Chart

Description automatically generated with medium confidence

**Online Supplement ESM 1**, Figure 1. Graphical representation of the (non-linear) growth curve model (GCM) for three measurement occasions. For group comparisons between boys and girls in the treatment group, mean intercept [I] and slope [S] parameters could vary across gender, with boys as reference group. Observed variables represented by squares (YSR: Youth Self Report; CBCL: Child Behavior Checklist). Two latent variables represented by dark circles: the random intercept (I), capturing stable between person differences; the random slope (S) representing within-person change. Means for intercept and slope are explicitly included in the model and represented by the triangle. Model-implied group means (I) and mean group differences of intercept (*ΔI)* and slope (*ΔS)* are shown. Higher intercepts indicate higher average symptom severity. Negative slopes indicate a reduction in psychopathology. To test for linear slope, the second factor load (λ) was initially constrained to 1 and then estimated freely for each model to test for a non-linear slope. Regression weights indicated by one-headed arrows, variances and covariances by two-headed arrows. Unlabeled paths are fixed to 1. \* Indicating significant (changes in) model parameter with *p* < .05.

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| **Online Supplement: ESM 2.** | |  |  |  |  |  |  |  |  |  |
| *Growth curve model (GCM) estimates and fit indices with model comparisons for the treatment group (upper part: treated adolescents) and the comparison groups (diabetics and health adolescents).* | | | | | | | | | | |
|  | Model (Gender Differences) | Gender (♂=0; ♀=1) Intercept/Slope | Intercept (I) | Slope (S) | Correlation  Int.-slope | Model fit | | | Model comparison | |
|  | *Mean* (Var) | *Mean* (Var) | -2LL (df) | RMSEA | CFI | *p*-value/*ΔAIC*2 | |
|  | M1: Patients | | |  |  |  |  |  |  |  |
|  | - YSR internalizing | 2.37\*/-.38 | 18.89\* (34.30\*) | -2.49\* (6.57\*) | -.73\* | 5759 (1) | <.01 | .99 | <.01/7.53 | |
|  | - YSR externalizing | -.01/-.38 | 13.97\* (18.20\*) | -1.42\* (1.10) | -.93\* | 5061 (1) | <.01 | .99 | .10/.70 | |
|  | - CBCL internalizing | 1.33\*/-.01 | 16.15\* (41.25\*) | -2.84\* (8.53\*) | -.89\* | 5633 (1) | <.01 | .99 | .02/4.16 | |
|  | - CBCL externalizing | -3.18\*/1.09\* | 15.92\* (31.48\*) | -2.28\* (3.38\*) | -.70\* | 5522 (1) | <.01 | .99 | <.01/13.04 | |
|  |  |  |  |  |  |  |  |  |  |  |
| M2: Healthy and diabetic | |  |  |  |  |  |  |  |  | |
|  | - YSR internalizing | 3.90\*/.21 | 1.78\* (41.78\*) | -.78\* (5.80\*) | -.22\* | 4108 (1) | <.01 | .98 | .01/4.47 | |
|  | - YSR externalizing | .05/-.48 | 3.03\* (26.00\*) | -.05 (4.46\*) | -.22 | 3843 (1) | .05 | .99 | .40/1.96 | |
|  | - CBCL internalizing | 1.71\*/-.55 | -.13 (24.67\*) | -.34 (2.74\*) | -.54 | 3697 (1) | .01 | .99 | .03/2.96 | |
|  | - CBCL externalizing | -1.91\*/-.13 | 1.68\* (22.48\*) | -.88\* (3.28\*) | -.24\* | 3622 (1) | <.01 | .99 | <.01/4.88 | |
| *Note:* YSR: German version of the 112-item Youth Self Report; CBCL: German version of the 112-item Child Behavior Checklist; 1Model comparison with model where grouped slope and intercept factors are constrained to zero, thus assuming no differences between groups*.* \**p*<.05 | | | | | | | | | | |

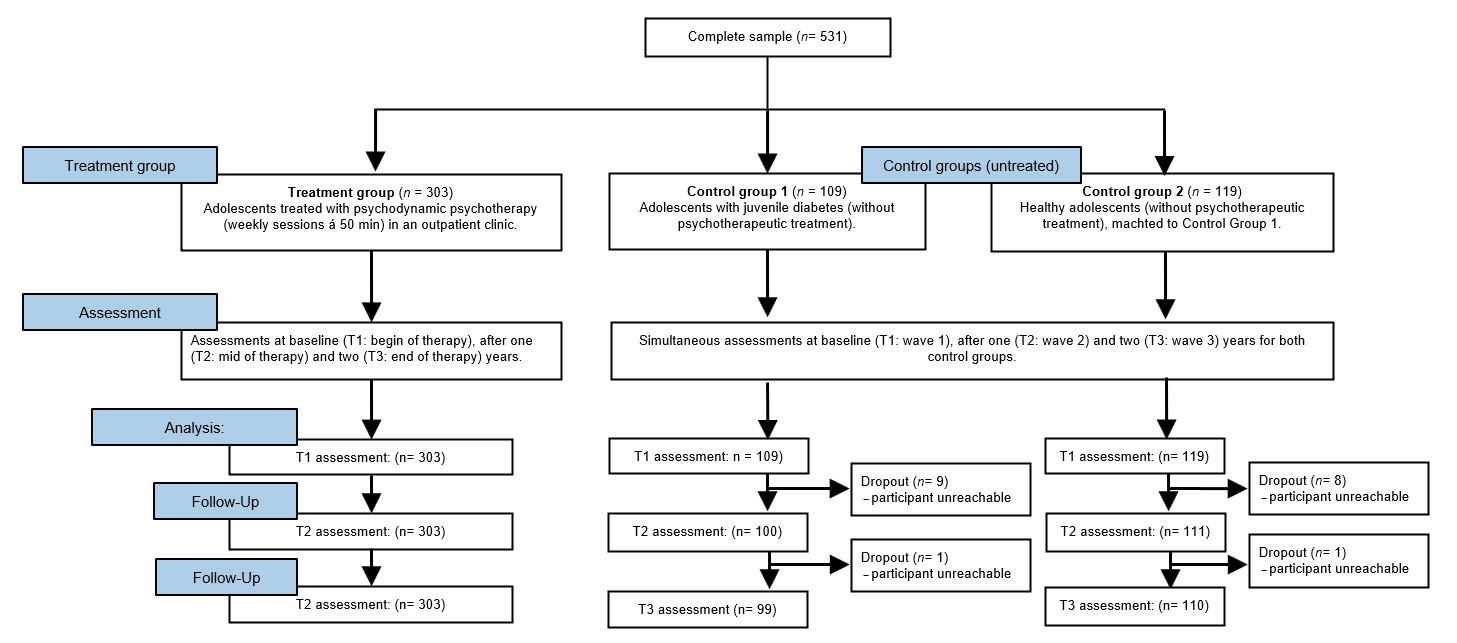
**Online Supplement: ESM 3.**

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| *Multi-level model (MLM) estimates for the treated (n=303) and non-treated (n=228) adolescents with regard to age-specific developmental trajectories* | | | | | | | | | | | | | | | |
|  |  | Model 1 (YSR INT) | |  | Model 2 (YSR EXT) | |  | Model 3 (CBCL INT) | | |  | | Model 4 (CBCL EXT) | | |
|  | Estimate / SE | *p-value* |  | Estimate / SE | *p-value* |  | Estimate / SE | *p-value* |  | | Estimate / SE | | *p-value* |
| Treated adolescents (*n*=303) | |  |  |  |  |  |  |  |  |  | |  | |  |
|  | Intercept | 18.62 / 1.40 | < .01\*\* |  | 14.34 / .81 | < .01\*\* |  | 15.03 / 7.7 | .05 |  | | 39.01 / 5.71 | | < .01\*\* |
|  | Time | -3.72 / .73 | < .01\*\* |  | -1.74 / .19 | < .01\*\* |  | -.45 / 4.1 | .90 |  | | -7.14 / 2.69 | | < .01\*\* |
|  | Gender (Girls = 0; Boys = 1) | -1.30 / .56 | .02\* |  | .11 / .58 | .84 |  | -1.34 / .75 | .08 |  | | -.15 / .78 | | .85 |
|  | Age | .16 / .11 | .12 |  | -.06 / .05 | .29 |  | .2 / .51 | .61 |  | | -1.71 / .38 | | < .01\*\* |
|  | Age\*time | .08 / .06 | .14 |  | .20 / .29 | .48 |  | -.19 / .27 | .48 |  | | .38 / .17 | | .03\* |
| Random effects | | |  |  |  |  |  |  |  |  | |  | |  |
|  | Measurement (Level 1) | 32.72 | |  | 16.77 | |  | 60.86 | | |  | | 26.42 | | |
|  | Patient (Level 2) | 6.54 | |  | 1.33 | |  | 13.82 | | |  | | 31778,00 | | |
|  | Therapist (Level 3) | .62 | |  | .22 | |  | .68 | | |  | | .02 | | |
| Comparison sample (*n*=228) | |  |  |  |  |  |  |  |  |  | |  | |  |
|  | Intercept | 2.45 / 6.85 | .72 |  | 4.83 / 5.3 | .37 |  | 4.39 / 5.01 | .38 |  | | 9.05 / 5.40 | | .09 |
|  | Time | -1.89 / 3.26 | .56 |  | -.21 / 2.57 | .93 |  | .91 / 2.53 | .72 |  | | 2.59 / 2.82 | | .35 |
|  | Gender (Girls = 0; Boys = 1) | -3.36 / .98 | < .01\*\* |  | .85 / .78 | .27 |  | -.85 / .66 | .20 |  | | 2.11 / .69 | | < .01\*\* |
|  | Age | .88 / .47 | .07 |  | .56 / .37 | .14 |  | .21 / .35 | .54 |  | | -.17 / .38 | | .65 |
|  | Age\*time | .06 / .22 | .74 |  | -.01 / .18 | .86 |  | -.12 / .19 | .511 |  | | -.25 / .20 | | .21 |
| Random effects | | |  |  |  |  |  |  |  |  | |  | |  |
|  | Measurement (Level 1) | 44.64 | |  | 25.43 | |  | 21.08 | | |  | | 28.15 | | |
|  | Patient (Level 2) | 6.15 | |  | 2.65 | |  | 2.15 | | |  | | 5.08 | | |
| Note: YSR: German version of the 112-item Youth Self Report; CBCL: German version of the 112-item Child Behavior Checklist; 1 INT: internalizing symptoms; 2 EXT: externalizing symptoms \* *p* < .05, \*\* *p* < .01 | | | | | | | | | | | | | | | |

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| **Online Supplement: ESM 4.** | | |  |  |  |  |  |  |  |  |  |  |
| *Multi-level model (MLM) estimates for the treated (n=303) and non-treated (n=228) adolescents with regard to reporter bias, which refers to the difference/discrepancy in perceived symptom load between mother (CBCL) and adolescent (YSR).* | | | | | | | | | | | | |
|  |  | *Treated adolescents (n=303)* | | | | |  | *Comparison samples (n=228)* | | | | |
|  |  | Reporter bias INT1 | |  | Reporter bias EXT2 | |  | Reporter bias INT1 | |  | Reporter bias EXT2 | |
|  | Estimate / SE | *p-value* |  | Estimate / SE | *p-value* |  | Estimate / SE | *p-value* |  | Estimate / SE | *p-value* |
|  | Intercept | -9.18 / .52 | .08 |  | -9.33 / 4.55 | .04\* |  | -4.59 / 6.01 | .44 |  | -7.53 / .54 | .17 |
|  | Time | 1.04 / .43 | .02\* |  | -.11 / .34 | .75 |  | -.20 / .30 | .51 |  | .40 / .27 | .08 |
|  | Gender (Girls = 0; Boys = 1) | -.42 / 1.07 | .69 |  | .14 / .92 | .88 |  | -2.38 / .93 | .01\* |  | -1.08 / .83 | .20 |
|  | Age | .75 / .34 | .03\* |  | .65 / .29 | .03\* |  | .85 / .42 | .04\* |  | .96 / .38 | .01\* |
| Random effects | | |  |  |  |  |  |  |  |  |  |  |
|  | Measurement (Level 1) | 49.28 | |  | 22.94 | |  | 60.86 | |  | 32.42 | |
|  | Patient (Level 2) | 8.87 | |  | .08 | |  | 13.82 | |  | 5.41 | |
|  | Therapist (Level 3) | .22 | |  | .62 | |  | *NA* | |  | *NA* | |
| Note: Negative values for the reporter bias indicate an underestimation of the symptom load by the mother; YSR: German version of the 112-item Youth Self Report; CBCL: German version of the 112-item Child Behavior Checklist; 1 INT: reporting bias with regard to internalizing symptoms; 2 EXT: externalizing symptoms \* *p* < .05, \*\* *p* < .01 | | | | | | | | | | | | |

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| **Online Supplement: ESM 5.** | | |  |  |  |  |  |  |  |  |  |  |
| *Multi-level model (MLM) estimates for the treated sample for internalizing (YSR: Model 1; CBCL: Model 2) and externalizing (YSR: Model 3; CBCL: Model 4) symptoms with therapist as cluster variable and model comparison with models without therapist as cluster variable* | | | | | | | | | | | | |
|  | Parameter estimates | Model 1 (YSR INT) | |  | Model 2 (YSR EXT) | |  | Model 3 (CBCL INT) | |  | Model 4 (CBCL EXT) | |
|  | Estimate / SE | *t*-value |  | Estimate / SE | *t*-value |  | Estimate / SE | *t*-value |  | Estimate / SE | *t*-value |
| Fixed effects | |  |  |  |  |  |  |  |  |  |  |  |
|  | Intercept | 20.91 / .49 | 44.16\*\* |  | 13.42 / .35 | 38.79\*\* |  | 17.60 / .51 | 34.81\*\* |  | 13.53 / .46 | 29.46\*\* |
|  | Time | -2.69 / .22 | -11.99\*\* |  | -1.66 / .14 | -11.89\*\* |  | -2.79 / .24 | -11.65\*\* |  | -1.67 / .17 | -9.36\*\* |
|  | Gender | - 1.88 / .55 | -3.39\*\* |  | .51 / .40 | 1.29 |  | -1.32 / .46 | -2.86\*\* |  | 1.47 / .54 | 2.72\*\* |
| Random effects | | |  |  |  |  |  |  |  |  |  |  |
|  | Measurement (Level 1) | 32.89 | |  | 16.95 | |  | 48.91 | |  | 33.03 | |
|  | Patient (Level 2) | 6.65 | |  | 1.35 | |  | 9.94 | |  | 2.65 | |
|  | Therapist (Level 3) | .83 | |  | .17 | |  | .26 | |  | 0.02 | |
|  | | *p - value* | *ICC* |  | *p - value* | *ICC* |  | *p - value* | *ICC* |  | *p - value* | *ICC* |
| Model comparison | | .28 | .02 |  | .61 | .01 |  | *.61* | *<.01* |  | .91 | *<.01* |
| Note: YSR: German version of the 112-item Youth Self Report; CBCL: German version of the 112-item Child Behavior Checklist; Gender refers to the mother's child. \* *p* < .05, \*\* *p* < .01 | | | | | | | | | | | | |

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| **Online Supplement ESM 6.** | |  |  |
| *Overview of percentages of adolescents with clinically significant change (CSC) in psychopathology based on participants' self-report (YSR) and mothers' report (CBCL) for the two non-healthy groups* | | | |
|  | Clinically Significant Change (CSC) |  | |
|  | T1 (Begin) - T2 (Mid) | T2 (Mid) - T3 (End) |
|  | *% CSC\* (*♀/♂) | *% CSC\* (♀/♂)* |
| Patients (*N*=303) | |  |  |
|  | YSR Adolescents |  |  |
|  | - Internalizing | 27.4 / 24.7 | 21.7 / 30.3 |
|  | - Externalizing | 26.7 / 26.1 | 18.1 / 30.3 |
|  | CBCL |  |  |
|  | - Internalizing | 8.0 / 14.8 | 31.1 / 27.5 |
|  | - Externalizing | 13.7 / 22.6 | 21.8 / 23.3 |
|  | Diabetic adolescents (*N*=109) |  |  |
|  | YSR Adolescents |  |  |
|  | - Internalizing | 10.7 / 10.8 | 10.7 / 10.0 |
|  | - Externalizing | 10.6 / 20.7 | 10.8 / 10.0 |
|  | CBCL Mothers |  |  |
|  | - Internalizing | 2.3 / 5.9 | 2.3 / 8.7 |
|  | - Externalizing | 11.3 / 14.0 | 4.7 / 17.3 |
| *Note:* YSR: German version of the 112-item Youth Self Report; CBCL: German version of the 112-item Child Behavior Checklist; \*CSC = clinically significant change, as defined as a reliable pre-post change, with a post-value indicating a transition to a healthy comparison group. CSC includes improved and recovered adolescents. Gender-specific norms and reliability values for the healthy comparison groups were taken from the representative German sample (cf. Döpfner, M., Achenbach, T. M., Plück, J., Kinnen, C., & Plück, J. (2014)). | | | |
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**Online Supplement ESM 7**. Figure 2. Participant flow chart across all three groups and measurement occasions.