Supplementary Materials

Table S1. *Diagnostic group characteristic and comparisons.*

	Diagnosed			**Not diagnosed**			**Group comparison**			
Demographic/clinical measure	***N***	**Median (IQR)**	**Range**	***N***	**Median (IQR)**	**Range**	**χ^2 (df, *N*)**		***p***	***φ***
Sex: males (females)	105 (48)	-	-	19 (18)	-	-	3.92 (1, 190)		0.05*	0.14
Presence of intellectual disability	2	-	-	5	-	-	Fisher's exact test		0.62	-
	N	**Median (IQR)**	**Range**	***N***	**Median (IQR)**	**Range**	***U***	***Z***	***p***	***r* effect size**
Age (years)	152	32.0 (18.00)	18-68	37	38.0 (21.00)	18-65	2163.5	-2.18	0.03*	0.16
AASP total	96	176.5 (39.25)	130-266	30	162.5 (33.75)	129-241	1714.0	1.57	0.12	0.14
Low registration (AASP)	97	45.0 (15.50)	23-71	31	40.0 (10.00)	30-61	1061.0	2.47	0.02*	0.21
Sensation seeking (AASP)	96	35.0 (11.00)	19-55	30	39.5 (10.25)	25-53	845.0	-3.41	<0.001***	0.30
Sensory sensitivity (AASP)	97	48.0 (16.50)	21-75	31	43.0 (10.00)	25-68	1213.5	1.62	0.12	0.14
Sensation avoiding (AASP)	96	51.0 (15.00)	30-74	31	44.0 (15.00)	21-69	1008.5	2.70	0.01**	0.24
Depression (HADS)	122	10.0 (7.00)	0-21	31	7.0 (8.00)	0-19	1399.0	2.24	0.03*	0.18
Anxiety (HADS)	123	12.0 (6.00)	0-21	31	13.0 (8.00)	4-21	1886.5	0.09	0.92	0.07
AQ	123	36.0 (11.00)	17-50	29	34.0 (10.00)	11-47	1468.5	1.48	0.14	0.12
Alexithymia total (TAS-20)	147	66.0 (16.00)	30-94	35	65.0 (21.00)	39-83	2301.5	0.97	0.33	0.07
Difficulty describing feelings (TAS-20)	153	20.0 (6.00)	7-25	37	18.0 (8.50)	9-24	2277.5	1.85	0.06	0.13
Difficulty identifying feelings (TAS-20)	150	24.0 (9.00)	7-35	36	25.0 (7.75)	10-35	2668.5	-0.11	0.91	0.01
Externally orientated thinking (TAS-20)	149	23.0 (7.00)	9-36	35	21.0 (7.00)	10-34	2182.5	1.50	0.13	0.11

IQR, interquartile range; χ^2 (df, N), chi-square test (degree of freedom, number of participants); φ, effect size $\sqrt{(\chi^2/N)}$; U, statistic from Mann-Whitney test; Z, standardised statistic from Mann-Whitney test; r, effect size ($Z/\sqrt{N}$); AQ, Autism Quotient; AASP, Adolescent/Adult Sensory Profile; HADS, Hospital Anxiety and Depression Scale; TAS-20, Toronto Alexithymia Scale. *Significant at $p \leq 0.05$; **Significant at $p \leq 0.01$; ***Bonferroni correction: significant at $p \leq 0.003$ (0.05/15)

Table S2. *Co-occurring conditions across the sample.*

Co-occurring Conditions	Anxiety Conditions	Mood Conditions	ADHD	Obsessive-Compulsive and Related Conditions	Other NDCs	Intellectual Disability	Psychotic Conditions	Specific Learning Difficulties	Personality Conditions	Disordered Eating Conditions	Trauma and Stressor-Related Conditions
N	132	91	36	33	7	7	6	5	4	4	4
Percentage Frequency (%)	69.5%	47.9%	18.9%	17.4%	3.7%	3.7%	3.2%	2.6%	2.1%	2.1%	2.1%

ADHD, Attention Deficit Hyperactivity Disorder; NDC, Neurodevelopmental Conditions; *N*, number of participants. Conditions within each category are listed below:
Anxiety Conditions: Generalised Anxiety Disorder, Mixed Anxiety Disorder, Social Anxiety, Agoraphobia
Mood Conditions: Depressive Disorder, Dysthymia, Atypical Depressive Disorder, Post-Natal Depression, Major Affective Disorder, Bipolar Affective Disorder
Obsessive-Compulsive and Related Conditions: Obsessive-Compulsive Disorder, Hoarding Disorder, Trichotillomania
Other NDCs: Tourette's Syndrome, Tic Disorder, Social Communication Disorder, Dyspraxia
Psychotic Conditions: Schizophrenia, Delusional Disorder, Psychosis
Specific Learning Difficulties: Dyslexia, Dyscalculia
Personality Conditions: Schizoid Personality Disorder, Narcissistic Personality Disorder, Anti-Social Personality Disorder, Borderline Personality Disorder
Disordered Eating Conditions: Anorexia, Atypical Anorexia, Bulimia
Trauma and Stressor-Related Conditions: Post-Traumatic Stress Disorder

Table S3. *Example items for all measures*

Factors	Example items
Difficulty describing feelings	"It is difficult for me to find the right words for my feelings"
Difficulty identifying feelings	"I have feelings that I can't quite identify"
Externally orientated thinking	"I prefer talking to people about their daily activities rather than their feelings"

The Toronto Alexithymia Scale factors and example items [53]

Factor	Example items
Low registration	"I don't smell things that other people say they smell"
Sensation seeking	"I enjoy how it feels to move about"
Sensory sensitivity	"I become frustrated when trying to find something in a crowded drawer or messy room"
Sensation avoiding	"I avoid or wear gloves during activities that will make my hands messy"

The Adolescent/Adult Sensory Profile factors and example items [54]

Factor	Example Items
Depression	"I feel as if I am slowed down"
Anxiety	"I feel tense or wound up"

The Hospital Anxiety and Depression Scale factors and example items [57]

Factor	Example items
Social skill	"I would rather go to a library than a party"
Attention switching	"I would prefer to do things the same way over and over again"
Attention to detail	"I usually notice car number plates or similar strings of information"
Communication	"Other people frequently tell me that what I've said is impolite, even though I think it is polite"
Imagination	"When I am reading a story, I find it difficult to work out the characters' intentions"

The Autism Quotient factors and example items [58]

Table S4. *Bivariate Spearman's rank correlation between continuous measures in the whole sample, diagnosed group, and not diagnosed group.*

All		1	2	3	4	5	6	7	8	9	10	11	12
1.	Age (years)	-	-	-	-	-	-	-	-	-	-	-	-
2.	TAS-20 total	-0.14	-	-	-	-	-	-	-	-	-	-	-
3.	Difficulty describing feelings (TAS-20)	-0.16*	**0.75*** **	-	-	-	-	-	-	-	-	-	-
4.	Difficulty identifying feelings (TAS-20)	-0.01	**0.86*** **	**0.59*** **	-	-	-	-	-	-	-	-	-
5.	Externally orientated thinking (TAS-20)	-0.21**	**0.62*** **	**0.25*** **	**0.25*** **	-	-	-	-	-	-	-	-
6.	AQ	0.11	**0.36*** **	**0.42*** **	**0.32*** **	0.11	-	-	-	-	-	-	-
7.	AASP total	-0.02	**0.40*** **	**0.37*** **	**0.48*** **	0.06	**0.43*** **	-	-	-	-	-	-
8.	Low registration (AASP)	-0.15	**0.45*** **	**0.35*** **	**0.45*** **	0.23*	0.24**	**0.72*** **	-	-	-	-	-
9.	Sensation seeking (AASP)	0.09	**- 0.31*** **	**-0.34*** **	-0.23*	- 0.25**	**- 0.38*** **	0.02	-0.10	-	-	-	-
10.	Sensory sensitivity (AASP)	0.05	**0.42*** **	**0.42*** **	**0.51*** **	0.02	**0.48*** **	**0.88*** **	**0.58*** **	-0.22*	-	-	-
11.	Sensation avoiding (AASP)	-0.02	**0.29*** **	**0.32*** **	**0.36*** **	0.02	**0.54*** **	**0.79*** **	**0.37*** **	-0.27**	**0.74*** **	-	-
12.	Depression (HADS)	0.04	**0.40*** **	**0.27*** **	**0.43*** **	0.15	0.18*	**0.34*** **	**0.44*** **	-0.28**	**0.39*** **	0.26**	-
13.	Anxiety (HADS)	0.21**	**0.36*** **	**0.30*** **	**0.52*** **	-0.12	**0.32*** **	**0.55*** **	**0.38*** **	-0.14	**0.57*** **	**0.46*** **	**0.54*** **
Diagnosed													
1.	Age (years)	-	-	-	-	-	-	-	-	-	-	-	-
2.	TAS-20 total	-0.21**	-	-	-	-	-	-	-	-	-	-	-
3.	Difficulty describing feelings (TAS-20)	-0.21**	**0.75*** **	-	-	-	-	-	-	-	-	-	-
4.	Difficulty identifying feelings (TAS-20)	-0.08	**0.87*** **	**0.59*** **	-	-	-	-	-	-	-	-	-

5.	Externally orientated thinking (TAS-20)	-0.26**	**0.60***	0.24**	0.26**	-	-	-	-	-	-	-	-
6.	AQ	0.19	**0.34***	**0.41***	**0.31***	0.07	-	-	-	-	-	-	-
7.	AASP total	0.00	**0.51***	**0.44***	**0.58***	0.09	**0.46***	-	-	-	-	-	-
8.	Low registration (AASP)	-0.11	**0.50***	**0.37***	**0.50***	0.24*	0.19	**0.75***	-	-	-	-	-
9.	Sensation seeking (AASP)	0.05	-0.27**	-0.32**	-0.12	-0.23*	**-0.37***	0.10	0.10	-	-	-	-
10.	Sensory sensitivity (AASP)	0.04	**0.52***	**0.50***	**0.60***	0.04	**0.54***	**0.87***	**0.59***	-0.20	-	-	-
11.	Sensation avoiding (AASP)	0.04	**0.38***	**0.38***	**0.44***	0.01	**0.61***	**0.77***	**0.33***	-0.16	**0.72***	-	-
12.	Depression (HADS)	0.00	**0.35***	0.20*	**0.40***	0.10	0.12	**0.41***	**0.47***	-0.17	**0.43***	0.26*	-
13.	Anxiety (HADS)	0.15	**0.34***	**0.30***	**0.52***	-0.18	0.29**	**0.57***	**0.41***	-0.12	**0.58***	**0.50***	**0.49***
Not diagnosed													
1.	Age (years)	-	-	-	-	-	-	-	-	-	-	-	-
2.	TAS-20 total	0.28	-	-	-	-	-	-	-	-	-	-	-
3.	Difficulty describing feelings (TAS-20)	0.21	**0.75***	-	-	-	-	-	-	-	-	-	-
4.	Difficulty identifying feelings (TAS-20)	0.28	**0.86***	**0.63***	-	-	-	-	-	-	-	-	-
5.	Externally orientated thinking (TAS-20)	0.09	**0.67***	0.26	0.31	-	-	-	-	-	-	-	-
6.	AQ	0.16	0.44*	0.43*	0.39*	0.18	-	-	-	-	-	-	-
7.	AASP total	-0.01	0.06	0.05	0.12	-0.01	0.26	-	-	-	-	-	-
8.	Low registration (AASP)	-0.14	0.36*	0.31	0.37*	0.19	0.40*	**0.64***	-	-	-	-	-
9.	Sensation seeking (AASP)	0.08	-0.46*	-0.24	**-0.56***	-0.25	-0.27	-0.13	-0.40*	-	-	-	-
10.	Sensory sensitivity (AASP)	0.15	0.16	0.16	0.25	-0.02	0.19	**0.83***	0.46**	-0.23	-	-	-
11.	Sensation avoiding (AASP)	-0.04	0.09	0.03	0.19	-0.04	0.27	**0.84***	0.45*	-0.43*	**0.75***	-	-

12. Depression (HADS)	0.29	**0.59*** **	0.44*	**0.58*** **	0.23	0.40*	0.15	0.33	-0.37	0.32	0.22	-
13. Anxiety (HADS)	0.40*	0.44*	0.34	0.45*	0.10	0.49**	0.49*	0.36	-0.33	0.55**	0.47*	**0.78*** **

TAS-20, Toronto Alexithymia Scale; AQ, Autism Quotient; AASP, Adolescent/Adult Sensory Profile; HADS, Hospital Anxiety and Depression scale
*Significant at p≤0.05; **Significant at ≤0.01; ***Bonferroni correction: significant at *p*≤0.001 (0.05/468)

Table S5. *Descriptives and group comparisons of sex on key clinical measures in the whole sample.*

	Males			Females			Group comparison				
Clinical measure	***N***	**Median (IQR)**	**Range**	***N***	**Median (IQR)**	**Range**	***U***	***Z***	***p***	***r* size**	**effect**
TAS-20 total	121	65.0 (18.50)	30-94	61	67.0 (14.00)	33-93	3720.5	0.09	0.93	0.00	
Difficulty describing feelings (TAS-20)	124	19.0 (5.75)	7-25	66	20.0 (5.25)	9-25	4410.0	0.88	0.38	0.06	
Difficulty identifying feelings (TAS-20)	124	24.0 (9.00)	7-25	62	25.0 (9.00)	7-35	4243.0	1.15	0.25	0.08	
Externally orientated thinking (TAS-20)	121	23.0 (6.50)	9-34	63	22.0 (8.00)	10-36	3360.5	-1.32	0.19	0.09	
Sensory processing differences (AASP)	85	165.0 (32.0)	126-266	41	188.0 (44.0)	131-241	2371.5	3.28	0.001***	0.29	
Depression (HADS)	104	10.0 (7.00)	1-21	49	8.0 (9.00)	0-17	3474.0	-1.17	0.24	0.09	
Anxiety (HADS)	104	12.0 (6.75)	0-21	50	13.0 (6.00)	4-21	2807.5	0.80	0.42	0.06	

IQR, interquartile range; χ^2 (df, *N*), chi-square test (degree of freedom, number of participants); U, statistic from Mann-Whitney test; Z, standardised statistic from Mann-Whitney test; r, effect size ($Z/\sqrt{N}$); TAS-20, Toronto Alexithymia Scale; AASP, Adolescent/Adult Sensory Profile. HADS, Hospital Anxiety and Depression Scale.
*Significant at p≤0.05; **Significant at p≤0.01; ***Bonferroni correction: significant at p≤0.004 (0.05/14)

Table S6. *Descriptives and group comparisons of depression and anxiety severity for those with severe vs lower alexithymia in the whole sample.*

	Severe alexithymia (≥61)			**Lower Alexithymia (<61)**			**Group comparisons**			
Clinical measure	***N***	**Median (IQR)**	**Range**	***N***	**Median (IQR)**	**Range**	***U***	***Z***	***p***	***r* effect size**
Depression (HADS)	98	10 (6)	1-20	51	7 (8)	0-21	3306.5	3.24	0.001***	0.27
Anxiety (HADS)	99	13 (6)	3-21	51	11 (8)	0-19	3223.0	2.78	0.005***	0.23

IQR, interquartile range; U, statistic from Mann-Whitney test; Z, standardised statistic from Mann-Whitney test; r, effect size ($Z/\sqrt{N}$); HADS, Hospital Anxiety and Depression Scale.

***Bonferroni correction: significant at p≤0.03 (0.05/2).

Table S7. *Depression and anxiety severity, regressed onto alexithymia severity and sensory processing differences, controlling for sex, diagnostic status, and anxiety/depression severity.*

		Depression (HADS)	**Anxiety (HADS)**
		β (95% CI)	β (95% CI)
Model 1 (*N*=105)	Sex	-0.12 (-0.59 to 0.09)	0.05 (-0.22 to 0.45)
	ASC diagnostic status	0.18 (0.06 to 0.77)*	-0.18 (-0.78 to -0.08)*
	AASP	0.04 (-0.15 to 023)	**0.32 (0.15 to 0.51)*** **
	TAS-20 total	0.19 (0.02 to 0.37)*	0.11 (-0.06 to 0.29)
	Anxiety/Depression (HADS)	**0.50 (0.30 to 0.65)*** **	**0.45 (0.29 to 0.64)*** **
Model fit (R^2_{adj})		$F_{(5,99)}$ = 15.06, p<0.001 (40.3%)	$F_{(5,99)}$ = 19.11, p<0.001 (46.5%)
Model 2 (*N*=107)	Sex	-0.15 (-0.66 to 0.01)	0.03 (-0.28 to 0.40)
	ASC diagnostic status	0.16 (0.02 to 0.74)*	-0.19 (-0.81 to -0.10)*
	AASP	0.05 (-0.16 to 0.24)	**0.34 (0.19 to 0.52)*** **
	Difficulty describing feelings (TAS-20)	0.18 (0.02 to 0.37)*	0.09 (-0.08 to 0.28)
	Anxiety/Depression (HADS)	**0.51 (0.32 to 0.67)*** **	**0.46 (0.31 to 0.65)*** **
Model fit (R^2_{adj})		$F_{(5,101)}$ = 15.52, p<0.001 (40.7%)	$F_{(5,101)}$ = 19.44, p<0.001 (46.5%)
Model 3 (*N*=107)	Sex	-0.13 (-0.61 to 0.07)	0.05 (-0.21 to 0.45)
	ASC diagnostic status	0.21 (0.13 to 0.84)**	-0.14 (-0.69 to 0.01)
	AASP	0.02 (-0.17 to 0.22)	0.27 (0.10 to 0.45)**
	Difficulty identifying feelings (TAS-20)	0.20 (0.01 to 0.38)**	0.23 (0.06 to 0.41)**
	Anxiety/Depression (HADS)	**0.48 (0.28 to 0.65)*** **	**0.41 (0.26 to 0.59)*** **
Model fit (R^2_{adj})		$F_{(5,101)}$ = 15.36, p<0.001 (40.4%)	$F_{(5,101)}$ = 21.58, p<0.001 (49.3%)

β (95% CI), regression coefficient and 95% confidence interval; F(df, df), analysis of variance statistic (regression degrees of freedom, residual degrees of freedom); ASC, Autism spectrum condition; HADS, Hospital Anxiety and Depression Scale; AQ, Autism Quotient; TAS-20, Toronto Alexithymia Scale

*Significant at p≤0.05; **Significant at p≤0.01; ***Bonferroni correction: significant at p≤0.002 (0.05/30).

Table S8. *Direct and indirect effects of difficulty describing feelings as a mediator of the relationship between sensory processing differences and depression severity, controlling for sex and diagnostic status.*

Independent variable	Dependent variable	Effect	β	SE	LLCI	ULCI
AASP *N* = 107	Depression (HADS)	Direct	0.30*	0.09	0.11	0.48
		Indirect via Difficulty describing feelings (TAS-20)	0.10*	0.04	0.03	0.19

β, regression coefficient; SE, Standard error; LLCI, Lower level confidence interval; ULCI, Upper level confidence interval; AASP, Adolescent/Adult Sensory Profile; HADS, Hospital Anxiety and Depression Scale; TAS-20, Toronto Alexithymia Scale. Indirect SE, LLCI and ULCI were bootstrapped.
*Significant at p≤0.05

Table S9. *Direct and indirect effects of difficulty identifying feelings as a mediator of the relationship between sensory processing differences and anxiety severity, controlling for sex and diagnostic status.*

Independent variable	Dependent variable	Effect	β	SE	LLCI	ULCI
AASP *N* = 107	Anxiety (HADS)	Direct	0.36*	0.10	0.16	0.55
		Indirect via Difficulty identifying feelings (TAS-20)	0.22*	0.06	0.11	0.36

β, regression coefficient; SE, Standard error; LLCI, Lower level confidence interval; ULCI, Upper level confidence interval; AASP, Adolescent/Adult Sensory Profile; HADS, Hospital Anxiety and Depression Scale; TAS-20, Toronto Alexithymia Scale. Indirect SE, LLCI and ULCI were bootstrapped. *Significant at p≤0.05