**Supplementary files**

Supplementary Table 1. Sample size justification.

|  |  |
| --- | --- |
| Analysis | Explanation |
| Power analysis for the larger project | An a priori power analysis was conducted for the larger research project that embedded this study. It showed that to observe a medium-sized effect (effect size = .35, power = .80, alpha = .05), a total sample size of 216 children would be needed for analyses with four repeated measures and two groups. Note that this analysis was done for the larger project and based on a repeated measure ANOVA design. We opted for mixed models for the current study because it better accounts for the dependency within the data and can handle missing or unbalanced data. |
| Power analysis for the present study | We did not conduct an a priori power analysis specifically for this study because the study was based on the data already collected. Yet, to understand the sample size needed for detecting the effect of diagnosis group in multilevel models, a simulation analysis was conducted via the Optimal Design program (Version 3.01; Raudenbush et al., 2011). It showed that in the case where each participant has two waves of data, an effect of group can be detected with a power ≥ .80 when the total number of participants is ≥ 150; in the case where each participant has three waves of data, a total sample size of ≥ 100 is needed (alpha = .05; effect size = .35). Given that 80% of our participants had three waves of data, we assumed that the power for conducting the analyses is adequate. |

Supplementary Table 2. Internal consistency of measures at three times points.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  | **Cronbach’s α** | |  |
|  |  | **Autistic** | **Non-autistic** | **Total** |
| **Time 1** |  |  |  |  |
| Shame/guilt |  | 0.97 | 0.79 | 0.96 |
| Pride |  | 0.88 | 0.78 | 0.83 |
| EU |  | 0.91 | 0.74 | 0.91 |
|  |  |  |  |  |
| **Time 2** |  |  |  |  |
| Shame/guilt |  | 0.71 | 0.82 | 0.81 |
| Pride |  | 0.83 | 0.78 | 0.80 |
| EU |  | 0.92 | 0.76 | 0.92 |
|  |  |  |  |  |
| **Time 3** |  |  |  |  |
| Shame/guilt |  | 0.81 | 0.83 | 0.86 |
| Pride |  | 0.79 | 0.81 | 0.82 |
| EU |  | 0.88 | 0.79 | 0.89 |
|  |  |  |  |  |

NOTE. EU: emotion understanding.

Supplementary Table 3. Correlation matrix of the predicting variables and moral emotions at three time points.

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | **Pride** |  |  | **Age** |  |  | **FBa** |  |  | **EUb** |  |  |
|  |  | **T1** | **T2** | **T3** | **T1** | **T2** | **T3** | **T1** | **T2** | **T3** | **T1** | **T2** | **T3** |
| **Shame** | **T1** | .29\*\* |  |  | .06 |  |  | .45\*\*/.16 |  |  | -.25/.15 |  |  |
|  | **T2** |  | .09 |  |  | -.21\* |  |  | .03 |  |  | .10 |  |
|  | **T3** |  |  | .42\*\* |  |  | .12 |  |  | .30\*\* |  |  | .36\*\* |
| **Pride** | **T1** |  |  |  | .36\*/.05 |  |  | .40\*\*/-.07 |  |  | -.03 |  |  |
|  | **T2** |  |  |  |  | .15 |  |  | .45\*\*/-.002 |  |  | .15 |  |
|  | **T3** |  |  |  |  |  | -.10 |  |  | .39\*/-.01 |  |  | .13 |
| **Age** | **T1** |  |  |  |  |  |  | .45\*\*/.66\*\* |  |  | .02 |  |  |
|  | **T2** |  |  |  |  |  |  |  | .39\*\* |  |  | -.01 |  |
|  | **T3** |  |  |  |  |  |  |  |  | .23\* |  |  | .22 |
| **FBa** | **T1** |  |  |  |  |  |  |  |  |  | .16 |  |  |
|  | **T2** |  |  |  |  |  |  |  |  |  |  | .45\*\*/.13 |  |
|  | **T3** |  |  |  |  |  |  |  |  |  |  |  | .34\*\* |

Note. a. false belief; b. emotion understanding. \**p* < .05; \*\**p* < .001.

First, the correlation analyses were conducted for children with and without ASD separately. Next, Fisher *r*-to-*z* transformations were used to compare the correlations of the two groups. Correlations that did not differ between groups were recalculated by collapsing groups. Correlations that differed between groups were both reported in the table, with the correlation of the ASD group on the left and the correlation of the non-ASD group on the right separated by slash.