

Supplementary Table 1

*Heart Rate Recovery: Exponential Decay Key Model Parameters*

	<i>M</i>	<i>SE</i>	<i>Est/SE</i>	<i>p</i>
Initial heart rate ( $\pi_0$ )	71.08	2.22	31.99	< .001
Change in heart rate from $\pi_0$ to the lower asymptote ( <i>s</i> )	1.55	2.14	0.72	0.47
Exponential rate of change ( $\alpha$ )	0.32	0.31	1.03	0.31

*Note.* The model was parameterized in the following way:

$$Y_{it} = \pi_{0i} + s_i * (1 - e^{-\alpha_i * t}) + \varepsilon_{it}$$

where  $\pi_{0i}$  is the initial heart rate for individual *i*;  $s_i$  is the amount of change in heart rate from the intercept to the lower asymptote for individual *i*;  $\alpha_i$  is the exponential rate of change for individual *i* (with higher, more positive coefficients indicating faster decay rates), and  $\varepsilon_{it}$  is the time-varying residual. Unstandardized coefficients are reported.

Supplementary Table 2

*Response System Coherence: Key Model Parameters*

	<i>M</i>	<i>SE</i>	<i>Est/SE</i>	<i>p</i>
Intercept ( $\pi_0$ )	73.89	0.77	95.42	< .001
Slope ( $\pi_1$ )	0.33	0.35	0.94	0.35

*Note.* The model at level 1 (within-person) was parameterized in the following way:

$$HR_{it} = \pi_{0i} + \pi_{1i} * (NA_{it} - \overline{NA}_i) + \varepsilon_{it}$$

where  $HR_{it}$  is the heart rate of individual  $i$  at time  $t$ ;  $\pi_{0i}$  is the random intercept that represents the heart rate of individual  $i$  at  $t = 0$ ;  $\pi_{1i}$  is the random slope for individual  $i$  that captures the amount of change in heart rate that corresponds to a 1-unit increase in person-mean centered negative affect ( $NA_{it} - \overline{NA}_i$ ); and  $\varepsilon_{it}$  is the time-varying residual. Unstandardized coefficients are reported.

Supplementary Table 3

*Prevalence, intraclass correlations, and origins of the 22 childhood adversity items*

	<i>N</i>	Proportion	ICC	Source
1 - Divorce	55	0.20	0.60	ACE
2 – Domestic violence between adults	79	0.29	0.52	ACE, RF
3 – Witnessed or experienced family conflict	207	0.76	0.21	RF
4 – Chaotic, disorganized household	37	0.14	0.42	RF
5 – Emotional abuse	151	0.56	0.20	ACE, RF
6 – Minor assault: spanked, slapped, pinched	194	0.72	0.19	ACE, RF
7 – Severe assault: hit with fist, kicked	48	0.18	0.30	ACE

Supplementary Table 3

*Prevalence, intraclass correlations, and origins of the 22 childhood adversity items*

	<i>N</i>	Proportion	ICC	Source
8 – Very severe assault: beat up, choked	32	0.12	0.74	ACE
9 – Neglect (physical or emotional)	56	0.21	0.25	ACE, RF
10 – Sexual maltreatment: molestation	57	0.21	0.19	ACE
11 – Severe sexual maltreatment: rape	13	0.05	0.41	ACE
12 – Parental substance use	106	0.39	0.66	ACE, RF
13 – Parental mental illness	73	0.27	0.19	ACE
14 – Parental legal trouble or prison	7	0.03	0.48	ACE

Supplementary Table 3

*Prevalence, intraclass correlations, and origins of the 22 childhood adversity items*

	<i>N</i>	Proportion	ICC	Source
15 – Primary caregiver unemployment	48	0.18	0.08	ACE, RF
16 – Unsafe neighborhood	16	0.06	0.70	ACE, RF
17 – Financial stress	106	0.39	0.47	New
18 – School stressors	52	0.19	0.15	ACE
19 – Teased or bullied	139	0.51	0.04	ACE
20 – Household (non-parent) substance use	14	0.05	0.66	ACE, RF
21 – Household (non-parent) mental illness	36	0.13	0.15	ACE
22 – Household (non-parent) legal trouble	14	0.05	0.48	ACE

*Note.* ACE = Adverse Childhood Experiences Questionnaire; RF = Risky Family Environment

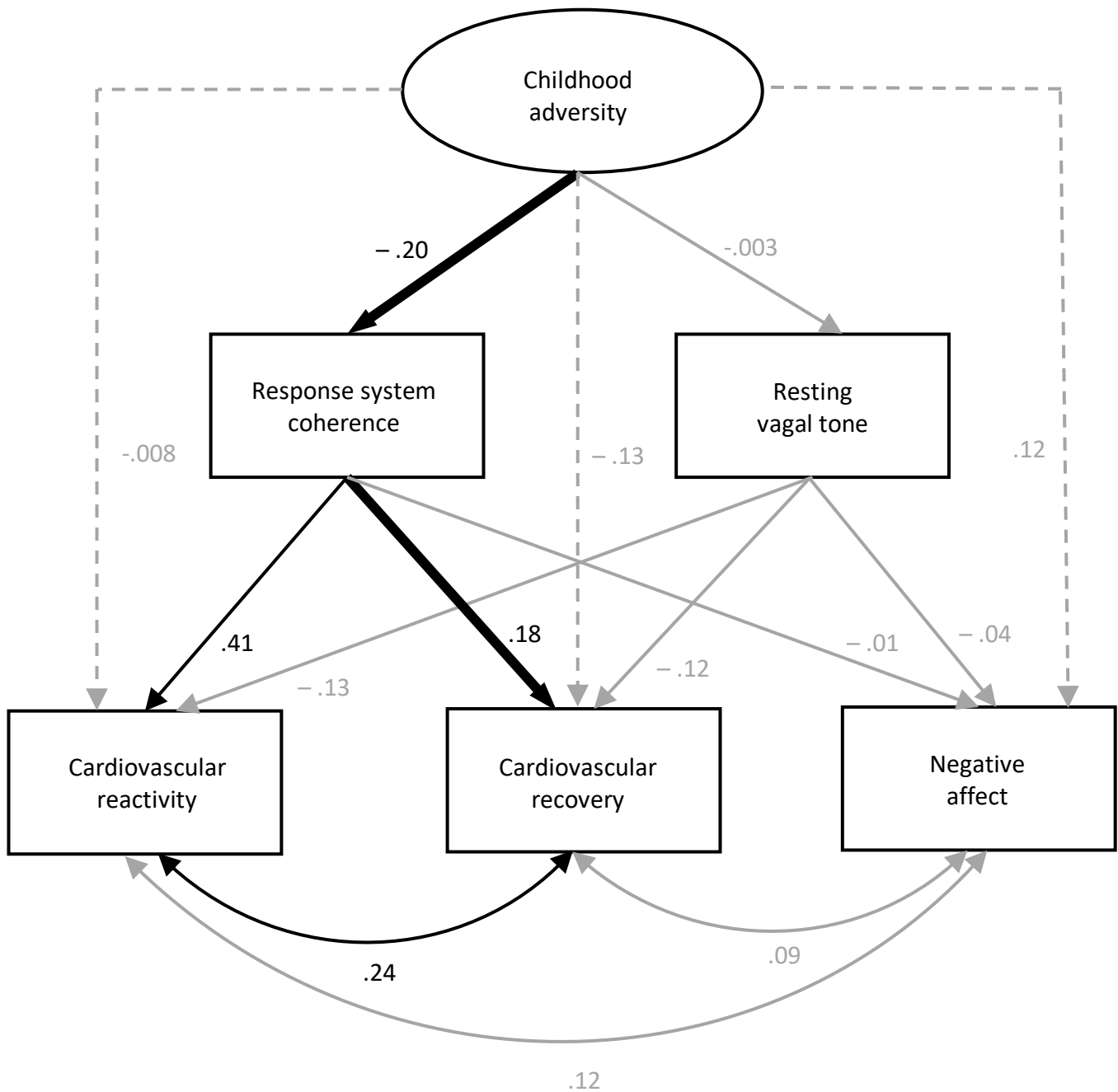
Measure; New = new item. ICC = intraclass correlation. Total *N* = 27

Supplementary Table 4

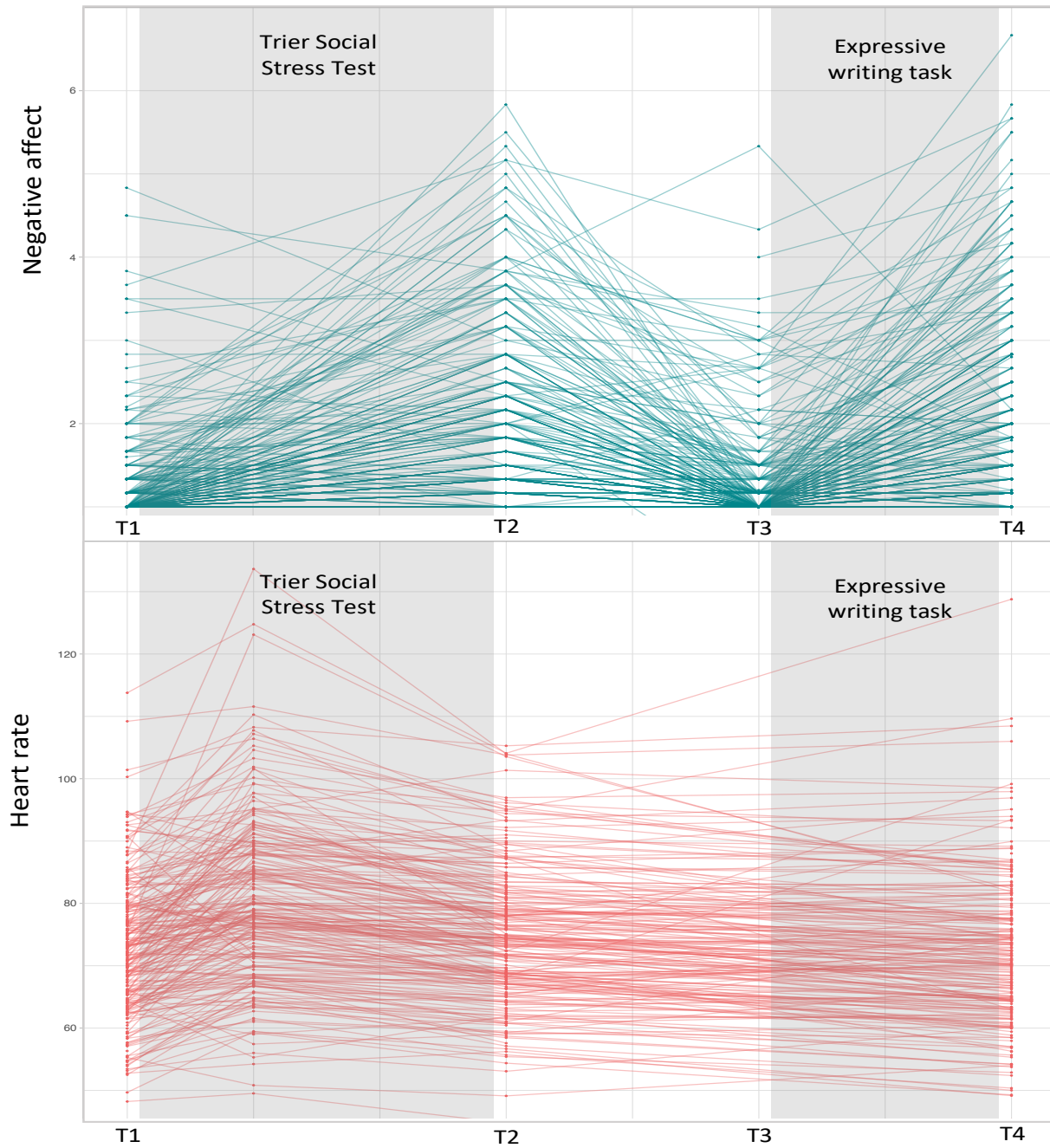
*Standardized within-family (level 1) correlations between facets of mindfulness and RSC*

Variables	1	2	3	4	5	6
1. RSC	—					
2. FFMQ total	<b>.18**</b>	—				
3. Observing	-.01	<b>.58***</b>	—			
4. Describing	<b>.25***</b>	<b>.81***</b>	<b>.32***</b>	—		
5. Acting with awareness	<b>.15†</b>	<b>.77***</b>	.08	<b>.59***</b>	—	
6. Accepting	.14	<b>.74***</b>	<b>.23***</b>	<b>.47***</b>	<b>.55***</b>	—
7. Non-judging	.14	<b>.76***</b>	<b>.39***</b>	<b>.49***</b>	<b>.41***</b>	<b>.44***</b>

*Note.* †,  $p = .05$ ; \*,  $p < .05$ ; \*\*,  $p < .01$ ; \*\*\*,  $p < .001$ .



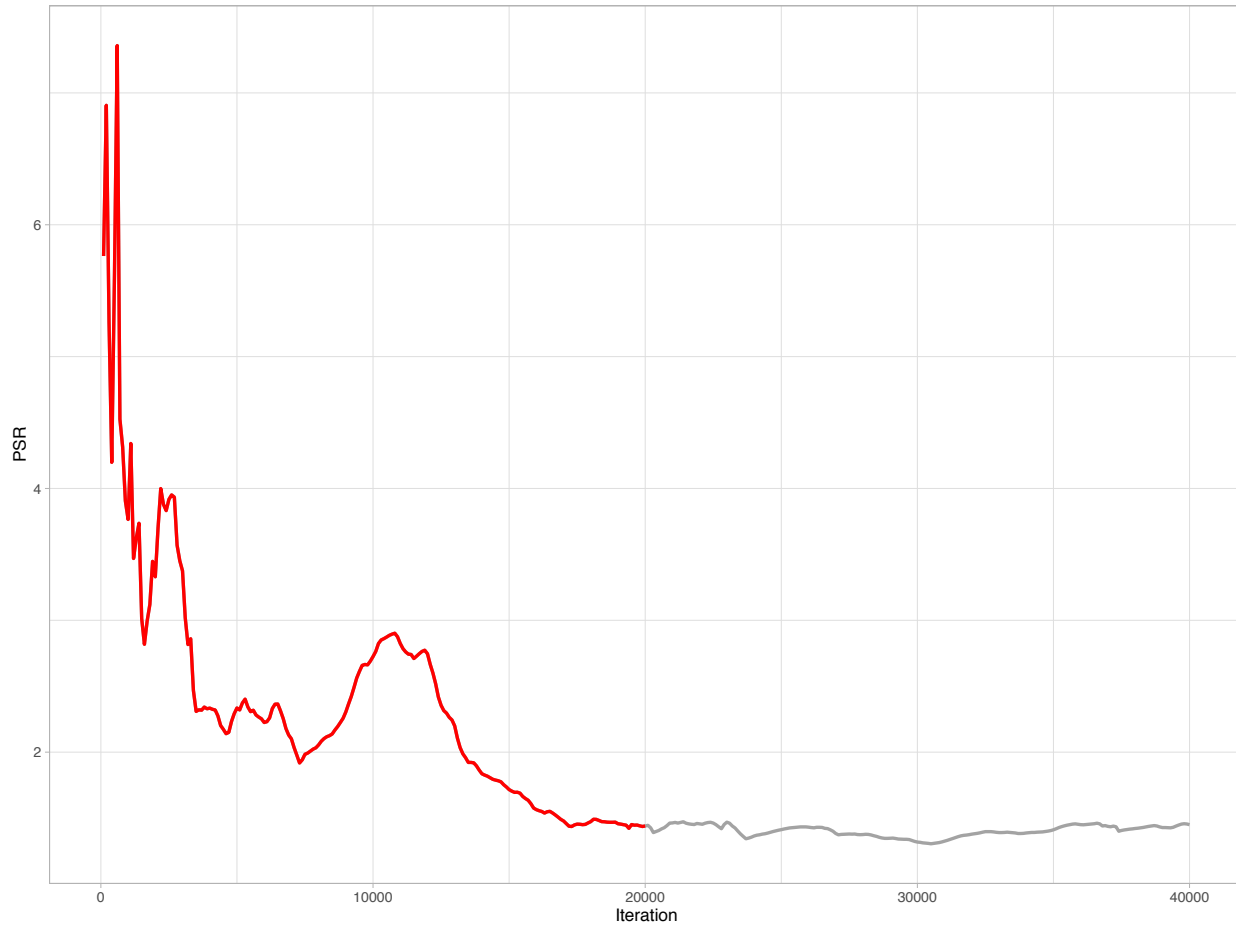
*Supplementary Figure 1.* Full MSEM model testing the links among childhood adversity, **uncensored RSC scores**, rVT, and responses to stress. Standardized coefficients are presented. Black lines = 95% CrI excludes 0; gray lines = 95% CrI overlaps with 0. Dashed lines = direct paths after accounting for indirect paths. Bold black lines = significant indirect pathway.



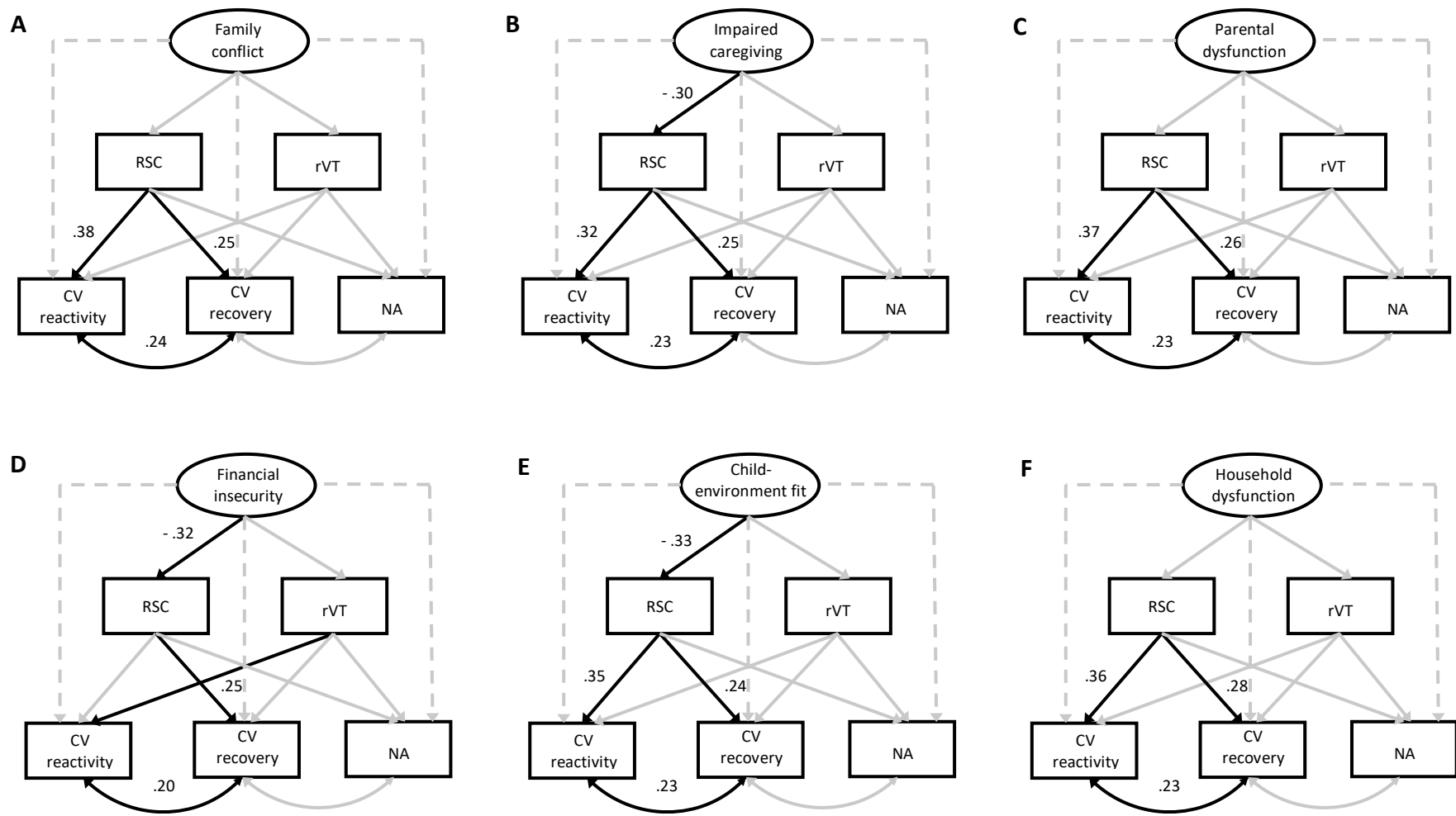
*Supplementary Figure 2.* The pattern of affective (top) and cardiovascular (bottom) responses to tasks in the lab visit. Each line represents one participant.



Potential Scale Reduction: 20,000 and 40,000 iterations



*Supplementary Figure 3.* Potential scale reduction coefficients for the 20,000-iteration and the 40,000-iteration solutions of the full MSEM model. PSR values for the 20,000-iteration model are shown in red. PSR values for the 40,000-iteration model are shown in gray. Total runtime for the 20,000-iteration model is 2 minutes and 25 seconds. Total runtime for the 40,000-iteration model is 5 minutes and 4 seconds.



*Supplementary Figure 4.* Exploratory analyses examining links among forms of childhood adversity (A: Family Conflict; B: Impaired Caregiving; C: Parental Dysfunction; D: Financial Insecurity; E: Poor Child-Environment Fit; F: Household Dysfunction), RSC, rVT, and responses to stress. Standardized coefficients are presented. RSC = Response System Coherence; rVT = resting Vagal Tone; CV = Cardiovascular; NA = Negative Affect. Black lines = 95% CrI excludes 0; gray lines = 95% CrI overlaps with 0. Dashed lines = direct paths after accounting for indirect paths. The links between Impaired Caregiving and RSC (Model B) and Poor Child-Environment Fit and RSC (Model E) remained significant after controlling for other forms of adversity ( $\beta = -.09$  and  $\beta = -.11$ , respectively). RSC mediated the link between Impaired Caregiving and CV recovery (unstandardized 95% CrI [-.30, -.02]) as well as the link between Child-Environment Fit and CV recovery (95% CrI [-.18, -.02]).

# MARKOV CHAIN MONTE CARLO (MCMC) TRACE PLOTS FOR KEY PARAMETER ESTIMATES AT LEVEL 1:

