Poster

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Poster 1

[P-1-01]

Effectiveness of acceptance and commitment therapy on obsessive beliefs among patients with obsessive-compulsive disorder

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[P-1-02]

Suicidal attempt history, childhood trauma, and functional brain network alterations in major depressive disorder: A resting-state functional connectivity-based multivariate pattern analysis

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[P-1-03]

Electroencephalographic Network Features Associated with Symptom Severity in Individuals with Irritable Bowel Syndrome

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[P-1-04]

Altered Resting-State Sensorimotor Network in Patients with Obsessive-Compulsive Disorder: an EEG Study

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[P-1-05]

Network Structure of Depression and Anxiety Symptoms in Older Asian Patients With Depressive Disorders: Findings From REAP-AD3

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[P-1-01] Effectiveness of acceptance and commitment therapy on obsessive beliefs among patients with obsessive-compulsive disorder

*Seung Jae Lee[1,3], Sang Won Lee[2,3], Sung Man Chang[1,3] (1. Kyungpook National University Hospital (Korea), 2. Kyungpook National University Chilgok Hospital (Korea), 3. Kyungpook National University (Korea))

Keywords：Acceptance commitment therapy、metacognitive therapy、obsessive belief、obsessive-compulsive disorder

Although theoretically distinct, both acceptance and commitment therapy (ACT) and metacognitive therapy (MCT) focus on the relationship with inner experiences—specifically, cognitive fusion and fused object mode—that drive unhelpful coping strategies, such as experiential avoidance, obsessive rumination and compulsions, and, with mindfulness as a core therapeutic factor. In this context, ACT's therapeutic effects on obsessive-compulsive disorder (OCD) are presumably reflected in the Obsessive Beliefs Questionnaire (OBQ), which incorporates significant metacognitive factors. However, most studies have investigated ACT's effects on obsessive-compulsive (OC) symptoms rather than on obsessive beliefs. Consequently, this study examined the relationship between ACT process measures—namely, Acceptance and Action Questionnaire-II (AAQ-II) and Cognitive Fusion Questionnaire (CFQ)—and the OBQ following an eight-week group-format ACT (GACT) intervention among patients with OCD (GACT group, N = 37; wait-list control group, N = 42). Significant reductions were observed in AAQ-II, CFQ, and OBQ scores after treatment. Changes in AAQ-II and CFQ (particularly in the former) were significantly associated with changes in the OBQ total and subscale scores. These measures accounted for 26% and 12% of the variance in the OBQ total score and OCD symptom scores, respectively. Among OBQ subscales, changes in AAQ-II and CFQ best accounted for the variance of perfectionism and intolerance of uncertainty (OBQ-PIU), followed by importance and control of thoughts (OBQ-ICT). In conclusion, improvements in ACT process measures through GACT explained obsessive beliefs—particularly OBQ-PIU and OBQ-ICT—better than OCD symptoms, thus highlighting the clinical significance of obsessive beliefs in ACT treatment for OCD.

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[P-1-02] Suicidal attempt history, childhood trauma, and functional brain network alterations in major depressive disorder: A resting-state functional connectivity-based multivariate pattern analysis

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Keywords：Major Depressive Disorder、Suicidal Attempts、Resting-State Functional Connectivity、Multivariate Pattern Analysis

Introduction: Dysfunctional brain network connectivity contributes to suicidality in major depressive disorder (MDD), and prior suicide attempts represent a critical risk factor. We compared resting-state functional connectivity (FC) among three groups—MDD patients with a history of suicide attempts (SD), MDD patients without such history (NSD), and healthy controls (HC)—and explored relationships with suicidal ideation and childhood trauma using FC-based multivariate pattern analysis (FC-MVPA).

Methods: A total of 204 adults were enrolled: 61 SD, 62 NSD, and 81 HC. Resting-state fMRI data were preprocessed and analyzed with the CONN toolbox. FC-MVPA identified regions exhibiting significant group differences; these regions then served as seeds for seed-to-voxel and ROI-to-ROI connectivity analyses.

Results: FC-MVPA highlighted group differences in the frontal pole, posterior cingulate cortex, lateral occipital cortex, cuneus, and angular gyrus. Subsequent analyses revealed 58 connections that varied across groups, 29 of which discriminated SD from NSD. These connections predominantly involved the visual and default mode networks. Notably, reduced FC between the cuneus and medial orbitofrontal cortex correlated with higher suicidal ideation, whereas increased FC between the lateral occipital cortex and supramarginal gyrus correlated with greater childhood trauma exposure.

Conclusion: Suicidality in MDD appears linked to disrupted integration between perceptual (visual) and regulatory (prefrontal/default mode) networks. Connectivity alterations associated with suicide risk and childhood trauma underscore large-scale network dysfunction as a potential mechanism. Patterns of FC—particularly between the visual cortex and prefrontal regions—may serve as neuroimaging biomarkers of suicide risk in MDD.

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[P-1-03] Electroencephalographic Network Features Associated with Symptom Severity in Individuals with Irritable Bowel Syndrome

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Keywords：irritable bowel syndrome、EEG、brain network

This study aimed to clarify brain network characteristics associated with symptom severity in individuals with irritable bowel syndrome (IBS). IBS is a functional gastrointestinal disorder involving brain-gut dysregulation, and previous research suggests that abnormalities in resting-state brain networks may relate to symptom burden. Fourteen adult male participants with IBS symptoms underwent ten-minute eyes-closed resting-state electroencephalographic (EEG) recordings. From each dataset, ten 2-second segments were randomly selected. Wavelet transformation was applied to each EEG channel, and wavelet correlation coefficients were used to construct an EEG network, with electrodes as nodes and inter-channel correlations as edges. Two network metrics clustering coefficient and characteristic path length, were calculated and normalized against random networks. This study was approved by the Ethics Review Committee on Research with Human Subjects of Waseda University (2024-142). Simple linear regression showed that the normalized clustering coefficient was significantly and negatively associated with IBS severity (R^2 = 0.45, β = -0.67, p = 0.009). In contrast, the normalized characteristic path length showed no significant association (R^2 = 0.14, β = -0.38, p = 0.19). These findings suggest an increase in local connectivity within brain networks, as indicated by a higher clustering coefficient, may reflect decreased symptom severity in IBS. This provides preliminary evidence that EEG-derived network metrics, particularly the clustering coefficient, could serve as potential biomarkers for IBS-related brain dysfunction. Understanding such network patterns may also support the development of targeted EEG-based neurofeedback interventions.

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[P-1-04] Altered Resting-State Sensorimotor Network in Patients with Obsessive-Compulsive Disorder: an EEG Study

*Taegyeong Lee[3], Sang-Shin Park[2], Chang-Hwan Im, *Seung-Hwan Lee[1,2,3] (1. Inje University Ilsan Paik Hospital (Korea), 2. Bwave Inc. (Korea), 3. CEClab (Korea))

Keywords：EEG、OCD、sensorimotor network、resting-state functional network、wPLI

Objective. Dysfunction in the cortical-striatal-thalamo-cortical (CSTC) circuits is a well-known pathological mechanism underlying obsessive-compulsive disorder (OCD). The imbalance between indirect pathway and direct pathway in CSTC circuits can contribute to the development of OCD, and these pathways are closely linked to the sensorimotor network [1]. Numerous neuroimaging studies have demonstrated alterations in the SMN of patients with OCD during the resting state. However, to the best of our knowledge, no study has confirmed SMN changes in patients with OCD using resting-state EEG (rsEEG), which has the advantage of capturing direct electrical activity and providing high temporal resolution. In this study, we compared the SMN between patients with OCD and healthy controls (HC) using rsEEG.**Methods**. Forty-one patients with OCD (aged 26.63 ± 10.63, W 15) and Forty-one HC (aged 29.32 ± 11.89, W 20) participated in this study. Eyes-closed rsEEG signals were acquired for 3 min. After signal pre-processing, rsEEG signals were divided into 2 s noise-free segments. To construct the SMN, eight regions of interest were employed as nodes, including the primary motor cortex (M1), supplementary motor area (SMA), primary sensory cortex (S1), and premotor cortex (PMC), each on both the right and left hemispheres. For edges, the weighted phase-lag index (wPLI) was applied as a measure of functional connectivity (FC) for 6 frequency bands: theta, low-alpha, high-alpha, low-beta, high-beta, and gamma bands. The global and local strengths of the SMN were calculated for the entire network and each ROI, respectively. The permutation test (n = 5,000) was utilized to compare the FC values and strength between the OCD group and the HC group for statistical analysis. The Bonferroni correction was conducted to account for multiple comparisons across frequency bands. Additionally, Pearson correlation test was conducted between y-bocs score and FC values or strength which showed significant differences.**Results**. In the theta band, FC between the LS1 and LSMA (p = 0.047, corrected) showed a significant difference, with the OCD group exhibiting higher FC values. In the high alpha band, FCs between LS1 and RM1 (p = 0.040, corrected) and between the LS1 and RPMC (p = 0.007, corrected) also exhibited significant differences, where the OCD group showed higher FC values. Global strength of SMN showed no significant difference between any frequency band. However, local strengths in the RPMC (p = 0.049, corrected) in the high alpha band was significantly higher in the OCD group than in the HC group.**Conclusion**. Our study suggests that abnormalities in the rsEEG-based SMN of patients with OCD have the potential to serve as biomarkers for the disorder. In particular, the hyper-connectivity between the LS1 and RM1 within the SMN in the high alpha band for patients with OCD may play a crucial role in serving as a

biomarker.**Reference**.[1] Karas, P. J., Lee, S., Jimenez-Shahed, J., Goodman, W. K., Viswanathan, A., & Sheth, S. A. (2019). Deep brain stimulation for obsessive compulsive disorder: evolution of surgical stimulation target parallels changing model of dysfunctional brain circuits. Frontiers in neuroscience, 12, 998.

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[P-1-05] Network Structure of Depression and Anxiety Symptoms in Older Asian Patients With Depressive Disorders: Findings From REAP-AD3

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Keywords：age、ageism、anxiety、depression、network analysis

Objective: The clinical presentation of depressive disorders might be influenced by age, and its diagnosis and treatment can be affected by ageism-related bias. A network analysis can reveal symptom patterns unrecognized by the reductionistic approach. Therefore, this study explores the network structure of depression and anxiety symptoms in older Asian patients with depressive disorders and examines age-related differences in the context of ageism.**Methods:** We used data from the Research on Asian Psychotropic Prescription Patterns for Antidepressants, Phase 3 study and included 2,785 psychiatric patients from 11 Asian countries. Depression and anxiety symptoms were assessed using the Patient Health Questionnaire-9 and Generalized Anxiety Disorder-7. Network analyses were conducted to identify symptom interconnections and centrality among older (>65 years), middle-aged (35–64 years), and young (18–34 years) adult groups. The network structures were also compared using a network comparison test. **Results:** Depressed mood was the most central symptom across all age groups. Network comparisons revealed no significant structural differences among the three age groups, despite several variations in terms of global strength. The network structure of the older group was characterized by strong interconnections between somatic symptoms (insomnia-energy) and core depressive symptoms (little interest or pleasure-feelings of hopelessness).**Conclusion:** This study reveals that the network structures of depression and anxiety symptoms have relatively consistent interconnections across age groups, despite subtle age-based differences. Specifically, older adults tend to present anxiety and depression symptoms as physical complaints. These findings challenge ageist stereotypes and advocate for inclusive, age-neutral approaches to treatment.