1. **Appendix**

**7.1 Imputation of missing values**

Where calculation of questionnaire sum scores was required, the proportion of NAs per questionnaire was checked, similar to Wilhelm and colleagues (2015). If more than 10% of item responses within a given questionnaire from one participant were missing, data on this particular questionnaire from this participant were excluded from analysis. If fewer than 10% of item responses were missing, Little’s test (Little, 1988) was used to determine whether item responses were missing at random. If so, NAs were imputed using person mean imputation. If Little’s test revealed item responses were missing not at random, no values were imputed and instead sum scores were calculated using all responses given.

**7.2 Assumed model equations**

***7.2.1 Hypotheses 1 and 3: multi-level model***

Symptom*ij* ~ *b*0*i* + *b*1*i* \* PerfectionismBaseline*i* + *b*2*i* \* SymptomBaseline*i* + *b*3*i* \* Time*ij* + *b*4 \* (Perfectionism x Time)*ij* + *ɛij*

*i*: participants, *j*: time points; with *b0i* = *b*0 + *u*0*i*, *b*1*i* = *b*1 *+ u*1*i*, *b*2*i* = *b*2 *+ u*2*i*, *b*3*i* = *b*3 *+ u*3*i*

***7.2.2 Hypothesis 1: logistic regression***

RecoveryPosti ~

***7.2.3 Hypotheses 2 and 4: multi-level model***

SymptomFU*i* ~ *b*0*i* + *b*1*i* \* PerfChange*i* + *b*2*i* \* SymptomPost*i* + *ɛi*

*i*: participants; with *b0i* = *b*0 + *u*0*i*, *b*1*i* = *b*1 *+ u*1*i*, *b*2*i* = *b*2 *+ u*2*i*

**7.3 Bivariate correlations between variables**

*Correlation Matrix*

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Variable | 1. | 2. | 3. | 4. | 5. | 6. | 7. | 8. | 9. | 10. | | 11. | | 12. | | 13. | | 14. | | 15. | | 16. | | 17. | | 18. | | 19. | | 20. | | 21. | |
| 1. Y-BOCS pre | 1 |  |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 2. Y-BOCS post | .79 | 1 |  |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 3. Y-BOCS FU3 | .65 | .75 | 1 |  |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 4. Y-BOCS FU6 | .43 | .58 | /a | 1 |  |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 5. Y-BOCS FU12 | .61 | .55 | /a | .85 | 1 |  |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 6. OCI-R pre | .49 | .36 | .39 | .32 | .47 | 1 |  |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 7. OCI-R post | .46 | .59 | .39 | .41 | .39 | .79 | 1 |  |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 8. OCI-R FU3 | .40 | .56 | .52 | /a | /a | .60 | .82 | 1 |  |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 9. OCI-R FU6 | .43 | .60 | /a | .61 | .17 | .53 | .69 | /a | 1 |  |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 10. OCI-R FU12 | .64 | .60 | /a | .58 | .73 | .67 | .73 | /a | .71 | 1 |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 11. BDI-II pre | .31 | .19 | .00 | .34 | -.04 | .39 | .21 | -.19 | .67 | .28 | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 12. BDI-II post | .48 | .50 | .47 | .19 | .14 | .28 | .38 | .23 | .61 | .48 | .72 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |  | |
| 13. BDI-II FU3 | .33 | .46 | .32 | /a | /a | .07 | .31 | .25 | /a | /a | .47 | | .79 | | 1 | |  | |  | |  | |  | |  | |  | |  | |  | |
| 14. BDI-II FU6 | .21 | .51 | /a | .71 | .44 | .19 | .53 | /a | .83 | .45 | .78 | | .46 | | /a | | 1 | |  | |  | |  | |  | |  | |  | |  | |
| 15. BDI-II FU12 | .40 | .35 | /a | .30 | .45 | .38 | .42 | /a | .10 | .58 | .42 | | .34 | | /a | | .52 | | 1 | |  | |  | |  | |  | |  | |  | |
| 16. FMPS-CM pre | .21 | .15 | .07 | .05 | -.33 | .44 | .24 | -.13 | .44 | -.04 | .70 | | .35 | | .28 | | .53 | | .35 | | 1 | |  | |  | |  | |  | |  | |
| 17. FMPS-CM post | .42 | .32 | .39 | /a | /a | .42 | .41 | .19 | /a | /a | .57 | | .55 | | .37 | | /a | | /a | | .60 | | 1 | |  | |  | |  | |  | |
| 18. FMPS-CM FU3 | .24 | .14 | .02 | /a | /a | .10 | .26 | .04 | /a | /a | .50 | | .43 | | .32 | | /a | | /a | | .54 | | .56 | | 1 | |  | |  | |  | |
| 19. CPQ pre | .31 | .22 | .06 | /a | /a | .50 | .38 | .03 | /a | /a | .52 | | .32 | | .28 | | /a | | /a | | .72 | | .55 | | .46 | | 1 | |  | |  | |
| 20. CPQ post | .36 | .51 | .44 | /a | /a | .34 | .47 | .45 | /a | /a | .31 | | .56 | | .43 | | /a | | /a | | .33 | | .55 | | .22 | | .63 | | 1 | |  | |
| 21. CPQ FU3 | .28 | .34 | .20 | /a | /a | .34 | .51 | .45 | /a | /a | .27 | | .36 | | .45 | | /a | | /a | | .37 | | .39 | | .57 | | .61 | | .67 | | 1 | |

*Note.* a Missing correlation because follow-up time points did not overlap between participant groups. Time points: pre = baseline measurement; post = post-treatment measurement; FU3/FU6/FU12 = follow-ups at 3, 6, 12 months. Y-BOCS = Yale-Brown Obsessive Compulsive Scale. OCI-R = Obsessive-Compulsive Inventory. BDI-II = Beck Depression Inventory-II. FMPS-CM = Frost Multidimensional Perfectionism Scale, subscale “concern over mistakes”. CPQ = Clinical Perfectionism Questionnaire.

**7.4 Statistical values used for model selection**

***7.4.1 Hypothesis 1***

When contrasting models, adding the predictors perfectionism at baseline, symptoms at baseline and time improved model fit compared to the baseline model (log likelihood value = 24.43, *p* < .0001). Including the interaction term (perfectionism and time) did not improve model fit when compared to a model without the interaction (log likelihood value = 1.89, *p* = .17). Further, the model with a random slope for time fit the data better than a model without random slopes (log likelihood value = 15.46, *p* < .001), whereas models with random slopes for baseline perfectionism or baseline symptoms showed no significant improvement of model fit (log likelihood value = 0.85, *p* = .65; log likelihood value = 1.29, *p* = .52).

***7.4.2 Hypothesis 2***

When contrasting models, adding the two predictors improved model fit compared to the baseline model (log likelihood value = 6.42, *p* = 0.04). Adding random slopes was not possible as there were fewer observations than random effects.

***7.4.3 Hypothesis 3***

When contrasting models using the OCI-R as outcome, adding the predictors perfectionism at baseline, symptoms at baseline and time improved model fit compared to the baseline model (log likelihood value = 27.93, *p* < .0001). Including the interaction between perfectionism and time did not improve model fit when compared to a model without the interaction (log likelihood value = 1.40, *p* = .24). Similarly, adding random slopes for any of the predictor variables did not improve fit when compared to a model without random slopes (log likelihood value = 0.02, *p* = .99; log likelihood value = 0.01, *p* = .99; log likelihood value = 1.45, *p* = .48).

When contrasting models using the BDI-II as outcome, adding the predictors perfectionism at baseline, symptoms at baseline and time improved model fit compared to the baseline model (log likelihood value = 47.22, *p* < .0001). Including the interaction between perfectionism and time did not improve model fit when compared to a model without the interaction (log likelihood value = 2.25, *p* = .11). Further, the model with a random slope for time fit the data better than a model without random slopes (log likelihood value = 8.37, *p* = .02), whereas models with random slopes for baseline perfectionism or baseline symptoms showed no significant improvement of model fit (log likelihood value = 0.001, *p* = .99; log likelihood value = 0.23, *p* = .89).

***7.4.4 Hypothesis 4***

When contrasting models using the OCI-R as outcome, adding the two predictors improved model fit compared to the baseline model (log likelihood value = 11.41, *p* < .01). Adding random slopes was not possible as there were fewer observations than random effects.

When contrasting models using the BDI-II as outcome, adding the two predictors improved model fit compared to the baseline model (log likelihood value = 8.81, *p* = .01). Adding random slopes was not possible as there were fewer observations than random effects.

**7.5 Equations for final multi-level models**

***7.5.1 Hypotheses 1 and 3 (outcomes Y-BOCS and BDI-II)***

Symptom*ij* ~ *b*0*i* + *b*1 \* PerfectionismBaseline*i* + *b*2 \* SymptomBaseline*i* + *b*3*i* \* Time*ij* + *ɛij*

*i*: participants, *j*: time points; with *b0i* = *b*0 + *u*0*i*, *b*3*i* = *b*3 *+ u*3*i*

***7.5.2 Hypothesis 3 (outcome OCI-R)***

Symptom*ij* ~ *b*0*i* + *b*1 \* PerfectionismBaseline*i* + *b*2 \* SymptomBaseline*i* + *b*3 \* Time*ij* + *ɛij*

*i*: participants, *j*: time points; with *b0i* = *b*0 + *u*0*i*

***7.5.3 Hypotheses 2 and 4***

SymptomFU*i* ~ *b*0*i* + *b*1 \* PerfChange*i* + *b*2 \* SymptomPost*i* + *ɛi*

*i*: participants; with *b0i* = *b*0 + *u*0*i*