

Appendix 1 to Rappaport L, Hunter M, Russell J et al. Emotional and interpersonal mechanisms in community SSRI treatment of social anxiety disorder. *J Psychiatry Neurosci* 2020.

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Measurement Model for Anxiety Symptom Severity

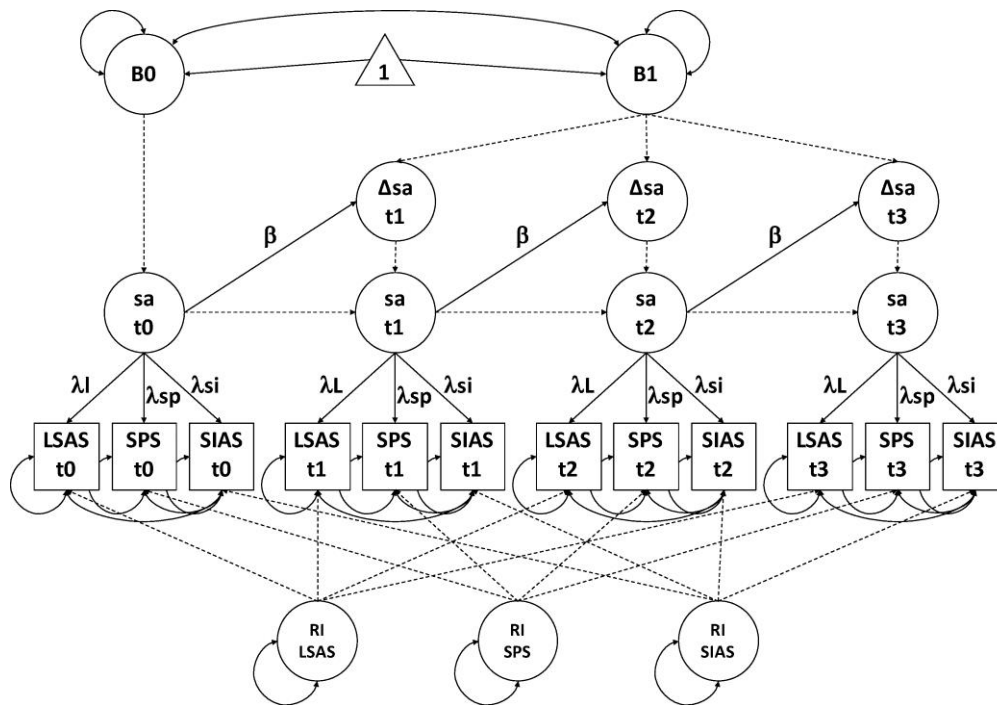
A measurement model facilitated estimation of latent anxiety symptom severity at each time point as indexed by clinician- and patient-report (see Measures in the main text). The measurement model for latent anxiety symptomatology was built within a higher-order dual-change latent difference score framework to model change in latent anxiety symptomatology from baseline over the first 3 months of treatment (see Supplemental Figure 1). Within the measurement model, three random intercepts account for interindividual differences in mean anxiety symptomatology over the course of treatment¹. Residual variances were allowed to correlate between both patient-report indices (i.e., the SIAS and SPS) and the SIAS with clinician-reported severity (i.e., the LSAS).

Chi-square difference tests of nested constraints demonstrate measurement invariance across time: (i) equal factor loadings ($\chi^2(9) = 8.98, p = 0.44$), (ii) equal covariances (i.e., of SIAS with SPS and LSAS; $\chi^2(6) = 11.45, p = 0.08$), and (iii) equal residual variance for the SIAS ($\chi^2(3) = 1.55, p = 0.67$) and LSAS ($\chi^2(3) = 0.51, p = 0.92$). Notwithstanding corrections for multiple testing, residual variance in the SPS may not be time invariant ($\chi^2(3) = 8.29, p = 0.04$). Subsequent analyses imposed all time invariant constraints indicated (see above), which produced a model of best fit that does not differ significantly in fit from the original model, which did not impose time invariance on any paths ($\chi^2(21) = 24.85, p = 0.25$). Chi-square difference tests indicate that phi (ϕ), an autoregressive path between latent change variables², is

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not statistically significant in the original model ($\chi^2(1) = 1.14, p = 0.28$) or the model of best fit ($\chi^2(1) = 0.001, p = 0.97$); to improve parsimony, ϕ was not included in subsequent analyses. The final model of best fit for anxiety symptomatology evidences good model fit, $\chi^2(67) = 80.62, p = 0.12$, CFI = 0.97, RMSEA = 0.066, 95%CI (0, 0.12), and indicates decreases in anxiety over time (see Supplemental Table 1). To substantially improve computational efficiency and robustness, factor scores were extracted from the measurement model using maximum likelihood estimation for separate analysis in a dual-change latent difference score model³.

Fig. S1:



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Supplemental Table 1. Parameter estimates for the model of best fit for latent change in anxiety severity over time

Parameter	B (95% CI)
<u>Measurement Model</u>	
λ_{LSAS}	8.07 (4.78, 10.71)
λ_{SPS}	4.59 (2.70, 6.20)
λ_{SIAS}	4.57 (2.69, 6.10)
eLSAS	130.87 (69.13, 181.77)
eSPS t1	65.41 (28.28, 101.34)
eSPS t2	40.48 (17.08, 62.78)
eSPS t3	21.92 (5.45, 37.93)
eSPS t4	21.56 (9.10, 40.15)
eSIAS	32.80 (15.68, 45.65)
Covariance: SIAS with LSAS	8.73 (-9.12, 24.40)
Covariance: SIAS with SPS	18.00 (4.75, 30.49)
MRI LSAS	-502.06 (-522.12, -476.84)
MRI SPS	-287.18 (-315.53, -253.95)
MRI SIAS	-277.89 (-297.86, -255.35)
$S^2_{RI LSAS}$	46.56 (-9.00, 99.77)
$S^2_{RI SPS}$	51.11 (20.15, 81.63)
$S^2_{RI SIAS}$	19.66 (7.95, 31.82)
<u>Latent Change Score Model</u>	
β	-0.55 (-0.70, -0.43)
$M_{intercept}$	72.79 (55.52, 119.88)
$S^2_{intercept}$	1.68 (0.20, 7.38)
M_{slope}	36.65 (24.52, 68.08)
S^2_{slope}	3.54 (1.49, 13.28)
Covariance: intercept with slope	0.98 (-0.11, 3.99)
<u>Model Fit</u>	
χ^2 (df)	80.62 (67), $p = 0.12$
CFI	0.97
RMSEA (95% CI)	0.066 (0, 0.12)

Note. Given equality constraints across time (see Supplemental Figure 1), parameter estimates and confidence intervals are unstandardized.