Supplemental Information

APPENDIX

Reporting of NHANES Prevalence Estimation

In accordance with the CDC analysis guidelines,[88] we calculated prevalence and variance estimates after applying the mobile examination center 6-year sample weights to take into account the complex sampling design by using the Survey package in R,[65,66] which uses Taylor series linearization methods for variance estimation. We constructed CIs by using the logit transformation through the svyby option in R, as recommended by CDC analysis guidelines.[88] Note that, given the complex sampling strategy of the NHANES surveys, the unweighted sample sizes (Table 3) could not be used in a binomial proportion test; thus, we used a 2-proportion *z* test to compare NHANES prevalence estimates with those from the ATN sample.

Reporting of Multivariate Imputation Procedures

As shown in Table 2, data were missing for ≤10% of each weight group for race, ethnicity, parent education levels, ADOS CSSs, and CBCL problem scores. Higher levels of missing data were observed for VABS-II, IQ, and CSHQ sleep scores. In the Multivariate Imputation by Chained Equations package in R,[89] we used predictive mean matching to impute continuous variables (ADOS severity, VABS Adaptive Behavior Composite, full-scale IQ, CSHQ total sleep disturbance, CBCL T-scores), logistic regression for categorical variables with 2 levels (ethnicity: Hispanic or Latino vs not Hispanic or Latino), and polytomous (unordered) regression for categorical variables with >2 levels (race, parent education levels). For the CSHQ total sleep disturbance score, individual item ratings were sometimes missing; the imputed item ratings were summed. Continuous variables that were analyzed as categorical (full-scale IQ, CBCL T scores) were transformed after imputation of the original continuous variable (ie, passive imputation). Note that age and gender were not imputed because the sample was selected based on their values. Missing data for several additional variables (any psychotropic drugs, any CAM, and GI disturbance) were replaced with zeros in analyses as a conservative approach and thus were not imputed. The Multivariate Imputation by Chained Equations procedure involved creating 20 multiply imputed data sets, performing statistical analyses (univariate and multivariate) on each imputed data set, and finally pooling the results of these analyses across data sets by using multiple imputation combining rules.[89]

SUPPLEMENTAL TABLE Complete-Case Multivariate Analyses ($N = 2076$; 2740 Observations Deleted Because of Missingness) to Predict Overweight and Obesity (≥85th and ≥95th Percentile for Age and Gender, Respectively) Among Children With ASDs

Variable	*n* (%) or Mean (SD) by BMI Percentile Range			Adjusted ORs (95% CI)	
	≥5th to <85th, $n = 1373$	≥85th to <95th, $n = 387$	≥95th, $n = 316$	Overweight	Obesity
Age, *n* (%)					
2–5 y	802 (58.4)	190 (60.1)	195 (50.4)	Reference	Reference
6–11 y	490 (35.7)	103 (32.6)	152 (39.3)	1.09 (0.88–1.35)	1.32 (1.02–1.71)*
12–17 y	81 (5.9)	23 (7.3)	40 (10.3)	1.46 (0.98–2.15)	1.78 (1.14–2.76)*
Male, *n* (%)	1152 (83.9)	265 (83.9)	320 (82.7)	1.04 (0.81–1.34)	1.10 (0.81–1.48)
Caucasian, *n* (%)	1130 (82.3)	261 (82.6)	319 (82.4)	0.95 (0.74–1.21)	0.98 (0.72–1.32)
Hispanic or Latino, *n* (%)	1282 (93.4)	279 (88.3)	336 (86.8)	1.88 (1.37–2.58)**	1.71 (1.19–2.42)**
Parent education, *n* (%)					
High school or less	190 (13.8)	48 (15.2)	81 (20.9)	Reference	Reference
Some college	386 (28.1)	91 (28.8)	127 (32.8)	0.89 (0.67–1.19)	0.81 (0.59–1.13)
College graduate or more	797 (58.0)	177 (56.0)	179 (46.2)	0.74 (0.56–0.97)*	0.59 (0.43–0.81)**
Behavioral functioning					
ADOS CSS, mean (SD)	7.2 (2.0)	7.1 (1.9)	7.2 (1.8)	0.97 (0.93–1.02)	0.99 (0.94–1.05)
VABS-II Adaptive Behavior, mean (SD)	73.8 (11.6)	72.1 (12.6)	71.6 (11.1)	0.99 (0.98–0.99)*	0.99 (0.98–1.00)
Full-scale IQ <70, *n* (%)	811 (59.1)	173 (54.7)	220 (56.8)	0.99 (0.80–1.25)	1.04 (0.80–1.37)
Treatments					
Any psychotropic drugs	373 (27.2)	99 (31.3)	133 (34.3)	1.29 (1.03–1.60)*	1.20 (0.92–1.56)
Any CAM	310 (22.6)	76 (24.0)	67 (17.3)	0.95 (0.75–1.20)	0.77 (0.57–1.04)
Comorbid problems					
CSHQ Sleep,[a] mean (SD)	47.7 (8.8)	48.3 (8.8)	48.8 (9.7)	1.01 (0.99–1.02)	1.00 (0.99–1.02)
GI disturbance, *n* (%)	407 (29.6)	84 (26.6)	107 (27.6)	0.85 (0.68–1.05)	0.91 (0.70–1.18)
CBCL Anxiety ≥70, *n* (%)	292 (21.3)	49 (15.5)	79 (20.4)	0.69 (0.53–0.89)**	0.79 (0.57–1.07)
CBCL Affective ≥70, *n* (%)	256 (18.6)	56 (17.7)	99 (25.6)	1.23 (0.94–1.60)	1.52 (1.11–2.07)**
CBCL ADHD ≥70, *n* (%)	304 (22.1)	70 (22.1)	85 (22.0)	0.89 (0.70–1.12)	0.81 (0.61–1.08)

ADOS CSS, Autism Diagnostic Observation Schedule Calibrated Severity Score.

* $P < .05$; ** $P < .01$.

[a] One or more CSHQ items of the 33 summed to create the total sleep disturbance score were missing.