Supplementary

In addition to the analyses described in the main manuscript, we additionally looked at group differences in life satisfaction, as measured by the ladder (parent and child) and the life satisfaction scale, as well as relationships between life satisfaction and affect recognition and empathy. Although the autism spectrum disorder (ASD) group showed lower mean life satisfaction ($p<.001$), the between-group comparisons were not significant according to the ladder parent and child report ($t=2.005$, $p=.160$, and $t=3.328$, $p=.075$, Bonferroni corrected, respectively) and the life satisfaction ($t=3.074$, $p=.085$, Bonferroni corrected) scale. Further, there was no significant correlation between life satisfaction and affect recognition or empathy, or with other measures within or across groups.

Theory of mind (ToM), described as the cognitive ability to infer another's mental state, plays an important role in socialization [1] and autistic individuals are known to have an impairment in theory-of-mind capacity [2, 3]. Given the prior results with perspective taking, we were also interested in looking at how ToM, which largely involves perspective taking, is modulated and impacted across groups. Indeed, ToM difficulties are commonly found in ASD [4, 5]; although, this has recently been under scrutiny [6, 7]. In the current study, we replicate prior studies finding significant differences in ToM scores, measured using the NEPSY, between the TD and ASD groups [4, 5]. The differences remain significant, even when controlling for alexithymia. However, when evaluated using hierarchical linear regressions, ToM was not found to be a significant contributor to differences in perspective taking (cognitive empathy) across groups. This suggests that while both ToM and perspective taking enable understanding another person's perspective and facilitating an appropriate social response, they may not be modulated by similar factors. This is supported by prior research, which has found that while similar regions are involved in both processes, they have different underlying neuronal networks [8]. Further investigation into the interaction of these concepts and the generalizability of interventions is warranted.

Table S1: Factors correlated with affect recognition.

	TD (n=54)		ASD (n=56)	
	r	p	r	p
Age	-.116	.404	-.111	.416
VCI	.299	.028	.290	.030
PRI	.204	.139	.354*	.007
FSIQ-4	.291	.033	.377*	.004

Pearson's correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD= Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, PRI = Perceptual Reasoning Index, VCI = Verbal Comprehension Index.

Table S2: Correlations between affect recognition and empathy and affect recognition and alexithymia in TD individuals.

Not controlled		**Controlled for age and sex**		**Controlled for age, sex, and FSIQ-4**		**Controlled for age, sex, and PRI**		**Controlled for age, sex, and VCI**		**Controlled for age, sex, alexithymia, and FSIQ-4**	
r	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*	*r*	*p*

Alexithymia (Identification)	-.167	.228	-.208	.139	-.299	.033	-.266	.059	-.311*	.026	-	-
Alexithymia (Communication)	-.165	.234	-.226	.107	-.302	.031	-.269	.057	-.315*	.024	-	-
Alexithymia (2 factor)	-.181	.190	-.237	.090	-.332*	.017	-.294	.036	-.346*	.013	-	-
IRI empathetic concern	.082	.557	.099	.483	.077	.591	.089	.534	.068	.636	.062	.667
IRI personal distress	.080	.567	-.006	.966	-.087	.542	-.079	.579	-.057	.692	.078	.588
IRI perspective taking	-.133	.336	-.063	.659	-.053	.713	-.027	.852	-.093	.514	-.068	.640
IRI fantasy	.029	.833	.033	.816	-.050	.729	-.015	.914	-.045	.755	-.013	.928

Pearson's correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD= Typically Developing, FSIQ-4 = Full-Scale IQ, PRI = Perceptual Reasoning Index, VCI = Verbal Comprehension Index, IRI = Interpersonal Reactivity Index.

Table S3 (a): Correlations between affect recognition and other ASD symptomology in the ASD and TD groups.

	TD		**ASD**	
	Controlled for age, sex, and FSIQ-4		**Controlled for age, sex, and FSIQ-4**	
	r	***p***	***r***	***p***
RBS Stereotype subscore TD, n=53; ASD, n=56	.141	.338	.095	.508
RBS Self-injury subscore TD, n=52; ASD, n=56	.116	.431	.163	.254
RBS Compulsive subscore TD, n=53; ASD, n=55	.221	.130	-.076	.597
RBS Ritual subscore TD, n=53; ASD, n=56	.320	.027	.019	.893
RBS Sameness subscore TD, n=53; ASD, n=55	.107	.469	.003	.984
RBS Restricted subscore TD, n=53; ASD, n=56	-.125	.395	.109	.448
CBCL Competence Activities T score	.051	.830	.197	.185

TD, n=53; ASD, n=54				
CBCL Competence Social T score TD, n=53; ASD, n=53	.277	.237	.028	.853
CBCL Competence School T score TD, n=53; ASD, n=54	-.100	.673	-.017	.908
CBCL Total score TD, n=53; ASD, n=53	.206	.385	.101	.498
CBCL Internalizing problems TD, n=49; ASD, n=51	-.034	.888	-.121	.419
CBCL Externalizing problems TD, n=49; ASD, n=52	-.449*	.047	-.107	.473
ADOS Social Affect ASD, n=55	-	-	-.255	.068
ADOS Restricted and Repetitive Behavior ASD, n=55	-	-	-.143	.311
ADOS Overall Total ASD, n=55	-	-	-.285	.040
ADIR Qualitative abnormalities in Reciprocal social interactions ASD, n=31	-	-	-.305	.114
ADIR Qualitative abnormalities in Communication ASD, n=31	-	-	.004	.982
ADIR Restricted Repetitive and Stereotyped patterns of behavior ASD, n=31	-	-	-.113	.567
SRS Restricted Interests and Repetitive Behavior TD, n=54; ASD, n=56	.221	.490	-.133	.499
SRS Social Communication and Interaction TD, n=54; ASD, n=56	-.113	.728	-.047	.810
SRS Total score TD, n=54; ASD, n=56	-.099	.760	.018	.926

Pearson's partial correlations were used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ; RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, ADIR = Autism Diagnostic Interview-Revised, SRS = Social Responsiveness Scale.

Table S3 (b): Correlations between affect recognition and common conditions in ASD in the TD and ASD groups.

	TD		ASD	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	*p*	*r*	*p*
SCARED (Parent) Total score TD, n=53; ASD, n=54	.092	.701	.081	.574
SCARED (Child) Total score TD, n=49; ASD, n=54	-.195	.411	-.055	.704
ASWS Total score TD, n=27; ASD, n=30	-.049	.837	.474*	.012
GSRS Total score TD, n=41; ASD, n=43	.219	.354	.251	.226

Pearson's partial correlations were used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ; RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, SRS = Social Responsiveness Scale.

Table S4: Correlation of personal distress with age and IQ.

	TD		ASD	
	r	*p*	*r*	*p*
Age	-.140	.314	.153	.259
VCI	.168	.225	-.163	.230
PRI	.185	.179	-.204	.131
FSIQ-4	.182	.187	-.206	.128

Pearson's correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. VCI = Verbal Comprehension Index, PRI = Perceptual Reasoning Index, FSIQ-4 = Full-Scale IQ.

Table S5 (a) : Correlations between personal distress and other ASD symptomology in the ASD and TD groups.

	TD	ASD
	Controlled for age, sex, and FSIQ-4	Controlled for age, sex, and FSIQ-4

	r	*p*	*r*	*p*
RBS Stereotype subscore TD, n=53; ASD, n=56	.250	.086	-.031	.827
RBS Self-injury subscore TD, n=52; ASD, n=56	.120	.416	.120	.403
RBS Compulsive subscore TD, n=53; ASD, n=55	.086	.562	.138	.336
RBS Ritual subscore TD, n=53; ASD, n=56	.035	.811	.065	.651
RBS Sameness subscore TD, n=53; ASD, n=55	.231	.114	-.010	.944
RBS Restricted subscore TD, n=53; ASD, n=56	-.201	.171	.041	.778
CBCL Competence Activities T score TD, n=53; ASD, n=54	-.064	.673	.011	.939
CBCL Competence Social T score TD, n=53; ASD, n=53	.022	.887	.064	.668
CBCL Competence School T score TD, n=53; ASD, n=54	-.258	.084	.287	.051
CBCL Total score TD, n=53; ASD, n=53	-.076	.615	.162	.276
CBCL Internalizing problems TD, n=49; ASD, n=51	.276	.063	.295	.044
CBCL Externalizing problems TD, n=49; ASD, n=52	-.035	.819	-.189	.204
ADOS Social Affect ASD, n=55	-	-	.147	.297
ADOS Restricted and Repetitive Behavior ASD, n=55	-	-	-.167	.236
ADOS Overall Total ASD, n=55	-	-	.074	.602
ADIR Qualitative abnormalities in Reciprocal social interactions ASD, n=31	-	-	.017	.930
ADIR Qualitative abnormalities in Communication	-	-	.001	.996

ASD, n=31				
ADIR Restricted Repetitive and Stereotyped patterns of behavior ASD, n=31	-	-	.147	.456
SRS Restricted Interests and Repetitive Behavior TD, n=54; ASD, n=56	.118	.409	.077	.582
SRS Social Communication and Interaction TD, n=54; ASD, n=56	-.040	.782	-.063	.656
SRS Total score TD, n=54; ASD, n=56	-.018	.901	-.020	.889

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, ADIR = Autism Diagnostic Interview-Revised, SRS = Social Responsiveness Scale.

Table S5 (b): Correlations between personal distress and common conditions in ASD in the TD and ASD groups.

	TD		**ASD**	
	Controlled for age, sex, and FSIQ-4		**Controlled for age, sex, and FSIQ-4**	
	r	***p***	***r***	***p***
SCARED (Parent) Total score TD, n=53; ASD, n=54	.170	.238	.247	.081
SCARED (Child) Total score TD, n=49; ASD, n=54	.574**	<.001	.581*	<.001
ASWS Total score TD, n=27; ASD, n=30	-.014	.950	-.479*	.011
GSRS Total score TD, n=41; ASD, n=43	.107	.524	.181	.264

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, SRS = Social Responsiveness Scale.

Table S6: Correlation of empathetic concern with age and IQ.

	TD		ASD	
	r	*p*	*r*	*p*
Age	-.027	.844	.157	.248
VCI	.118	.395	.100	.461
PRI	.048	.732	.288	.032
FSIQ-4	.083	.551	.211	.119

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, PRI = Perceptual Reasoning Index, VCI = Verbal Comprehension Index.

Table S7 (a) : Correlations between empathetic concern and other ASD symptomology in the ASD and TD groups.

	TD		ASD	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	*p*	*r*	*p*
RBS Stereotype subscore TD, n=53; ASD, n=56	.119	.447	-.084	.774
RBS Self-injury subscore TD, n=52; ASD, n=56	.314	.040	-.147	.617
RBS Compulsive subscore TD, n=53; ASD, n=55	.191	.220	.127	.666
RBS Ritual subscore TD, n=53; ASD, n=56	.063	.688	.094	.750
RBS Sameness subscore TD, n=53; ASD, n=55	.220	.156	.228	.433
RBS Restricted subscore TD, n=53; ASD, n=56	.071	.650	-.053	.857
CBCL Competence Activities T score TD, n=53; ASD, n=54	-.189	.811	-.254	.382
CBCL Competence Social T score TD, n=53; ASD, n=53	.090	.910	.320	.265

CBCL Competence School T score TD, n=53; ASD, n=54	.436	.564	-.213	.465
CBCL Total score TD, n=53; ASD, n=53	.006	.994	.067	.820
CBCL Internalizing problems TD, n=49; ASD, n=51	-.242	.758	-.164	.575
CBCL Externalizing problems TD, n=49; ASD, n=52	-.225	.775	-.227	.435
ADOS Social Affect ASD, n=55	-	-	-.078	.585
ADOS Restricted and Repetitive Behavior ASD, n=55	-	-	-.150	.290
ADOS Overall Total ASD, n=55	-	-	-.125	.376
ADIR Qualitative abnormalities in Reciprocal social interactions ASD, n=31	-	-	.178	.543
ADIR Qualitative abnormalities in Communication ASD, n=31	-	-	.222	.447
ADIR Restricted Repetitive and Stereotyped patterns of behavior ASD, n=31	-	-	-.162	.580
SRS Restricted Interests and Repetitive Behavior TD, n=54; ASD, n=56	-.415	.585	.099	.735
SRS Social Communication and Interaction TD, n=54; ASD, n=56	-.710	.290	-.107	.716
SRS Total score TD, n=54; ASD, n=56	-.637	.363	-.037	.899

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale.

Table S7 (b): Correlations between empathetic concern and common conditions in ASD in the TD and ASD groups.

	TD		ASD	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	*p*	*r*	*p*
SCARED (Parent) Total score TD, n=53; ASD, n=54	.125	.424	-.331	.248
SCARED (Child) Total score TD, n=49; ASD, n=54	.168	.280	.039	.894
ASWS Total score TD, n=27; ASD, n=30	.011	.989	.207	.478
GSRS Total score TD, n=41; ASD, n=43	-.729	.271	.199	.496

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale.

Table S8: Correlation of perspective taking with age and IQ.

	TD (n = 54)		ASD (n = 56)	
	r	*p*	*r*	*p*
Age	.215	.118	.326*	.014
VCI	.063	.649	.192	.156
PRI	-.065	.639	.153	.261
FSIQ-4	-.005	.971	.207	.125

Pearson's partial correlation was used to analyze the table. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, PRI = Perceptual Reasoning Index, VCI = Verbal Comprehension Index.

Table S9 (a) : Correlations between perspective taking and other ASD symptomology in the ASD and TD groups.

	TD	ASD
	Controlled for age, sex, and FSIQ-4	Controlled for age, sex, and FSIQ-4

	r	*p*	*r*	*p*
Theory of Mind TD, n=54; ASD, n=54	-.091	.524	-.207	.146
RBS Stereotype subscore TD, n=53; ASD, n=56	-.162	.272	-.227	.102
RBS Self-injury subscore TD, n=52; ASD, n=56	.177	.228	-.295	.036
RBS Compulsive subscore TD, n=53; ASD, n=55	.133	.367	-.309	.028
RBS Ritual subscore TD, n=53; ASD, n=56	-.150	.307	-.322	.021
RBS Sameness subscore TD, n=53; ASD, n=55	-.031	.835	-.246	.082
RBS Restricted subscore TD, n=53; ASD, n=56	.052	.723	-.181	.204
CBCL Competence Activities T score TD, n=53; ASD, n=54	.139	.356	-.010	.945
CBCL Competence Social T score TD, n=53; ASD, n=53	.259	.082	.074	.622
CBCL Competence School T score TD, n=53; ASD, n=54	.272	.067	.176	.237
CBCL Total score TD, n=53; ASD, n=53	.332*	.024	.047	.754
CBCL Internalizing problems TD, n=49; ASD, n=51	.025	.867	-.280	.056
CBCL Externalizing problems TD, n=49; ASD, n=52	-.160	.288	-.286	.051
ADOS Social Affect ASD, n=55	-	-	-.016	.909
ADOS Restricted and Repetitive Behavior ASD, n=55	-	-	.138	.330
ADOS Overall Total ASD, n=55	-	-	.035	.805
ADIR Qualitative abnormalities in Reciprocal social interactions ASD, n=31	-	-	.253	.067

ADIR Qualitative abnormalities in Communication ASD, n=31	-	-	.271	.171
ADIR Restricted Repetitive and Stereotyped patterns of behavior ASD, n=31	-	-	-.256	.111
SRS Restricted Interests and Repetitive Behavior TD, n=54; ASD, n=56	.059	.680	.256	.189
SRS Social Communication and Interaction TD, n=54; ASD, n=56	.171	.230	.141	.475
SRS Total score TD, n=54; ASD, n=56	.183	.198	-.010	.959

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale.

Table S9 (b): Correlations between perspective taking and common conditions in ASD in the TD and ASD groups.

	TD		**ASD**	
	Controlled for age, sex, and FSIQ-4		**Controlled for age, sex, and FSIQ-4**	
	r	***p***	***r***	***p***
SCARED (Parent) Total score TD, n=53; ASD, n=54	-.078	.589	-.322	.021
SCARED (Child) Total score TD, n=49; ASD, n=54	-.006	.969	-.246	.082
ASWS Total score TD, n=27; ASD, n=30	.102	.635	-.072	.614
GSRS Total score TD, n=41; ASD, n=43	-.194	.244	-.063	.652

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom.
Rating Scale

Table S10: Correlation of fantasy with age and IQ.

	TD		ASD	
	r	*p*	*r*	*p*
Age	-.018	.897	.127	.350
VCI	.251	.067	.053	.698
PRI	.172	.214	.034	.804
FSIQ-4	.237	.085	.046	.734

Spearman's correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. FSIQ-4 = Full-Scale IQ, PRI = Perceptual Reasoning Index, VCI = Verbal Comprehension Index.

Table S11(a): Correlations between fantasy and other ASD symptomology in the ASD and TD groups.

	TD		ASD	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	*p*	*r*	*p*
Theory of Mind TD, n=54; ASD, n=54	-.138	.334	-.241	.089
RBS Stereotype subscore TD, n=53; ASD, n=56	.070	.637	.233	.423
RBS Self-injury subscore TD, n=52; ASD, n=56	.280	.054	-.043	.885
RBS Compulsive subscore TD, n=53; ASD, n=55	.158	.284	.276	.339
RBS Ritual subscore TD, n=53; ASD, n=56	.005	.973	.089	.762
RBS Sameness subscore TD, n=53; ASD, n=55	.197	.180	.114	.698
RBS Restricted subscore TD, n=53; ASD, n=56	.116	.433	.165	.572
CBCL Competence Activities T score TD, n=53; ASD, n=54	.012	.938	.069	.816

CBCL Competence Social T score TD, n=53; ASD, n=53	.221	.140	-.112	.702
CBCL Competence School T score TD, n=53; ASD, n=54	.105	.486	-.184	.528
CBCL Total score TD, n=53; ASD, n=53	.200	.182	-.120	.682
CBCL Internalizing problems TD, n=49; ASD, n=51	-.017	.911	-.209	.474
CBCL Externalizing problems TD, n=49; ASD, n=52	.045	.767	-.196	.502
ADOS Social Affect ASD, n=55	-	-	.002	.991
ADOS Restricted and Repetitive Behavior ASD, n=55	-	-	.114	.421
ADOS Overall Total ASD, n=55	-	-	.043	.763
ADIR Qualitative abnormalities in Reciprocal social interactions ASD, n=31	-	-	.264	.361
ADIR Qualitative abnormalities in Communication ASD, n=31	-	-	.037	.899
ADIR Restricted Repetitive and Stereotyped patterns of behavior ASD, n=31	-	-	-.356	.211
SRS Restricted Interests and Repetitive Behavior TD, n=54; ASD, n=56	.149	.297	.221	.448
SRS Social Communication and Interaction TD, n=54; ASD, n=56	.217	.126	-.127	.666
SRS Total score TD, n=54; ASD, n=56	.248	.079	-.130	.354

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, ADIR = Autism Diagnostic Interview-Revised.

Table S11(b): Correlations between fantasy and common conditions in ASD in the TD and ASD groups.

	TD		ASD	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	p	r	p
SCARED (Parent) Total score TD, n=53; ASD, n=54	-.121	.403	-.304	.291
SCARED (Child) Total score TD, n=49; ASD, n=54	.027	.859	-.086	.770
ASWS Total score TD, n=27; ASD, n=30	.105	.625	.161	.582
GSRS Total score TD, n=41; ASD, n=43	-.153	.360	.030	.919

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ, RBS = Repetitive Behavior Scale, SCARED = Screen for Child Anxiety Related Emotional Disorders, CBCL = Child Behavior Checklist, ASWS = Adolescent Sleep–Wake Scale, GSRS = Gastrointestinal Symptom Rating Scale, ADIR = Autism Diagnostic Interview-Revised.

Table S12 (a): Correlations between alexithymia and empathy in the TD group.

	Alexithymia (Identification)		Alexithymia (Communication)		Alexithymia - 2 factor	
	Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4		Controlled for age, sex, and FSIQ-4	
	r	*p*	*r*	*p*	*r*	*p*
IRI personal distress	.429**	.002	.405**	.003	.461*	<.001
IRI empathic concern	.069	.631	-.184	.196	-.056	.698
IRI perspective taking	.077	.592	-.151	.292	-.034	.814
IRI fantasy	.128	.369	.072	.617	.113	.431

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ.

Table S12 (b): Correlations between alexithymia and empathy in the ASD group.

	Alexithymia (Identification)		**Alexithymia (Communication)**		**Alexithymia - 2 factor**	
	Controlled for age, sex, and FSIQ-4		**Controlled for age, sex, and FSIQ-4**		**Controlled for age, sex, and FSIQ-4**	
	r	***p***	***r***	***p***	***r***	***p***
IRI personal distress	.380*	.005	.309*	.024	.401*	.003
IRI empathic concern	.002	.986	-.523*	<.001	-.276	.046
IRI perspective taking	-.227	.102	-.340	.013	-.321	.019
IRI fantasy	-.103	.464	-.346	.011	-.247	.075

Pearson's partial correlation was used to analyze the table and multiple comparisons correction was conducted using Bonferroni's method. The significant correlation coefficients at a 95% confidence level are marked using *. TD = Typically Developing, ASD = Autism Spectrum Disorder, FSIQ-4 = Full-Scale IQ.

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