Supplementary Table 1.

Summary of measures included in the current study, including timepoint of assessment and informant.

|  |  |  |  |
| --- | --- | --- | --- |
| Construct | Measure | Timepoint | Age Range |
| **Adol. (12-17-years)** | **Adults (18-30-years)** |
| Alexithymia | **20-item Toronto Alexithymia Scale** | 1 & 2 | S | S |
| Autism traits | **Social Responsiveness Scale - Second Edition** | 1 & 2 | S & P | S & P |
| **Repetitive Behaviour Scale - Revised** | 1 & 2 | P | P |
| Anxiety/ Depression | **Beck’s Anxiety/ Depression Inventories** | 1 & 2 | S | S |

Note: S=Self-report (i.e. participant); P=Parent-report.

Supplementary Table 2.

*Descriptives and group comparisons for participant characteristics and alexithymia at T2.*

|  |  |  |  |
| --- | --- | --- | --- |
| a) Demographic/ Clinical | ASD (T2) | Non-ASD (T2) | Group Comparison |
| ***N*** | **Median (*IQR*)** | **Range** | ***N*** | **Median (*IQR*)** | **Range** | ***X2* (df, *N*)** | ***p*** | ***φ*** |
| Sex: Males (Females) | 51 (25) | - | - | 33 (26) | - | - | 1.76 (1,135) | 0.18 | 0.11 |
|  |  |  |  |  |  |  | ***Z*** | ***p*** | ***r* effect size** |
| Age (years) | 76 | 20.94 (7.56) | 13-31 | 59 | 19.72 (6.62) | 14-31 | 0.91 | 0.36 | 0.08 |
| SRS-2 (Self) | 31 | 65.00 (14.50) | 46-91 | 27 | 47.00 (9.50) | 39-76 | 4.32 | <0.001\*\*\* | 0.58 |
| SRS-2 (Parent) | 19 | 68.00 (18.00) | 43-90 | 17 | 42.00 (3.00) | 38-45 | 4.92 | <0.001\*\*\* | 0.82 |
| RBS-R | 58 | 7.00 (7.75) | 0-28 | 17 | 0.00 (2.00) | 0-6 | 4.64 | <0.001\*\*\* | 0.54 |
| Beck’s Anxiety | 74 | -0.04 (1.17) | -1.11-4.39 | 58 | -0.62 (0.71) | -1.02-1.46 | 4.16 | <0.001\*\*\* | 0.36 |
| Beck’s Depression | 74 | 0.05 (1.53) | -0.92-4.75 | 58 | -0.51 (0.56) | -0.92-1.92 | 3.86 | <0.001\*\*\* | 0.34 |
| b) Alexithymia | **ASD (T2)** | **Non-ASD (T2)** | **Group Comparison** |
| ***N*** | **Median (*IQR*)** | **Range** | ***N*** | **Median (*IQR*)** | **Range** | ***Z*** | ***p*** | ***r* effect size** |
| TAS-20 Total | 76 | 48.00 (18.25) | 20-93 | 59 | 38.00 (9.50) | 23-66 | 4.99 | <0.001\*\*\* | 0.43 |
| TAS-20 Identify | 76 | 14.00 (11.25) | 7-35 | 59 | 9.00 (5.50) | 7-23 | 4.28 | <0.001\*\*\* | 0.37 |
| TAS-20 Describe | 76 | 14.00 (7.00) | 5-24 | 59 | 10.00 (5.00) | 5-23 | 4.88 | <0.001\*\*\* | 0.42 |
| TAS-20 External | 76 | 21.00 (6.25) | 8-34 | 59 | 19.00 (7.00) | 10-27 | 1.77 | 0.08 | 0.15 |

Note: SRS-2=Social Responsiveness Scale – Second Edition; RBS-R=Repetitive Behaviour Scale – Revised; TAS=Toronto Alexithymia Scale; IQR=Interquartile range; *X2* (df, *N*)=Chi-square test (degrees of freedom, number of participants); *Z*=statistic for Mann-Whitney comparison, *r*=effect size (*Z*/√*N*). \*\*\**p*<0.01 (significant after Bonferroni correction; *p*=0.05/11).

Supplementary Table 3.

Bivariate correlations between T1 and T2 measures in the: a) whole sample; b) ASD group.

|  |  |  |
| --- | --- | --- |
| 1. All
 | T1 | T2 |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** |
| T1 | **1. TAS Total** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **2. TAS Identify** | **0.80\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **3. TAS Describe** | **0.88\*\*\*** | **0.66\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **4. TAS External** | **0.57\*\*\*** | 0.14\*\* | **0.33\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **5. SRS-2 (Self)** | **0.79\*\*\*** | **0.70\*\*\*** | **0.73\*\*\*** | **0.35\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6. SRS-2 (Parent)** | **0.46\*\*\*** | **0.37\*\*\*** | **0.41\*\*\*** | **0.33\*\*\*** | **0.59\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - |
| **7. RBS-R** | **0.45\*\*\*** | **0.37\*\*\*** | **0.39\*\*\*** | **0.26\*\*\*** | **0.59\*\*\*** | **0.81\*\*\*** | - | - | - | - | - | - | - | - | - | - | - |
| **8. Beck’s Anxiety** | **0.55\*\*\*** | **0.65\*\*\*** | **0.47\*\*\*** | 0.08 | **0.64\*\*\*** | **0.36\*\*\*** | **0.34\*\*\*** | - | **-** | - | - | - | - | - | - | - | - |
| **9. Beck’s Depression** | **0.55\*\*\*** | **0.64\*\*\*** | **0.49\*\*\*** | 0.08 | **0.66\*\*\*** | **0.38\*\*\*** | **0.32\*\*\*** | **0.79\*\*\*** | **-** | **-** | - | - | - | - | - | - | - |
| T2 | **10. TAS Total** | **0.66\*\*\*** | **0.47\*\*\*** | **0.57\*\*\*** | **0.44\*\*\*** | **0.63\*\*\*** | 0.33\*\* | 0.25\* | **0.44\*\*\*** | **0.44\*\*\*** | - | - | - | - | - | - | - | - |
| **11. TAS Identify** | **0.55\*\*\*** | **0.64\*\*\*** | **0.47\*\*\*** | 0.11 | **0.57\*\*\*** | 0.29\*\* | 0.20 | **0.54\*\*\*** | **0.51\*\*\*** | **0.78\*\*\*** | - | - | - | - | - | - | - |
| **12. TAS Describe** | **0.65\*\*\*** | **0.46\*\*\*** | **0.63\*\*\*** | **0.40\*\*\*** | **0.61\*\*\*** | 0.31\*\* | 0.27\*\* | **0.41\*\*\*** | **0.42\*\*\*** | **0.87\*\*\*** | **0.66\*\*\*** | - | - | - | - | - | - |
| **13. TAS External** | **0.35\*\*\*** | 0.02 | 0.26\*\* | **0.56\*\*\*** | 0.28\*\* | 0.17 | 0.12 | 0.08 | 0.10 | **0.66\*\*\*** | 0.21\* | **0.37\*\*\*** | - | - | - | - | - |
| **14. SRS-2 (Self)** | **0.75\*\*\*** | **0.59\*\*\*** | **0.65\*\*\*** | **0.54\*\*\*** | **0.81\*\*\*** | 0.37\* | 0.23 | **0.50\*\*\*** | **0.51\*\*\*** | **0.69\*\*\*** | **0.63\*\*\*** | **0.66\*\*\*** | 0.35\*\* | - | - | - | - |
| **15. SRS-2 (Parent)** | **0.57\*\*\*** | **0.49\*\*\*** | **0.48\*\*\*** | 0.42\*\* | **0.75\*\*\*** | **0.91\*\*\*** | **0.78\*\*\*** | **0.48\*\*\*** | **0.47\*\*\*** | 0.48\*\* | 0.52\*\* | 0.35\* | 0.16 | 0.03 | - | - | - |
| **16. RBS-R** | **0.49\*\*\*** | **0.48\*\*\*** | **0.43\*\*\*** | 0.31\*\* | **0.59\*\*\*** | **0.76\*\*\*** | **0.81\*\*\*** | **0.54\*\*\*** | **0.43\*\*\*** | 0.39\*\* | 0.34\*\* | 0.32\*\* | 0.22 | 0.28 | **0.80\*\*\*** | - | - |
| **17. Beck’s Anxiety** | **0.38\*\*\*** | **0.60\*\*\*** | 0.26\*\* | 0.01 | **0.47\*\*\*** | **0.40\*\*\*** | 0.37\*\* | **0.71\*\*\*** | **0.61\*\*\*** | **0.34\*\*\*** | **0.52\*\*\*** | 0.29\*\* | -0.04 | 0.38\*\* | 0.47\*\* | 0.34\*\* | - |
| **18. Beck’s Depression** | **0.38\*\*\*** | **0.47\*\*\*** | **0.32\*\*\*** | 0.09 | **0.47\*\*\*** | 0.31\*\* | 0.23\* | **0.58\*\*\*** | **0.64\*\*\*** | **0.34\*\*\*** | **0.42\*\*\*** | 0.30\*\* | 0.09 | 0.34\*\* | 0.40\*\* | 0.32\*\* | **0.71\*\*\*** |
| 1. ASD
 | **T1** | **T2** |
| **1** | **2** | **3** | **4** | **5** | **6** | **7** | **8** | **9** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** |
| T1 | **1. TAS Total** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **2. TAS Identify** | **0.82\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **3. TAS Describe** | **0.82\*\*\*** | **0.60\*\*\*** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **4. TAS External** | **0.45\*\*\*** | 0.01 | 0.18\*\* | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **5. SRS-2 (Self)** | **0.74\*\*\*** | **0.67\*\*\*** | **0.68\*\*\*** | 0.20\*\* | - | - | - | - | - | - | - | - | - | - | - | - | - |
| **6. SRS-2 (Parent)** | 0.23\*\* | 0.08 | 0.11 | **0.38\*\*\*** | 0.22\*\* | - | - | - | - | - | - | - | - | - | - | - | - |
| **7. RBS-R** | 0.26\*\* | 0.16 | 0.17\* | 0.26\*\* | 0.30\*\* | **0.66\*\*\*** | - | - | - | - | - | - | - | - | - | - | - |
| **8. Beck’s Anxiety** | **0.48\*\*\*** | **0.61\*\*\*** | **0.29\*\*\*** | 0.01 | **0.55\*\*\*** | 0.16 | 0.16 | **-** | **-** | - | - | - | - | - | - | - | - |
| **9. Beck’s Depression** | **0.49\*\*\*** | **0.59\*\*\*** | **0.31\*\*\*** | 0.03 | **0.57\*\*\*** | 0.12 | 0.06 | **0.72\*\*\*** | **-** | **-** | - | - | - | - | - | - | - |
| T2 | **10. TAS Total** | **0.63\*\*\*** | **0.47\*\*\*** | **0.53\*\*\*** | 0.37\*\* | **0.46\*\*\*** | 0.11 | <0.01 | 0.38\*\* | 0.36\*\* | - | - | - | - | - | - | - | - |
| **11. TAS Identify** | **0.56\*\*\*** | **0.66\*\*\*** | **0.43\*\*\*** | 0.07 | **0.50\*\*\*** | 0.10 | -0.06 | **0.50\*\*\*** | **0.43\*\*\*** | **0.82\*\*\*** | - | - | - | - | - | - | - |
| **12. TAS Describe** | **0.55\*\*\*** | 0.34\*\* | **0.57\*\*\*** | 0.29\*\* | **0.41\*\*\*** | 0.07 | -0.03 | 0.21 | 0.31\*\* | **0.85\*\*\*** | **0.61\*\*\*** | - | - | - | - | - | - |
| **13. TAS External** | 0.40\*\* | 0.09 | 0.30\*\* | **0.60\*\*\*** | 0.22 | 0.20 | 0.18 | 0.16 | 0.12 | **0.64\*\*\*** | 0.22\* | 0.39\*\* | - | - | - | - | - |
| **14. SRS-2 (Self)** | **0.83\*\*\*** | **0.64\*\*\*** | **0.79\*\*\*** | 0.38\* | **0.78\*\*\*** | 0.05 | -0.02 | 0.52\*\* | **0.61**\*\*\* | **0.66\*\*\*** | **0.68\*\*\*** | **0.74\*\*\*** | 0.26 | - | - | - | - |
| **15. SRS-2 (Parent)** | 0.57\*\* | 0.51\*\* | 0.38\* | 0.43\* | **0.61**\*\*\* | **0.73\*\*\*** | 0.27 | 0.60\*\* | 0.36\* | 0.57\*\* | 0.57\*\* | 0.40 | 0.39 | 0.26 | - | - | - |
| **16. RBS-R** | **0.44\*\*\*** | 0.36\*\* | 0.32\*\* | **0.39\*\*\*** | **0.40\*\*\*** | **0.59\*\*\*** | **0.71\*\*\*** | **0.47\*\*\*** | 0.29\*\* | 0.22 | 0.11 | 0.11 | 0.30\* | 0.21 | 0.57\*\* | - | - |
| **17. Beck’s Anxiety** | 0.39\*\* | **0.61\*\*\*** | 0.21 | -0.003 | 0.38\*\* | 0.18 | 0.19 | **0.64\*\*\*** | **0.60\*\*\*** | 0.21 | **0.43\*\*\*** | 0.08 | -0.08 | 0.24 | 0.31 | 0.16 | - |
| **18. Beck’s Depression** | 0.41\*\* | **0.51\*\*\*** | 0.29\*\* | 0.11 | 0.41\*\* | 0.19 | 0.08 | **0.52\*\*\*** | **0.70\*\*\*** | 0.21 | 0.30\*\* | 0.20 | 0.02 | 0.23 | 0.42 | 0.19 | **0.69\*\*\*** |

Note: TAS=Toronto Alexithymia Scale; SRS-2=Social Responsiveness Scale – Second Edition; RBS-R=Repetitive Behaviour Scale – Revised. \**p*<0.05; \*\**p*<0.01; \*\*\**p*<0.0002 (significant after Bonferroni correction; *p*=0.05/306).

Supplementary Table 4.

Descriptives and group comparison of social-communication difficulties, anxiety and depression symptoms for those with ‘severe’ (≥61) vs. lower levels of alexithymia in the: a) whole sample; b) ASD group.

|  |  |  |  |
| --- | --- | --- | --- |
| a) All | Severe alexithymia (≥61) | Lower Alexithymia (<61) | Group-comparison |
| ***N*** | **Median (*IQR*)** | **Range** | ***N*** | **Median (*IQR*)** | **Range** | ***Z*** | ***p*** | ***r* effect size** |
| SRS-2 (Self) | 56 | 70.00 (11.00) | 47-94 | 263 | 50.00 (14.50) | 37-85 | 9.82 | <0.001\*\*\* | 0.55 |
| SRS-2 (Parent) | 46 | 70.00 (21.00) | 44-95 | 160 | 58.00 (25.00) | 37-90 | 4.73 | <0.001\*\*\* | 0.33 |
| Beck’s Anxiety | 53 | 0.86 (1.59) | -0.81-4.65 | 265 | -0.46 (0.97) | -1.28-2.63 | 8.02 | <0.001\*\*\* | 0.45 |
| Beck’s Depression | 52 | 1.10 (1.75) | -0.86-4.15 | 265 | -0.43 (0.82) | -1.08-3.42 | 7.56 | <0.001\*\*\* | 0.42 |
| b) ASD | **Severe alexithymia (≥61)** | **Lower Alexithymia (<61)** | **Group-comparison** |
| ***N*** | **Median (*IQR*)** | **Range** | ***N*** | **Median (*IQR*)** | **Range** | ***Z*** | ***p*** | ***r* effect size** |
| SRS-2 (Self) | 50 | 71.00 (9.00) | 57-94 | 123 | 59.00 (10.50) | 40-85 | 7.99 | <0.001\*\*\* | 0.61 |
| SRS-2 (Parent) | 42 | 72.00 (19.25) | 44-95 | 100 | 67.00 (18.00) | 43-90 | 2.56 | 0.01\*\*\* | 0.22 |
| Beck’s Anxiety | 46 | 1.04 (1.79) | -0.81-4.65 | 122 | -0.07 (1.09) | -1.28-2.63 | 6.20 | <0.001\*\*\* | 0.48 |
| Beck’s Depression | 45 | 1.14 (1.91) | -0.75-4.15 | 123 | -0.21 (0.94) | -0.97-3.42 | 5.97 | <0.001\*\*\* | 0.46 |

Note: SRS-2=Social Responsiveness Scale – Second Edition; IQR=Interquartile range; *Z*=statistic for Mann-Whitney comparison; *r*=effect size (*Z*/√*N*). \*\*\**p*<0.01 (significant after Bonferroni correction; *p*=0.05/8).