

Supplemental Materials

- Page 2. Supplemental Method
- Page 5. Supplemental Table 1. Polychoric correlations between PSS-SR items
- Page 6. Supplemental Table 2. Polychoric correlations between PSS-I items
- Page 7. Supplemental Figure 1. Standardized betweenness, closeness, and strength centrality of DSM-IV PTSD symptoms in the PSS-SR network
- Page 8. Supplemental Figure 2. Standardized betweenness, closeness, and strength centrality of DSM-IV PTSD symptoms in the PSS-I network
- Page 9. Supplemental Figure 3. Centrality stability in the PSS-SR network
- Page 10. Supplemental Figure 4. Centrality stability in the PSS-I network
- Page 11. Supplemental Figure 5. Strength centrality difference plot for all symptoms in the PSS-SR network
- Page 12. Supplemental Figure 6. Strength centrality difference plot for all symptoms in the PSS-I network

Supplemental Method

Inclusion/Exclusion Criteria

Inclusion criteria for both clinical trials (NCT00127673; NCT01600456) included: (a) primary DSM-IV diagnosis of PTSD; (b) experienced traumatic event at least 12 weeks prior to study entry; and (c) willingness to discontinue current CBT or antidepressant treatment.

Exclusion criteria for the first clinical trial (NCT00127673) included: (a) current diagnosis of schizophrenia or delusional disorder; (b) medically unstable bipolar disorder, depression with psychotic features, or depression requiring immediate psychiatric treatment; (c) severe self-injurious behavior or suicide attempt within the past three months; (d) current diagnosis of alcohol or substance dependence within three months prior to study entry; (e) ongoing intimate relationship with the perpetrator of the traumatic event; (f) history of nonresponse to adequate trial of either prolonged exposure (eight sessions or more) or sertraline (150 mg/day for eight weeks); and (g) medical contraindication for sertraline (e.g., pregnancy).

Exclusion criteria for the second clinical trial (NCT01600456) included those for the first trial plus two additional criteria: (h) No clear trauma memory or trauma before age 3; (i) current high dose use of benzodiazepines.

Measures

PTSD Symptom Scale – Self Report Version (PSS-SR; Foa, Cashman, Jaycox, & Perry, 1997). The PSS-SR is a self-report instrument that assesses DSM-IV PTSD criteria A-F. Participants are instructed to rate each problem with respect to the trauma that brought them into treatment. The PSS-SR has demonstrated high internal consistency ($\alpha = .92$), good test-retest reliability ($r = .87$), and high convergent validity (82% agreement) with the SCID-IV for PTSD diagnosis (Foa et al., 1997).

PTSD Symptom Scale – Interview Version (PSS-I; Foa, Riggs, Dancu, & Rothbaum, 1993). The PSS-I has demonstrated high internal consistency ($\alpha = .65-.86$; Foa, Riggs, Dancu, & Rothbaum, 1993), high interrater reliability ($\rho = .93$), and high convergent validity (80% agreement) with the Structured Clinical Interview for DSM-IV (SCID-IV; First, Spitzer, Gibbon, & Williams, 1995) for PTSD diagnosis (Foa et al., 1993).

Statistical Analyses

During network estimation, *Qgraph* was used to generate multiple network models to fit the data and ultimately selected the model with the lowest Extended Bayesian information criterion (EBIC). A hyperparameter γ was used to determine the sparsity, or parsimony, of the network selected by the EBIC; for all analyses, $\gamma = 0.5$. This resulted in parsimonious models in which spurious edges were unlikely to appear (Epskamp, Borsboom, & Fried, 2018).

GLASSO networks were visualized using the Fruchterman-Reingold algorithm, which places strongly related nodes closer to one another. Nodes with multiple strong connections are drawn to the center of the graph, pushing weakly connected nodes to the periphery (Epskamp et al., 2018).

After estimating interview and self-report network structures, three centrality indices reflecting node strength, closeness, and betweenness were calculated (Borsboom & Cramer, 2013). Node *strength* consists of the summed absolute weights of all of a node's edges; thus node strength reflects both the number and magnitude of direct connections to other nodes. Node *closeness* reflects the average distance (i.e., number of edges) from one node to all other nodes in the network. Nodes high in closeness are, on average, a shorter distance away from other nodes in the network, requiring few mediational relationships to interact with other nodes. Node *betweenness* reflects how often a node lies on the shortest path between two other nodes; nodes

with high betweenness often mediate indirect relationships between nodes and thus may be responsible for funneling influence throughout the network (Borsboom & Cramer, 2013). For all three centrality indices, higher values reflect greater centrality.

Bootnet was used to assess centrality stability by subsetting the data into progressively smaller partitions, and correlating centrality indices from the original sample with those from each partition. This produced a correlation stability coefficient (*CS*-coefficient) reflecting the maximum proportion of cases that can be dropped such that there remained a 95 percent probability that the correlation between the original and partitioned centrality rankings was 0.7 or greater. To interpret centrality differences, the *CS*-coefficient should be at least 0.25 and preferably above 0.5. (Epskamp et al., 2018).

Supplemental Table 1

Polychoric correlations between PSS-SR items.

Symptoms	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Intru	-															
2. Dream	0.350	-														
3. Flash	0.425	0.334	-													
4. Upset	0.548	0.292	0.433	-												
5. Physio	0.448	0.309	0.444	0.629	-											
6. Avcog	0.308	0.200	0.123	0.369	0.260	-										
7. Avbeh	0.312	0.279	0.418	0.397	0.333	0.458	-									
8. Amnes	0.044	0.088	0.121	0.070	0.068	0.084	0.119	-								
9. Lossint	0.157	0.214	0.263	0.231	0.302	0.243	0.332	0.126	-							
10. Detach	0.231	0.174	0.205	0.323	0.234	0.319	0.229	0.037	0.658	-						
11. Numb	0.238	0.265	0.253	0.262	0.243	0.209	0.193	0.114	0.414	0.607	-					
12. Future	0.312	0.163	0.244	0.413	0.185	0.216	0.353	0.060	0.432	0.511	0.424	-				
13. Sleep	0.304	0.531	0.188	0.234	0.300	0.194	0.192	0.218	0.287	0.266	0.200	0.222	-			
14. Irrit	0.128	0.146	0.173	0.263	0.230	0.087	0.173	0.106	0.319	0.366	0.168	0.274	0.313	-		
15. Conc	0.316	0.215	0.272	0.288	0.409	0.215	0.267	0.129	0.454	0.438	0.429	0.323	0.373	0.318	-	
16. Hyper	0.279	0.291	0.267	0.251	0.330	0.164	0.194	0.112	0.212	0.209	0.279	0.180	0.295	0.130	0.237	-
17. Startle	0.336	0.307	0.264	0.281	0.329	0.150	0.309	0.113	0.202	0.213	0.185	0.180	0.247	0.122	0.267	0.787

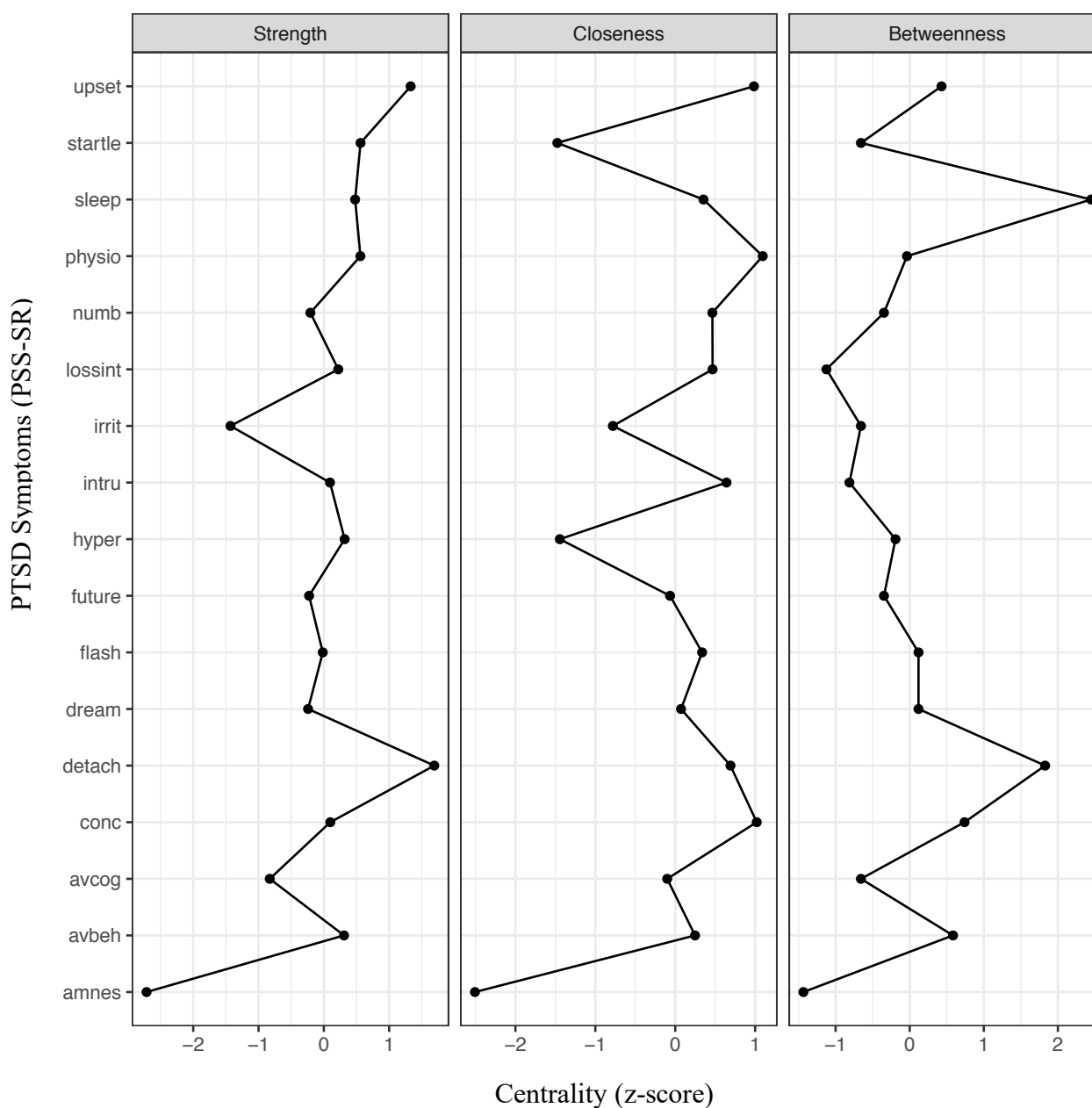
Note: PSS-SR: PTSD Symptom Scale, Self-Report Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings; avbeh = avoidance of situations; amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response.

Supplemental Table 2

Polychoric correlations between PSS-I items.

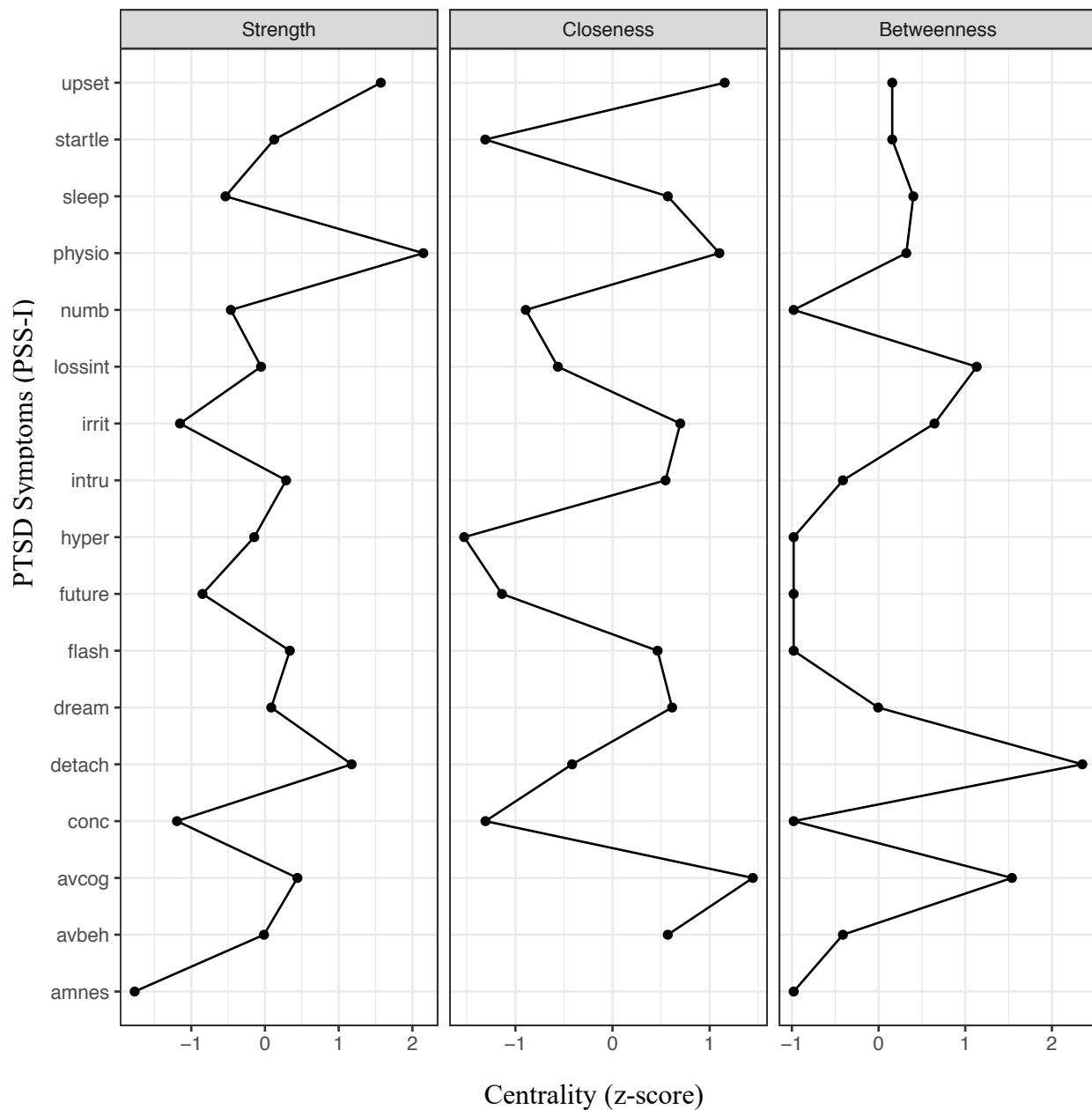
Symptoms	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1. Intru	-															
2. Dream	0.059	-														
3. Flash	0.387	0.226	-													
4. Upset	0.177	0.181	0.184	-												
5. Physio	0.072	0.308	0.239	0.577	-											
6. Avcog	0.277	0.240	0.218	0.298	0.223	-										
7. Avbeh	0.025	0.206	0.108	0.227	0.250	0.098	-									
8. Amnes	0.022	-0.042	-0.016	-0.090	-0.099	0.149	-0.048	-								
9. Lossint	0.132	0.048	-0.076	0.125	0.024	-0.044	0.130	0.010	-							
10. Detach	0.183	-0.009	0.040	0.005	0.032	0.046	0.145	0.092	0.335	-						
11. Numb	0.101	0.049	0.064	-0.131	-0.110	0.085	0.076	0.121	0.182	0.340	-					
12. Future	0.100	0.091	0.055	0.094	0.040	0.062	0.152	0.052	0.129	0.280	0.230	-				
13. Sleep	0.083	0.185	0.077	0.033	0.156	0.143	0.309	0.014	0.185	0.165	0.119	0.149	-			
14. Irrit	0.113	0.077	0.075	0.148	0.099	0.223	0.182	-0.044	0.154	0.192	0.122	0.085	0.152	-		
15. Conc	0.163	0.052	0.142	0.070	0.119	0.122	-0.017	0.014	0.260	0.167	0.109	0.113	0.119	0.097	-	
16. Hyper	0.100	0.167	0.083	0.105	0.024	0.147	0.176	-0.041	-0.130	0.027	0.130	0.121	0.050	0.118	-0.060	-
17. Startle	-0.012	0.196	0.136	0.128	0.081	0.046	0.131	0.046	0.065	-0.042	0.110	0.084	0.191	0.094	0.062	0.420

Note: PSS-I: PTSD Symptom Scale, Interview Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings; avbeh = avoidance of situations; amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response



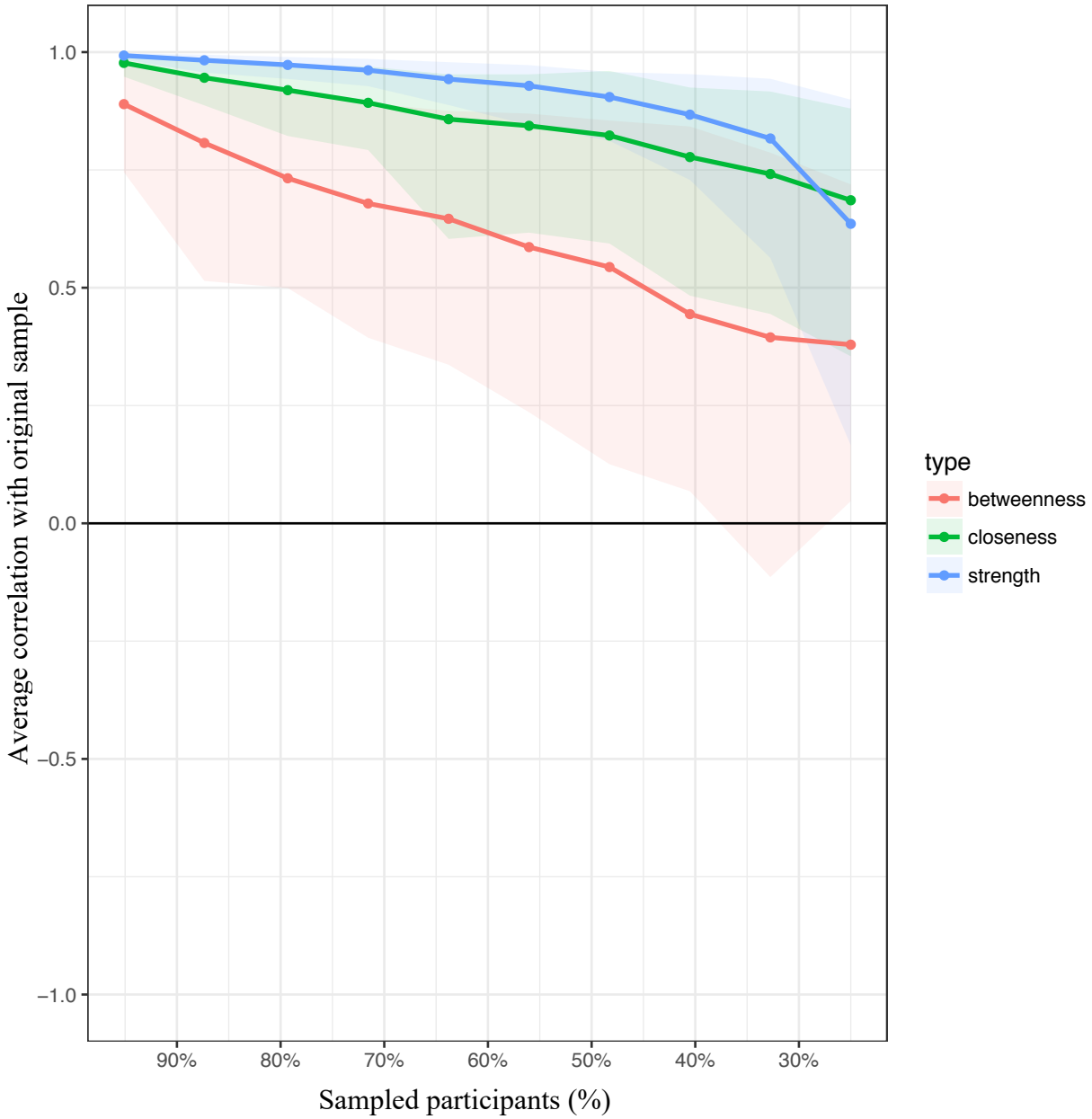
Supplemental Figure 1. Standardized betweenness, closeness, and strength centrality of DSM-IV PTSD symptoms in the PSS-SR network.

Note: Higher values indicate greater centrality. Concentration difficulties, emotional reactivity, and physiological reactivity demonstrated the greatest closeness centrality. Nodes high in closeness centrality are, on average, fewer edges away from other nodes. Betweenness centrality should not be interpreted due to poor stability (see Supplemental Figure 3). PSS-SR: PTSD Symptom Scale, Self-Report Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings (cognitive avoidance); avbeh = avoidance of situations (behavioral avoidance); amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response.



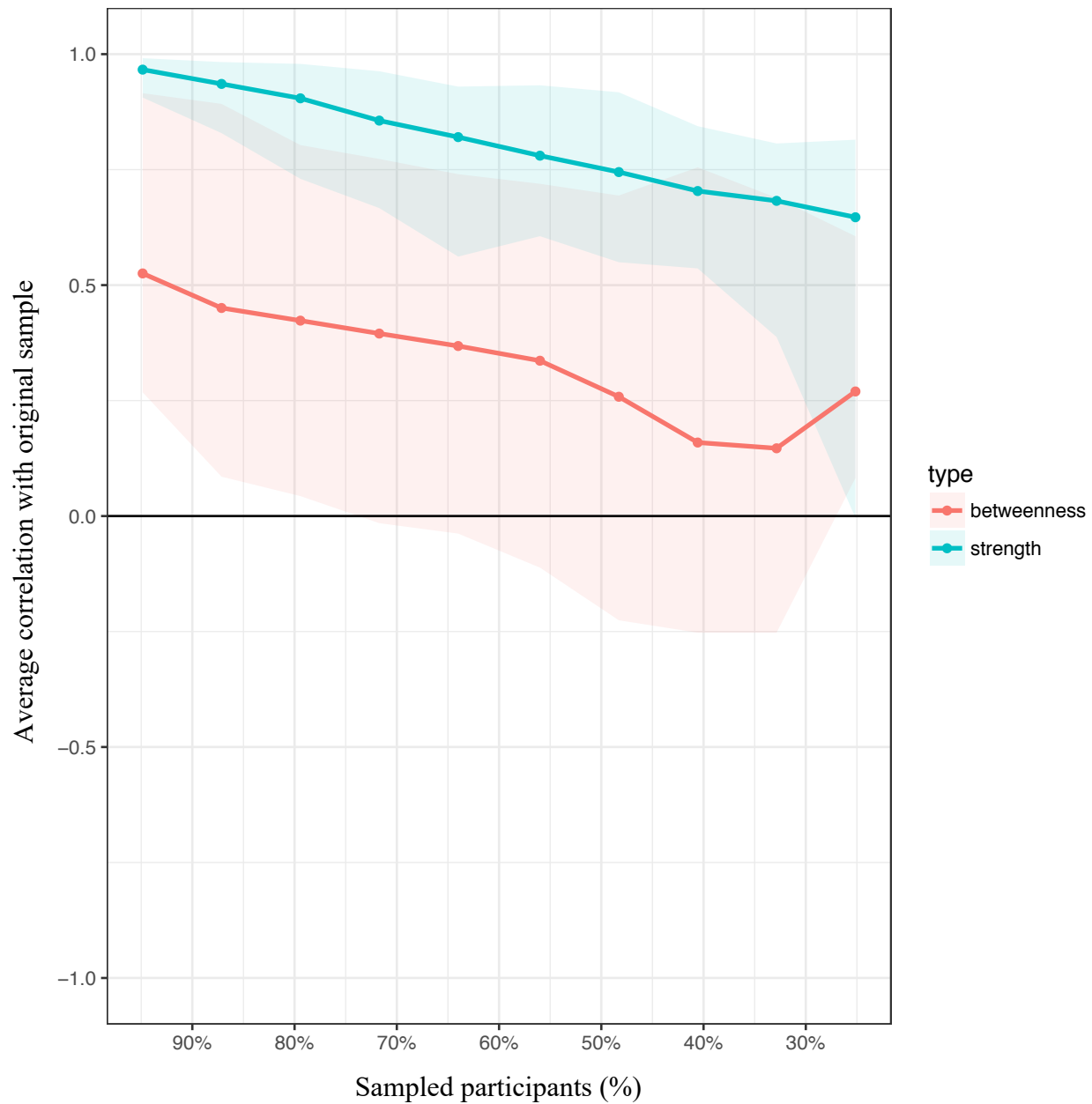
Supplemental Figure 2. Standardized betweenness, closeness, and strength centrality of DSM-IV PTSD symptoms in the PSS-I network.

Note: Higher values indicate greater centrality. Closeness and betweenness centrality should not be interpreted due to poor stability (see Supplemental Figure 4). PSS-I: PTSD Symptom Scale, Interview Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings (cognitive avoidance); avbeh = avoidance of situations (behavioral avoidance); amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response.



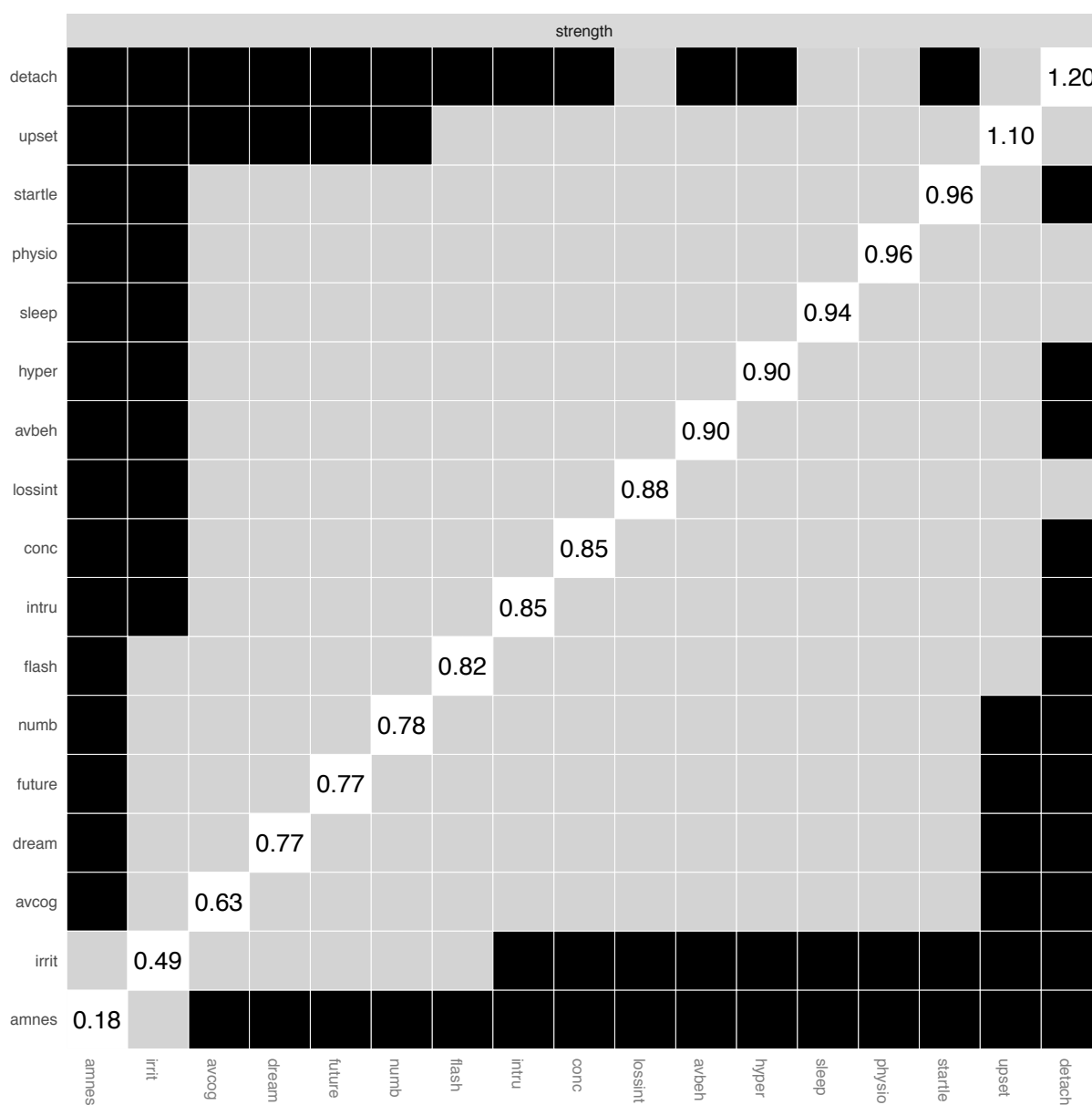
Supplemental Figure 3. Centrality stability in the PSS-SR network.

Note: Correlations between centrality indices from original network and networks based on increasing reduced samples of participants. Strength centrality was good (correlation stability coefficient [CS-coefficient] = .60; closeness centrality was acceptable (CS-coefficient = .28); betweenness centrality was poor (CS-coefficient = .05). Node closeness centrality should be interpreted with some caution, and node betweenness centrality should not be interpreted. PSS-SR: PTSD Symptom Scale, Self-Report Version



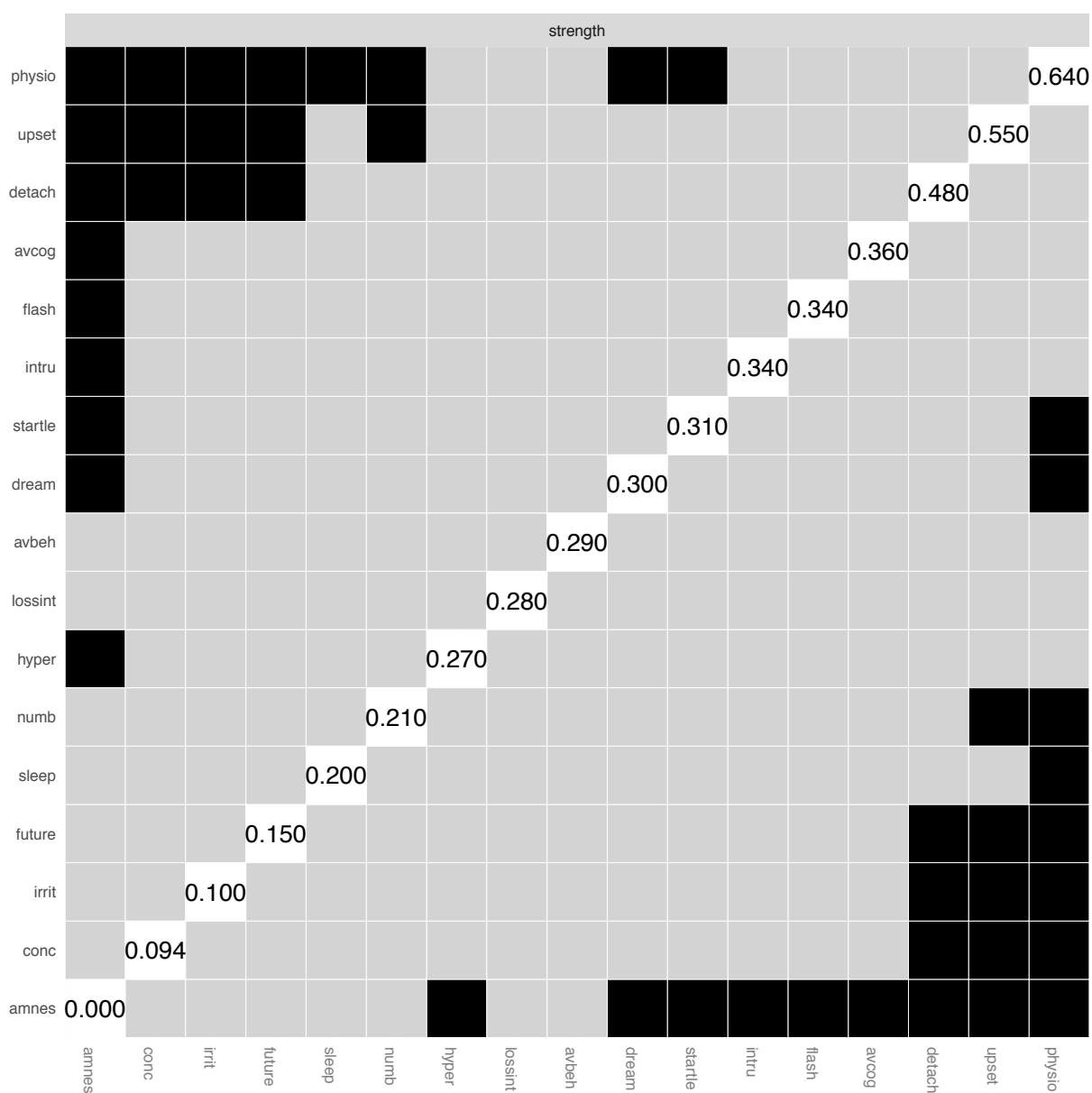
Supplemental Figure 4. Centrality stability in the PSS-I network.

Note: Correlations between centrality indices from original network and networks based on increasing reduced samples of participants. Closeness centrality stability could not be calculated for the PSS-I. Strength centrality stability was acceptable (CS -coefficient = .36); betweenness centrality stability was poor (CS -coefficient = .00). Strength centrality should be interpreted with some caution; closeness and betweenness centrality should not be interpreted. PSS-I: PTSD Symptom Scale, Interview Version



Supplemental Figure 5. Strength centrality difference plot for all symptoms in the PSS-SR network.

Note: Darkened cells indicate significant differences in strength centrality. Diagonals indicate raw strength centrality. Interpersonal detachment was higher in strength centrality than 75% of other nodes; emotional reactivity was higher than 38% of other nodes; amnesia was lower in strength centrality than 94% of other nodes; irritability was lower than 63% of other nodes. PSS-SR: PTSD Symptom Scale, Self-Report Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings (cognitive avoidance); avbeh = avoidance of situations (behavioral avoidance); amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response



Supplemental Figure 6. Strength centrality difference plot for all symptoms in the PSS-I network

Note: Darkened cells indicate significant differences in strength centrality. Diagonals indicate raw strength centrality. Strength centrality differences should be interpreted with some caution (see Supplemental Figure 4). Physiological reactivity was higher in strength centrality than 50% of other nodes; emotional reactivity was higher than 31% of other nodes; interpersonal detachment was higher than 25% of nodes; amnesia was lower in strength centrality than 56% of other nodes. PSS-I: PTSD Symptom Scale, Interview Version, Intru = intrusions; dream = nightmares; flash = flashbacks; upset = emotional reactivity; physio = physiological reactivity; avcog = avoidance of thoughts and feelings (cognitive avoidance); avbeh = avoidance of situations (behavioral avoidance); amnes = amnesia; lossint = disinterest in activities; detach = interpersonal detachment; numb = emotional numbing; future = sense of foreshortened future; sleep = sleep difficulties; irrit = irritability; conc = concentration difficulties; hyper = hypervigilance; startle = exaggerate startle response.