**Supplementary results for**

**Identification of shared and distinct patterns of brain network abnormality across mental disorders through individualized structural covariance network analysis**

**Table S1**. Heterogeneity of IDSCNs in patients with mental disorder.

|  |  |  |  |
| --- | --- | --- | --- |
|  | Depression | OCD | Sch |
| The number of altered edges for each patient, mean (SD), [range] | 235.48 (1.36×103) [0-12839] | 235.48 (1.36×103) [0-9582] | 235.48 (1.36×103) [0-3825] |
| The number of altered edges shared by one patient (patient-specific) | 14789 | 11778 | 8274 |
| The number of altered edges shared by at least two patient | 4579 | 3247 | 2122 |
| The number of altered edges shared by at least three patient | 698 | 452 | 388 |

**Figure S1**. Heterogeneity of IDSCNs in patients with mental disorder. Notes, altered edges are shared by 0 patient means that they are not altered.



**Figure S2**. Association between IDSCN and clinical symptoms.



**Figure S3**. Distribution of most shared altered edges for each disorder. For each disorder, the numbers in heat maps described how top 80 altered (increased or decreased) edges according to the number of affected patients distributed in networks. Note: MF, medial frontal network; FP, frontopartial network; DMN, default model network; SC, subcortical-cerebellum network; VA, visual association network.



**Figure S4**. Distribution of most shared altered edges for each disorder. For each disorder, the numbers in heat maps described how top 120 altered (increased or decreased) edges according to the number of affected patients distributed in networks. Note: MF, medial frontal network; FP, frontopartial network; DMN, default model network; SC, subcortical-cerebellum network; VA, visual association network.



**Figure S5**. Distribution of networks.

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**Figure S6**. Distribution of difference variability for each disorder obtained using 200 brain atlas. The heat maps represented network-level difference variability for each disorder. The network-level (within- and between-network) difference variability was defined as the average difference variability values (standard deviation of Z-scores across patients) of constituent edges. The chord diagrams represented how difference variability (the corresponding heat maps in the left) distributed. Note: MF, medial frontal network; FP, frontopartial network; DMN, default model network; SC, subcortical-cerebellum network; VA, visual association network.



**Figure S7**. Distribution of most shared altered edges for each disorder obtained 200 brain atlas. For each disorder, the numbers in heat maps described how top 100 altered (increased or decreased) edges according to the number of affected patients distributed in networks. Note: MF, medial frontal network; FP, frontopartial network; DMN, default model network; SC, subcortical-cerebellum network; VA, visual association network.

