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## Poster 33

[P-33-01]

### Decoding Subconscious Emotional Regulation Pathways in PTSD: Integrative Deep Learning of rs-fMRI and Chronobiological Epigenetics

*Prihantini Prihantini[1], Rifaldy Fajar[2], Sahnaz Vivinda Putri[3], Andi Nursanti Andi Ureng[4], Asfirani Zahaz[5] (1. Bandung Institute of Technology (Indonesia), 2. Yogyakarta State University (Indonesia), 3. International University Semen Indonesia (Indonesia), 4. Andini Persada College of Health Sciences (Indonesia), 5. Bonto-Bonto General Hospital (Indonesia))

[P-33-02]

### Video Cognitive Behavior intervention for OCD: validation patient perspectives

*shalisah sharip[1], idayu badilla Idris[1], Syahnaz Mohd Hashim[1], ku izzah ku seman[1] (1. XxxUKM (Malaysia))

[P-33-03]

### Child and Adolescent Suicide Rates and Economic Crisis in South Korea using Hierarchical Age-Period-Cohort Analysis

*Duk-In Jon[1], Hyun Ju Hong[1] (1. Hallym University Sacred Heart Hospital (Korea))

[P-33-04]

### Neurodevelopmental Correlates of ADHD Remission: Evidence from Longitudinal White Matter Analysis

*Huey-Ling Chiang[1,2], Gau Susan Shur-Fen[2] (1. Department of Psychiatry, Far Eastern Memorial Hospital, New Taipei City, Taiwan (Taiwan), 2. Department of Psychiatry, National Taiwan University Hospital and College of Medicine, Taipei, Taiwan (Taiwan))

[P-33-05]

### Investigation on Genetic Differences under Clinical Subtypes of Schizophrenia

Meng Zhou[1], *Yamin Zhang[1], Tao Li[1] (1. The Mental Health Center, Zhejiang University School of Medicine (China))

[P-33-06]

### Comparison of the treatment strategies of mixed features between bipolar disorder and major depressive disorder: data from Korean Medication Algorithm Project(KMAP) for Bipolar Disorder and Depressive Disorder

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# [P-33-01] Decoding Subconscious Emotional Regulation Pathways in PTSD: Integrative Deep Learning of rs-fMRI and Chronobiological Epigenetics

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Keywords：PTSD、Subconscious Emotional Regulation、Resting-State fMRI (rs-fMRI)、Chronobiological Epigenetics、Deep Learning Integration

**Background/Aim:** Post-Traumatic Stress Disorder (PTSD) significantly disrupts emotional regulation, yet the subconscious neural mechanisms remain underexplored. Most studies focus on conscious emotional responses, neglecting the interplay of neural connectivity and epigenetic chronobiology. This study aims to decode subconscious emotional regulation pathways in PTSD by integrating multi-scale resting-state functional MRI (rs-fMRI) connectivity and chronobiological epigenetic markers using deep learning. **Methods:** Data were derived from the UK Biobank (n=2,472; PTSD diagnoses: n=1,125) and GEO (DNA methylation data, n=1,048). Emotional regulation metrics were calculated using validated cognitive-emotional harmonization tasks. A convolutional neural network (CNN) was developed to extract rs-fMRI features, emphasizing connectivity in amygdala-prefrontal cortex (PFC) and hypothalamic pathways. Attention-based transformers analyzed clock gene methylation patterns (CLOCK, PER1, BMAL1) to detect PTSD-specific chronobiological disruptions. A variational autoencoder (VAE) fused neural and epigenetic features into a unified latent representation. Generalized additive models predicted emotional regulation outcomes, validated via 10-fold cross-validation. Key metrics included AUROC for accuracy, feature interpretability (SHAP values), and neurobiological clustering. **Results:** The model achieved an AUROC of 0.84 (95% CI: 0.81–0.87) in predicting PTSD-related emotional regulation deficits. Disrupted amygdala-hypothalamic connectivity (n=-0.41, p<0.001) strongly correlated with PTSD. Chronobiological disruptions in PER1 and CLOCK methylation patterns were linked to amygdala-PFC dysfunction (r=0.68, p<0.001). Patients with greater latent disruption scores exhibited significantly impaired emotional regulation metrics (effect size=1.42, p<0.0001). The fusion model improved predictive performance by 21% over single-modality models. **Conclusions:** This study identifies disrupted amygdala-hypothalamic connectivity and chronobiological epigenetic alterations as key factors underlying subconscious emotional regulation deficits in PTSD, offering a novel integrative framework for predictive modeling and therapeutic strategies.

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## Poster 33

# [P-33-02] Video Cognitive Behavior intervention for OCD: validation patient perspectives

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Keywords：video CBT、qualitative、validation

Cognitive behavior therapy (CBT) a widely efficacious intervention treating people with obsessive compulsive disorder. This CBT predominantly relies on Western modules and takes place face-to-face between the therapist and the patient. The new technology has raised questions about whether technologies can be integrated with CBT modules as part of an intervention. There is limited information on CBT modules that incorporate cultural and technological elements from Asian countries. Consequently, this study seeks to develop a video-based cultural CBT module specifically for individuals with OCD and assess the content validity of the module.The video content was created based on a validated module developed based on theoretical framework in literature review, and with adaptations and modifications of a Western CBT module to align with the cultural, religious, and normative practices of Asian societies. The video content was then validated by experts prior to being tested on patients with OCD.Three patients were enlisted to validate the video CBT module on first evaluation. OCD patients scored the language, duration, and comprehension of the 6 content intervention, Based on the CVI (Content Validity Index) score for each 6 video CBT module rate patient was at 0.75 which offered suggestions for improvement. Upon re-evaluation, six patients re-assessed each of the 6-video CBT modules as having clarity, usefulness, and relevant topic selection, along with an appropriate level of comprehension and duration, all scored at 0.90 for OCD patients. The patient stated qualitatively that all videos are simple to utilize, convenient, and helpful for them to carry out the intervention with or without a therapist.Video cognitive behavior therapy is suitable and valid to be used to treat OCD patient managed their symptoms. Further studies still required with a larger sample size and diverse methods to assess the efficacy of this intervention

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## Poster 33

# [P-33-03] Child and Adolescent Suicide Rates and Economic Crisis in South Korea using Hierarchical Age-Period-Cohort Analysis

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Keywords：economic crisis、suicide rate、children and adolescents

Introduction: The 1997 Asian financial crisis caused serious economic damage in Korea, and Korea received bailout support from IMF from December 23, 1997 to August 23, 2001.This study investigates the relationship between the suicide rate of children and adolescents who grew up during this economic crisis. Method: Suicide rates are calculated according to gender, region, and age of 5 years (10-14 years old, 15-19 years old, 20-24 years old) using suicide death data from the Korea National Statistical Office from 2000 to 2017. The cohort of interest in the study is the group that was in childhood and early adolescence between 1997-2000 and corresponds to 1986-1995 in terms of birth year. Cohorts are divided into 1986-1989 (G1), 1990-1992 (G2), and 1993-1995 (G3) according to birth year. These groups were 8-14 years old for G1 and 5-10 years old for G2, 2-7 years old for G3 during the economic crisis. The Age-Period-Cohort analysis and linear mixed-effects regression models are used and the moderating effect on region and age is also analyzed.Results: The 10-24 year-old suicide rate was higher in males than females, in older age groups, earlier in birth years in the birth cohort, and in rural than urban areas. Suicide rates between the ages of 20-24 years were particularly high among men living in rural areas. During the national economic crisis, the suicide rate was higher among adolescents than preschoolers (G3 < G1) ($p<0.001$), and this trend was observed for both men and women. However, the main effect of the cohort was not observed at a statistically significant level. Conclusion: The national economic crisis of Korea has a serious impact on the mental health of children and adolescents, and it is more negative for adolescents than for children, which can increase the suicide rate between the ages of 20-24.

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## Poster 33

# [P-33-04] Neurodevelopmental Correlates of ADHD Remission: Evidence from Longitudinal White Matter Analysis

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Keywords：ADHD、white matter、remission、longitudinal

**Objective:** Attention-deficit/hyperactivity disorder (ADHD) is associated with heterogeneous structural brain anomalies. Approximately half of childhood ADHD cases remit by adulthood. This study aimed to investigate longitudinal changes in white matter microstructure in individuals with ADHD compared to typically developing controls (TDC), and to explore differences between remitted and persistent ADHD trajectories.**Methods:** Diffusion spectrum imaging (DSI) was conducted at two timepoints in a cohort of 57 participants, including 26 individuals with ADHD and 31 TDCs. Participants were first scanned at a mean age of 13 years (range: 7–18), with a follow-up scan approximately five years later. In adulthood, a clinical reassessment categorized the ADHD group into remitted (n=13) and persistent (n=13) subgroups. Microstructural integrity of 45 white matter tracts was quantified using generalized fractional anisotropy (GFA), standardized into Z-scores (Z-GFA) based on a normative dataset (n=626). A mixed-effects model examined time-by-group interactions in Z-GFA, adjusting for follow-up interval and head motion.**Results:** Significant time-by-group interactions were observed between the remitted ADHD and TDC groups, with 17 white matter tracts exhibiting FDR-corrected differences. These tracts encompassed key projection and association fibers involving the prefrontal and sensorimotor cortices, as well as interhemispheric pathways within the corpus callosum. In contrast, no significant longitudinal changes were detected between the persistent ADHD group and either the remitted or TDC groups. Importantly, the remitted ADHD group displayed accelerated white matter maturation compared to TDCs. Furthermore, greater microstructural development in the right arcuate fasciculus and left fronto-striatal tract was associated with more pronounced improvement in hyperactivity and impulsivity symptoms over time.**Conclusions:** This longitudinal study provides evidence that distinct trajectories of white matter maturation are associated with differential clinical outcomes in individuals with ADHD. These findings support the deviant brain development hypothesis and highlight white matter microstructure as a candidate predictive biomarker for ADHD prognosis.

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**Poster 33**

# [P-33-05] Investigation on Genetic Differences under Clinical Subtypes of Schizophrenia

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Keywords：Schizophrenia、Heterogeneity、Genetics

Clinical heterogeneity in schizophrenia (SZ) poses a significant challenge to genetic research, as varying symptoms may be linked to different genetic susceptibilities. This study aims to investigate the genetic heterogeneity underlying clinically defined SZ subtypes. We first classified 2899 SZ patients into three stable clinical subtypes using unsupervised cluster analysis based on their symptom profiles: Cluster-L (low symptom severity), Cluster-S (severe symptom severity), and Cluster-N (predominant negative symptoms). The reproducibility of the classification was also confirmed in another datasets. The network comparison test identified significant differences in symptom structures among three subtypes. Then, subtypes-based genome-wide association studies (GWAS) were applied to identify subtypes-specific risk loci. Notably, a risk locus, rs3767295, within the *CNTN2* gene, which reached genome-wide significance specifically in Cluster-N ($P_{meta}=1.5x10^{-08}$, OR=0.65). Gene-based analysis further revealed several risk genes unique to individual subtypes. Additionally, we observed subtype-specific patterns in pathway-specific polygenic risk scores (pPRS) and cell type-specific PRS (ctPRS). For instance, the pPRS for ‘regulation of neuron differentiation’ and ctPRS for ‘Oligodendrocyte precursor cells’ were significantly elevated only in Cluster-N when compared to healthy controls. Our results highlight the utility of patient stratification in enhancing statistical power to uncover subtype-specific risk loci and demonstrate that SZ patients with distinct symptom profiles display varying genetic liability involving different biological pathway and cell types.

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## Poster 33

# [P-33-06] Comparison of the treatment strategies of mixed features between bipolar disorder and major depressive disorder: data from Korean Medication Algorithm Project(KMAP) for Bipolar Disorder and Depressive Disorder

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Keywords：Bipolar disorder、KMAP-BP、Mixed features.、Pharmacotherapy

Objectives. Treatment guidelines or an algorithm can help clinicians implement better practices and clinical decisions. Therefore, the Korean Medication Algorithm Project for Bipolar Disorder and Depressive Disorder (KMAP-BP; KMAP-DD) have been regularly revised through a consensus of expert opinion almost every 4 years, since its first development in 2002. We compared the pharmacological strategies for mixed features in the perspective between bipolar disorder and major depressive disorder from the results of KMAP-BP 2022 and KMAP-DD 2018.Methods We revised the KMAP-BP and -DD with an updated questionnaire and conducted a survey with expert clinicians in mood disorder in Korea. Eighty-seven members of the review committee completed the survey in KMAP BP 2022, one hundred forty-three experts reviewed in KMAD-DD 2021. Each treatment strategy or treatment option was statistically calculated with 95% confidence interval, and the treatment option was categorized into the three levels of recommendation of primary, secondary, and tertiary depending on the low value of 95% CI. Treatment of choice (TOC) refers to an item that more than half of the reviewers gave 9 points. Results. A. In first-step strategies for manic episode with mixed features (KMAP-BP 2022) For manic-dominant mixed features, a combination of a mood stabilizer (MS) and an atypical antipsychotic (AAP) is the TOC. And MS monotherapy and AAP monotherapy are preferred strategies. For depressive symptom-dominant mixed features, a combination of MS + AAP, a combination of AAP + lamotrigine (LMT), AAP monotherapy, a combination of MS + LMT, and MS monotherapy were preferred. For mixed features with similar manic symptoms and depressive symptoms, a combination of MS and AAP, AAP monotherapy, and MS monotherapy were preferred. For depressive episode with mixed features (KMAP-DD 2021), preferred strategies were antidepressant (AD) + AAP and AD + MS were recommended. Conclusion. The treatment strategy for the mixed features differed depending on whether it was diagnosed as bipolar disorder or depressive disorder. In addition, there were differences in treatment strategies depending on which symptoms were dominant among bipolar disorders.