

---

## Supplementary materials for article entitled:

Understanding the protective effect of social support on depression symptomatology from a longitudinal network perspective  
Gen L, et al.

### Table of contents

page

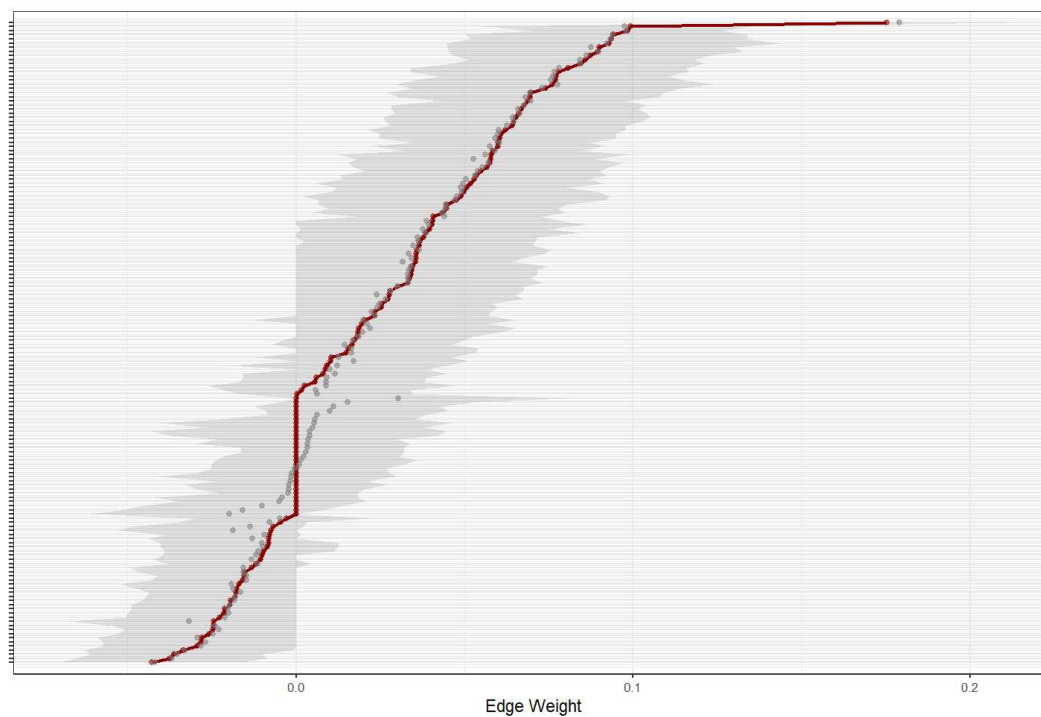
Details for the COMET survey .....	2
Supplementary Figure 1. Bootstrapped confidence intervals of the edge weights in the network of social support and depression.....	3
Supplementary Figure 2. Edge weight difference test for the network of social support and depression ....	4
Supplementary Figure 3. Node centrality difference tests for the the network of social support and depression .....	5
Supplementary Figure 4. Centrality stability in the network using case-drop bootstrapping .....	6
Supplementary Figure 5. A network of social support, loneliness and depression with covarites .....	7
Supplementary Figure 6. Sentivity analysis of a network of social support, loneliness and depression .....	8
Supplementary Figure 7. Centrality stability in the male’s network using case-drop bootstrapping .....	9
Supplementary Figure 8. Centrality stability in the female’s network using case-drop bootstrapping .....	10
Supplementary Table 1. Edge weights matrix for the whole network .....	11
Supplementary Table 2. Edge weights matrix for the men’s network .....	12
Supplementary Table 3. Edge weights matrix for the women’s network .....	13

---

### **Details for the COMET survey**

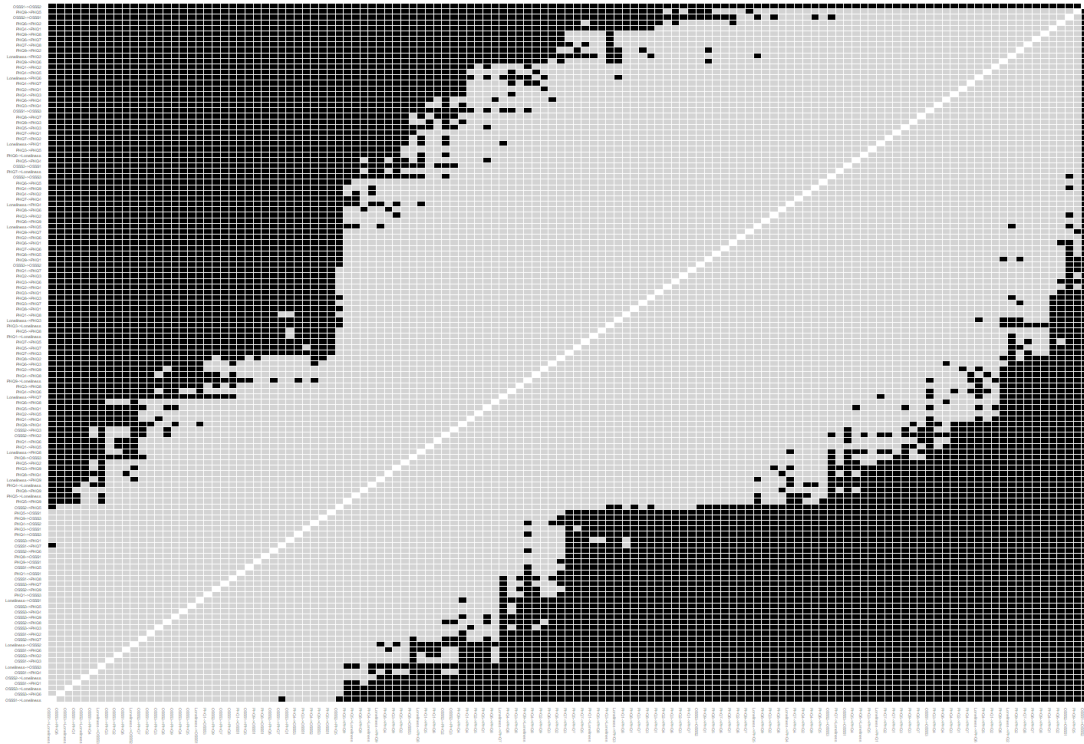
The final protocol for the COMET survey has been registered on Open Science Framework (OSF) (<https://osf.io/bgtsf/>). This longitudinal cross-country online survey covered 13 countries affected by the COVID-19 outbreak: Australia, France, Germany, Indonesia, Italy, China, The Netherlands, South Africa, Spain, Sweden, Switzerland, Turkey, and United Kingdom. A convenience sampling was conducted via social networks (e.g., Facebook, Instagram, Twitter, WhatsApp etc.), university postings and circular emails. The online tool Surveyzr (www.surveyzr.com) was used to administer the survey. The questionnaire was available in different languages including Bahasa Indonesia, Traditional Chinese, Dutch, English, French, German, Italian, Spanish, Swedish, Turkish. The questionnaire was translated to the other used languages through a double-translation and reconciliation process followed by an independent verification of the equivalence between the final versions.

The COMET study was approved by the ethical review board of the Faculty of Behavioral and Movement Sciences of the Vrije Universiteit Amsterdam (VCWE-2020-077), by the Ethics Committee of the Department of Human Neurosciences - Sapienza University of Rome, Italy (approval n° 02/2020), the ethical review board of the University of Verona (UNIVR n8/2020), by the ethical review board in Sweden (Dnr 2020-02157), the Research Ethics Committee Universitas Padjadjaran Bandung (431/UN6.KEP/EC/2020) the ethical review board of the Koc University, Turkey (2020.134.IRB3.072), the Health Research Ethics Committee of Stellenbosch University (Ethics Reference No: N20/05/016\_COVID-19), the Research Ethics Committee Universitas Padjadjaran Bandung (431/UN6.KEP/EC/2020), and by the ethical review board of Freie Universität Berlin, Germany (023/0000). The French contribution to the COMET consortium is in accordance with French regulations concerning the Comité de Protection des Personnes (CCP), the Règlement Général sur la Protection des Données (RGPD) and the Informatique et Libertés law.

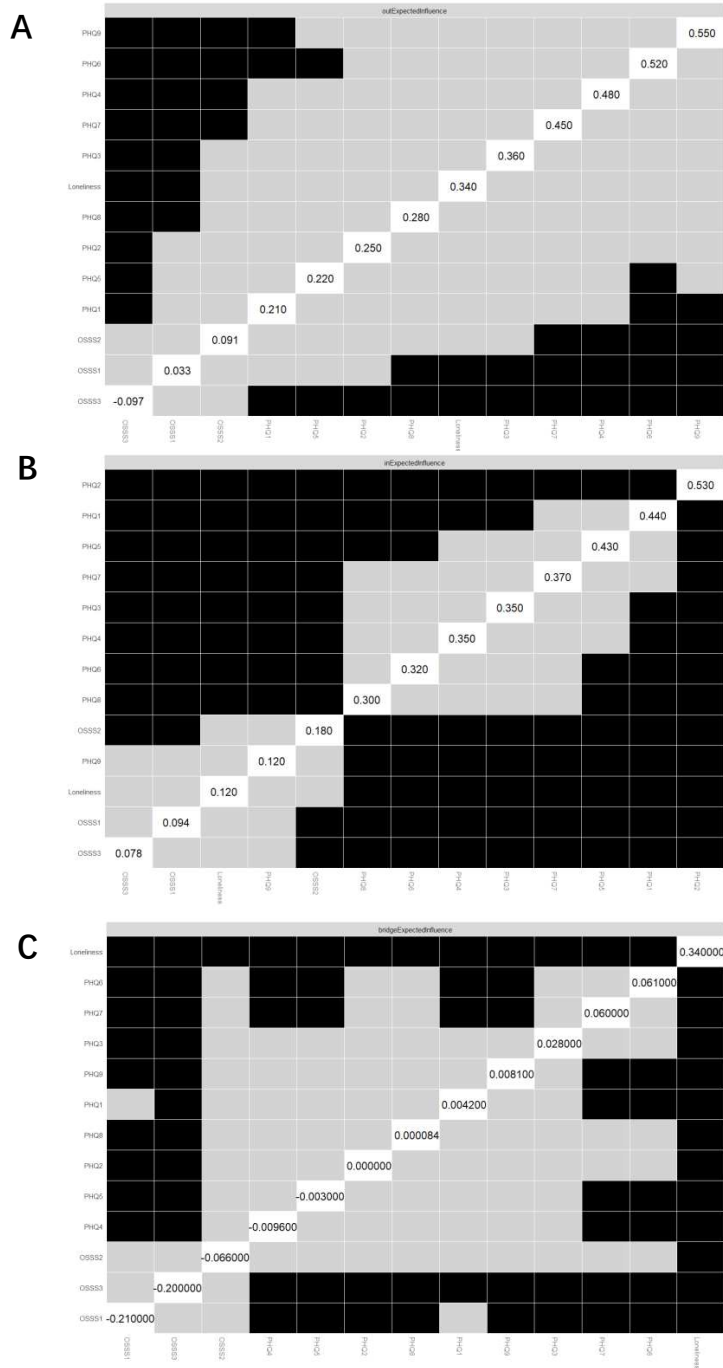


**Supplemental Figure 1. Bootstrapped confidence intervals of the edge weights in the network of social support and depression**

The red line indicates the edge weight values, and the gray area indicates the 95% CIs. The wider the bootstrapped CI is for one edge, the more careful the inferences should be.

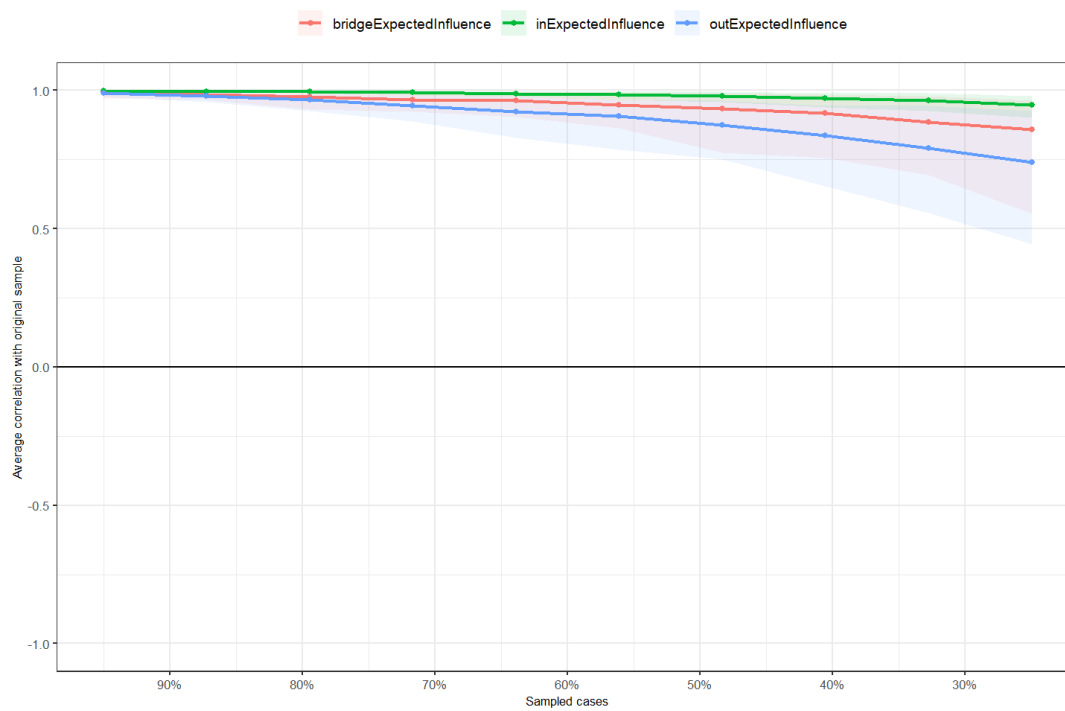


**Supplemental Figure 2. Edge weight difference tests for the network of social support and depression**  
Black box represents an edge that differs significantly ( $\alpha = 0.05$ ) from another one.

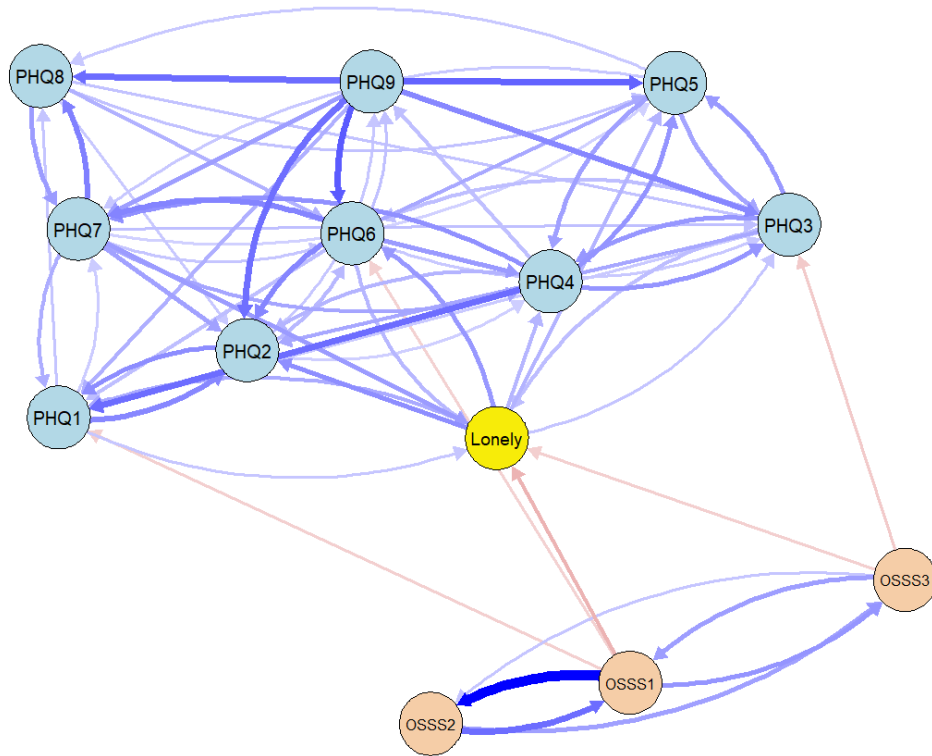


**Supplemental Figure 3. Node centrality difference tests for the the network of social support and depression**

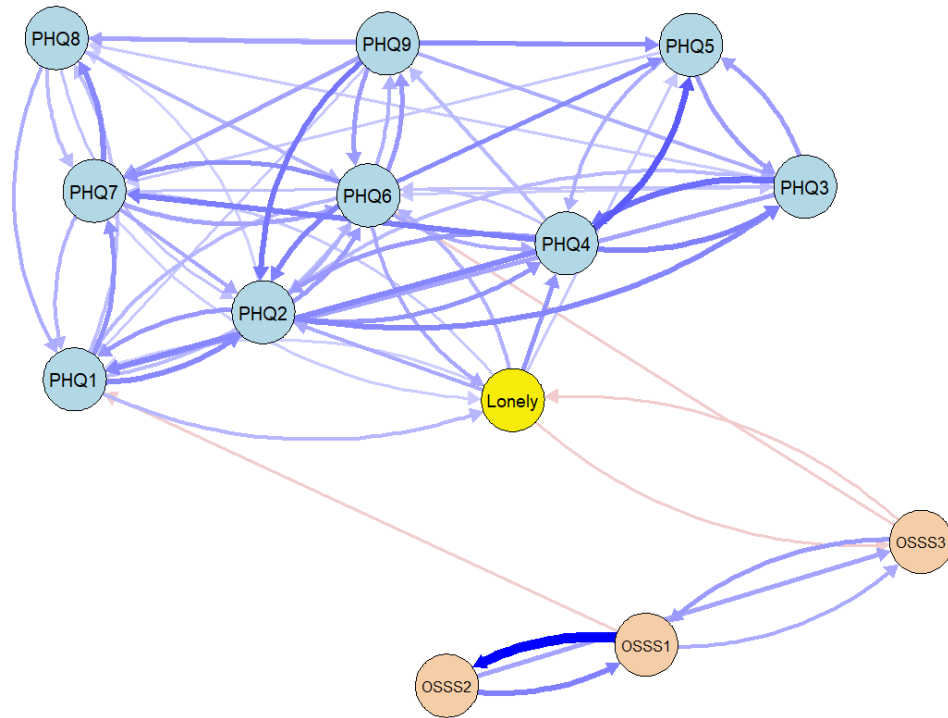
A) test for out-EI; B) test for in-EI; c) test for bridgeEI. Black box represents the centrality parameter of node is significantly different ( $\alpha = 0.05$ ) from another one.



**Supplemental Figure 4. Centrality stability in the network using case-drop bootstrapping**  
Average correlations between different centrality indices sampled with persons dropped and the original sample. Lines indicate the means and areas indicate the range from the 2.5th quantile to the 97.5th quantile.

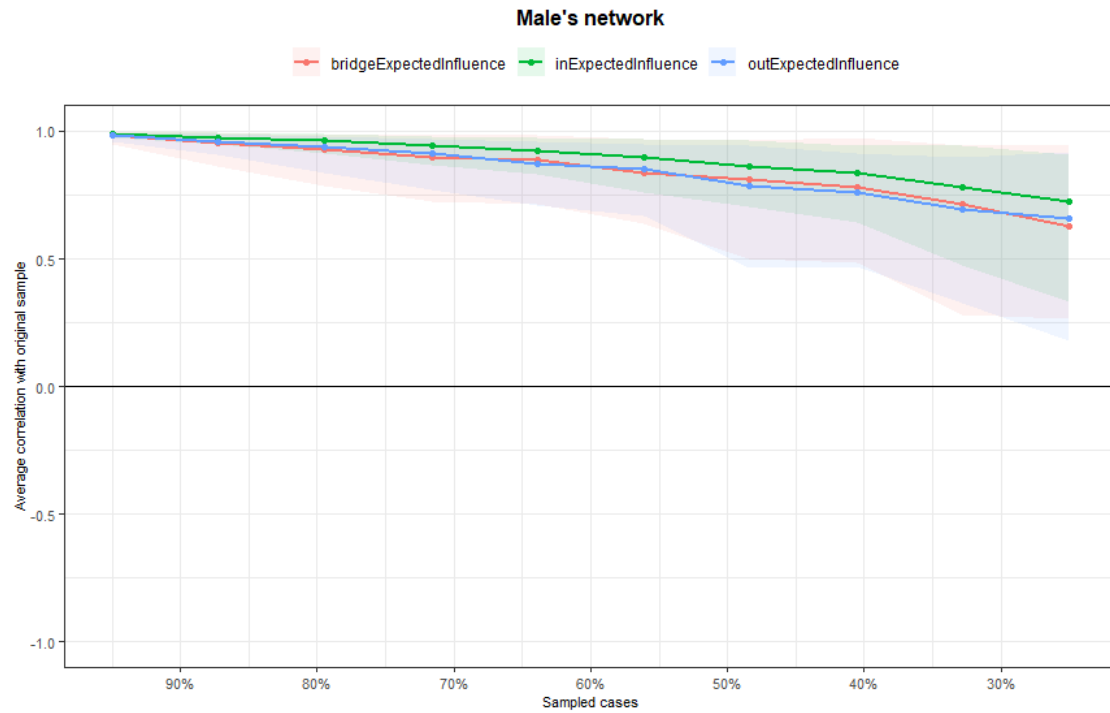


**Supplemental Figure 5. A network of social support, loneliness, and depression with covariates**  
Age, gender, education level and marital status controlled as covariates. A threshold of 0.03 was applied when plotting the network for better inference of the network.

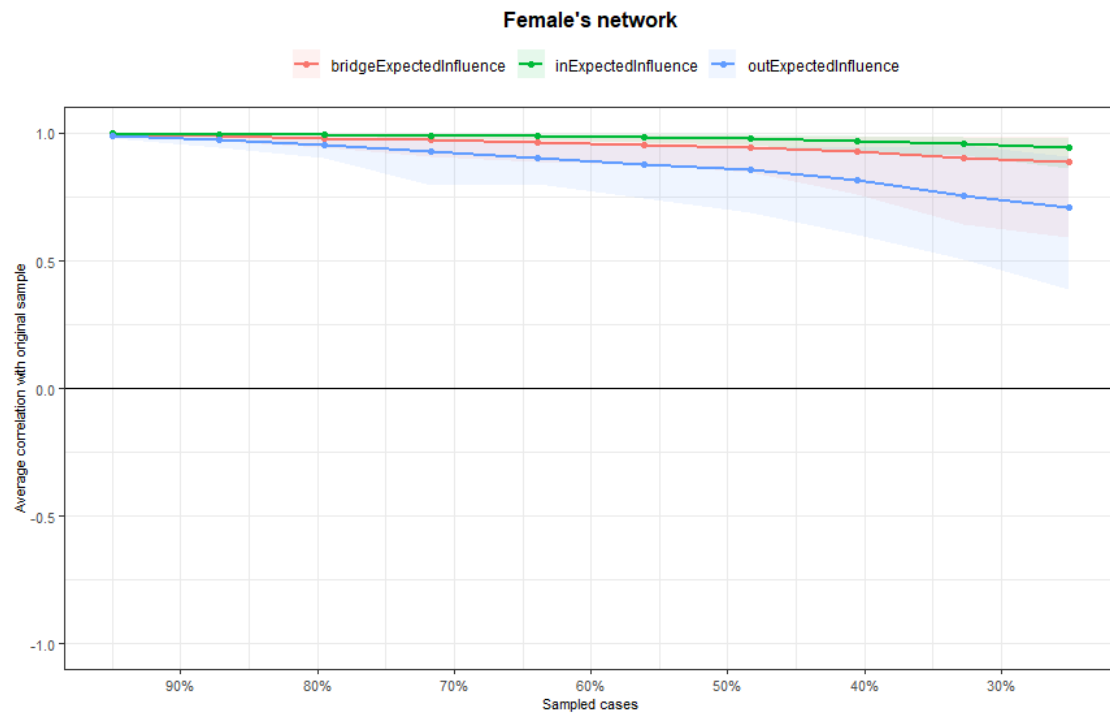


**Supplemental Figure 6. Sensitivity analysis of a network of social support, loneliness, and depression**  
All the variables were dichotomized before estimation of the network. A threshold of 0.032 was applied when plotting the network for better interpretation of the network.





**Supplemental Figure 7. Centrality stability in the male network using case-drop bootstrapping**  
Average correlations between different centrality indices sampled with persons dropped and the original sample. Lines indicate the means and areas indicate the range from the 2.5th quantile to the 97.5th quantile.



**Supplemental Figure 8. Centrality stability in the female network using case-drop bootstrapping**  
Average correlations between different centrality indices sampled with persons dropped and the original sample. Lines indicate the means and areas indicate the range from the 2.5th quantile to the 97.5th quantile.

**Supplemental Table 1. Edge weights matrix for the whole network**

	PHQ1	PHQ2	PHQ3	PHQ4	PHQ5	PHQ6	PHQ7	PHQ8	PHQ9	Lonely	OSSS1	OSSS2	OSSS3
PHQ1	0.204	0.081	0	0.018	0.015	0.016	0.041	0.036	0	0.034	-0.013	0	-0.018
PHQ2	0.076	0.211	0.04	0.039	0.019	0.049	0	0	0.028	0	0	0	0
PHQ3	0.037	0.053	0.339	0.069	0.062	0.04	0.037	0.025	0.009	0.035	-0.008	0	0
PHQ4	0.093	0.057	0.074	0.311	0.078	0.023	0.077	0.027	0.058	0.006	0	-0.007	-0.009
PHQ5	0.019	0.009	0.066	0.06	0.311	0	0.034	0.034	0	0.002	-0.004	0	0
PHQ6	0.048	0.094	0.028	0.07	0.058	0.38	0.09	0.02	0.052	0.061	0	0	0
PHQ7	0.065	0.064	0.034	0.057	0.034	0.045	0.321	0.09	0	0.06	0	0	0
PHQ8	0.035	0.03	0.037	0.008	0.045	0.054	0.067	0.315	0.002	0	-0.01	0	0.013
PHQ9	0.043	0.087	0.067	0.018	0.099	0.085	0.05	0.093	0.549	0.026	-0.01	0	-0.008
Lonely	0.064	0.086	0.036	0.055	0.051	0.077	0.023	0.011	0.006	0.518	-0.017	-0.024	-0.028
OSSS1	-0.033	-0.021	-0.027	-0.028	-0.012	-0.025	-0.008	-0.015	0	-0.043	0.564	0.175	0.069
OSSS2	0	0.017	0.02	0	-0.003	-0.01	-0.022	-0.019	-0.015	-0.029	0.098	0.45	0.059
OSSS3	-0.007	-0.025	-0.022	-0.018	-0.018	-0.038	-0.015	0	-0.019	-0.036	0.059	0.041	0.608

**Note.** Variables of T1 are in rows and variables of T2 are in columns.

**Supplemental Table 2. Edge weights matrix for the men's network**

	PHQ1	PHQ2	PHQ3	PHQ4	PHQ5	PHQ6	PHQ7	PHQ8	PHQ9	Lonely	OSSS1	OSSS2	OSSS3
PHQ1	0.166	0.043	0.011	0.039	0.061	0	0	0	0	0.057	0	0	0
PHQ2	0.101	0.251	0.034	0.071	0.041	0.068	0	0	0.045	0.025	0	0	0
PHQ3	0	0	0.279	0	0	0	0	0	0	0.019	0	0	0
PHQ4	0.136	0.057	0	0.280	0.140	0.013	0.030	0.031	0.022	0	0	0	0
PHQ5	0.056	0	0.033	0.077	0.242	0	0.061	0	0	0.008	0	0	0
PHQ6	0.023	0.150	0.080	0.108	0.074	0.408	0.134	0.137	0.068	0.097	0	0	0
PHQ7	0.050	0.043	0	0.037	0.031	0.062	0.340	0.101	0	0	0	0	0
PHQ8	0.029	0.030	0.119	0	0.044	0.001	0.023	0.265	0	0.009	0	0.032	0
PHQ9	0.017	0.050	0.031	0	0.045	0.037	0	0	0.459	0.022	0	0	0
Lonely	0.035	0.066	0.038	0	0.001	0.040	0	0	0	0.494	-0.049	-0.057	-0.027
OSSS1	-0.033	-0.011	-0.073	-0.053	-0.019	-0.055	-0.027	-0.044	-0.005	-0.059	0.531	0.178	0.085
OSSS2	-0.023	-0.012	0	-0.034	-0.031	-0.030	-0.045	-0.052	-0.012	-0.033	0.100	0.405	0.045
OSSS3	0	-0.021	-0.017	0	0	-0.074	0	0	0	-0.025	0.015	0.049	0.553

**Note.** Variables of T1 are in rows and variables of T2 are in columns.

**Supplemental Table 3. Edge weights matrix for the women's network**

	PHQ1	PHQ2	PHQ3	PHQ4	PHQ5	PHQ6	PHQ7	PHQ8	PHQ9	Lonely	OSSS1	OSSS2	OSSS3
PHQ1	0.217	0.096	0.001	0.019	0.008	0.026	0.058	0.051	0.006	0.024	-0.012	-0.001	-0.02
PHQ2	0.066	0.201	0.041	0.032	0.012	0.039	0	0.001	0.019	0	0	0	0
PHQ3	0.056	0.069	0.346	0.082	0.068	0.047	0.050	0.037	0.005	0.036	-0.013	0	0
PHQ4	0.084	0.051	0.083	0.309	0.064	0.019	0.079	0.012	0.061	0.003	0	-0.013	-0.005
PHQ5	0.008	0.013	0.070	0.052	0.324	0.008	0.023	0.052	0.019	0	-0.012	-0.008	0
PHQ6	0.051	0.079	0.013	0.054	0.056	0.373	0.077	0	0.038	0.051	0.009	0	0
PHQ7	0.065	0.066	0.041	0.052	0.030	0.033	0.311	0.075	0	0.072	0	0	0
PHQ8	0.035	0.025	0.018	0.010	0.045	0.069	0.074	0.314	0.003	0	-0.009	0	0
PHQ9	0.053	0.094	0.079	0.034	0.110	0.093	0.060	0.115	0.566	0.021	-0.020	0	0
Lonely	0.070	0.090	0.040	0.073	0.062	0.092	0.040	0.024	0.012	0.520	-0.014	-0.019	-0.023
OSSS1	-0.037	-0.021	-0.010	-0.012	-0.005	-0.016	-0.001	0	0	-0.032	0.573	0.173	0.061
OSSS2	0.015	0.026	0.017	0	0	-0.003	-0.016	0	-0.006	-0.024	0.091	0.457	0.054
OSSS3	-0.016	-0.025	-0.025	-0.018	-0.020	-0.027	-0.014	0	-0.025	-0.036	0.067	0.033	0.615

**Note.** Variables of T1 are in rows and variables of T2 are in columns.