**Supplementary Materials**

**Table S1. The connectivity strengths of different groups**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | **Thalamic seeds** | **Brain region** | **Connectivity strengths**  **(Fisher’s r-to-z)** | |
| **OCD <HC** |  |  | OCD | HC |
|  | Occipital | Left caudate | 0.074 | 0.240 |
|  |  | Right caudate | 0.084 | 0.165 |
| **OCD\_HCT>OCD\_LCT** |  |  | **OCD\_HCT** | **OCD\_LCT** |
|  | Prefrontal | BA45, right VLPFC | 0.302 | 0.167 |
|  | Premotor | BA47, Right VLPFC | 0.304 | 0.164 |
|  | Parietal | BA47, Right VLPFC | 0.282 | 0.156 |
|  |  | BA19, Right Parahippocampus | 0.296 | 0.180 |
|  |  | BA13, Right Insula | 0.271 | 0.137 |
| **OCD\_HCT > HC** |  |  | **OCD\_HCT** | **HC** |
|  | Primary Motor | BA10, Right DLPFC | 0.133 | 0.065 |
|  | Premotor | BA10, Right DLPFC | 0.198 | 0.135 |
| **OCD\_LCT < HC** |  |  | **OCD\_LCT** | **HC** |
|  | Occipital | Right Caudate | 0.052 | 0.138 |
|  |  | Left Caudate | 0.018 | 0.075 |

**Table S2. Hierarchical regression analysis on the associations between connectivity strength and CTQ, interaction of BDI and BAI, and YBOCS in OCD patients.**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  |  | R2 | *F* | *p* | R2 changes | *F* changes | Beta | *p* Beta |
| **Prefrontal thalamic subdivision- right VLPFC** | | | | | | | | | |
| Model1 |  | 0.064 | 5.252 | 0.025 | 0.064 | 5.252 |  |  |
|  | CTQ |  |  |  |  |  | 0.253 | 0.025 |
| Model2 |  | 0.065 | 2.632 | 0.078 | 0.001 | 0.075 |  |  |
|  | CTQ |  |  |  |  |  | 0.243 | 0.039 |
|  | BDI\*BAI |  |  |  |  |  | 0.032 | 0.784 |
| Model3 |  | 0.098 | 2.706 | 0.051 | 0.033 | 2.733 |  |  |
|  | CTQ |  |  |  |  |  | 0.0240 | 0.040 |
|  | BDI\*BAI |  |  |  |  |  | -0.028 | 0.813 |
|  | Y-BOCS |  |  |  |  |  | 0.191 | 0.102 |
| **Premotor thalamic seed- right VLPFC** | | | | | | | | | |
| Model1 |  | 0.041 | 3.293 | 0.073 | 0.041 | 3.293 |  |  |
|  | CTQ |  |  |  |  |  | 0.203 | 0.073 |
| Model2 |  | 0.042 | 1.684 | 0.192 | 0.001 | 0.113 |  |  |
|  | CTQ |  |  |  |  |  | 0.214 | 0.072 |
|  | BDI\*BAI |  |  |  |  |  | -0.039 | 0.737 |
| Model3 |  | 0.061 | 1.619 | 0.192 | 0.018 | 1.467 |  |  |
|  | CTQ |  |  |  |  |  | 0.211 | 0.075 |
|  | BDI\*BAI |  |  |  |  |  | -0.085 | 0.493 |
|  | Y-BOCS |  |  |  |  |  | 0.143 | 0.230 |
| **Parietal thalamic seed- right VLPFC** | | | | | | | | | |
| Model1 |  | 0.059 | 4.840 | 0.031 | 0.059 | 4.840 |  |  |
|  | CTQ |  |  |  |  |  | 0.243 | 0.031 |
| Model2 |  | 0.059 | 2.390 | 0.098 | 0 | 0.003 |  |  |
|  | CTQ |  |  |  |  |  | 0.245 | 0.038 |
|  | BDI\*BAI |  |  |  |  |  | -0.006 | 0.959 |
| Model3 |  | 0.107 | 2.997 | 0.036 | 0.048 | 4.022 |  |  |
|  | CTQ |  |  |  |  |  | 0.241 | 0.038 |
|  | BDI\*BAI |  |  |  |  |  | -0.079 | 0.512 |
|  | Y-BOCS |  |  |  |  |  | 0.231 | 0.049 |
| **Parietal thalamic seed- Right Parahippocampus** | | | | | | | | | |
| Model1 |  | 0.055 | 4.462 | 0.038 | 0.055 | 4.462 |  |  |
|  | CTQ |  |  |  |  |  | 0.234 | 0.038 |
| Model2 |  | 0.055 | 2.202 | 0.118 | 0 | 0.001 |  |  |
|  | CTQ |  |  |  |  |  | 0.235 | 0.047 |
|  | BDI\*BAI |  |  |  |  |  | -0.004 | 0.973 |
| Model3 |  | 0.090 | 2.497 | 0.068 | 0.035 | 2.919 |  |  |
|  | CTQ |  |  |  |  |  | 0.232 | 0.048 |
|  | BDI\*BAI |  |  |  |  |  | -0.067 | 0.583 |
|  | Y-BOCS |  |  |  |  |  | 0.199 | 0.092 |
| **Parietal thalamic seed- Right Insula** | | | | | | | | | |
| Model1 |  | 0.041 | 3.293 | 0.073 | 0.041 | 3.293 |  |  |
|  | CTQ |  |  |  |  |  | 0.203 | 0.073 |
| Model2 |  | 0.046 | 1.837 | 0.166 | 0.005 | 0.406 |  |  |
|  | CTQ |  |  |  |  |  | 0.181 | 0.126 |
|  | BDI\*BAI |  |  |  |  |  | 0.075 | 0.526 |
| Model3 |  | 0.057 | 1.500 | 0.221 | 0.010 | 0.834 |  |  |
|  | CTQ |  |  |  |  |  | 0.179 | 0.131 |
|  | BDI\*BAI |  |  |  |  |  | 0.041 | 0.743 |
|  | Y-BOCS |  |  |  |  |  | 0.108 | 0.364 |