be missed in a more heterogeneous group of patients. Additionally, differences in our SDM measures and statistical approaches may contribute to differences between that study and our own.

SDM receipt was particularly low among parents of children with ASD, with or without ADHD. Although some treatment decisions may not be amenable to SDM, decisions in ASD are unlikely to be in that category, given the many possible treatments with varying levels of evidence.(6) Another possible interpretation is that parents of children with ASD are uninterested in SDM. However, studies in other chronic conditions have shown that most parents are interested in participating in SDM.(19–22) Further, among adults it has been shown that patients have a greater interest in SDM for mental health conditions than for physical conditions.(23) Together these studies suggest that the low levels of SDM among parents of children with ASD are unlikely to be due to a lack of SDM appropriate decisions or lack of parental interest.

Healthcare system factors may contribute to the low receipt of SDM found among parents of children with developmental and behavioral conditions, particularly ASD. Our finding of less consistent SDM among parents of children with two common developmental and behavioral conditions is in line with studies showing low receipt of other domains of family-centered care, such as receiving care in a medical home, in ADHD and ASD.(16, 24, 25) Receiving chronic disease care in a primary care medical home, as in much of asthma and ADHD treatment, has been associated with higher levels of SDM.(10) This idea is further supported by research showing that having more clinicians and having subspecialists involved in a patient's care, which may be more common among those with ASD, can be a barrier to SDM.(26) Overall, both the quality of primary care and the receipt of care from subspecialists may contribute to parents' experience of SDM for their children with developmental and behavioral conditions.

In addition to healthcare system differences, disease severity may play a role in SDM. A child having more functional limitations, as well as parental perceptions of their child having poor general health, have been associated with lower perceptions of SDM.(10, 18) In our study we found that children diagnosed with two target conditions, asthma+ADHD or ADHD+ASD, received no less consistent SDM than those with ADHD without asthma or ASD without ADHD, respectively. In the setting of multiple diagnoses, one may dominate parents' experiences, and when answering general questions about SDM they may primarily consider that dominant condition. For asthma and ADHD, we hypothesize that ADHD may dominate parents' experience due to its continual rather than episodic nature and the increased stigma associated with a behavioral condition.(1, 22, 27) For ADHD and ASD, ASD is likely dominant given its more pervasive pattern of disability and functional impairment. Understanding the role of co-morbidities in the experience of SDM will be an important area for future research, especially given the high rates of co-morbidity among CSHCN.

Although the NS-CSHCN is a large and nationally representative data set, it has several limitations. These include a low response rate and reliance upon parent report for both diagnoses and shared decision making experience.(9) The survey only includes children who have positive responses to the CSHCN screener, and thus those with mild disease and/or who lack clear diagnoses may be excluded. Since the measure of SDM used in the NS-CSHCN is a general measure and not specific to condition, provider or decision, we are unable to assess any heterogeneity in parents' experience of SDM. Additionally, it is possible that parents' responses are due to experiences with healthcare providers other than those providing care directly related to the child's asthma, ADHD or ASD. Moreover, because the measure asks about parents' experience in the past 12 months, it is subject to recall bias, and responses are likely influenced by more recent healthcare experiences. Also, SDM may not be ideal for all clinical decisions nor the preference of all families.(28) However, given the general nature of this measure and the use of "usually" or "always" as a positive response, we propose that optimal SDM, as measured by this survey, should be close to 100%.

From our data it cannot be determined whether the differences in SDM are clinically meaningful nor whether they represent parents' full experience of SDM. Other members of

the care team, such as nurses and therapists, may engage in SDM behaviors which are not captured, as the survey asks specifically about doctors. We also have no information on the participation of children in decision making. Ideal SDM would include children in a developmentally appropriate manner.(2) Given the low levels of child participation in decision making seen in other studies(29, 30) it is likely that the rates of true SDM— involving clinicians, parents and children---are even lower than what we found.

Our study represents the first direct comparison, in a national sample, of SDM among an array of specific pediatric chronic conditions. Our results suggest that challenges to the widespread implementation of SDM may be related to the type of condition and aspects of the healthcare system. Disentangling these effects may facilitate more expeditious implementation of SDM, as promoted by federal agencies and the Institute of Medicine.(31, 32) Such implementation will benefit families through more family-centered care and increased use of treatments that are consistent with their goals and preferences. Research is needed to identify barriers and facilitators of SDM in pediatrics. Such research will inform interventions to promote SDM in pediatric chronic conditions, particularly in developmental and behavioral conditions where the disease complexity, treatment options and varying levels of evidence make SDM highly necessary.

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Table 1
Sociodemographic Characteristics among CSHCN Age 3–17 years, by Asthma, ADHD or ASD Status

	Asthma without ADHD		ADHD without asthma		ADHD with asthma		ADHD without ASD		ASD without ADHD		ASD with ADHD	
N		10 413		9267		2108		10 087		1756		1240
% (Proportion is among all CSHCN age 3–17 years)		28.6%		24.1%		6.8%		27.2%		4.5%		3.5%
Population estimate		2 949 205		2 486 931		692 104		2 806 073		454 990		359 084
Child Characteristics												
Age												
3–5 years		19.8%		3.8% **		5.1% **		3.5%		22.6% ##		8.8% ##
6–8 years		19.9%		17% *		18.4%		17.2%		23% ##		18.3%
9–11 years		22.6%		27.9% **		27.0%		27.3%		22.8%		30.5%
12–14 years		19.4%		27.6% **		24.7% *		26.9%		16% ##		27.5%
15–17 years		18.3%		23.8% **		24.9% **		25.1%		15.6% ##		14.9% ##
Gender												
Male		58.1%		69.2% **		69.6% **		67.8%		79.6% ##		81.6% ##
Female		41.9%		30.8%		30.4%		32.2%		20.4%		18.4%
Race/Ethnicity												
Hispanic		18.4%		12.7% **		15.1%		13.2%		17.0%		14.0%
White, Non-Hispanic		50.0%		68.1% **		53.9%		65.4%		62.7%		63.9%
Black, Non-Hispanic		22.4%		11.9% **		22.9%		14.8%		11.7%		8.7% ##
Other Race, Non-Hispanic		9.2%		7.3%		8.0%		6.7%		8.6%		13.5% #
4 Comorbid Conditions												
Yes		10.1%		27.9% **		66.6% **		30.5%		37.9% ##		79.7% ##
No		89.9%		72.1%		33.4%		69.5%		62.1%		20.3%
Household Characteristics												
Primary Household Language												
Hispanic/Spanish-Speaking		5.8%		3.1% **		2.1% **		2.8%		4.2%		3.9%
Hispanic/English-Speaking		12.6%		9.6% *		13.0%		10.4%		12.8%		10.1%

	Asthma without ADHD	ADHD without asthma	ADHD with asthma	ADHD without ASD	ASD without ADHD	ASD with ADHD
Non-Hispanic, English	81.6%	87.3% **	84.9%	86.8%	83.0%	86.0%
Household Income Level						
0%–99% FPL	22.4%	21.4%	35% **	24.9%	17.9% ##	18.8% #
100%–199% FPL	21.5%	23.2%	22.9%	23.1%	20.7%	23.3%
200%–399% FPL	29.2%	28.7%	24.1% *	27.2%	31.5%	32.0%
400% FPL	26.9%	26.7%	18% **	24.7%	30% #	25.9%
Health Insurance Type						
Private Only	55.0%	49.6% **	36.7% **	47.5%	48.4%	42.1%
Public Only	34.0%	38.8% **	51.4% **	41.9%	30.2% ##	37.5%
Public and Private Insurance	7.0%	8.6%	7.8%	7.3%	18.7% ##	17.3% ##
Uninsured	3.9%	3.1%	4.0%	3.3%	2.7%	3.1%
Highest Parental Education Level						
HS Diploma	30.7%	32.4%	42.4% **	35.4%	21.1% ##	27.3% #
>HS Diploma	69.3%	67.6%	57.6%	64.6%	78.9%	72.7%
Family Structure						
2 parents biological/adopted	57.2%	46.8% **	38.6% **	44.3%	69.1% ##	51.9% #
Single mother	28.5%	27.1%	36.6% **	29.3%	18.3% ##	28.1%
Other family structure	14.3%	26.1% **	24.8% **	26.4%	12.6% ##	19.9% #
Region of Residence						
Northeast	19.2%	17.2%	18.0%	17.0%	25% ##	21.0%
Midwest	22.4%	24.6%	20.2%	24.1%	20.7%	20.8%
South	38.3%	41.1%	48.7% **	43.2%	29.7% ##	38.0%
West	20.1%	17.1% *	13.1% **	15.7%	24.6% ##	20.2%

Abbreviations: ADHD, Attention Deficit and Hyperactivity Disorder; ASD, Autism Spectrum Disorder; CSHCN, children with special health care needs; FPL, federal poverty level.

^aCondition variables dichotomized as never/ever had condition vs. currently has the condition.

* p<0.01 compared to asthma;

** p<0.001 compared to asthma

p<0.01 compared to ADHD;

d>0.001 compared to ADHD

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Unadjusted Frequency of Shared Decision Making Subcomponents among CSHCN Age 3–17 Years, by Asthma and ADHD Status

Table 2

	Consistent Shared Decision Making (Composite Measure) (n=19 514)	SDM Subcomponent 1: Child's doctors discussed range of health care/ treatment options (n=19 625)	SDM Subcomponent 2: Child's doctors encouraged parents to raise concerns (n=19 601)	SDM Subcomponent 3: Child's doctors made it easy for parents to ask questions (n=19 621)	SDM Subcomponent 4: Child's doctor respected parents' treatment choices (n=19 582)
Asthma without ADHD	72.9% (71.3%–74.5%)	84.2% (82.9%–85.5%)	82.7% (81.3%–84.0%)	88.4% (87.3%–89.5%)	86.0% (84.8%–87.2%)
ADHD without asthma	68.5% (66.7%–70.3%)	80.1% (78.4%–81.6%)	80.2% (78.6%–81.8%)	85.2% (83.6%–86.7%)	84.0% (82.5%–85.5%)
ADHD+ Asthma	66.5% (62.9%–70.0%)	80.8% (77.7%–83.6%)	77.7% (74.4%–80.7%)	82.0% (78.9%–84.8%)	80.5% (77.2%–83.4%)
P-value ADHD vs asthma	P < .001	P < .001	P = .025	P = .001	P = .041
P-value ADHD+asthma vs asthma	P = .001	P = .028	P = .003	P < .001	P < .001
P-value ADHD+asthma vs ADHD	P = 0.318	P=0.655	P = 0.150	P = 0.052	P = 0.037

Abbreviations: CSHCN—children with special health; SDM—shared decision making; ADHD—attention deficit/hyperactivity disorder

Table 3

Unadjusted and Adjusted Odds Ratios for Consistent SDM among CSHCN with Asthma and/or ADHD age 3–17 years

	OR (95% CI)	AOR (95% CI)
Asthma without ADHD	1.00	1.00
ADHD without asthma	0.81 (0.72–0.91)	0.73 (0.64–0.83)
ADHD+asthma	0.74 (0.62–0.88)	0.79 (0.65–0.95)

Odds ratios adjusted for child age, sex, race/ethnicity, primary household language, insurance type, household income relative to the federal poverty level, family structure, region of residence, and highest level of parental education achieved.

Abbreviations: OR–odds ratio; CI–confidence interval; AOR–adjusted odds ratio; CSHCN–children with special health; SDM–shared decision making; ADHD–attention deficit/hyperactivity disorder

Unadjusted Frequency of Shared Decision-Making Subcomponents among CSHCN Age 3–17 Years, by ASD and ADHD Status

Table 4

	Consistent Shared Decision Making (Composite Measure) (n=11 744)	SDM Subcomponent 1: Child's doctors discussed range of health care/treatment options (n=11 808)	SDM Subcomponent 2: Child's doctors encouraged parents to raise concerns (n=11 788)	SDM Subcomponent 3: Child's doctors made it easy for parents to ask questions (n=11 796)	SDM Subcomponent 4: Child's doctor respected parents' treatment choices (n=11 780)
ADHD without ASD	69.6% (67.9%–71.3%)	81.7% (80.2%–83.0%)	80.9% (79.4%–82.3%)	85.8% (84.4%–87.1%)	84.4% (83.0%–85.6%)
ASD without ADHD	57.4% (53.5%–61.2%)	68.0% (64.2%–71.6%)	73.0% (69.4%–76.4%)	78.4% (74.8%–81.5%)	78.4% (74.8%–81.6%)
ASD+ADHD	56.6% (51.0%–62.1%)	69.4% (63.5%–74.7%)	70.2% (64.2%–75.6%)	74.9% (68.8%–80.2%)	75.3% (69.3%–80.4%)
P-value ASD vs ADHD	P < .001	P < .001	P < .001	P < .001	P < .001
P-value ASD+ADHD vs ADHD	P < .001	P < .001	P < .001	P < .001	P < .001
P-value ASD+ADHD vs ASD	P = 0.823	P = 0.693	P = 0.407	P = 0.299	P = 0.335

Abbreviations: CSHCN—children with special health; SDM—shared decision making; ADHD—attention deficit/hyperactivity disorder; ASD—autism spectrum disorder

Table 5

Unadjusted and Adjusted Odds Ratios for Consistent SDM among CSHCN with ADHD and ASD age 3–17 years

	OR (95% CI)	AOR (95% CI)
ADHD without ASD	1.00	1.00
ASD without ADHD	0.59 (0.49–0.70)	0.54 (0.44–0.66)
ASD+ADHD	0.57 (0.45–0.72)	0.51 (0.41–0.65)

* Odds ratios adjusted for child age, sex, race/ethnicity, primary household language, insurance type, household income relative to the federal poverty level, family structure, region of residence, and highest level of parental education achieved.

Abbreviations: OR–odds ration; CI–confidence interval; AOR–adjusted odds ratio; CSHCN–children with special health; SDM–shared decision making; ADHD–attention deficit/hyperactivity disorder; ASD–autism spectrum disorder