

E-POSTER ABSTRACTS



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ANXIETY DISORDERS / SOMATOFORM DISORDERS /
DISSOCIATIVE DISORDERSEP-1017 | The interaction effect of early trauma exposure and a
diagnosis of panic disorder on cortical thicknessIseul An¹, Minji Bang², Sang-Hyuk Lee²¹Department of Clinical Counseling Psychology Graduate School, CHA University, Korea²Department of Psychiatry, CHA Bundang Medical Center, Korea

Purpose: Early trauma is a risk factor for adult psychiatric disorders. Early trauma exposure during the “sensitive period” for neuro-development is known to cause structural brain alterations, particularly in the fronto-temporo-limbic circuitry. Early trauma-related effects on brain development may differ based on individual characteristics and cause different psychiatric outcomes. We investigated the interaction effect of early trauma exposure and panic disorder on cortical thickness.

Materials and method: Sixty-six participants with panic disorder and 66 healthy controls were enrolled. High-resolution T1-weighted images were acquired, and a whole-brain vertex-based analysis was performed to estimate cortical thickness. The Early Trauma Inventory Self Report-Short Form, Anxiety Sensitivity Inventory-Revised, Panic Disorder Severity Scale, Beck Depression Inventory-II, and Beck Anxiety Inventory were administered.

Results: There was a significant interaction between early trauma exposure and panic disorder on the mean cortical thickness in the bilateral insula and right pars triangularis. An exploratory correlational analysis revealed a positive correlation between the mean cortical thickness in the left insula and severity of anxiety sensitivity to cardiovascular symptoms in participants with panic disorder.

Conclusion: Our findings suggest that early trauma exposure may affect brain structures differently based on a diagnosis of panic disorder. Furthermore, individual variation in brain alterations after early trauma may confer trait vulnerability that triggers the development of panic disorder. Future longitudinal studies are warranted to elucidate the neurobiological mechanisms underlying early trauma and psychiatric outcomes.

EP-1019 | Initial white matter connectivity differences between
remitters and non-remitters of patients with panic disorder after
6-month pharmacotherapyChae rim Song¹, Na-Ok Kang², Minji Bang², Chun Il Park², Tai-Kiu Choi², Sang-Hyuk Lee²¹Department of Clinical and counseling psychology, CHA University, Korea²Department of Psychiatry, CHA University, CHA Bundang Medical Center, Korea

Purpose: Panic disorder (PD) is a harmful mental condition that causes relapsed and persistent impairment. In the treatment of PD, the prognosis for PD should be considered, however, the relationship between pharmacotherapy and biomarkers predicting a better response through neuroimaging are little known. The purpose of the present study was to examine whether there would be the initial white matter (WM) regions associated with the remission in 6-month.

Materials and method: A total of one hundred four patients with PD were investigated in the study. In six months, remission patients with PD were seventeen and non-remission patients with PD were eighty-one. The Panic Disorder Severity Scale, Albany Panic and Phobia Questionnaire, Anxiety Sensitivity Inventory-Revised, Beck Anxiety Inventory and Beck Depression Inventory were assessed for all patients at baseline. We compared the diffusion indices between remission and non-remission group at 6 months using Tract-based Statistical Statistics.

Results: The results showed that the fractional anisotropy (FA) values were significantly higher in non-remitter group compared with remitter in the WM regions such as posterior corona radiata and superior longitudinal fasciculus in the 6-month. The logistic regression analysis with clinical symptom severity and FA values of the WM regions as covariates showed that FA values in those regions and BDI predicted poor remission.

Conclusion: This study suggests that posterior corona radiata and superior longitudinal fasciculus are related to potential predictive factors of 6-month remission in patients with PD. WM regions associated to the long-term remission should be verified with further investigations.

EP-1067 | Changes in frontal brain activity according to the application of virtual reality treatment for patients with social anxiety disorder: fNIRS study

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Purpose: Social anxiety disorder (SAD) is one of the most common psychiatric disorders. The aim of this study is to identify the effectiveness of virtual reality (VR) exposure therapy for SAD. It is achieved by analyzing brain activation using functional near-infrared spectroscopy (fNIRS).

Materials and method: We investigated the effectiveness of the VR program on 28 patients with SAD and 27 healthy controls (HC). The mean age of patients' group was 23.74 and that of healthy controls was 23.18. Two types of VR treatments were applied to patients. The patients were provided with VR therapy we developed that was exposed to social situations as first-person view (Video 1) and third-person view (Video 2). Before and after VR treatment, nine scales related to social anxiety were examined. Besides, the activations of prefrontal regions were measured by fNIRS before and after treatment, and after first session of treatment.

Results: We found that patients with SAD had significantly higher scores than healthy controls on all rating scales, and that scores of most rating scales were lower after VR treatment than before treatment. Compared with the SAD group and HC, reduction of activation of right frontopolar prefrontal cortex in HC was greater than in SAD group in baseline. Comparing the frontal cortex activation before and after treatment in SAD group, there were significant differences in frontopolar prefrontal cortex and orbitofrontal cortex in video 2. Also, activation of prefrontal cortex is correlated with some psychological rating scales.

Conclusion: VR exposure therapy we developed is effective and we could find its effectiveness through fNIRS, as well as psychological rating scales.

EP-1092 | The influence of adverse developmental experience on interaction between emotion and cognition in patients with post-traumatic stress disorder

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Purpose: We performed the fMRI to discriminate differential brain activation patterns in PTSD patients with adverse developmental

experience, without it, and healthy controls during face recognition task.

Materials and method: Total 28 subjects were participated in this study: 10 PTSD patients with adverse developmental experience (mean age = 28.6 ± 10.8 years, CAPS total score = 55.6 ± 9.8), 8 without it (mean age = 39.5 ± 16.8 years), and 10 healthy controls (mean age = 29.1 ± 10.8 years). All PTSD patients were diagnosed on the basis of DSM-IV-TR and had no other psychiatric disorders. They underwent fMRI during face recognition task with neutral distracters (non-emotional pictures) and emotional distracters (fearful pictures). The paradigm consisted of trials with the sequence "encoding - maintenance - distracter - retrieval." In the retrieval task, participants were presented either the previously encoded face or a new face, asked whether they recognize the face. Brain activation maps were compared between groups and between each distracter condition by SPM8 program.

Results: The subjects may try to maintain WM during the task-irrelevant emotional distracters which induced interruption and required attention. Compared to healthy controls, the PTSD patients with adverse developmental experience exhibited significantly increased activity in the superior and middle frontal gyrus, superior and middle temporal gyrus, and lingual gyrus in a delayed-response WM task with emotional distracters ($p < 0.005$). And compared to without it, they showed differential high signal intensity in the area of middle and inferior frontal gyrus, middle temporal gyrus, angular gyrus, postcentral gyrus, superior and middle occipital gyrus ($p < 0.005$). However, there was no significant difference during neutral distracters in 3 groups.

Conclusion: These results demonstrated that WM during emotional distraction of PTSD patients was significantly influenced by pre-existing trauma. These findings might be helpful for understanding the pathogenesis of PTSD and neurobiology of interaction between emotion and cognition.

EP-1164 | WITHDRAWN

EP-1173 | Effects of tDCS on PTSD and psychological predictors of treatment effects on symptom reduction

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Purpose: Currently, there is no enough information regarding the treatment effects of transcranial direct current stimulation (tDCS) for patients with Post-traumatic stress disorder (PTSD). This study aimed to investigate the effects of tDCS for patients with PTSD and explore the tDCS treatment effects.

Materials and method: Thirty one participants received tDCS (10 times, once per day, 1.5 mA, 20 min) which targeted the left and right dorsolateral prefrontal cortex, and their PTSD-related symptoms, severity, and various psychological factors were assessed before and after the treatment.

Results: Results showed that: 1) PTSD patients showed a significant reduction in PTSD symptoms and severity so much that 21 patients out of 31 no longer met the criteria for the diagnosis of PTSD 2) PTSD-related sub-symptoms such as depression, anxiety, insomnia, depersonalization as well as dissociation were significantly reduced 3) emotion regulation strategies such as self-blaming, blaming others, and catastrophizing significantly predicted symptom reduction after controlling for age and education years.

Conclusion: This study highlighted the efficacy of frontal tDCS for the treatment of patients with PTSD and suggested positive psychological variables could predict the better treatment effect of tDCS.

EP-1082 | The influence of psychological worry on pharmacological treatment outcome in patients with panic disorder

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Purpose: There are several predictors of unfavorable treatment outcome in panic disorder (PD) patients. Duration of the illness, presence of agoraphobia, comorbidities with other anxiety, depression, personality traits, being a woman, and early trauma have been suggested. However, few studies have reported an association between worry and pharmacological treatment outcome in PD patients. This study aimed to examine whether worry is associated with pharmacological treatment outcome in PD patients.

Materials and method: This study included 890 PD patients and 427 healthy controls (HCs). The Penn State Worry Questionnaire (PSWQ), the Early Trauma Inventory Self Report-Short Form, Beck Depression Inventory-II (BDI-II), Panic Disorder Severity Scale (PDSS), and Anxiety Sensitivity Inventory-Revised (ASI-R) were administered. We measured the pharmacological treatment outcome at 8 weeks. Multiple regressions were used to predict pharmacological treatment outcome after controlling for other confounding variables.

Results: The total scores of the PSWQ were significantly higher in PD patients compared with HCs ($t = 12.738$, $p < 0.001$). Also, the total scores of the PSWQ showed significant correlations with BDI-II ($r = 0.636$, $p < 0.001$), PDSS ($r = 0.290$, $p < 0.001$), and ASI-R ($r = 0.534$, $p < 0.001$) at baseline in PD patients. In multiple regression analyses, the PSWQ could predict poor short-term pharmacological treatment outcome in PD patients ($B = 5.263$, $F = 2.152$, $p = 0.008$). However, age, being a woman, level of education, BDI-II and ASI-R cannot affect pharmacological treatment outcome in PD patients.

Conclusion: This is the first study to demonstrate that the excessive worry may contribute to poor short-term pharmacological treatment outcome in PD patients. Therefore, our studies suggest that clinicians need to be aware of the worry to optimize treatment outcomes for PD patients.

EP-1099 | Reduced DNA methylation of the serotonin transporter gene is related to the susceptibility of panic disorder

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Purpose: The serotonin transporter gene (SLC6A4) has been suggested as a prime candidate in the pathogenesis of panic disorder (PD); however, the effect of SLC6A4 DNA methylation on individuals with PD has not been established. In this study, DNA methylation patterns in the serotonin-transporter-linked polymorphic region (5-HTTLPR) were investigated in patients with PD.

Materials and method: This study included 243 patients with PD (130 females) and 100 healthy controls (HCs; 50 females). All participants were analyzed for DNA methylation status at 5 CpG sites in 5-HTTLPR via direct sequencing of sodium bisulfate-treated DNA, extracted from whole blood. We included Coping Scales to measure coping strategies, such as problem-focused coping and emotion-focused coping. In addition, Panic Disorder Severity Scale, and the Anxiety Sensitivity Inventory-Revised version were administered. Multivariate analysis of covariance (MANCOVA) was used to compare the DNA methylation level at 5-HTTLPR 5 CpG sites between PD participants and HCs, adjusted for age and sex. Pearson's partial correlation analyses controlling age and sex were performed to determine the relationship between the level of DNA methylation and symptom severity of PD and other trait markers.

Results: When comparing between patients with PD and HCs, the MANCOVA analyses showed that patients with PD were associated with lower DNA methylation levels at CpG2, CpG3, CpG4, and CpG5 in 5-HTTLPR. ($p < 0.001$ to 0.008). The level of methylation at CpG1 was not significantly different between patients with PD and HCs ($p = 0.152$). In patients with PD, CpG2 methylation levels were significantly negatively associated with problem-focused coping strategies that were related to lower levels of emotional distress ($r = -0.698$, $p = 0.017$).

Conclusion: The present study suggests a potential role of hypomethylation in the 5-HTTLPR polymorphism in the pathogenesis of PD. In addition, coping strategies appear to be associated with SLC6A4 methylation in patients with PD.

EP-1215 | The effect of continuous pharmaceutical treatment during the first 12 months on relapse anxiety disorders

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Purpose: Anxiety disorders are common diseases with a high prevalence rate and affect the general quality of life. Concerning the chronic course trajectories with a high relapse rate of anxiety disorder, improving the long-term prognosis by preventing relapse of anxiety disorders is essential. The current study examined

whether continuous pharmaceutical treatment during the first 12 months reduces the risk of relapse of anxiety disorders in South Korea.

Materials and method: We used Health Insurance Review and Assessment Service Data covering the period from 2013 through 2018. The study population consisted of 42,175 adult patients who received pharmaceutical treatment after being diagnosed with anxiety disorders. The continuous pharmaceutical treatment was defined as evidence of psychiatric medication prescriptions for 75% of the first 12 months of treatment. Relapse until 30, June 2018 was defined by evidence of a new episode requiring pharmaceutical treatment, psychiatric hospitalization, or emergency department visit. We compared the relapse rate until the 30, June 2018 in patients receiving continuous treatment and those who discontinued early using Cox's proportional hazard model.

Results: 6050 (14.34%) subjects received continuous pharmaceutical treatment, and 36,125 (85.65%) patients discontinued pharmaceutical treatment early. Patients receiving continuous pharmaceutical treatment experienced a lower risk of relapse (Hazard ratio: 0.265, 95% CI: 0.201–0.348). Three or more follow-up visits in the first 3 months also reduced the risk of relapse (Hazard ratio: 0.814, 95% CI: 0.0753–0.879). Factors such as comorbid medical illness, the type of medical institution, and the specialty of the physician were not significantly associated with relapse.

Conclusion: Continuous pharmaceutical treatment and frequent follow-up visits during the acute phase were associated with a significant reduction in the likelihood of relapse of anxiety disorders. Our results provide important evidence on the importance of continuous and frequent pharmaceutical treatment in South Korea.

BRAIN IMAGING

EP-1042 | Amyloid deposition and its association with depressive and anxiety symptoms and cognitive functions in late-life depression

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Purpose: To compare amyloid deposition in late-life depression participants with healthy controls in cognitively normal older adults, images with amyloid- β PET were collected with neuropsychological measurements.

Materials and method: 61 participants including 40 patients with late-life depression and 21 healthy volunteers with no history of psychiatric disease were enrolled in this study. The Mini International Neuropsychiatric Interview was applied at baseline. To evaluate clinical depression and anxiety, the 17-item Hamilton Scale for Depression, the Hamilton Anxiety Rating Scale, and Clinical Global

Impression Scale were applied to participants at baseline. Korean version of Mini-Mental Status Examination (K-MMSE) and Korean version of Montreal Cognitive Assessment (MoCA-K) were applied for the eligibility test. Seoul Neuropsychological Screening Battery (SNSB-II) was applied to assess cognitive function at baseline and follow up period on 3 months.

Results: There was no significant group difference between late-life depression and healthy volunteers. Amyloid deposition showed no significant association with depression severity. In correlational analysis with amyloid deposition and neurocognitive function measurements, there was no significant result after adjustment for depression severity. There was no significant finding between amyloid deposition and cognitive function difference from baseline to follow up, either. Interestingly, patients with late-life depression showed significantly negative correlation with somatic anxiety and amyloid deposition in left inferior frontal lobe ($p = 0.0093$), left inferior parietal lobe ($p = 0.0398$), left middle frontal lobe ($p = 0.0398$), left superior parietal lobe ($p = 0.0398$), right anterior cingulate ($p = 0.0028$), right lateral temporal lobe ($p = 0.0398$), right middle frontal lobe ($p = 0.0415$), right orbitofrontal cortex ($p = 0.0415$), and right superior frontal lobe ($p = 0.0093$).

Conclusion: Somatic anxiety was lower in the late-life depression group with more amyloid deposition, especially in left inferior frontal lobe. This finding could suggest different underlying mechanism in amyloid deposition in late-life depression and dementia.

EP-1051 | Morphologic alterations in subregions of amygdala in adults with major depressive disorder

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Purpose: Previous studies comparing the amygdala volume in major depressive disorder (MDD) patients with the amygdala volume in healthy controls (HC) showed inconsistent results. Since the amygdala is composed of several subregions, it is difficult to detect the subtle changes of each amygdala by measuring the volume of the total amygdala. The present study aimed to identify volume changes in each subregion of the amygdala and their association with illness duration and clinical status of MDD.

Materials and method: One-hundred forty-seven MDD patients and one-hundred forty-four HCs underwent T1-weighted structural magnetic resonance imaging. We analyzed volumes of the whole amygdala and each amygdala subregion, including the anterior amygdaloid area, cortico-amygdaloid transition area, basal, lateral, accessory basal, central, cortical, medial, and paralaminar nuclei using the atlas in the FreeSurfer. The volume difference was analyzed using a one-way analysis of covariance with individual volumes as

dependent variables, and age, sex, and total intracranial volume as covariates.

Results: The volumes of the whole right amygdala and subregions including lateral nucleus, anterior amygdaloid area in the right amygdala of MDD patients were significantly smaller compared to the HC group. There was no significant correlation between illness duration and each amygdala subregion volume. Depression severity at study inclusion was not associated with any amygdala subregion volume.

Conclusion: Our findings suggest that specific amygdala subregions are more susceptible to volume change in the MDD patient group than in the HC group. Such volume changes may be related to altered functional activity and connectivity of amygdala nuclei in MDD.

EP-1114 | Differences in cortical structure between cognitively normal East Asian and Caucasian older adults: A surface-based morphometry study

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Purpose: There is a growing literature on the impact of ethnicity on brain structure and function. Despite the regional heterogeneity in age-related changes and non-uniformity across brain morphometry measurements in the aging process, paucity of studies investigated the difference in cortical anatomy between the East Asian and Caucasian older adults. The present study aimed to compare cortical anatomy measurements, including cortical thickness, volume and surface area, between cognitively normal East Asian ($n = 171$) and Caucasian ($n = 178$) older adults.

Materials and method: The current study used semi-automated brain morphometry tools for evaluating cortical thickness, volume, and surface area. Vertex-wise statistical test was performed to compare the differences of these cortical anatomy measurements between East Asian and Caucasian groups, adjusting for age, gender, education, and MMSE score.

Results: The East Asian group showed greater cortical thickness and larger cortical volume in the right superior temporal gyrus, post-central gyrus, bilateral inferior temporal gyrus, and inferior parietal cortex. The Caucasian group showed thicker and larger cortex in the left transverse temporal cortex, lingual gyrus, right lateral occipital cortex, and precentral gyrus. Additionally, the difference in surface area was discordant with that in cortical thickness. Differences in brain structure between the East Asian and Caucasian might reflect differences in language and information processing, but further studies using standardized methods for assessing racial characteristics are needed.

Conclusion: The research results represent a further step towards developing a comprehensive understanding of differences in brain structure between ethnicities of older adults, and this would enrich clinical research on aging and neurodegenerative diseases.

CHILD AND ADOLESCENT PSYCHIATRY

OP-1047 | WITHDRAWN

EP-1138 | WITHDRAWN

EP-1166 | The intergenerational transmission of maternal adverse childhood experiences on offspring's psychiatric disorder: The mediating role of maternal depression

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Purpose: Maternal adverse childhood experiences (ACE) may negatively affect the mental health and development of their offspring. The purpose of this study was to investigate the association of maternal ACE and offspring's psychiatric disorder and the mediating effect of maternal depression.

Materials and method: The subjects included 463 mothers (42.78 ± 5.68 years) and their offspring aged 6–18 years (13.26 ± 3.90 years). Mothers reported their ACE before age 18 and completed the Beck Depression Inventory-II and Diagnostic Predictive Scales (DPS), a screening tool for offspring's psychiatric disorder. Logistic regression was used to estimate the odds ratio of mothers' ACE on offspring's psychiatric disorder, and the mediating effect of mother's depression was analyzed through path analysis.

Results: 35.42% of subjects had at least one ACE, and 11.0% reported three or more ACEs. Higher maternal ACE scores were associated with a significantly higher prevalence of offspring's psychiatric disorders ($p < 0.001$). Household dysfunction of maternal ACE ($OR = 2.263, p < 0.001$) is significantly associated with offspring's psychiatric disorder. In the mediation model in which the household dysfunction affects the number of offspring's psychiatric disorders, the partial mediation model through maternal depression was significant.

Conclusion: The mother's experience of household dysfunction before the age of 18 has a significant impact on her offspring's psychiatric disorder and supported significant mediation through maternal depression. Further research is needed to determine the mechanisms of intergenerational transmission of ACE and offspring's psychopathology.

EP-1185 | Altered gut microbiota in youth with autism spectrum disorder associated with the attention problems

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Purpose: Spectrum disorder (ASD) is a common neurodevelopmental disorder in Taiwan and worldwide (1%). It is a clinically and genetically heterogeneous disorder without effective biological treatment. Recently, the role of the microbiome in neuropsychiatric disorders (e.g., ASD) has been noticed in its modulation effect on behavioral impairments. Several lines of evidence suggested the decrease of gut microbiota dysbiosis also decreases clinical symptoms. In views of higher attentional problems in ASD than typically developing controls (TDC), our study aims to identify the direct associations between the gut microbiome and inattention symptoms in ASD as compared to TDC to understand the underlying mechanisms of how gut microbiota dysbiosis modulates the attention/hyperactivity problems.

Materials and method: We assessed a total of 114 study subjects, aged 6 to 25, from National Taiwan University hospital, including 83 males with a clinical diagnosis of ASD (age = 16.16) according to DSM-5 criteria and 31 TDC boys (age = 13.195.29). The stool samples of all the participants have been analyzed with 16 s metagenome sequencing, and along with the social responsiveness scale (SRS) score and Swanson, Nolan, and Pelham. (SNAP) Questionnaire- IV. The statistical analysis was performed via QIIME2 and R, with the significance level as FDR-corrected q value <0.05. There were no group differences in alpha diversity of species richness estimates (Chao1 and ACE and diversity indices (Shannon and Simpson).

Results: The significant group differences in microbiota at the family level included Lachnospiraceae and Eggerthellaceae. The ASD group had higher variability of microbial communities in the ASD youth than TDC. Such higher variability in ASD was significantly associated with more severe hyperactivity and inattention. Moreover, Ruminococcaceae, Fusobacteriaceae, and Enterobacteriaceae in the family level demonstrated lower diversity associated with more severe oppositional symptoms than TDC.

Conclusion: These findings support the connection between metabolism, attention/hyperactivity/oppositional problems may advance the discovery of molecular biomarkers for ASD.

EP-1187 | Crisis response and intervention in the schools: A survey of psychiatrist's experiences and perceptions

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Purpose: The purpose of this study was to investigate the experiences and perceptions of psychiatrists who provided mental health interventions in the school setting.

Materials and method: An online questionnaire was delivered to the members of the Korean Neuropsychiatric Association with past experience in school crisis intervention. The contents and the school's response towards the crisis intervention, the elements to be supplemented or improved in the future were included in the questionnaire.

Results: A total of 79 psychiatrists completed the survey regarding experiences of the crisis intervention in the school after the traumatic events. Student suicide showed highest frequency (45.6%) amid the crises they involved, followed by school violence (26.6%) and sexual violence (10.1%). In terms of appropriateness of the school's response to crisis, 64.1% of respondents said schools' responses relatively appropriate. In the correlation analysis of the school's active attitude towards and coping with crisis intervention, it was found that the more active schools were in crisis intervention, the more likely they were to respond appropriately to the crisis ($r = 0.68$, $p < 0.05$).

Conclusion: We found that systematic preparedness and intervention was needed the process of crisis responses in confusing school sites. Additionally, all of respondents suggested that the active role of school administrators and coping strategies would improve schools' crisis responses. Our findings provided that the need for school-based crisis responses and systematic intervention system to successful crisis management.

OE-1021 | Depression among adolescents living in orphanage

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Purpose: To find out the prevalence and severity of depression and the association between socio-demographic factors and severity of depression among adolescent orphans living in orphanages.

Materials and method: This study was cross sectional descriptive study. Study population included the orphans from 3 Training Schools under the Government of Union of Myanmar. Socio-demographic variables of the participants were collected and depression was assessed by using Beck depression inventory (II).

Results: The overall prevalence of depression among the adolescent orphans was 73.7% in which minimal to mild depression was 51.8% and moderate to severe depression was 56.9%. There was statistical association found between leisure activity and severity of depression that the proportion of depression and severity of depression was lower in the group who spent their leisure by doing physical activity than the group who spent their leisure with entertainment.

Conclusion: Prevalence of depression among adolescents living in orphanages is very high and there is a need for well-developed system of care for orphans to be implemented in all orphanages and early identification and intervention should be provided to reduce their sufferings and to improve their quality of lives.

EP-1038 | Cerebellar gray matter volume and its role in executive function, and attention: Gender differences by age in adolescents

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Purpose: In recent studies, cerebellum is not only well known for its role in movement and motor skills, but is important in cognitive functions. This research measures the regional GMV (rGMV) of the cerebellum, attention, Executive Function (EF) and we aimed to identify their correlation and gender differences in children and adolescents.

Materials and method: Total of 114 subjects (M = 62, F = 52, 12.44 ± 2.99 years old) were analyzed, and were divided into three groups by age (Age 6-9, 10-13, 14-17). We used Stroop test (ST) and Wisconsin card sorting test (WCST) to measure EF, and Continuous Performance Test (CPT) to estimate attention. MRI images were analyzed with Regional Voxel-Based Morphometry (VBM) Analysis, resulting in 26 sites of cerebellum (8 vermis and 9 lobule regions in each hemisphere). Partial correlation analyses were conducted between cerebellar rGMV and clinical scores of WCST, ST, and CPT subcategories ($p < 0.05$, FDR < 0.2 , controlled for age, IQ, Child Depression Inventory score, and Intracranial volume).

Results: In 6-9 years old boys, negative correlations were observed in the following CPT results: Omission Errors and cerebellum crus 2 [Left (Lt), FDR = 0.1853, Right (Rt), FDR = 0.1721], vermis 8 (FDR = 0.1853); standard deviation of response time (RTv) and crus10 (Rt, FDR = 0.1539). WCST total errors and crus6 (Rt, FDR = 0.1539), Perseverative Errors and crus6 (Rt, FDR = 0.1539) was positively correlated. Meanwhile, girls rarely showed correlation. At age 10-13, girls showed positive correlation in multiple ST subcategories with crus1,2 (Lt, Rt, $p < 0.05$). At age 14-17, boys had positive correlation in ST: Color T score and crus 1 (Rt, $p = 0.023$), crus 2 (Lt, $p = 0.026$, Rt, $p = 0.008$), crus7 (Lt, $p = 0.038$, Rt, $p = 0.012$), crus 8 (Rt, $p = 0.038$), crus 9 (Rt, $p = 0.029$). CPT RTv showed negative correlation (crus 7,8,9, Lt and Rt, $p < 0.05$).

Conclusion: This study highlights that gender-different cerebellum maturation in adolescence might be correlated with EF and attention. Longitudinal or functional neuroimaging studies could be needed for further research.

EP-1052 | Prospective study on resting state functional connectivity in adolescents with major depressive disorder after antidepressant treatment

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Purpose: Aberrant interactions of brain regions that play a major role in depression. Previous studies on resting state functional connectivity (rsFC) showed varying results. We look into the change of rsFC in depressed adolescents compared to healthy controls, and also into the change of rsFC after 3-month of antidepressant treatment.

Materials and method: Patients underwent clinical assessments including MRI scans at their first visit and after 12 weeks of treatment. Data was analyzed using the CONN Functional Connectivity toolbox through a seed-to-voxel analysis.

Results: The rsFC between the right DLPFC and the left putamen/right frontal operculum, and also between the left DLPFC and the left putamen/the left lingual gyrus were higher in patients compared to controls. The rsFC between the right dorsal ACC and the left precentral gyrus were lowered after 3-month of antidepressant treatment.

Conclusion: Adolescent depressed brains show altered connections between the DLPFC and the putamen, frontal operculum, and lingual gyrus. Those results are consistent with previous research findings where depression is thought to influence visual cognitive processing. Antidepressant treatment also impacts the right ACC, an area important for emotional and cognitive processing, which is also a part of the salience network.

EP-1055 | Effectiveness of a web-based parent training program for parents of children with autism spectrum disorders (ASDs): A pilot study

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Purpose: This study was conducted to examine the effectiveness of a web-based parent training program on the knowledge of behavior modification, parenting stress, parenting efficacy and quality of life in parents of children with ASDs.

Materials and method: We developed a web-based, behaviorally oriented parenting program including 10-weekly 40-min individual sessions and feedback survey for the purpose of this study. The Behavioral Vignettes Test (BVT), the Parenting Stress Index (PSI), the Parenting Efficacy Test (PET) and the General Health Questionnaire/Quality of Life-12(GHQ/QL-12) were used to verify the effectiveness of this program. A pre-, posttest group design was used in this study. Given the small sample size of this study, the efficacy of the program was evaluated using Wilcoxon signed ranks tests.

Results: Twelve families of Korean children with ASDs participated in this study. The knowledge of behavior modification, parenting stress, parenting efficacy and quality of life in participants did not show differences before and after the intervention. The feedback survey showed high satisfaction.

Conclusion: The results of this study raise doubts about the effectiveness of the web-based parental education program, and further large scale studies are needed in the future.

EP-1072 | Trajectories of psychopathology according to continuation or discontinuation of child maltreatment: A longitudinal observation study

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Purpose: Previous studies have revealed child maltreatment (CM) is the lifetime risk factor of psychopathology. However, few studies have explored the discontinuation of CM. The purpose of this study was to examine the impact of CM discontinuation on developmental trajectories of psychopathology.

Materials and method: The childhood and adolescence data of Korea Welfare Panel Study (Wave 10–13) was analyzed. 354 children aged 10 to 12 completed 3-year follow-up. The rate of emotional abuse (EA) and physical abuse (PA) were examined, and Child Behavior Checklist was carried out to assess internalizing (INT) and externalizing symptoms (EXT). The subjects are divided into four groups according to type of CM experience: Never, Occurrence, Discontinuation, Continuation. Logistic regression analysis was used to estimate adjusted relative risks (aRR) of psychopathology in CM groups.

Results: 58 (16.4%) experienced PA and 82 (23.2%) experienced EA over the past year, and they had higher scores in CBCL than control at Wave 10. In logistic analysis compared to Never, Occurrence and Continuation of PA show significant aRR of INT (Occurrence 9.75; CI 3.41–27.88, Continuation 9.40; CI 2.37–37.37, respectively) and EXT (Occurrence 6.72; CI 2.22–20.31, Continuation 6.58; CI 1.58–27.45, respectively). Of EA, Occurrence and Continuation show similar results: aRR of INT for Occurrence (7.45; CI 2.71–20.45) and Continuation (4.43, CI; 1.17–16.78), of EXT for Occurrence (10.97, CI; 3.65–32.96) and Continuation (15.17, CI; 4.42–52.09). However, Discontinuation of PA shows significant aRR of only EXT (3.26, CI 1.18–9.03) not INT, and Discontinuation of EA show not significant aRR of both INT and EXT.

Conclusion: The present study shows that the occurrence as well as continuation of CM might increase risk of psychopathology, and discontinuation of CM could reduce the negative effect of CM on developmental trajectory. These results suggest that the early intervention including discontinuation of CM may prevent childhood adversities developing to psychopathology.

EP-1083 | The association of mental health, smartphone usage type and time among adolescents: The perspective of social usage

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Purpose: The use of smartphones for social interaction is associated with depression, insomnia, suicide, and addiction. American Academy of Pediatrics and Canadian 24-Hour Movement Guidelines

recommend screen time of no more than 2 hours/day for teenagers, but few studies considered the purpose of smartphone use and time together. We used data from the 2017 Korea-Youth Risk Behavior Web-based Survey (KYRBS) to evaluate the impact of smartphone use and time on mental health.

Materials and method: A total of 54 243 adolescents answered questionnaires about stress recognition, sleep dissatisfaction, depressive symptom, suicide indicators, and purpose and time of smartphone usage. Smartphone usage was categorized as social interaction and non-social interaction, and the usage time was classified into three categories: <2 hours/day, ≤ 2 and <4 hours/day, ≥ 4 hours/day. Rao-Scott chi-squared test, t-tests, and multiple logistic regression analysis were used with SPSS complex samples. The significance level was set at p-value <0.05.

Results: We found that on weekdays, stress recognition, sleep dissatisfaction, depressive symptoms, and suicide indicators were worsened in both groups when using smartphone for ≥ 4 hours/day. In using smartphones for $2 \leq$ and <4 hours/day on weekdays, different mental health outcomes depended on the purpose. On weekends, using smartphones for ≤ 2 and <4 hours/day worsened sleep dissatisfaction but improved suicide indicators in both groups. All mental health outcomes that improved when using smartphones for $2 \leq$ and <4 hours/day worsened in both groups when using smartphones for ≥ 4 hours/day on weekends.

Conclusion: Specific smartphone guidelines and preventive plans should be prepared in consideration of the lifestyle of teenagers and the purpose and usage time of smartphones. This study provides evidence of a U-shaped relationship between smartphone usage time and poor mental health scale.

OE-1137 | Significant domains of life satisfaction in adolescents' suicide-related behaviors

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Purpose: Adolescent suicide is a serious national issue in Korea, in which life satisfaction has recently been presented as a key factor. The main purpose of this study was to identify the domains of life satisfaction that affect suicide-related behaviors in adolescence.

Materials and method: We analyzed the data of a 2018 suicide survey conducted on middle school students in Incheon, Korea. A total of 1297 students were asked questions about their demographic characteristics, happiness, self-related domains of life satisfaction (leisure time, appearance, physical health, mental health), depression symptoms, and suicide-related behaviors.

Results: When tested in pairs, female gender, perceived SES, happiness, and all of the four self-related satisfactions showed significant

correlation with depression and suicidality. Multivariate regression analysis suggested that suicidality was significantly affected by perceived SES, appearance satisfaction, mental health satisfaction, and depression. Finally, depression was identified as a partial mediator for the association between mental health satisfaction and suicidality, and a complete mediator for the association between female gender and suicidality.

Conclusion: We conclude that perceived SES, appearance satisfaction, and mental health satisfaction significantly affected suicidality of the students, with or without the effect of depression. Health authorities, schools and families should be aware of this to recognize adolescents at suicide risk earlier.

EP-1168 | Reduced volume of a brainstem substructure in adolescents with problematic smartphone use

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Purpose: Despite the growing concern for adverse health effects related to problematic smartphone use (PSU), little is known about underlying morphologic changes in the brain currently. The brainstem is a deep brain structure which consists of several important nuclei associated with emotion, sensation and motor function of body connecting fibers from the cerebellum. In this study, we sought to examine the difference in volume of brainstem substructures between adolescents with and without PSU.

Materials and method: A total of 87 Korean adolescents participated in this study. We designated the PSU group ($n = 20$, age 16.2 ± 1.1 , F: M, 12:8) if participants reported a total SAPS score of 42 and higher, and the remaining subjects were assigned to the control group ($n = 67$, age 15.3 ± 1.7 , F:M, 19:48). High resolution T1 magnetic resonance imaging (MRI) was acquired at Siemens 3 T scanner. Freesurfer imaging suite was used to measure the volume of each of the four substructures (midbrain, pons, medulla, superior cerebellar peduncle) in the brainstem. Analysis of covariance was conducted to reveal group difference after adjusting effects of age, gender, whole brainstem volume, depressive symptom, and impulsivity.

Results: The PSU group showed a significantly smaller volume of the superior cerebellar peduncle compared to the control group ($F = 8.595$, $p = 0.004$). There was a negative correlation between the volume of the superior cerebellar peduncle relative to that of the whole brainstem and the SAPS score (Pearson's $r = -0.242$, $p = 0.031$).

Conclusion: To our knowledge, the present study is the first to reveal altered volume of the brainstem substructure among PSU adolescents. This finding suggests the altered white matter connectivity between the cerebellum and the rest of the brain could be one of the neurobiological mechanisms underlying PSU.

Keywords: Problematic Smartphone Use, Brainstem, Superior cerebellar peduncle.

EP-1231 | The developmental coordination disorder questionnaire and correlated neuropsychological characteristics in ADHD children

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Purpose: Developmental coordination disorder (DCD) is a common neurologic disorder, affecting up to 6% of children. DCD and Attention-Deficit/Hyperactivity Disorder (ADHD) coexist with each other, at comorbidity rates of 50%. In this study, we aimed to assess the extent of motor coordination in ADHD and controls by using the Developmental Coordination Disorder Questionnaire (DCDQ), and assess the correlation between motor coordination and cognitive/behavioral characteristics.

Materials and method: We recruited 298 children, aged 5 to 12 years, at the outpatient clinic of Pediatric Psychiatry at Asan Medical Center, Seoul, Korea. ADHD diagnosis were made according to the diagnostic criteria of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) and Kiddie-Schedule for Affective Disorders and Schizophrenia-Present and Lifetime Version (K-SADS-PL). Parents of the participants completed the DCDQ, and the Korean Personality Rating Scale for Children (K-PRC). The Wechsler Intelligence Scale for Children (WISC) were administered by clinical psychologists.

Results: The children who participated in the study were of 7.6 ± 1.7 years old, and 214 (71.8%) were boys. A total of 176 children had a diagnosis of ADHD. The ADHD group showed significantly lower scores in the DCDQ total score ($p < 0.001$), and all three subscales, which are Control During Movement ($p < 0.001$), Fine Motor/Handwriting ($p < 0.001$), and General Coordination ($p = 0.002$), indicating more deficits in motor coordination. DCDQ total score were significantly correlated with the Perceptual Reasoning Index (PRI), the Working Memory Index (WMI), and the Processing Speed Index (PSI) of the WISC subscales. In addition, DCDQ total score was significantly correlated with externalizing and internalizing problems measured by KPRC, but the extent of correlation was higher with externalizing problems.

Conclusion: Our study suggests that DCDQ scores are lower in ADHD subjects, indicating difficulties in motor coordination. Moreover, DCDQ scores are significantly correlated with specific domains of cognition and attention.

COMMUNITY MENTAL HEALTH

EP-1100 | Description of psychosocial aspects of cancer in Japanese ethical textbooks for elementary school education: A qualitative content analysis

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Purpose: Based on the Cancer Control Act enacted in 2007, cancer education is promoted in compulsory education in Japan. A comprehensive educational approach is required for cancer education and it should be carried out not only in physical education courses but throughout all subjects. The aim of this study is to investigate the description of QOL and psychosocial aspect of cancer and other diseases in the ethical textbook for elementary school children.

Materials and method: The study design is a qualitative study using content analysis. Examining the ethical textbook for upper level elementary school students, two researchers independently collected stories which contain the description of diseases based on our inclusion criteria. Then information associated with the description, such as type of the story (fiction or nonfiction), diagnosis, the role of the patients, the physical and emotional distress of the patients and their family, change of QOL and psychosocial aspects of the patients, and outcome of the disease were identified. Finally, two psychiatrists and a clinical psychologist discussed and conceptualized similarities and differences in the content. They then created the definitions for each category.

Results: Of the 227 stories, 47 were included in the analysis. Four stories were written about cancer and all the stories contained the details of the process of fighting against cancer and the psychological effect on patients and their families. Three of the cancer stories referred to psychological distress and deterioration of QOL. Two described positive spiritual aspects such as dignity and the irreplaceability of life.

Conclusion: The results indicate that the cancer descriptions in the ethical textbooks for upper level elementary school children contain information regarding the psychosocial aspects of cancer and the positive spiritual aspects of the fight against the illness. As the number of cancer stories in the textbooks are limited, an additional survey of a broader sample will be necessary.

EP-1184 | A study on the effect of the intensive case management model at the Mental Health Welfare Center in Seoul

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Purpose: The study aims to investigate the effect of intensive case management (ICM) of the Mental Health Welfare Center in Seoul on

the drug use management of subjects and the number of hospitalization, and to verify the effect of ICM.

Materials and method: The difference between the characteristics of the ICM subjects and the level of drug administration during the period of the ICM was confirmed with the Chi-square test, and a logistic regression analysis was used to test the effect that the characteristics of the subjects had on the number of hospitalization as well as the effect that the period of the ICM had on the number of hospitalization.

Results: There are significant differences in the drug administration and number of hospitalization depending on the characteristics of the ICM subjects. The higher the level of education in their 30s and 40s, the higher the adherence to medication use in the case of those with mental disorders and those who receive regular outpatient treatment. In addition, in the case of either type 1 Medicaid beneficiaries, or those with no mental disorder, or those diagnosed with a psychotic disorder, or those using drugs intermittently, or those with a higher rate of hospitalization before using the intensive case management, it is found that the hospitalization after using the ICM is more frequent. Secondly, depending on the period of the ICM, there is a significant difference in the number of hospitalization after the drug administration and the termination of the ICM. Those using the ICM for more than 3 months show a less frequent hospitalization after using the ICM.

Conclusion: The ICM is effective in reducing the hospitalization of the subjects. Therefore, it is necessary to make active and continuous efforts to reduce the long-term hospitalization for those with mental disorders in Seoul.

OP-1213 | “Model of everything” of mental health promotion center

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Purpose: The main purpose of this paper is to develop an ideal model to take good care of the mentally ill soldiers, and finally to strengthen the fighting power of the Korean military.

Materials and method: This paper is basically based on my life-long personal developmental experience on education, research and clinical services in the field of psychiatry (from 1983 to 2014, August) and military psychiatry (from 2014, September to 2021, January).

Results: The review on my research activities from 1983 to 2014 when I had been working as a professor at Seoul National University had shown three definitive developmental phases. Those are period of externalization, period of internalization and period of integration of the these two aspects. I called these processes as ‘Bio-Psycho-Socio-Spiritual Model and also called as “Consilient Approach.” From 2014 to 2021, while I have been interested in military psychiatry, I have found a big difference between psychiatry and military psychiatry. Thus, in addition to the “Bio-Psycho-Socio-Spiritual Model,” I introduced the concept of positive psychology. Thus, the final ideal

model is produced and I named it as “Model of Everything.” This model can be exemplified as follows:

Objects: Bio-Psycho-Socio-Spiritual aspects

Time: Past-Present-Future

Space: I-Family-Society-Nation-World-Cosmos

Attitudes: Positive-Historical-Scientific-Artistic-Philosophical.

Conclusion: This model can be an ideal model for the mentally ill soldiers, because it helps to take care of the soldiers as the “whole, entire person” rather than the diseases or disorders themselves. And the “Model of Everything” means that it can be applied to not only psychiatry or military psychiatry but also to all the academic fields including politics, economics, social sciences, natural sciences, culturology etc.

EP-1024 | The psychiatric impact of COVID-19 on healthcare workers: A primary care approach

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Purpose: Healthcare workers (HCWs) are a vulnerable population who have been exposed to high levels of work-related stress during the COVID-19 pandemic, largely due to the elevated risk of infection and excessive workloads. The aim of this poster is to highlight the psychiatric impact of the COVID-19 pandemic on frontline HCWs, the need for screening and early diagnosis by general practitioners (GPs), and the appropriate psychosocial strategies and treatments to address this.

Results: Heightened fear and increased stress levels, especially for frontline HCWs during the COVID-19 pandemic, can lead to a range of psychological adversities. They are at greater risk of mental illness, particularly sleep disturbances, post-trauma stress syndromes, depression and anxiety. Appropriate screening tools and psychosocial strategies are often useful, but therapies to address mental health problems need to be easily accessible. GPs can play an important role in caring for HCWs through proactive screening for mental health disorders and offering early interventions and effective treatments. However, GPs are equally vulnerable and should have their own doctors caring for them.

Conclusion: The risks to the mental wellbeing of HCWs in the current pandemic are multifaceted. If unrecognized, they can lead to long-term psychological consequences. Psychiatric comorbidities can be triggered but can potentially be mitigated with appropriate measures. GPs play an important role in providing early interventions for HCWs who may experience adverse psychological outcomes. Through opportunistic screening for mental health disorders and timely consideration of psychosocial interventions and treatment in both psychological and pharmacological modalities, the burden on the mental health of the healthcare workforce can be lessened.

EP-1103 | Study on the mental health status of individuals self-quarantined due to the COVID-19 in a city

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Purpose: The Coronavirus disease 2019 (COVID-19) epidemic has now spread across China. Self-quarantine and social distancing to prevent infection is being implemented in South Korea. Individuals self-quarantined suffer from social isolation and mental health problems such as anxiety, depression, and fear. The purpose of this study was to explore the characteristics of Individuals self-quarantined during the COVID-19 outbreak in a city and to help public mental health policy.

Materials and method: We analyzed the original data on mental health care through the “New Coronavirus Psychological Support Group” conducted at a satellite city Mental Health Center from February to August 2020. Mental health professionals interviewed Individuals self-quarantined via phone contact and recorded demographic data, Clinical Global Impression-severity (CGI-S). Subjects with more than two CGI scores were defined as a symptomatic status. We reviewed CGI-S score of the study subjects and performed a chi-square test to determine the difference in CGI-S score according to sociodemographic characteristics.

Results: We interviewed 3001 subjects, and 1477 subjects (49.2%) were female (mean age; 39.86 [SD = 18.10]). There was a statistically significant difference in CGI-S scores according to nationality and gender. A CGI-S score of 2 or higher was found to be 130 for Korean and 4 for foreigners. ($X^2 = 11.221$, $p = 0.01$). A CGI-S score of 2 or higher was 85 for women and 49 for men ($X^2 = 11.341$, $p = 0.01$). There was no statistically significant difference in CGI-S scores according to age.

Conclusion: Among Individuals self-quarantined due to the COVID-19 in a city, Korean had relatively higher CGI-S scores than foreigners and women had relatively higher CGI-S scores than men. Koreans who arrived from abroad seem to have more mental health stress than foreigners. In the future, there is a need for intensive mental health assessment and crisis intervention for Korean and women among Individuals self-quarantined.

EP-1191 | The outcomes of mental health assessments among COVID-19 patients in South Korea

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Purpose: Coronavirus disease 2019 (COVID-19) outbreak is one of the largest pandemic disasters in recent century. It is suggested that patients with COVID-19 may be struggled with both the life-threatening fear of the infection and quarantine related stressors, so may require to psychological support during a pandemic. However,

there is only little empirical study reported the current mental health among COVID-19 survivors. The aim of the present study was to investigate the severity of mental health problems among confirmed COVID-19 patients.

Materials and method: National Center for Disaster Trauma (NCT) have provided psychological support services via 24-hour hotline for COVID-19 patients and their families. Our study analyzed the data from 118 COVID-19 patients who voluntarily participate the online mental health assessment from March to November 2020. The online assessment consisted of self-reported scales including Primary Care of Posttraumatic Stress Disorder screen (PC-PTSD), Generalized Anxiety Disorder-7 (GAD-7, Patient Health Questionnaire-9 (PHQ-9), Patient Health Questionnaire-15 (PHQ-15), P4 Suicidality Screener.

Results: The COVID-19 patients showed severer symptoms including post-traumatic symptoms, depression, anxiety, somatic symptoms than comparison groups across all four screening scales ($p < .001$). When it comes to high-risk group, COVID-19 patients had an increased association for high-risk group compared to comparison groups (PC-PTSD: OR = 17.31, 95% CI = 9.26–32.35 $p < .001$; PHQ-9: OR = 8.11, 95% CI = 4.75–13.84, $p < .001$; GAD-7: OR = 14.67, 95% CI = 8.59–25.07, $p < .001$; PHQ-15: OR = 5.68, 95% CI = 3.1–10.25, $p < .001$; P4: OR = 14.67, 95% CI = 8.95–25.07, $p < .001$).

Conclusion: We found that COVID-19 patients suffered from post-traumatic stress symptoms, depression, anxiety, and somatic symptoms. Our findings could give valuable information that what kind of and how severe symptoms exist in the individuals with COVID-19. This study highlights the need to enhance mental health support in managing psychological problems of COVID-19 patients amid pandemic.

EP-1216 | Moderation of marital and occupational status on the effect of personality trait on 1-year suicidality of middle age adults: A nationwide study in Korea

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Purpose: This study aimed to examine how marital and employment status and individual personality influence suicidal ideation and attempts among Korean middle-aged adults, and to explore their interaction effects.

Materials and method: Among the participants included in the 2011 Korean Epidemiologic Catchment Area Study, 2,464 middle-aged adults aged 40 to 59 years were surveyed on suicidal ideation and suicidal attempts in the past year (1-year suicidality). Participants' current marital status, employment status, and other demographic and clinical

variables were investigated. Personality traits were assessed using the Big Five Inventory. The dependent variable was the presence of 1-year suicidality. Independent variables were marital status and current employment status (full-time, part-time, or unemployed). Adjusting for other covariates, generalized linear model (GLM) analysis was performed.

Results: The group with 1-year suicidality had significantly lower incomes than the group without suicidality, as well as a lower proportion of full-time jobs, and higher percentages of part-time jobs and unemployment. GLM analysis results showed that marital and occupational status had no significant association with 1-year suicidality. Neuroticism and openness were positively associated with 1-year suicidality, whereas conscientiousness and extraversion had a negative association. Interaction analysis revealed that the interactions between marital status and neuroticism, conscientiousness and occupational status, and extraversion and sex were significant.

Conclusion: Personality may be a predictor of suicidality in middle aged adults. Furthermore, marital status, occupational status, and sex may affect suicidality by interacting with personality. Hence, individualized social and psychological interventions for suicidality prevention are required according to individual personality traits.

OE-1018 | Knowledge, attitude and practice towards mental health among general practitioners from Tarmway Township, Yangon, Myanmar

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Purpose: The aim of the study was to assess the knowledge, attitude and practice towards mental health in General Practitioners from Tarmway Township, Yangon, Myanmar.

Materials and method: Community - based cross- sectional study was conducted with 100 General Practitioners from Tarmway Township, Yangon. The study duration was one year period. The standardized questions used in this study was adopted and modified from National Institute of Mental Health and Neuro-Science (NIMHANS) and Myanmar Mental Health Project. Data processing and statistical analysis were done by using SPSS software. The level of significant association was determined by P-value<0.05.

Results: Among the 100 participants, 52.0% of the General Practitioners had good knowledge and 51% of the General Practitioners had good attitude towards mental health. Half of the participants 50% had good practice towards mental health. There was significant association between the total GP services and attitude level of General Practitioners towards mental health ($P=0.014$). And also, knowledge level was found to be significantly associated with the attitude level towards mental health ($P = 0.000$).

Conclusion: According to my study results, about half of the General Practitioners appear to have adequate knowledge, good attitude and good practice towards mental health. To get the early diagnosis, referrals and proper treatment in community, it is very important to

promote the continuing medical education (CME) and practice based training regarding mental health problems in community. General Practitioners are key persons in implementing health care services in Community. By promoting their knowledge, attitude and practice towards mental health, we could reduce the mhGAP in Community.

DEMENTIA/DELIRIUM

EP-1167 | Association between activity of daily living of dementia and temporal lobe atrophy in patients with Alzheimer's disease and mild cognitive impairment

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Purpose: The aim of this study was to compare activity of daily living according to the degree of temporal lobe atrophy (MTA) in Korean patients with dementia due to Alzheimer's disease and mild cognitive impairment.

Materials and method: Participants were 114 elderly subjects diagnosed with Alzheimer's disease or mild cognitive impairment in this cross-sectional study. MTA in brain MRI was rated with standardized visual rating scales (Scheltens scale) and the subjects were divided into two groups according to Scheltens scale. Activity of daily living was evaluated with the Korean version of Blessed Dementia Scale – Activity of daily living (BDS-ADL). Neurocognitive function was evaluated with the Korean version of the Consortium to Establish a Registry for Alzheimer's Disease assessment packet (CERAD-K). Independent t-test was performed to compare activity of daily living between two groups.

Results: The group with high severity of the medial temporal lobe atrophy (MTA) showed significantly higher BDS-ADL scores ($p < 0.05$). The BDS-ADL score showed the strongest correlation with the word list recognition test among sub-items of the CERAD-K test ($p < 0.01$, $r = -0.564$).

Conclusion: Activity of daily living of Alzheimer's disease and mild cognitive impairment had significant association with MTA. Evaluating MTA seems to have potential benefit in evaluating and managing activity of daily living in the elderly. Further evaluation is needed to confirm the association between certain brain structures and activity of daily living.

EP-1214 | Inflammatory cytokine and cognitive impairment

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Purpose: Since inflammation is involved in the pathogenesis of dementia, inflammatory cytokine levels, including interleukin (IL)-6, tumor necrosis factor (TNF) α , Insulin like growth factor (IGF)-I, were

expected to be associated with cognitive decline. However, evidence has been mixed. The aim of this study was to investigate the association of between inflammatory biomarkers and cognitive function.

Materials and method: Demographic data, clinical data and blood samples were collected from 37 community-dwelling participants above 60 years. Serum levels of IL-6, TNF- α , and IGF-I was assessed and cognitive functions were evaluated using the Mini-Mental State Examination (MMSE).

Results: Among participants; 8 were diagnosed as dementia, 15 were diagnosed as mild cognitive impairment (MCI), 14 were concluded to have normal cognitive function. There was not a significant difference of serum cytokine levels according to diagnosis, after adjusting for age. However, total score and a score of attention domain of MMSE was associated with serum level of IL-6.

Conclusion: Our result suggest that plasma inflammatory cytokine may not be useful as diagnostic marker for dementia, but IL-6 may be useful as a marker for cognitive decline related to age.

EP-1112 | Impact of transcranial direct current stimulation on cognitive function, brain functional activity in MCI patients according to amyloid-beta retention and APOE $\epsilon 4$ allele

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Purpose: Previous studies have demonstrated that anodal transcranial direct current stimulation (anodal-tDCS) improves cognition and normalizes abnormal network configuration during resting-state fMRI in mild cognitive impairment (MCI) patients. This study aimed to evaluate the impact of anodal-tDCS on memory performances, functional segregation and integration of default mode network in MCI patients depending on amyloid-beta (A β) deposition and APOE $\epsilon 4$ allele.

Materials and method: In 32 patients with MCI ([¹⁸F] flutemetamol –: $n = 10$, [¹⁸F] flutemetamol +: $n = 22$; APOE $\epsilon 4$ –: $n = 13$, APOE $\epsilon 4$ +: $n = 19$), we delivered anodal tDCS (2 mA/day, five times per week for 2 weeks) over the left dorsolateral prefrontal cortex and assessed neuropsychological test battery (CERAD-K) and resting-state fMRI measurements before and after 2 weeks of stimulation.

Results: We observed a statistical trend towards an impact of an anodal tDCS-by-A β retention interaction on MMSE score, and towards a negative association between baseline [¹⁸F] flutemetamol SUVR_{PONS} and change in score of word list recognition. We found a significant effect of tDCS-by-APOE $\epsilon 4$ allele interaction on change in amplitude of low-frequency fluctuation of temporal pole and also observed a negative association between baseline [¹⁸F] flutemetamol SUVR_{PONS} and change in degree centrality of hippocampal formation.

Conclusion: These findings suggest a possibility that anodal tDCS could have a therapeutic effect of improving cognitive function and enhancing compensatory intrinsic functional change in MCI patients, being modulated by the presence of A β retention and APOE $\epsilon 4$ allele.

EP-1116 | Differential impact of education on gray matter volume according to sex in cognitively normal older adults: Whole brain surface-based morphometry

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Purpose: The effect of educational status on brain structural measurements depends on demographic and clinical factors in cognitively healthy older adults. The current study aimed to evaluate the impact of interaction between years of education and sex on gray matter volume and to investigate whether cortical volume has a differential impact on cognitive function according to sex.

Materials and method: One hundred twenty-one subjects between 60 and 85 years old were included in this study. Gray matter volume was evaluated by whole brain surface-based morphometry. Multiple regression analysis was used to analyze the effects of sex-cortical volume interactions on cognitive functions.

Results: There was a significant interaction between years of education and sex on the cortical volume of the left inferior temporal gyrus after adjusting for age, APOE $\epsilon 4$ allele prevalence, and total intracranial volume. In addition, we found a significant impact of the interaction between adjusted left inferior temporal volume and sex on CERAD-K total scores.

Conclusion: These findings have significant implications for the understanding of how sex could affect the role of cognitive reserve for cortical atrophy in cognitively intact older adults.

EP-1127 | Association of antipsychotic medication use and neuropsychiatric symptoms with cognitive decline in subjects with neurocognitive disorder due to Alzheimer's disease

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Purpose: Neuropsychiatric symptoms are common among patients with major neurocognitive disorder and they are manifested in various ways. Antipsychotic medications have been widely used to manage BPSD, however efficacy and safety of these agents are conflicting. In this study, we tried to overview the association of antipsychotic medication use and neuropsychiatric symptoms with cognitive decline in patients with Alzheimer's disease through chart review of patients in psychiatric department of our hospital.

Materials and method: We reviewed the patients who were diagnosed as major neurocognitive disorder due to Alzheimer's disease and mixed etiology including Alzheimer's disease from November 2014 to October 2015.

We reviewed whether the subjects had used antipsychotics, and whether patients had neuropsychiatric symptoms. Psychiatrists and trained research nurses scored Mini Mental State Examination

(MMSE) of the subjects every year. All subjects were diagnosed by psychiatrists based on Diagnostic and Statistical Manual of Mental Disorders, Fifth edition (DSM-V).

We used linear mixed models to examine the statistical difference between each group.

Results: We reviewed 147 subjects. The mean age of the subjects was 77.9 at first visit. 111 subjects (75.5%) were female. 97 subjects (66.0%) were prescribed more than one kind of antipsychotics. 120 subjects (81.6%) were having neuropsychiatric symptoms. There was no statistically significant difference in cognitive function decline (MMSE score change) between subjects with or without BPSD ($p = 0.24$). There was no statistically significant difference in cognitive function decline between subjects with or without antipsychotic medication ($p = 0.64$).

Conclusion: There was no evidence that subjects who took antipsychotic medication experience more cognitive function decline. Also, there was lack of evidence that neuropsychiatric symptoms are associated with faster cognitive decline. Findings imply that neuropsychiatric symptoms and cognitive impairment come from different etiologic causes, which highlights the heterogeneity of the disorder.

EP-1154 | Default mode network dissociation linking cerebral beta amyloid retention and depression in cognitively normal older adults

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Purpose: To date, cerebral beta amyloid (A β) deposition and late-life depression (LLD) are known to be associated with trajectory of Alzheimer's disease (AD). However, their neurobiological link is not clear. Although previous studies showed aberrant functional connectivity (FC) change of default mode network (DMN) in early A β deposition and LLD respectively, its mediating role is not elucidated. The aim of this study is to investigate distinctive association pattern of DMN FC linking LLD and A β retention in the cognitively normal older adults.

Materials and method: Two hundred thirty five cognitively normal older adults with (N = 118) and without depression (N = 117) underwent resting state functional magnetic resonance image and ¹⁸F-Flutemetamol positron emission tomography. We investigated associations among A β burden, depression, and DMN FC. Independent component analysis showed increased anterior DMN FC and decreased posterior DMN FC in depression group compared with no depression group.

Results: Global cerebral A β retention correlated positively with anterior and negatively with posterior DMN FC. Anterior DMN FCs were positively correlated with depression severity whereas posterior DMN FCs were negatively correlated with cognitive function. In addition, effect of global cerebral A β retention on depression severity was mediated by subgenual anterior cingulate FC.

Conclusion: Our results of anterior and posterior DMN FC dissociation pattern might play pivotal role in linking cerebral A β pathology and LLD in the course of AD progression. Further longitudinal studies would be needed to confirm causal relationships between cerebral A β retention and LLD.

EP-1155 | A comparative study on predictive value of different resting state functional magnetic resonance imaging parameters in preclinical Alzheimer's disease

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Purpose: Diverse resting-state functional magnetic resonance imaging (rs-fMRI) studies showed that rs-fMRI may be an early biomarker reflecting the earliest detrimental effect of cerebral beta-amyloid (A β) pathology. However, no previous studies specifically compared predictive value of different rs-fMRI parameters in preclinical AD.

Materials and method: A total of 106 cognitively normal adults (A β + group = 66 and A β - group = 40) were included. Three different rs-fMRI parameter maps including functional connectivity (FC), fractional amplitude of low-frequency fluctuations (fALFF), and regional homogeneity (ReHo) were calculated. Receiver operating characteristic (ROC) curve analyses was utilized to compare classification performance of the three rs-fMRI parameters.

Results: Overall, the classification accuracies were acceptable for the three rs-fMRI parameters. The best performance was achieved when FC maps were employed (AUC, 0.915, $p < 0.001$). Good but weaker performance was achieved by using ReHo maps (AUC, 0.836, $p < 0.001$) and fALFF maps (AUC, 0.804, $p < 0.001$). The brain regions showing the greatest discriminative power included left angular gyrus for FC, left anterior cingulate for ReHo, and left middle frontal gyrus for fALFF.

Conclusion: Our results provided support for the hypothesis that rs-fMRI can be an early distinguishing biomarker for cognitively normal adults with cerebral A β retention, with the FC providing the greatest accuracy. These results strengthen the idea that the rs-fMRI might be sensitive to earlier changes in spontaneous brain activity and FC in response to A β retention.

OE-1194 | Dementia prediction study using structural neuroimaging and genetic biomarkers

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Purpose: This paper examines late-onset dementia-related cognitive impairment and neuroimaging-genetics biomarker association using the Alzheimer's Disease Neuroimaging Initiative (ADNI) data archive.

Materials and method: ADNI GO and ADNI 2 arms of the ADNI study included participants ages 65 to 85, 266 normal CN's (CDR = 0, Male:138, Female:128), 572 mild cognitively impaired MCI's (CDR = 0.5, Male:227, Female:245), and 188 AD patients (CDR = 0.5/1, Male:102, Female:86). The 29 SNPs were selected, by Jansen et al (Jansen, et al., 2019) that meet a minor allele frequency threshold (MAF > 0.5%). Using multinomial linear modeling of diagnosis, we studied the associations between the three individual cohorts (CN, MCI and AD dementia). The differences of the 200 ROIs and 29 SNPs between CN, MCI, and AD dementia cohorts. We used multinomial linear modeling (Outcome = Dx). We computed the ORs and relative risks (RRs) for AD and MCI, relative to CN.

Results: In AD RR depiction, rh_G_occipital_middle_foldind (cortical folding index) is protective, but in MCI RR, it looks detrimental rather than protective for being MCI. We can guess that the folding index might do role as a detrimental factor for changing from CN to MCI, but as a protective factor for changing from MCI to AD dementia, in term of AD pathogenesis. In MCI RR depiction, "left and right parahippocampal_wg.pct" are involved as a risk factor and as a protective factor individually at the same time. All the 29 SNPs are not so much impacting to being AD from CN. The genetic factors were not as strong factors, as some of the NIMs.

Conclusion: The MCI and AD effects quantified the metrics "relative to CN". These represent extensions the binary outcome in logistic regression, but reflect 3 categorical outcomes (CN, MCI, AD), which may also be analyzed via more general multi-nominal linear modeling.

EARLY DETECTION/INTERVENTION

EP-1003 | Insomnia, anxiety and depression in patients first diagnosed with female cancer

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Purpose: This study evaluated insomnia, anxiety and depressive symptoms among patients first diagnosed with a gynecological or breast cancer, the degree of interference in their daily life due to these symptoms, and also investigated whether they sought specialized care for these symptoms.

Materials and method: This study included 232 patients and the severity of insomnia, anxiety and depressive symptoms was measured with the National Cancer Center Psychological Symptom inventory (NCC-PSI). It is composed of the modified distress thermometer (MDT), the modified impact thermometer (MIT), and a questionnaire indicating whether the patient sought specialized care for each symptom. Multivariate logistic regression analyses were used to identify which diagnosis was associated with significant levels of symptoms.

Results: Patients with ovarian cancer and breast cancer reported more severe insomnia and problems with daily life compared with those with cervical cancer (MDT ovarian cancer OR = 6.11, CI = 2.06–18.15, breast cancer OR = 7.99, CI = 2.10–30.45; MIT ovarian cancer OR = 4.43, CI = 1.33–14.80, breast cancer OR = 6.11, CI = 1.42–26.33). Anxiety symptoms were more distressing among breast cancer patients than cervical cancer patients, and the degree of interference in their daily life was severe (MDT breast cancer OR = 13.64, CI = 3.24–57.37; MIT breast cancer OR = 4.24, CI = 1.14–15.87). Finally, compared with those with cervical cancer, ovarian cancer and breast cancer patients complained more severe depressive symptoms, and their daily life was disrupted more (MDT ovarian cancer OR = 4.72, CI = 1.29–17.35, breast cancer OR = 8.26, CI = 1.89–36.18; MIT breast cancer OR = 4.78, CI = 1.12–20.47). However, results on seeking medical help with symptoms showed no significant results in any cancer patients.

Conclusion: Compared with cervical cancer patients, breast cancer patients suffered more subjective distress and disruptions to daily life from insomnia, anxiety and depressive symptoms. Ovarian cancer patients reported more severe insomnia and depressive symptoms than cervical cancer patients, and insomnia particularly interfered with their daily lives. Nevertheless, none of the patients with breast cancer, ovarian cancer or endometrial cancer sought medical care for these symptoms.

EP-1065 | The association between alcohol use and suicide attempt in Korean employees

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Purpose: This study aimed to analyze the alcohol use patterns that may influence suicide attempts in Korean employees who have suicidal ideation.

Materials and method: Participants were classified into three groups according to suicide severity. Participant scores on the Alcohol Use Disorders Identification Test-Korea (AUDIT-K), subscale for drinking amount/frequency (AUDIT-C, items 1–3), subscale for dependence/related problems (AUDIT-D/P, items 4–10), and other sociodemographic and psychiatric scales were analyzed between the severity groups using one-way analysis of variance and the chi-square test, followed by post hoc analysis using the Bonferroni correction.

Results: A statistically significant difference between all three groups was observed for AUDIT-D/P scores after post hoc analysis ($p < 0.001$), indicating an increasing trend for greater suicide risk. This trend was present in both sexes and across all age groups above 30 years old.

Conclusion: Alcohol dependence/related problems are significantly associated with suicidal attempt among Korean employees. Assessing and preventing suicide risk according to these issues may minimize socioeconomic losses due to suicide.

EP-1162 | Development of a resting-state electroencephalography (EEG)-based computer-aided diagnosis (CAD) system for first-episodic drug-naïve female major depressive disorder

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Purpose: Major depressive disorder (MDD) is a serious mental disease suffered from depressed mood, and they characterized by loss of interest of pleasure, insomnia, concentration difficulties, and fatigue. Clinical symptoms of MDD patients could be moderated by early diagnosis and treatment in a timely manner, but it often failed due to several reasons such as ignorance of depression symptoms and comorbid symptoms with other mental disorders. Resting-state electroencephalography (EEG)-based computer-aided diagnosis (CAD) system could complement the traditional diagnostic error for MDD patients. Therefore, we developed an EEG-based CAD system for diagnosis of drug-naïve female MDD patients.

Materials and method: Eyes-closed resting-state EEG data were recorded from 49 female MDD patients and 49 female healthy controls. Features were extracted from two-levels, sensor- and source-level. Source signals in 68 regions of interests (ROIs) were estimated based on standard head model. Three different types of features were extracted, power spectrum densities, phase locking values (PLVs), and network indices, for both sensor- and source-level. The features with relatively higher Fisher scores were used sequentially from 1 to 20 (number of features) in each feature set for the classification. The classification performances for each feature set were evaluated using support vector machine with leave-one out cross-validation. In addition, we computed the receiver operating characteristics (ROC) curve and the area under the ROC curve (AUC) to check the classification performances of each feature set.

Results: A maximum classification accuracy of 81.63% was achieved when using the five sensor-level PLV features. The highest AUC value of 0.94 was also obtained when using the sensor-level PLV features.

Conclusion: We investigated the possibility of sensor-level PLVs as promising features for EEG-based CAD for diagnosis MDD patients. In our future studies, we will attempt to enhance the practicality of our proposed CAD system by reducing the number of EEG channels.

EATING DISORDER

EP-1102 | Feasibility, acceptability, and effectiveness of an Internet-based guided self-help intervention for female college students with bulimia nervosa or binge eating disorder in Korea

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Purpose: The aim of this study was to evaluate the feasibility, acceptability, and effectiveness of an internet-based guided self-help intervention for female college students with bulimia nervosa (BN) or binge eating disorder (BED).

Materials and method: A total of 19 female college students with either BN or BED participated in the study. We assessed eating psychopathology and affective symptoms at baseline, post-intervention, and 1-month follow-up.

Results: Our results demonstrated that the participants in the intervention showed the reduction of eating psychopathology and affective symptoms at post-intervention and the reduced conditions were maintained at 1-month follow-up. The participants in the intervention showed lowered eating psychopathology (binge/overeating and types of compensatory behaviors) compared to those in the control group.

Conclusion: The internet-based intervention program is feasible, acceptable, and effective for improving eating psychopathology and affective symptoms in young adult women with bulimic-type eating disorders.

EP-1105 | A school-based eating disorder prevention program (Me, You & Us) for young adolescents in Korea: A 3-year follow-up study

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Purpose: The study aimed to examine the feasibility and long-term effects of a school-based eating disorder prevention program for young adolescents in Korea.

Materials and method: A total of 312 students participated in the study of 9th-grade students in two middle schools, among whom 133 students were formal participants of the intervention in their 6th-grade (; intervention group) and 179 students were not (; control group). We longitudinally compared body esteem and self-esteem over time in the intervention group, and also cross-sectionally compared the intervention group and the control group, investigating whether gender moderated the effect of time.

Results: In the cross-sectional comparisons, the intervention group showed better weight satisfaction than the control group in boys, not in girls. In the intervention group, there was no improvement in body esteem and self-esteem over time in the longitudinal comparisons, in which girls showed decreases in body esteem and self-esteem over time.

Conclusion: This study provides evidence supporting the feasibility of the school-based eating disorders prevention program targeting mixed-sex, young adolescents in Korea. There was a small benefit of the program on boys' body esteem, which effect was not found in girls. Boosters and/or complementary prevention approaches across gender are needed.

EDUCATION

EP-1235 | The mediating effects of internalized shame and self-concealment on the relationship between perceived parenting attitude and professional help-seeking attitude in medical students

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Purpose: Although literature has accumulated that medical students suffer from serious psychological difficulties such as depression, they are unlikely to seek professional help for resolving the problems. Therefore, the purpose of the current study was to examine the dual mediating effects of internalized shame and self-concealment on the relationship between perceived parenting attitude and professional help-seeking attitude.

Materials and method: A total of 220 medical students participated and completed the questionnaires on perceived parenting attitude, internalized shame, self-concealment, and professional help-seeking attitude. The data analyses were conducted by using regression analysis and the bootstrap sampling method.

Results: First, perceived parenting attitude negatively affected professional help-seeking attitude. Second, the indirect effects of internalized shame and self-concealing, respectively, were not observed in the relationship between perceived parenting attitude and professional help-seeking attitude. Finally, perceived parenting attitude had indirectly an effect on professional help-seeking attitude via self-concealment and internalized shame.

Conclusion: The results suggest that the more parenting style is perceived negatively, the more reluctant medical students are to seek professional help by enhancing the internalized shame and self-disclosure.

EPILEPSY

OE-1074 | EEG signal feature extraction for disorders of epilepsy using the wavelet method

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Purpose: Epilepsy occurs because there is a disruption of the brain's nervous system in humans, which is recorded from the Electroencephalogram signal. Electroencephalogram signals have information on electrical activity in the brain, including conditions of electrical

disturbances and thoughts on nerves. Electroencephalogram signals have complex shapes, are easily buried with noise, have small amplitudes, and do not have standard patterns, so visual analysis is not easy. To improve accuracy and eliminate noise from EEG signals, this study uses the Wavelet method as a process of feature extraction and backpropagation for classification.

Materials and method: Electroencephalogram signal data obtained from the University of Bonn consisting of 5 classes of datasets namely A, B, C, D, and E. Each dataset contains 100 single-channel EEG segments with a duration of 23.7 seconds. Researchers used datasets B and E. The training phase using 80 facilities, while the testing phase used 100 facilities. This process is carried out after extracting the characteristics of the EEG signal with Wavelet.

Results: The results of feature traction are used as input values, in this study using the backpropagation method (16-35-2), namely two EEG signal inputs, one hidden layer with 35 units, and two epilepsy and non-epileptic targets and from testing the data, obtained accuracy values by 100%.

Conclusion: Based on the 100% perfect accuracy, it can be said that the results of the classification are very good.

GENETIC/MOLECULAR PSYCHIATRY

EP-1030 | The gene-sharing relationship of schizophrenia with other mental or systemic disorders: The results from disease-similarity network analysis

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Purpose: It is suspected that schizophrenia may not be a pure brain disease but a systemic disorder. Genetic studies have identified hundreds of candidate genetic loci, and in turn, these loci were found to be associated with a variety of systemic diseases. From a bipartite network built from these gene-disease relationships, a disease-similarity network can be projected. The structure of this network would reveal the position of schizophrenia among the broader categories of systemic disorders.

Materials and method: DisGeNET is a discovery platform with the large collections of gene-disease association data. Triplet of diseases, associated genes, and the timestamp of publication was fed into a graph database. From this, a disease-similarity network with shared gene counts and Jaccard similarity scores as edge strength was extracted. Louvain community detection algorithm was applied to expose underlying group structure. Similar networks centered upon other major psychiatric disorders were also inspected. Finally, the annual change of the network structure was investigated.

Results: The most similar diseases with schizophrenia in gene sharing degree were bipolar and depressive disorder. Other diseases with higher similarity could be grouped into three communities: 1) psychiatric disorder, 2) cancer, especially, neuroblastoma, stomach and pancreatic cancer, 3) mainly immune system disorders including multiple sclerosis, metabolic syndrome, and rheumatoid arthritis. The gene-sharing relationship with systemic disorders began to be revealed after 2005.

Conclusion: Past epidemiological studies had revealed the positive or negative correlations between the incidence of schizophrenia and those of cancer/autoimmune disorders. The present study augmented these epidemiological data and supported the concept of schizophrenia as a systemic disorder. It may reflect deeper link at the level of genetic or intracellular biochemical pathways between schizophrenia and systemic disorders. Major regulatory machineries involving cell cycle regulation, control of cell death and apoptosis, immunological activation would be the promising research area for revealing such deep links.

EP-1133 | The longitudinal effect of amisulpride on striatal dopamine synthesis capacity in first-episode psychosis

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Purpose: To prospectively observe the change striatal dopamine capacity during 1-year amisulpride treatment and to develop predicting model of treatment-responsiveness based on observed neurobiological changes in first-episode psychosis (FEP) patients.

Materials and method: Fifteen antipsychotic-naïve FEP patients, aged 19 or more and less than 45, were enrolled, along with 15 age- and sex-matched healthy controls. Striatal dopamine activity was assessed as K_i^{cer} value using [¹⁸F]DOPA PET, before initiating treatment and after 6 weeks and 1 year of amisulpride treatment. Healthy controls also underwent PET scans according to the corresponding schedule of the patients. Patients were clinically assessed regularly with Positive and Negative Symptom scale (PANSS) and Clinical Global Impression-severity scale (CGI-S). Treatment response, defined as 20% or more decrease in PANSS total score from baseline, was assessed at 6 weeks after amisulpride treatment.

Results: There were no significant difference in demographic characteristics between FEP patients and healthy controls. Mean PANSS total score of FEP patients at baseline, 6-week and 1-year follow-up were 70.4, 48.9, and 41.5, respectively. All FEP patients showed treatment response after 6-week treatment of amisulpride, while 2 FEP patients had worsening of psychotic symptom afterwards. The change in K_i^{cer} value over time significantly differed between FEP patients and healthy controls (Time*Group: $F = 11.0166$, $df = 2374.72$, $p < 0.001$).

Conclusion: Significant change in dopamine synthesis capacity were found after 1-year amisulpride treatment but not after 6-week treatment in FEP patients. These results suggest that the effect of antipsychotics treatment on dopamine neurotransmission might be related to delayed decrease of striatal dopamine synthesis capacity. Longer prospective study is needed to confirm the antipsychotic effect on the dopamine synthesis capacity in FEP.

GERIATRIC PSYCHIATRY

EP-1115 | Differential risk of incident fractures depending on intensity and frequency of physical activity according to cognitive status: A nationwide longitudinal study

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Purpose: Previous studies have demonstrated an increased risk of fractures in subjects with various degrees of cognitive impairments. Recently, there has been growing recognition of the vital effect of physical activity (PA) on delay and prevention of fractures in older adults. This study aimed to evaluate the optimal intensity and frequency of PA needed to prevent fractures in cognitively preserved older adults (CP), participants with subjective cognitive decline (SCD), and dementia patients using a large-scale nationwide cohort study.

Materials and method: Data from a nationwide health screening program for individuals at the transitional age of 66 years were used in this study. A total of 968,240 subjects was enrolled, followed from 2007 to 2014, and classified as CP (n = 759 874), SCD (n = 195365), or dementia group (n = 13001). Adjusted hazard ratios (aHRs) by demographic and known risk factors for fractures were evaluated to identify the impact of various frequency and intensity PA on the occurrence of hip, vertebral, and limb fractures.

Results: In CP participants, the most noticeable reduction of hip and vertebral fracture risk was shown in those performing vigorous-intensity PA at least three times per week. In the SCD group, the risk decrement in hip and vertebral fractures was most prominent in subjects who performed multiple-intensity PAs at least three times a week regardless of intensity. In the dementia group, only high-frequency walking and high-frequency & multiple-intensity PA decreased the risk of hip fractures compared with absence of PA.

Conclusion: These findings suggest a role for various PA intensity and frequency levels to prevent hip and vertebral fractures according to cognitive status. Further study is needed to validate the effects of PA intensity and frequency proposed in this study on fractures according to cognitive status.

EP-1136 | Cognitive impairment with executive dysfunction and suicide risk in older adults

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Purpose: It is uncertain whether cognitive impairment with executive dysfunction (ED) increases the suicide risk in older adults even without depression. The aim of this study is to identify the impact of executive dysfunction on the suicide risk in non-demented euthymic older adults.

Materials and method: We included 4791 older adults from the participants of the Korean Longitudinal Study on Cognitive Aging and Dementia. We ascertained death by suicide using the National Mortality Database and suicidal behaviors based on the structured diagnostic interview. We defined ED as the cognitive performance below -1.5 standard deviations of age-, gender-, and education-adjusted norms in any of following tests: Frontal Assessment Battery, Digit Span Test - Forward, Digit Span Test - Backward, Trail Making Test A, or Verbal Fluency Test.

Results: Our multivariate Cox proportional hazard model revealed that cognitive impairment with ED increased the risk of suicide significantly (hazard ratio = 7.20, 95% confidence interval = 1.84 - 28.12). But ED did not affect the risk of suicidal behaviors. Meanwhile, cognitive impairment without ED did not affect the risk of suicide and suicidal behaviors. Age above 75 years, living alone, and economic disadvantage had significant association with suicide risk in older adults with ED.

Conclusion: ED can be a promising target for the development of prevention strategies against suicide in late life, in particular for older adults living in disadvantaged environments.

EP-1141 | Cross-sectional association between frailty and white matter hyperintensity among Alzheimer's disease

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Purpose: With an aging global population, recent years have seen rapid expansion in the attention of the frailty. Thus, understanding, and determinant the potentially modifiable risk factor for frailty is a major concern for health care policy and provision.

Materials and method: Subjects were recruited for the study from the dementia clinic of Jeju National University Hospital between January 2018 and January 2020. All of the subjects were evaluated by using CERAD-K and diagnosed probable AD and possible AD by a panel of two experienced dementia research neuropsychiatrists. WMH volume was calculated using automated segmentation analysis and further partitioned into three categories (Kim, BIOL PSYCHIATRY 2008). Frailty evaluated by Korean Frailty Index (KFI) and classified into three

categories according to the cutpoints. Other physical performances such as BMI, muscle mass index, grip strength, and gait speed measures were performed by experienced researchers specialized in geriatric assessment. Comorbidity status using the Charlson comorbidity index, and depressive symptoms using GDS was examined.

Results: In total 144 subjects, 23.6% were classified as frail, 32.6% were classified as prefrail, and 43.8% were classified as a non-frail group. The frail group had higher WMH volume compared to the non-frail group ($p = 0.002$), and these trends remained significant after linear regression analyses. According to the new subclassification of WMH, using the non-frail group as a reference, total WMH volume (OR = 6.297, $p = 0.013$), JVWMH volume (OR = 12.955, $p = 0.014$), and PVWMH (OR = 3.382, $p = 0.025$) were associated with frail. Furthermore, according to the path model, gait speed mediated the association between WMH and frailty (direct effect = 0.17, indirect effect = 0.16).

Conclusion: In our study provides evidence of a cross-sectional relationship between WMH and frailty, and there is a difference in the association between the subclassification of WMH volume and frailty. Furthermore, we suggest that gait speed could be a useful biomarker for assessment of the frailty.

MOOD DISORDERS

EP-1070 | The association between alcohol use and suicidal ideation among employees

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Purpose: The risk of suicide is assessed by identifying the relationship between alcohol-use patterns and suicidal ideation in Korean employees.

Materials and method: The study involved 15 360 employees who underwent workplace mental health screening at the Workplace Mental Health Institute of Kangbuk Samsung Hospital over a 6-year period between 2014 and 2019. Analysis was performed separately for Alcohol Use Disorders Identification Test–Korea (AUDIT-K) items related to the frequency/volume of alcohol consumption (items 1 to 3, AUDIT-C) and those regarding alcohol dependence/related problems (items 4 to 10, AUDIT-D/P). Subjects were then classified into three groups on the basis of the presence or absence of clinical depression and suicidal ideation. The groups' sociodemographic factors and clinical features of depression, anxiety, and alcohol-use patterns were analyzed with a chi-square test as well as one-way analysis of variance, followed by a post hoc test using the Bonferroni correction.

Results: AUDIT-K and AUDIT-D/P scores were significantly associated with the presence or absence of clinical depression as well as the presence or absence of suicidal ideation ($p < 0.05$). However, no significant differences were found among the three groups with regard to the AUDIT-C score ($p = 0.054$).

Conclusion: Identifying or treating alcohol dependence/related problems can help lower the occurrence of mental health problems, and suicidal ideation in particular, in employees and reduce social costs.

OP-1093 | Relationship between postnatal depression of mental health patients and the psychological health of their offspring

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Purpose: The rate of postnatal depression among mental health clients is postulated to be higher than in the community due to the added brain assault. Children of parents who are mental health clients are more likely to have psychological problems compared to children from other parents in the community. This study investigates the rate of postnatal depression among mental health clients and their offspring's psychological health.

Materials and method: A total of 140 mental health clients were assessed using the Edinburgh Postnatal Depression Scale. They subsequently completed the Strength and Difficulties Questionnaire regarding their children.

Results: The majority ethnicity was the Kadazan (40.7%). The mean age of mothers was 38.6 (7) years with most having a secondary education (53.6%) and a household income per month of less than RM1000 per month (27.1%). The postnatal depression rate was 47.8%. Higher EPDS scores were associated with higher total SDQ scores in their offspring. Model 1 was unadjusted, giving an OR of 5.65 (95% CI (3.74, 7.55)), $p < 0.001$. After adjustment for confounders, Model 2 had an OR of 5.51 (95% CI (3.57, 7.46)), $p < 0.001$.

Conclusion: More efforts need to be given to the early detection of maternal depression and its prompt treatment in mental health clients because of the relationship with the psychological health of the offspring.

EP-1142 | WITHDRAWN

EP-1004 | Hospital based cross-sectional study on depression in patients with systemic lupus erythematosus

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Purpose: The purpose of this study was to find out the prevalence and associated factors of depression in patients with systemic lupus erythematosus, admitted at Department of Rheumatology, 500 bedded Yangon Specialty Hospital, Yangon, Myanmar.

Materials and method: Study group included 100 SLE patients admitted at Department of Rheumatology, 500 bedded Yangon Specialty Hospital from 1st April 2017 to 30th September 2018. Study population was recruited with eligibility criteria and consecutive sampling was done until the enough sample size of 100 participants is fulfilled. Depressive symptoms were detected by Beck Depression Inventory II (BDI-II) and social support was measured by Multidimensional Scales of Perceived Social Support (MSPSS). Data processing and statistical analysis were done by using appropriate computer software (SPSS version 18.0) for Window.

Results: Study group included 100 SLE patients of above 18 years of age. Prevalence of depression in the study population was 36%. Out of which depression was found to be more in patients with low social support (P -value = 0.000), those with more than two complications (P -value = 0.000), those with neurological complications (P -value = 0.004), hematological complications (P -value = 0.007), and non-erosive arthritis (P -value = 0.044).

Conclusion: The findings in this study support awareness of the health care personal on depression in SLE patients. The higher prevalence figure warrants the effective management strategies to reduce the impact of depressive symptoms in SLE patients. Joint care of Psychiatrist and Rheumatologist for SLE patients with mental health problems, raising awareness, early recognition and timely appropriate interventions should be implemented which can improve the quality of life for SLE patients. Findings of this study contribute to develop comprehensive health care especially mental health services for the SLE patients in Myanmar.

OE-1007 | Insomnia and emotion dysregulation in patients with bipolar disorder

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Purpose: 1.To determine proportion of insomnia and to assess emotion dysregulation in the study population. 2.To determine association between insomnia and emotion dysregulation in the study population.

Materials and method: Total study population of 117 patients with bipolar disorder who visited to outpatient department, Mental Health Hospital, Mandalay from 1st April 2019 to 31st March 2020 were selected according to inclusion and exclusion criteria. In data collection technique, followings were included; socio-demographic data of the patients, insomnia experienced during the last two weeks assessed by using Insomnia Severity Index (ISI) and emotion dysregulation assessed by using Difficulty in Emotion Regulation Scale-18 (DERS-18). Data were summarized and statistically analyzed by using SPSS 26 software.

Results: In this study, among the age groups ranging from 18 to 60 years, 33.3% of total study population was in 18–30 years age group. Male to female ratio was 1.017:1. Majority of the patients, 53.8%, were married and the rest were not. Those in the largest

proportion of the study population, 38.5% were educated up to primary school. Regarding with the occupational status, about one third of the patients, 33.3%, were farmers and 24.8%, were dependent patients. Majority of the study population, 61.5%, had no insomnia and 38.5% of the patients had insomnia. Total DERS-18 minimum score was 18 and maximum score was 59 and total mean score was 29.68. In patients with insomnia, mean score of DERS -18 was 36.16 and higher than the mean score in patients without insomnia that was 25.64. There was statistically significant association between insomnia and emotion dysregulation in patients with bipolar disorder (p value $\leq .001$).

Conclusion: This study found that majority of the patients 61.5% had no insomnia and 38.5% had insomnia. Total DERS-18 mean score was 29.68 in total study population. There was significant association between insomnia and emotion dysregulation in patients with bipolar disorder.

EP-1032 | Effects of anxiety on the course of bipolar disorder: An interim analysis of prospective follow-up study

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Purpose: Despite growing attention to anxiety in bipolar disorder (BD), little research has assessed anxiety symptoms in the course of BD. The current prospective follow-up study examines the influence of subjectively and objectively measured anxiety symptoms on the course of BD.

Materials and method: A total of 49 patients with BD were followed-up prospectively for average of one year at an average of four months interval. Hamilton Anxiety Rating Scale (HAMA), Korean version of the Beck Anxiety Inventory (K-BAI), Heart rate variability (HRV) were used to measure anxiety subjectively, objectively and physiologically. Participants were divided into high and low anxiety group based on their K-BAI scores. Kaplan–Meier survival analysis was performed to compare and analyze the recurrence of mood episode, suicide attempt, emergency room visit, and psychiatric hospitalization between the two groups. Mediators were investigated with Cox proportional hazards models.

Results: Compared to the low-anxiety group, high-anxiety group reported significantly higher impulsiveness ($p = 0.016$) and lower HF (high frequency) component on HRV ($p = 0.007$) after controlling for severity of BD. Regarding survival analysis, high-anxiety group showed hastened depressive episode recurrence ($p = 0.048$) and suicidal ideation was the mediator of the hazard ratio 1.089 ($p = 0.029$) in the Cox model. Moreover, high anxiety-group showed a tendency of accelerated suicide attempt ($p = 0.12$) and impulsivity was the risk factor of suicide attempt (the hazard ratio 1.089, $p = 0.036$).

Conclusion: This study suggests that high anxiety level in BD may anticipate unfavorable course. Further studies are needed to understand the multifactorial mechanism of anxious bipolar patients.

OE-1046 | Association between baseline peripheral biomarkers and stress response reduction in patients with major depressive disorder and Panic disorder

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Purpose: Stress, one of the most important risk factors in generating psychiatric disorders is in close relation with peripheral biomarkers. In this study we aimed to compare differences of stress response among the patients with Major depressive disorder (MDD) and Panic disorder (PD) and the predictive value of peripheral biomarkers for stress reduction.

Materials and method: Patients with MDD (n = 41), PD (n = 52) and health controls (HC, n = 59) were selected and regularly followed by five visits for 12 weeks. We assessed severity of stress at every visit using Stress Response Inventory (SRI) and measured peripheral biomarkers by blood test at baseline, 2 week, 4 week, 8 week and 12 week. Serum cytokines, plasma and serum brain-derived neurotrophic factors (BDNF), C-reactive protein (CRP), adiponectin and leptin were analyzed using Enzyme-Linked Immunosorbent Assay (ELISA).

Results: The total SRI score was significantly higher in patients with MDD and PD group than HC at every visit ($p < 0.0001$). In all groups, the total SRI score for visit 1 was significantly higher than that of visit 2, 3, 4, and 5. For each visit, the total SRI score of HC was lower compared to that of MDD group ($p < 0.0001$). Baseline IL-2 showed a significant clinical correlation with reduction of stress response in MDD patients at visit 5 ($p = 0.03$) and baseline adiponectin presented a significant negative correlation with stress response reduction in PD patients ($p = 0.02$). Among seven subscales of SRI, somatization items had a negative correlation with adiponectin in patients with PD.

Conclusion: Higher baseline IL-2 was associated with more reduction of stress response in patients with MDD, whereas higher adiponectin was associated lesser reduction of stress response in patients with PD. Different predictive peripheral biomarkers found in MDD and PD support the need for expanding research in other similar symptoms in different disorders.

EP-1091 | The relationship between smoking and depression in Korean men: A population-based cohort study

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Purpose: Smoking is an important public health problem worldwide. Smoking is not only related to physical diseases, but also to mental disorders such as depression, anxiety disorder and post-traumatic stress disorder. Depression is common mental illness, and the burden of disease is high. This study aims to examine the relationship between smoking and depression.

Materials and method: We analyzed the National Health Insurance Service- Health Screening Cohort (NHIS-HEALS) database of South Korean men. We determined the smoking status based on the questionnaire from both the first and second health examinations. The participants were divided into baseline heavy (≥ 20 cigarettes per day), moderate (10–19 cigarettes per day), light (< 10 cigarettes per day) smokers, quitters, and never smokers. Smokers were categorized into continual smokers, reducers, quitters, and never smokers from the change of smoking status between first and second health examination periods. The participants were followed from the index date to 2013 for depression. Cox's proportional models was performed to examine the associations between smoking and the risk of depression.

Results: People who quit smoking for a prolonged period were at a lower risk of depression compared to heavy smokers (hazard ratio, HR 0.69; 95% CI, confidence interval 0.56–0.85). Furthermore, never smokers showed decreased risk of depression compared to heavy smokers (HR: 0.82; 95% CI: 0.69–0.97). In subgroup analyses, the risk of depression increased with age.

Conclusion: This population-based study showed that smoking cessation for prolonged period could reduce the risk of depression. Psychological and biological aspects will contribute to the effect of smoking cessation. Therefore, smokers should be encouraged to quit for a long time to prevent depression.

EP-1129 | Oxyhaemoglobin dynamics in the left ventrolateral prefrontal cortex mediate the indirect effect of depression on suicidal ideation in medication-naïve young adults with major depressive disorder: A functional near-infrared spectroscopy study

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Purpose: The reduction in the oxygenation dynamics in the prefrontal cortex (PFC) during cognitive tasks is a well-known occurrence in major depressive disorders (MDD). Studies focusing on oxygenation changes in the PFC in individuals with suicidal ideation are limited.

Materials and method: Therefore, this study investigated and confirmed the presence of prefrontal dysfunction depending on the intensity of suicidal ideation among 77 young adults (45 patients with MDD and 32 healthy controls) using near-infrared spectroscopy (NIRS). All participants underwent assessment with the Beck Depression Inventory-II, Beck Anxiety Inventory, and Beck Scale for Suicidal ideation. NIRS revealed relative hypofunction in the left dorsolateral PFC, left ventrolateral PFC (LVLPFC), and both orbitofrontal cortices

in young adults with MDD compared to that in the healthy controls during verbal fluency tasks.

Results: The oxyhaemoglobin changes in the LVPFC mediated the indirect effect of depression severity on suicidal ideation intensity.

Conclusion: Our results confirmed that functional NIRS is a useful auxiliary tool for objectively assessing the risk of suicidal ideation.

EP-1176 | Relationship between the severity of bipolar depression and inflammatory biomarkers: Neutrophil/lymphocyte ratio, monocyte/lymphocyte ratio and platelet/lymphocyte ratio

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Purpose: Recent studies have focused on inflammatory indicators as an important etiological factor underlying bipolar disorder. The neutrophil/lymphocyte ratio (NLR), monocyte/lymphocyte ratio (MLR), and platelet/lymphocyte ratio (PLR) are economic and reproducible indicators of systemic inflammation. Several studies have evaluated inflammatory biomarkers and their relationship with the severity of bipolar disorder, but none were conducted in South Korea. The authors investigated the relationship between NLR, MLR, and PLR and the severity of depression in inpatients with bipolar disorder.

Materials and method: We retrospectively reviewed the medical records of bipolar depression patients admitted at Kosin University Gospel Hospital between January 2010 and November 2020. Patients with leukocytosis or leukopenia, allergic or inflammatory diseases, those receiving anti-inflammatory drugs or chemotherapy, and those with a substance abuse history were excluded. Depression severity was assessed using the Hamilton Rating Scale for Depression (HAM-D) and Beck Depression Inventory (BDI). Spearman correlation analysis and Mann-Whitney U test were performed to assess their correlations.

Results: Twenty-seven subjects, of whom 12 were men and 15 women, were enrolled. Subjects with higher NLR had higher HAM-D scores ($N = 26$, $r_s = 0.548$, $p = 0.004$), but showed no significant relationship with BDI score ($N = 16$, $p = 0.556$). Patients with psychotic features (PF+) exhibited greater MLRs than those without psychotic features ($N[PF+] = 4$, $N[PF-] = 23$, $p = 0.041$). There was no significant difference in the level of the ratios with respect to suicide attempts ($N[SA+] = 15$, $N[SA-] = 12$, $p = 0.733$).

Conclusion: We revealed a possible correlation between the objective severity of bipolar depression and inflammatory indicators in the Korean population, especially in the presence of psychotic features. A well-designed prospective study involving a larger cohort is needed in the future.

EP-1192 | Association between high-sensitivity C-reactive protein levels and depressive symptoms: A population-based study

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Purpose: Peripheral low-grade inflammation can be a biomarker for depression, and serum level of C-reactive protein is one of the most extensively investigated inflammatory markers. The present study aimed to investigate the association between serum level of high-sensitivity C-reactive protein (hsCRP) and depressive symptoms and to explore potential moderating effect of age, sex, obesity, and physical activity in the association between them using a nationally representative sample of Korean adults.

Materials and method: Data of 10,702 adults aged 19 years or older were obtained from the nationwide cross-sectional Korea National Health and Nutrition Examination Surveys conducted in 2016 and 2018. Significant depressive symptoms were defined as 10 or above on the Patient Health Questionnaire-9 (PHQ-9), and high level of serum hsCRP was defined as >3.0 mg/L. High physical activity level was defined by engagement in medium (≥ 2.5 h/week)- or high-intensity (≥ 1.25 h/week) aerobic exercise.

Results: In the total sample, adults with high serum hsCRP level were more likely to have depressive symptoms (OR: 1.41, 95% CI: 1.07 - 1.84) and suicidal ideation (OR: 1.39, 95% CI: 1.07 - 1.80) compared to those with the low level. In the age and sex-stratified analysis, high hsCRP level was associated with depressive symptoms only in non-geriatric population (age ≤ 64 years). Men showed higher OR for depressive symptoms compared to women in non-geriatric sample. In the subgroup analyses, high serum hsCRP level was associated with depressive symptoms only among obese adults (BMI >30 kg/m²) or adults without high level of physical activity.

Conclusion: Our results replicate previous findings of significant association between high hsCRP level and depressive symptoms in adults using a population-level sample. We observed that association between high hsCRP level and depressive symptoms was more prominent in non-geriatric population, men, obese people, or those without high level of physical activity.

EP-1211 | WITHDRAWN

EP-1219 | Emotional dysregulation mediates the relationship between childhood trauma and nonsuicidal self-injury in mood disorder patients

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Purpose: Previous studies have shown that mood disorder patients were more likely to engage in nonsuicidal self-injury(NSSI). Emotional dysregulation is one of risk factor for NSSI, and mood disorder patients has greater emotional dysregulation(ED) than healthy individuals. Childhood maltreatment also considered as risk factors of NSSI, but the exact nature of the relation between childhood maltreatment and NSSI is currently unclear. In this study, we explored the mediating effects of emotional dysregulation in relation between childhood trauma and NSSI in the patient with mood disorder.

Materials and method: Total 190 subjects with mood disorder was included. Participants completed self-report questionnaires related to childhood trauma, emotional regulation and lifetime frequency of NSSI.

Results: Bipolar II disorder patients and depressive spectrum disorder patients reported more childhood abuse, more profound emotional dysregulation and more likely to engage NSSI than other diagnostic subgroups. Path analysis and mediation analysis demonstrated that childhood maltreatment was significantly associated with NSSI of mood disorder and ED mediate the relationship.

Conclusion: This finding support the importance of promoting emotional regulation strategy of mood disorder patient with childhood trauma.

EP-1229 | A higher rate of childhood trauma in bipolar II disorder than bipolar I disorder and unipolar depression

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Purpose: Childhood trauma is known to be one of the causal factors and has a negative impact on clinical course in mood disorder. However, the frequency and clinical significance of childhood trauma in bipolar II disorder having the worst clinical outcome among mood disorders has not been fully understood. The purpose of the current study was to investigate differences in frequencies and clinical impact of childhood trauma between bipolar II disorder and the other subtypes of mood disorders.

Materials and method: One hundred and sixty-three subjects with bipolar II disorder (BD II group), 61 subjects with bipolar I disorder (BD I group), and 82 subjects with major depressive disorder (MDD group) completed the Childhood Trauma Questionnaire (CTQ), clinical evaluation including MINI interview for diagnosis and mood

symptoms severity scales. The total CTQ scores and subscale scores were compared between the three groups using Kruskal-Wallis test and Mann-Whitney U test. In each diagnostic group, relation of any kind of childhood trauma to clinical features was explored using Spearman correlation analysis and Logistic regression analysis.

Results: The BD groups (I + II) scored higher on abuse subscales (emotional, physical, sexual) than the MDD group. Furthermore, BD II group scored higher on CTQ_emotional subscale than the BD I group. None of subscale showed a higher score in the MDD group than in the BD groups (I + II). CTQ scores were related to severities of depressive symptoms in all three groups. However, the effect of childhood trauma on clinical features including onset age and comorbidities was different among the three groups.

Conclusion: Childhood adversity, particularly emotional abuse seems to be more frequent in bipolar II disorder than any other subtypes of mood disorders. Our findings suggest that there may be a distinct role of childhood trauma on the cause and clinical features between subtypes of mood disorders.

OE-1039 | Predictive inflammatory biomarkers for change in suicidal ideation in major depressive disorder and panic disorder: A 12-week follow-up study

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Purpose: Previous studies have investigated the role of inflammatory markers in suicidality of patients with major depressive disorder (MDD) or panic disorder (PD). However, few studies have investigated associations between serum inflammatory cytokine levels and suicidality. We hypothesized that MDD and PD status might be significantly associated with serum inflammatory cytokines and that we could predict levels of improvement in suicide ideation intensity using serum inflammatory biomarkers in patients with MDD and PD.

Materials and method: For this study, 41 patients with MDD, 52 patients with PD, and 59 healthy control (HC) subjects were enrolled. Psychological measurements and serum inflammatory markers such as interleukin (IL) -6, -10, interferon (IFN)- γ , tumor necrosis factor (TNF)- α , and C reactive protein (CRP) were examined. A total of five visits were completed during 12 weeks.

Results: After controlling for confounding factors, log-transformed IL-6 (ln_IL-6) at baseline (MDD: 0.297 ± 0.626 ; PD: 0.342 ± 0.723 ; HC: -0.121 ± 0.858 ; $p = 0.007$, >0.0017 , $0.05/30$) and mean ln_IL-6 (MDD: 0.395 ± 0.550 , PD: 0.249 ± 0.544 , HC: -0.139 ± 0.622 , $p = 0.002$, >0.0017 , $0.05/30$) levels were trends toward significantly 4 of 13 ABSTRACTS higher in patients with MDD and PD than in HC. In

MDD patients, a higher level of basal $\text{In_TNF-}\alpha$ was a significant predictor of ΔSSI (changes in SSI scores between baseline and week 12) even after controlling for changes of depression symptoms and baseline SSI scores (standardized $\beta = 0.541$, $p = 0.002 < 0.0028$, $0.05/18$).

Conclusion: In conclusion, we could predict ΔSSI using baseline inflammatory biomarkers for patients with MDD.

NEUROPATHOLOGY

EP-1190 | Inflammatory markers and brain volume in patients with PTSD

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Purpose: Posttraumatic stress disorder (PTSD) is characterized by increased inflammatory processing. Inflammatory biomarkers include C-reactive protein (hs-CRP), Interleukin-6, and homocysteine, etc. In this study, we investigated the relationship between inflammatory markers and brain volume in patients with PTSD.

Materials and method: All participants (PTSD: 44 and Healthy controls(HC): 64) completed clinical assessments and self-reported psychopathology surveys. Inflammatory biomarkers and magnetic resonance imaging of brain were then measured.

Results: The high sensitive hs-CRP level was significantly higher in the PTSD group than in the HCs. The volumes of the frontal operculum and frontal pole were significantly lower in the PTSD group than in the HCs. In the PTSD group, hs-CRP level was negatively correlated with the frontal operculum volume and frontal pole, while in the HCs, this correlation was not significant.

Conclusion: Our results indicate that inflammatory biomarkers impact frontal operculum and frontal pole volume in patients with PTSD. In patients with PTSD, increased hs-CRP level may induce decreases in frontal operculum and frontal pole volume. However, in HCs, hs-CRP may not impact the brain volume.

NEUROPHARMACOLOGY

EP-1121 | The relationship between subjective well-being and dopamine D2 receptor occupancy in patients with schizophrenia on aripiprazole: [11C] Raclopride PET study

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Purpose: The excessive blockade of dopamine D2 receptors by D2 full antagonists has been linked to neuroleptic dysphoria. However, patients treated with aripiprazole, a dopamine partial agonist, have reported improved subjective well-being despite high D2 occupancy. Yet, the limitation of the previous study was that D2 occupancy of unrelated healthy controls substituted the unmedicated baseline occupancy of patients with schizophrenia. This could have introduced significant errors in estimating aripiprazole D2 occupancy of patients, because the substitution method does not take into account population differences in the unmedicated D2 occupancy between healthy controls and patients. Hence, the proposed study re-investigated the relationship between aripiprazole D2 occupancy measured by [11C] Raclopride PET and subjective well-being in patients with schizophrenia.

Materials and method: Eight patients with schizophrenia who have been clinically stable on aripiprazole were enrolled. Clinical assessments such as Positive and Negative Syndrome Scale(PANSS) and Subjective Well-being under Neuroleptics Scale (SWN) were administered. All patients completed a [11C] raclopride scan two hours after aripiprazole administration. In calculating D2 receptor occupancy by aripiprazole, the drug-free binding potential was estimated from a mathematical model that includes maximum inhibitory effect(I_{max}) and plasma concentration of aripiprazole, instead of borrowing data from healthy controls.

Results: We found that higher D2 occupancy by aripiprazole was associated with lower subjective well-being (SWN score) in patients with schizophrenia, $r = -.69$, $p = 0.036$. There was no significant association between plasma concentration of aripiprazole and SWN score. We found no significant association between PANSS and SWN score.

Conclusion: Previous findings have associated higher blockade of dopamine D2 receptors with lower subjective well-being in patients on antipsychotics. Our finding indicates that aripiprazole, a D2 partial agonist, was no exception to the previous findings. Our finding encourages clinicians to find the lowest effective dose of aripiprazole in order to minimize adverse effects on subjective well-being of patients.

EP-1171 | Efficacy and safety of escitalopram, desvenlafaxine, and vortioxetine for the acute treatment of anxious depression: A randomized rater-blinded 6-week clinical trial

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Purpose: Anxious depression is associated with greater chronicity, higher severity of symptoms, more functional impairment and a poor response to treatment. However, evidence for first-choice antidepressant in the patient with anxious depression is limited. This study

aimed to compare the efficacy and safety of escitalopram, desvenlafaxine, and vortioxetine for the acute treatment of anxious depression.

Materials and method: Patients with major depressive disorder and high levels of anxiety were randomly assigned to escitalopram group ($n = 42$), desvenlafaxine group ($n = 40$), or vortioxetine group ($n = 42$) in a 6-week randomized rater-blinded head-to-head comparative trial. The changes in the depressive and anxiety symptoms were assessed using the 17-item Hamilton Depression Rating Scale (HAMD) and Hamilton Anxiety Rating Scale (HAMA), respectively.

Results: Patients demonstrated similar baseline-to-endpoint improvement in scores and response and remission rates on the HAMD and HAMA. Analysis of the individual HAMD items revealed that desvenlafaxine had greatly reduced the anxiety somatic scores ($p = 0.013$) and hypochondriasis scores ($p = 0.014$) compared to escitalopram. With respect to the individual HAMA items, desvenlafaxine treatment showed significantly lower scores for the respiratory symptoms ($p = 0.013$) compared to escitalopram treatment and for the cardiovascular symptoms ($p = 0.005$) compared to vortioxetine treatment. The treatments were well-tolerated with no significant differences in adverse events.

Conclusion: Our results indicated no significant differences in the efficacy and tolerability of escitalopram, desvenlafaxine, and vortioxetine in this subtype of patients with anxious depression during the acute phase treatment.

OE-1230 | Effect of long-term lithium maintenance therapy on estimated glomerular filtration rate

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Purpose: Previous studies have shown conflicting results in confirming that long-term lithium treatment leads to deteriorations in renal function. The present study aimed to assess the effect of lithium maintenance therapy on estimated glomerular filtration rate (eGFR) in patients diagnosed with a psychiatric illness.

Materials and method: This is a single-centered, retrospective study which included participants aged 18 or higher at baseline who had been treated with lithium or a comparator drug (valproate) in Samsung Seoul Medical Center between Nov 1994 to Oct 2020. Participants had to have at least 6 months of exposure to lithium or valproate, and have at least two eGFR data (baseline and ≥ 6 months post-baseline). Those with a baseline eGFR <30 mL/min/1.73 m² and those with previous renal disease (ICD N00-08, N10-19) or with kidney transplantation history (ICD T86.1, Z94.0) were excluded. Estimated glomerular filtration rate (eGFR) was calculated using the CKD-EPI equation. Survival analysis and cox proportional hazard model was applied to calculate time to needed to reach GFR <60 mL/min/1.73 m².

Results: 1750 participants (443 lithium; 1307 lithium) were included in the study. Hazard ratio (HR) to enter CKD Stage 3 increased with

age (HR 1.06, $p < 0.001$), but lithium use (vs. valproate) or treatment duration did not show significant associations with eGFR decline in the cox proportional hazard model. Kaplan-meier plot showed over-time tendencies of those treated with lithium to have greater risks of eGFR decline compared to those treated with valproate, but showed little significance ($p = 0.42$).

Conclusion: Our results show that long-term lithium maintenance therapy is associated with decreasing patterns of eGFR over time, but not to a significant level. Concerns of nephrotoxicity should not withhold the necessary use of lithium.

NEUROPHYSIOLOGY

EP-1026 | Alteration of cortical functional networks in default-mode network-related regions in mood disorders with resting-state electroencephalography

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Purpose: Studies comparing bipolar disorder (BD) and major depressive disorder (MDD) are scarce, and the pathologies of these disorders are poorly understood. Brain network analysis can yield important insights into their neuropathology. This study investigated source-level cortical networks using resting-state electroencephalography (EEG) in patients with BD and MDD.

Materials and method: EEG was performed in 35 patients with BD, 39 patients with MDD, and 42 healthy controls (HC). Graph theory-based source-level weighted functional networks were evaluated, including strength, clustering coefficient (CC), and path length (PL) in six frequency bands.

Results: At the global level, patients with BD and MDD showed higher strength and CC, and lower PL in the high beta band, compared to HCs. At the nodal level, compared with HCs, patients with BD showed higher high beta band nodal CCs in the right precuneus, left isthmus cingulate, bilateral paracentral, and left superior frontal, belonging to the default-mode network (DMN); however, patients with MDD showed higher nodal CC only in the right precuneus compared to HCs. Also, the nodal level high beta band CCs of the right precuneus and left superior frontal positively correlated with state and trait anxiety in patients with BD. Although both MDD and BD patients had similar global level network changes, they had different nodal level network changes in DMN-related regions.

Conclusion: Our findings might suggest a more altered network in the DMN regions in patients with BD than in those with MDD. In addition, disrupted networks in BD patients might contribute to affective functioning, such as anxiety.

EP-1027 | Machine-learning-based diagnosis of drug-naïve adult patients with attention-deficit hyperactivity disorder using mismatch negativity

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Purpose: Relatively little is known about the neurophysiology of adult Attention-deficit/hyperactivity disorder (ADHD). Mismatch negativity (MMN) is an event-related potential component that represents pre-attentive auditory processing closely correlated with cognitive status. In this study, we investigated the possibility of MMN features as biomarkers for classification between drug-naïve adult ADHD patients and healthy controls (HCs).

Materials and method: Electroencephalograms were recorded in 34 patients with ADHD and 45 HCs performing a passive auditory oddball paradigm. Sensor-level features (amplitude and latency) and source-level features (source activation) of MMN were evaluated and compared between the two groups. Correlation analysis was also conducted between MMN features and ADHD symptom scales. Finally, we differentiated the two groups based on machine-learning methods with both sensor- and source-level features of MMN.

Results: The adult patients with ADHD showed significantly decreased MMN amplitudes compared to HCs at the frontocentral electrodes. In addition, the patient group showed significantly reduced MMN source activities in the frontal, temporal, and limbic lobes, which were closely related to MMN generators and ADHD pathophysiology. The source activities were significantly correlated with ADHD symptoms. Furthermore, the best classification performances for adult ADHD patients and HCs were an accuracy of 81.01%, a sensitivity of 82.35%, and a specificity of 80.00% based on the MMN source activity features.

Conclusion: Our results suggest that abnormal MMN could reflect the pathophysiological characteristics of adult ADHD patients and MMN might offer additional useful information as a neuromarker for detecting adult patients with ADHD in the clinical setting.

EP-1118 | Comparative analysis of default mode networks in major psychiatric disorders using resting-state EEG

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Purpose: In the present study, we tried to construct multi band resting-state EEG-based DMN functional network models for a variety of major psychiatric disorders.

Materials and method: Patients with post-traumatic stress disorder (PTSD), obsessive compulsive disorder (OCD), panic disorder (PD),

major depressive disorder (MDD), bipolar disorder (BD), schizophrenia (SZ), mild cognitive impairment (MCI), and Alzheimer's disease (AD) were recruited with their demographically-matched healthy control groups. In the functional network, 25 regions were determined as nodes, phase-locking values (PLVs) between a couple of nodes as connectivity, and clustering coefficients (CCs) as network measures representing local and global activation status. DMN patterns were then visualized to be readily compared at a glance.

Results: In the global CCs, SZ and AD showed hyperactivation in the theta band; OCD, MCI, and AD showed hypoactivation in the low-alpha band; OCD and MDD showed hypoactivation in the low-, and hyperactivation in the high-beta band, respectively. In the PLVs, the theta band under-connectivity between left lingual gyrus and left hippocampus was frequently observed in the most psychiatric disorders.

Conclusion: These comprehensive comparisons indicated the EEG-based DMN as a useful method understanding functional disturbance of major psychiatric disorders.

EP-1183 | WITHDRAWN

PSYCHIATRIC EMERGENCY

EP-1044 | Comparisons of warning signs of suicide victims between depression and non-psychiatric disorders in South Korea

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Purpose: Finding a high-risk group impeding suicide is very important in suicide prevention. But few studies have evaluated the characteristics of warning signs in large sample. This study aimed to compare the difference in suicide warning signs according to the diagnosis of psychiatric disorder, and to investigate the characteristics of warning signs, especially in depressive disorder.

Materials and method: We analyzed data from the police investigation record for five years from 2013 to 2017, with the cause of death classified as suicide. A total of 13,265 suicide victims were included in the analysis. With this database, we were able to identify the demographics of suicide victims of South Korea and the difference in warning signs according to the diagnosis of psychiatric disorder. In addition, the percentage of time each warning sign was observed was evaluated according to the diagnosis of psychiatric disorder. The odds ratio was calculated using logistic regression analysis to evaluate the association between the warning signs and the diagnosis.

Results: Warning signs were better observed when diagnosed with psychiatric disorder (Female: OR = 1.74; Male: OR = 2.27), especially in depressive disorder. (Female: OR = 3.32; Male: OR = 4.95) Talking about dying or suicide was the most common warning sign in all groups. Apathetic behavior was associated depressive disorder (Female: OR = 1.71; Male: OR = 1.74). Harmful behaviors, apathetic behaviors and depressive affect have generally been observed for over a year before suicide. However, the proportion of talking about

dying or suicide was high not only “over a year,” but also “within a week” before suicide. On the other hand, in non-psychiatric disorder, the proportion of change observed within a week before suicide was relatively high.

Conclusion: Differentiated suicide prevention may be possible because the characteristics and timing of warning signs differ depending on the diagnosis of psychiatric disorder.

PSYCHIATRIC EPIDEMIOLOGY

EP-1008 | Impact of neurodegenerative disease on the development of cancer in elderly Korean: A 10-year cohort study using national health insurance database

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Purpose: Epidemiological studies represented an inverse correlation between the risk of developing cancer and neurodegenerative disease (ND). However, a positive association of Parkinson's disease (PD) and melanoma has been reported. The objective of this study is to evaluate the association between cancer and NDs, including Alzheimer's disease (AD), PD, and circumscribed brain atrophy (CBA) and to evaluate the impact of ND on the development of cancer.

Materials and method: A population-based 10-year follow-up study was conducted using the Korean National Health Insurance Database for 2002–2015. The study population included three ND groups and control, aged 60 years or over. ND groups were comprised of ADs ($n = 3157$), PDs ($n = 5866$), and CBAs ($n = 342$). The control consisted of 46 818 subjects who had not any NDs to match each ND patient in terms of age, sex, and comorbidity using 1:5 propensity score matching. We used Cox proportional-hazards regression to determine the 10-year cancer-free survival rates.

Results: Various NDs were newly developed in control and three ND groups during the follow-up periods. Newly developed ND cases were 33.0% in control, 35.3% in ADs, 19.9% in PDs, and 45.3% in CBAs. Cancer developed in 20.5% of ADs, in 23.6% of PDs, in 24.3% of CBAs, and in 18.6% of control. We compared cancer frequencies in control and three NDs with newly ND-developed groups and those without. Cancer development was significantly higher in ADs with newly developed ND cases than in those without (22.8% vs. 19.3%). There were no differences in cancer frequencies between newly ND-developed groups and those without, in PD, CBA, and control. The hazard ratios for cancer in ADs, PDs, and CBAs were 1.43, 1.55, and 1.58, respectively.

Conclusion: This study showed that various NDs are positively associated with cancer and suggests that newly developed NDs during the follow-up period, especially in AD, may influence the development of cancer.

EP-1140 | Prevalence and correlation of PTSD during preparation for early settlement of North Korean defectors

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Purpose: This study examined the prevalence of Posttraumatic Stress Disorder(PTSD) during preparation for early settlement of North Korean defectors. Also, the correlation between PTSD and other mental disorders, suicidal ideation was assessed.

Materials and method: Total 639 North Korean defectors aged 19 to 65 years were included in resettlement and training centers for North Korean defectors. PTSD was assessed using the PTSD Diagnostic Scale (PDS). The prevalence of other mental disorder and suicidal ideation were assessed using the Korean version of Psychiatric Diagnostic Screening Questionnaire(K-PDSQ).

Results: A total of 6.8% North Korean defectors had a PDS score > 23, suggestive a diagnosis of PTSD. Presence of repatriation to North Korea was significantly associated with PTSD. The defectors with PTSD had a higher prevalence of other mental disorders. (Major depressive disorder prevalence: adjusted odds ratio (AOR), 14.5; 95% Confidence interval (CI), 6.7–31.2, Panic disorder: AOR, 9.5; 95% CI, 4.6–20.0, Generalized anxiety disorder: AOR, 5.6; 95% CI, 2.4–13.2). No significant association was found between suicidal ideation and PTSD.

Conclusion: North Korean defectors had a relatively low prevalence of PTSD and suicidal ideation during preparation for early settlement. Cohort studies would be needed on the effects of PTSD on North Korean defectors' settlement in Korea.

PSYCHOSOCIAL TREATMENT

EP-1010 | The effectiveness of thinking healthy program for antenatal depression

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Purpose: This study aimed to find out the effectiveness of Thinking Healthy Program (THP), a program developed from translation and adaptation of Thinking Healthy Manual. This manual is one of the publications of World Health Organization as a guide to low intensity psychosocial intervention for management of perinatal depression. This study was started after approval of Academic Board of Study and Research and Ethics Committee, University of Medicine 1, Yangon.

Materials and method: This was a two-years long study starting from 1st February 2018 to 30th September 2019. The design of the study was randomized controlled interventional study done at a outpatient

antenatal care clinic of Hlaingtharyar Township, Yangon, Myanmar. After screening (by using EPDS) and validation (by using DSM - 5) of depressive episode, total participants of 130 women with mild to moderate antenatal depression were recruited and then they were randomly allocated into intervention group and the control group.

The THP was delivered to intervention group and usual care was given to the control group for six consecutive weeks for each participants. The symptom severity of the two groups were monitored by using HAM-D 17. The comparison of change of mean depressive scores of each group before and after intervention was assumed as the effectiveness of the program.

Results: The statistically significant decline ($p < 0.001$) of depressive scores at the end of the study period was found in both intervention (4.08) and control (2.9) populations. But there was no statistically significant difference between the two groups (0.07).

Conclusion: The pregnant women with mild to moderate depression in the study population were found to be benefited by “Thinking Healthy Program” and the extent of effectiveness is comparable with the non-structured psychosocial intervention provided by psychiatrists.

EP-1197 | Protocol-based COVID-19 infection prevention and control in chronic psychiatric hospital: A single-center experience

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Purpose: Chronic psychiatric hospitals are vulnerable to respiratory infection due to their characteristics of the inpatient population. Chronic psychiatric patients tend to be impulsive, uncooperative, and have difficulty maintaining good self-hygiene. Therefore, establishing a prevention protocol for infection control is important in chronic psychiatric hospitals.

Materials and method: Infection prevention and control protocol was made and applied to a chronic psychiatric hospital in Busan. Four strategies were implemented: prevention of COVID-19 inflow, early detection of COVID-19, prevention of healthcare-associated COVID-19 outbreak, and disinfection of the hospital environment.

Only a single point of entry was allowed to the hospital. Visits to a patient were restricted. Family meetings were allowed only through remote web meetings.

When a patient was hospitalized, the patient's travel history and symptoms of COVID-19 were assessed. COVID-19 test was mandatory if a patient was involuntarily hospitalized. A patient who was voluntarily hospitalized took COVID-19 test according to recent travel history.

After hospitalization, the patient was isolated in a single-person room to be monitored of fever and respiratory symptoms. The isolation period was determined by considering the type of hospitalization, reliability of travel history before hospitalization, and risk factors for severe illness.

Campaigns were carried out to prevent infection, and inpatients were not allowed to visit another ward. Environmental disinfection was implemented regularly.

Results: From March to August 2020, the average number of inpatients was 520.65. There were a total of 2,969 outpatient patients, 212 admissions, and 210 discharged patients. There were no cases of COVID-19 infection in our hospital during the six months period. Meanwhile, 222 COVID-19 cases were confirmed in Busan, with an incidence rate of 6.45 per 100,000 people.

Conclusion: Under these protocols, COVID-19 infection did not occur in a chronic psychiatric hospital. This protocol may be helpful for effective infection prevention and control in chronic psychiatric hospitals in future respiratory pandemics.

PSYCHOSOMATIC MEDICINE

EP-1151 | Pre-transplant depression decreased overall survival of patients receiving allogeneic hematopoietic stem cell transplantation: A nationwide cohort study

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Purpose: Studies investigating association of depression with overall survival (OS) after allogeneic hematopoietic stem cell transplantation (allo-HSCT) yielded conflicting results. We conducted a nationwide longitudinal cohort study using the National Healthcare Insurance Service (NHIS) database containing data of majority of allo-HSCTs performed in South Korea (hereafter “Korea”). We first replicated previous findings by investigating association of pre-transplant depression in the long-term survival of allo-HSCT in Asian population (Koreans). Beyond replication, we extended previous work by analyzing independent risk of pre-transplant depression, separating possible overlapping effect of anxiety, in OS of allo-HSCT.

Materials and method: A nationwide cohort study, which included all adult patients ($n = 7170$; depression group, 13.3% ($N = 956$); non-depression group, 86.7% ($N = 6214$)) who received allo-HSCT from 2002 to 2018 in South Korea, analyzed risk of pre-transplant depression in OS of allo-HSCT. Subjects were followed from the day they received allo-HSCT, to occurrence of death, or last follow-up day (December 31, 2018).

Results: Median age at allo-HSCT for depression and non-depression groups were 50 and 45 ($p < 0.0001$), respectively. Two groups also differed in rate of females (depression group, 55.8%; non-depression group, 43.8%; $p < 0.0001$) and leukemia (depression group, 61.4%; non-depression group, 49.7%; $p < 0.0001$). After a median follow-up of 29.1 months, 5-year OS rate was

63.1%. Cox proportional-hazard regression evaluated an adjusted risk of post-transplant mortality related to depression: OS decreased sequentially from no depression (adjusted hazard ratio [aHR] = 1) to pre-transplant depression only (aHR = 1.167, CI: 1.007–1.352, $P = 0.04$), and to having both depression and anxiety disorder (aHR = 1.202, CI: 1.038 ~ 1.393, $P = 0.014$) groups. Pre-transplant anxiety (anxiety only) did not have significant influence in OS.

Conclusion: In conclusion, patients having depression, especially both depression and anxiety, before allo-HSCT have a higher risk of post-transplantation mortality needing more intensive care.

EP-1179 | Depression, anxiety, related risk factors and cognitive distortion in Korean patients with inflammatory bowel disease

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Purpose: To evaluate the severity of depression, anxiety, associated risk factors, and cognitive distortion in Korean patients with ulcerative colitis and Crohn's disease.

Materials and method: This study was conducted at Kyung Hee University Hospital, Seoul, Korea, and included patients with a confirmed diagnosis of UC or CD who were evaluated and treated in the Department of Gastroenterology from March 2018 to June 2018. The study included 369 patients with inflammatory bowel disease. The severity of depression and anxiety was examined using Patient Health Questionnaire-9 and Hospital Anxiety and Depression Scale. The Anxious Thoughts and Tendencies scale was used to measure catastrophizing tendency. Multivariate regression analyses were performed.

Results: The average depression and anxiety levels in patients with IBD were not clinically significant. However, 35% of UC patients and 45% of CD patients complained of feeling depressive based on the PHQ-9 scale, whereas 25% of UC patients and those with CD had depressive mood based on the HADS-D. In addition, 20% of UC patients and 14% of CD patients complained of anxiety. The predictors of depression were marital status, anti-TNF- α agent use, age, and BMI in UC patients and marital status, disease activity, alcohol use, and employment status in CD patients. For anxiety, sex and marital status were the associated factors in UC patients, whereas steroid use was the only significant predictor in CD patients. Comparing the cognitive distortion level, there were no significant differences between UC and CD patients although there was an increasing tendency according to the severity of depression or anxiety.

Conclusion: Psychological distress in patients with IBD requires considerable attention. If patients are accompanied by high levels

of depression or anxiety and their associated risk factors including TNF- α agent or steroid use, it is recommended that not only symptoms are treated but also cognitive approach and evaluation be performed.

PSYCHOTHERAPY & CLINICAL SKILLS

OP-1156 | WITHDRAWN

OP-1028 | Effectiveness of written exposure therapy for patients with PTSD in Korea

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Purpose: PTSD is a common disease in people who experience trauma, but it definitely destroys patients' well-being. Written exposure therapy (WET) is exposure therapy for PTSD. Compared to classical evidence-based treatments, WET requires only five sessions, and shorter session time, and no between-session assignments and there were several studies in western countries that proved its effectiveness. The current study examined whether WET for Korean patients with PTSD due to various traumatic events was effective in PTSD symptoms, depressive symptoms, and global functional levels.

Materials and method: The study enrolled subjects in psychiatric outpatient clinics, Eulji University Hospital from 2019 March to 2020 August. Assessments were conducted at baseline and 6-, 12 weeks following the first treatment session. PTSD diagnosis and symptom severity were determined via the CAPS-5 and PCL-5. Depression symptoms were assessed using PHQ-9, and GAF for overall function was also obtained.

Results: 34 participants completed baseline assessment and 25 started WET. The authors identified a significant reduction of rate of PTSD diagnosis and symptom severity scores including CAPS-5, PCL-5, PHQ-9 and increase of GAF score regardless of subjects' demographic characteristics and trauma type. At 6 week, 14 of 23 (60.9%) were no more satisfied PTSD diagnosis. At 12 weeks, 15 of 22 (68.2%) were no longer satisfied with the PTSD diagnosis. The drop-out rate among subjects receiving WET was 8% ($n = 2$).

Conclusion: This study suggests the feasibility of implementing WET in various types of PTSD patients in Korea even Asians of similar cultures, which will improve not only PTSD symptoms of them but also depressive symptoms and general functions of them. Although several limitations, it is meaningful that this is the first clinical WET study conducted in an Asian country. In the future, large-scale randomized controlled trial investigating effectiveness of WET in the Asian population will have to be done.

SCHIZOPHRENIA

EP-1182 | Assessment of suicide potentiality in a criminal offenders with non-psychopathic schizophrenic patient sample using the Personality Assessment InventoryHyun-Seung Chee¹, Seung-Min Cha²¹Department of Psychiatry, Chungnam National University Hospital, Korea²Department of Psychiatry, Institute of Forensic Psychiatry, Ministry of Justice, Gongju, Korea**Purpose:** Assessing the risk of self(including suicide) is very important in treatment of schizophrenia. The purpose of this study was to evaluate suicide potentiality in Korean criminal offenders with non-psychopathic schizophrenia.**Materials and method:** The participants included 152 inpatients with non-psychopathic schizophrenia who had committed crime. All participants filled out Personality Assessment Inventory(PAI) and Psychopathic Personality Inventory-Revised(PPI-R). PAI is widely used in assessing the general psychopathology and information about suicide and violence risk. PPI-R is used to assess the psychopathy. Author tested the correlation suicide potentiality and clinical variable of PAI and PPI-R with Pearson's correlation test. And among the clinical variables of PAI and PPI-R, Author investigated which factors influenced suicide potentiality with multiple regression test.**Results:** Suicide potentiality was found to have positively correlation with BE($r = 0.648$, $p = 0.001$), RN($r = 0.414$, $p = 0.001$), ME($r = 0.364$, $p = 0.001$), and CN($r = 0.322$, $p = 0.001$) in PPI-R. Among the clinical variables of PAI, Suicide potentiality was positively correlated with SOM($r = 0.755$, $p = 0.001$), ANX($r = 0.840$, $p = 0.001$), ARD($r = 0.812$, $p = 0.001$), DEP($r = 0.780$, $p = 0.001$), MAN($r = 0.499$, $p = 0.001$), PAR($r = 0.602$, $p = 0.001$), SCZ($r = 0.770$, $p = 0.001$), BOR($r = 0.787$, $p = 0.001$), ANT($r = 0.542$, $p = 0.001$), ALC($r = 0.446$, $p = 0.001$), DRG($r = 0.455$, $p = 0.001$), AGG($r = 0.481$, $p = 0.001$), SUI($r = 0.605$, $p = 0.001$), STR($r = 0.490$, $p = 0.001$) and NON($r = 0.506$, $p = 0.001$). Clinical factors affecting suicide potentiality were Anxiety, Depression, Borderline, Somatization, and mania($B = -5.871$, $SE = 2.806$, $t = -2.093$, $p = 0.038$, adjusted $R^2 = 0.825$).**Conclusion:** The clinical factors affecting suicide potentiality were anxiety, depression, borderline, somatization, and mania of the PAI, and comparative study about the psychopathic schizophrenia who had committed crime is needed. In addition, it seems that it is necessary to pay special attention when treating general schizophrenic patient with anxiety, depression, borderline, somatization, and manic symptoms.**OE-1066 | Potential compensatory effects of uric acid on white matter connectivity and treatment response in patients with schizophrenia**

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Purpose: Uric acid (UA) is known for its antioxidant property and neuroprotective effect. Recent evidence suggests that reduced UA levels are a potential risk factor for schizophrenia, although a causality between UA and schizophrenia remains elucidated. This study aimed to investigate the effect of UA on structural white matter (WM) connectivity and its association with treatment response in drug-naïve or -free patients with schizophrenia.**Materials and method:** A total of 171 patients with schizophrenia (recent-onset: 122, chronic: 49) and 107 healthy controls (HCs) participated in this study. UA levels from peripheral blood were measured in patients with schizophrenia. Voxel-wise comparisons were conducted to compare fractional anisotropy (FA) among three groups, and the correlations between UA levels and FAs were explored in regions showing significant differences between recent-onset and chronic patients. Among 109 patients (recent-onset: 69, chronic: 40) followed-up after 8 weeks of treatment, the relationship between UA levels and treatment response were explored.**Results:** Both recent-onset and chronic patients showed decreased FAs in extensive WM regions compared to HCs. Chronic patients showed significantly higher FAs in the left uncinate fasciculus (UF) and inferior longitudinal fasciculus than recent-onset patients. FAs in the left UF had a positive correlation with UA levels in chronic ($r = 0.346$, $p = 0.034$), but not in recent-onset patients. UA levels were positively associated with the percentage of changes in the total PANSS scores in chronic patients ($r = 0.370$, $p = 0.022$).**Conclusion:** The results of the present study suggest that higher UA levels may have a protective effect on WM connectivity in chronic patients with schizophrenia. Although the role of UA in the early phase of schizophrenia remains inconclusive, UA may be involved in a compensatory mechanism to repair WM disruptions due to the pathogenesis of schizophrenia and improve treatment outcome. Further studies are warranted to understand an intertwined relationship between UA and the pathogenesis of schizophrenia.**EP-1068 | Comparison of face emotional recognition deficits in remitted schizophrenia and euthymic bipolar I disorder**

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Purpose: Facial emotion recognition (FER) is an important task associated with social cognition because facial expression is a significant source of non-verbal information that guides interpersonal relationships. Increasing evidence suggests that schizophrenia and bipolar disorder patients present deficits in FER. This study aimed to compare that differences in type and degree of the defect in FER with schizophrenia, bipolar I disorder to provide a basis for early diagnosis and providing time-appropriate therapeutic approach for these psychiatric illness.**Materials and method:** Three groups were included in this study: remitted patients with schizophrenia ($n = 83$), patients in euthymic states of

bipolar I disorder ($n = 71$), and healthy controls ($n = 56$) who were matched on age, sex, years of education. Facial Labeling Task was used to examine FER defects. The standardized happy, fearful, disgust, anger, sad, contempt, surprise and neutral faces were used. Accuracy (commission error rates), correct response times of each trial were calculated. All subjects had to satisfy the inclusion criteria and subjects with above mild level of psychiatric symptoms were excluded.

Results: There were no differences on demographic data between three groups. The scoring of BPRS, YMRS, MADRS were higher in schizophrenia patients. Intelligence was low in two patient groups. Two patients groups were significantly higher error rates for sadness ($p < 0.01$), anger ($p < 0.05$), and contempt ($p < 0.05$). Sad had significantly more delayed correct response times in two patient groups than in the healthy controls ($p < 0.05$). Schizophrenia group showed significantly delayed correct response times for contempt ($p < 0.05$) and neutral to normal controls ($p < 0.01$).

Conclusion: These finds suggest that the patients with schizophrenia and bipolar I disorder have a defects in the perception and response of specific emotions in the remitted states. Therefore, it is thought that a defects in facial recognition should be considered in the process of assessing and treating patients with bipolar I disorder as well as those with schizophrenia.

EP-1117 | Decreased white matter integrity in schizophrenia with antisocial feature: A preliminary study

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Purpose: Both antisocial personality disorder and schizophrenia are known to show the decreased white matter integrity in fronto-temporo-parietal connection. However, the comparison of white matter integrity between schizophrenia with antisocial feature (SZ + AS) and schizophrenia without antisocial feature (SZ-AS) has not been conducted yet.

Materials and method: Participants with SZ + AS were collected among the SZ data pool in a university hospital according to the criteria which include 1) schizophrenia and 2) over the 64 scores in both No.4 and No.9 of MMPI-2 scales. Age- and sex-matched patients in schizophrenia without antisocial feature (SZ-AS) were included as control subjects. Finally, twenty participants with schizophrenia (SZ + AS: 7; SZ-AS: 13) were enrolled. Structural brain magnetic resonance imaging (T1, diffusion-weighted image) was performed on all participants. Positive and Negative Symptom Scale (PANSS), Scale for the Assessment of Positive Symptoms (SAPS), Scale for the assessment of Negative Symptoms (SANS) and Tract-based spatial statistics (TBSS) were applied.

Results: Between SZ + AS and SZ-AS, there were no significant differences in age, sex, years of education, duration of medication before

MRI, SAPS total, SANS total and PANSS total scores. In SZ + AS, TBSS revealed significantly decreased FAs in mainly frontal area, which includes the genu of corpus callosum (CC), the body of CC, the splenium of CC, the anterior corona radiata R, the superior corona radiata, the posterior corona radiata L, the external capsule R, and the superior longitudinal fasciculus ($p < 0.05$ compared to SZ-AS).

Moreover in SZ + AS, Spearman correlation analyses showed significant correlations between PANSS total score and FA in the splenium of CC ($r = -0.847$, $p = 0.016$) and between Aggression scores of SAPS and FA in the genu of CC.

Conclusion: This study showed that significantly decreased frontal connectivity to other temporo-parietal regions were observed in SZ + AS compared to SZ-AS. Our preliminary findings should be validated with large samples because of the small number of subjects.

EP-1130 | The effect of the TNF-alpha rs1800629 polymorphism on white matter structures and memory function in patients with schizophrenia

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Purpose: Recent advances in inflammation and immunogenetics suggest that excessive inflammatory response, which causes alterations in neurocognitive development, especially memory function, contributes to the pathogenesis of schizophrenia. This study investigated the effect of the TNF- α rs1800629 polymorphism on white matter integrity and memory function in patients with schizophrenia.

Materials and method: Fifty-six participants with schizophrenia (33 women; mean age = 36.5 ± 9.8) were enrolled. They were genotyped for the TNF- α rs1800629 polymorphism and underwent a diffusion tensor imaging scan. Memory function was assessed using the Rey-Kim memory test (RKMT) in patients with schizophrenia.

Results: Participants with schizophrenia were grouped into GG homozygotes ($n = 44$) and A-allele carriers ($n = 12$) of the TNF- α rs1800629. The A-allelic frequency was 0.107. Compared to GG homozygotes, A-allele carriers showed significantly lower fractional anisotropies (FAs) in extensive brain regions. Higher total scores in immediate recall of verbal memory ($r = 0.303$, $p = 0.023$) and figure copy of visual memory ($r = 0.311$, $p = 0.020$) were significantly correlated with the increased FAs in white matter tracts.

Conclusion: Our findings suggest that the A-allele, associated with higher levels of TNF- α expression, correlates with lower connectivity of fronto-temporal white matter compared to GG homozygotes. Impaired fronto-temporal connectivity may be associated with a genetic vulnerability of schizophrenia, leading to verbal and visual memory deficits in patients with schizophrenia.

EP-1177 | Perceptions of coronavirus disease 2019(COVID-19) in schizophrenia

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Purpose: This study aims to investigate the impact of COVID-19 on the daily life of patients with schizophrenia who have visited the Department of Mental Health, and also to understand how schizophrenic patients perceive information on the current status of COVID-19 and the disease itself in Korea.

Materials and method: Participants were 161 inpatients and 117 outpatients with schizophrenia and 40 normal controls. Subjects completed the self-report questionnaires measuring changes in daily life, perceptions of the current status of COVID-19 and basic knowledge about it. The fear of COVID-19 scale was administered.

Results: 51.6% of inpatients with schizophrenia, 65.5% of outpatients, and 85.0% of normal groups reported that there was a change in daily life due to COVID-19. 82.9% of the outpatient group answered that the infection route of COVID-19 is transmitted by "Droplets of saliva," while 41.6% of the inpatients selected the correct answer. Cough and fever were selected as the main symptoms of COVID-19 in 80% of outpatients. In the case of inpatients, more than 20% choose other symptoms such as skin rash, constipation, and urination disorder in addition to cough and fever. More than 90% of each group accurately recognized the question which is "The most effective way to prevent COVID-19 is to wear a mask and wash hands." Compared to the normal group, the patients with schizophrenia underestimated the cumulative number of COVID-19 confirmed cases and overestimated the mortality rate of COVID-19. The patients with schizophrenia showed higher subjective fear score for COVID-19 than normal group.

Conclusion: It shows that the awareness of COVID-19 among the schizophrenic patient group is insufficient. In particular, inpatients are more likely to not be able to recognize Covid-19 compared to outpatients. Additional measures are needed to provide information and the accurate status on Covid19 to schizophrenic patients.

EP-1189 | Quality of life schizophrenia patients treated through self-stigma

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Purpose: Schizophrenia is a syndrome that could induce seriously psychological problems. Self-stigma can induce because of the consequence of negative stereotypes in patients with Schizophrenia with the result that diminished ability to work, social function, self-esteem, and hope. Quality of life in patients with Schizophrenia related to disability because of impaired cognition and perception in their life. This study was conducted to correlate self-stigma with quality of life in patients with Schizophrenia.

Materials and method: The methodology uses descriptive correlative with a cross-sectional study, used 92 patients with a diagnosis of Schizophrenia, and used consecutive sampling. Statistical analysis test using correlation test.

Results: Result of this study, there is a significant correlation between self-stigma and quality of life ($p = 0.00 < 0.005$) ($r = -0.865$). The level of self-stigma of patients with schizophrenia was determined to be high, and the self-stigma had a negative impact on the quality of life.

Conclusion: The results of the study concluded that there is a relationship between self-stigma (alienating behavior, support for stereotypes, withdrawal from the social environment, resistance to stigma) and quality of life (quality of life in general, satisfaction with health, physical health, psychological, social relationships, environment). This study recommends the implementation of patient-oriented nursing interventions in the form of prevention of negative stigma and improvement of quality of life.

EP-1198 | Effect of long-acting injections of paliperidone palmitate on clinical and functional outcomes in patients with schizophrenia based on illness duration

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Purpose: To examine the degree of clinical and functional improvement after paliperidone long-acting injectable (LAI) administration according to the duration of illness.

Materials and method: Patients with schizophrenia diagnosed by ICD-10 criteria who were planned to start once-monthly paliperidone LAI were recruited from 2010 to 2017. Clinical and functional changes were measured every 4 weeks using the Clinical Global Impressions-Severity of Illness scale (CGI-S) and Personal and Social Performance scale (PSP), respectively, for 6 months after paliperidone LAI initiation. Improvements after starting paliperidone LAI were compared among patients with duration of illness <3 years, ≥3 and < 10 years, and ≥ 10 years.

Results: A total of 1166 participants (duration of illness <3 years, $n = 240$; $3 \leq$ duration of illness <10 years, $n = 442$; duration of illness ≥10 years, $n = 484$) were enrolled. The total olanzapine-equivalent doses of antipsychotics and the LAI monotherapy proportion at the final visit were significantly different among the 3 duration of illness groups (dose: $F = 18.41$, $df = 21$, 163 , $p < 0.001$; monotherapy: $\chi^2 = 11.73$, $df = 2$, $p = 0.003$). The changes in CGI-S score were significantly different according to the duration of illness, and those with duration of illness <3 years showed the best improvement (group $\times$ week: $\chi^2 = 25.33$, $df = 12$, $p = 0.013$). All 3 groups showed significantly improved PSP scores (week: $\chi^2 = 294.2$, $df = 6$, $p < 0.001$).

Conclusion: Starting paliperidone LAI significantly improved clinical and functional outcomes in patients with schizophrenia, especially those with shorter duration of illness. These findings suggest that LAI

antipsychotic administration may be considered in early-stage schizophrenia for improved outcomes.

EP-1228 | Sex differences of white matter connectivity in schizophrenia spectrum psychosis

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Purpose: A wide range of the white matter (WM) microalterations in schizophrenia spectrum psychosis (SSP) has been reported in previous studies. Sex differences in symptomatic presentations of SSP suggest distinct neurobiological processes between female and male patients with SSP. However, there is a dearth of large-scale studies on sex differences of WM structural connectivity in SSP patients.

Materials and method: The present study included 133 female and 76 male SSP patients. All subjects were evaluated by diffusion tensor imaging. Analysis of covariance was performed using tract-based spatial statistics to compare differences in the WM tracts between female and male subjects. Exploratory Pearson's correlation was conducted to evaluate associations between structural connectivity of the WM tracts and neuropsychiatric symptoms of SSP, measured by Positive and Negative Syndrome Scale (PANSS).

Results: Female subjects showed significantly lower FA values of the WM tracts in extensive regions of the right hemisphere, compared to male subjects. Exploratory correlation analysis showed significant correlations between the FA value of left superior corona radiata and PANSS positive ($r = 0.333$, $p = 0.009$), general ($r = 0.281$, $p = 0.030$), total ($r = 0.345$, $p = 0.007$) and negative ($r = 0.375$, $p = 0.017$) scores in male, not female subjects. The FA value of right superior longitudinal fasciculus presented a significant correlation with PANSS positive ($r = 0.232$, $p = 0.014$), general ($r = 0.302$, $p = 0.001$), total ($r = 0.307$, $p = 0.001$) and negative ($r = 0.271$, $p = 0.004$) scores in female, not male subjects.

Conclusion: Our findings suggest that there could be sex differences of WM connectivity in a wide range of the right hemisphere in SSP and distinct WM tracts might be involved in disease course of SSP, which might contribute to distinct symptomatology in female and male patients with SSP.

SLEEP DISORDER

EP-1069 | The association between weekend catch-up sleep and depression among a Korean nationally representative sample of adults

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Purpose: Few studies have been conducted on whether weekend catch-up sleep (CUS) compensated for lack of sleep during weekday in general adults. We aimed to explore CUS by aging and to find out the association between CUS and depression by the age and sleep time group.

Materials and method: A total of 16,714 participants were analyzed, excluding acute physical problems or mental illness, using the 2016-2018 Korean National Health and Nutrition Examination Survey. CUS was calculated as the weekend sleep time (ST_WK) minus weekday sleep time (ST_WD). The Patient Health Questionnaire-9 was administered to divide into depression and control groups and participants were stratified into three age groups: early, middle, and late adulthood. ST_WD was divided into three categories: ≥ 6 hours, 4-6 hours, <4 hours. Logistic regression analysis was used to determine the association between CUS and depression in groups.

Results: ST_WK and CUS decreased with age, while ST_WD was near constant. No significant difference in CUS between depression and control groups was observed in early and late adulthood. However, only in the middle adulthood, CUS was significantly shorter in depression group than in the control group (25.14 ± 66.46 vs. 36.72 ± 70.14 , $P = 0.015$). Odds ratios (OR) of depression was 1.57 (95% CI; 1.18-2.10) in the group with ST_WD 4-6 hours, and 7.82 (95% CI; 4.57-13.36) in the group with ST_WD <4 hours. Compared to a group with ST_WD ≥ 6 hours, the risk of depression in short sleepers without CUS was significantly higher (OR 2.23, 95% CI; 1.63-3.05), but not significant in short sleepers with CUS (OR 1.33, 95% CI; 0.86-2.06). These findings were similarly observed in each age group.

Conclusion: This study supports that short ST_WD and weekend CUS are associated with depression and that CUS might compensate for lack of sleep during weekday.

EP-1178 | Characteristics of sleep disorder in Parkinson disease patients using Parkinson disease sleep scale

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Purpose: Parkinson's disease (PD) is the second most common progressive neurodegenerative disease after Alzheimer's disease. Sleep disorders in patients with PD are often found but rarely detected. Parkinson's Disease Sleep Scale (PDSS) is a simple and accurate tool to detect specific sleep disorders in PD. This study aims to obtain the characteristics of sleep disorder in patients with Parkinson's Disease using the PDSS scale.

Materials and method: This was an observational descriptive study with a cross-sectional design in 54 PD patients in Bethesda Hospital in Bandung and RSUD Yogyakarta, who fulfilled the inclusion criteria during the period of June 2020. Anamnesis and PDSS questionnaire

filling was performed on the subjects to obtain the characteristics of sleeping disorders in patients with Parkinson's Disease.

Results: From the 54 Parkinson's disease patients as subjects, were mostly males (66.7%), the mean age of 63.92 years old, with high school graduate as the majority of education level (38.9%), stage 2 on Hoehn and Yahr scale as the most common severity level of disease (37.3%), and the mean duration of disease was 4.53 ± 3.87 years. Types of sleep disorder assessed using PDSS, were insomnia (34.25%), EDS (31.48%), RLS (15.74%), and parasomnia (8.33%). Causes of sleep disorders included nocturia (37.96%), sleeping quality (35.18%), motor symptoms (20.83%), and sleep refreshment (16.66%). There was a significant correlation association between the degree of disease severity to the total PDSS score ($p < 0.000$), the patient's age and duration of PD are not associated with the incidence of sleeping disorder.

Conclusion: The most frequent type of sleep disorder was insomnia and the cause of the sleeping disorder was nocturia. The degree of PD severity had a positive correlation with the chance of the patients developing the sleeping disorders.

EP-1181 | Association between sleep quality and dyslipidemia

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Purpose: Dyslipidemia is a well-known risk factor for cardiovascular disease and major burden for public health. Because insomnia is a main symptom of major depressive disorder, we studied the association between low sleep quality and dyslipidemia.

Materials and method: We used Kangbuk Samsung Health Care cohort data. People who scored more than 5 points of Pittsburgh Sleep Quality Index score were defined as poor sleep quality group. We defined dyslipidemia according to Korean guidelines for the management of dyslipidemia. After setting socio-demographic data and lipid profile as independent variable and poor sleep quality group as dependent variable, multivariable logistic regression analysis was performed.

Results: 28,904 (34.4%) showed poor sleep quality and 27,412 (32.6%) had dyslipidemia. Multivariable logistic regression analysis adjusted for sex, body mass index, hypertension, diabetes, and other sociodemographic variables showed significant relationship between poor sleep quality and hypertriglyceridemia in whole sample ($OR = 1.045$, $p = 0.0048$), especially relationship between poor sleep quality and hypercholesterolemia in female sample ($OR = 1.195$, $p = 0.008$). However, no association was shown in male.

Conclusion: In female, poor sleep quality and dyslipidemia are significantly associated each other. It implies importance of checking underlying lipid profile for whom shows poor sleep quality. A large-scale longitudinal study should be needed to evaluate the specific mechanism between these variables.

SOCIETY AND MENTAL HEALTH

EP-1001 | Association between sleep duration change and PTSD symptoms in disaster victims: The mediating role of resilience

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Purpose: The present study investigated the association between sleep duration change after disaster and PTSD symptoms and the mediating or moderating role of resilience on the association between them.

Materials and method: Data were collected from 2951 Korean adults who underwent the long-term survey on the change of life of Disaster victim between January 1, 2016 and December 31, 2018. Sleep duration change before and after a month of disaster were assessed using a self-reported questionnaire and categorized no change, increased after disaster, decreased after disaster. Resilience levels and PTSD symptoms were measured using the Brief Resilience Scale and the Impact of Event Scale – Revised (IES-R) respectively, and more than 33 of IES-R scores were defined as significant PTSD symptoms. Multivariate logistic regression was used to examine the associations between sleep duration change and PTSD symptoms. Additionally, mediating and interaction studies were conducted to identify the role of resilience on the association between sleep duration change and PTSD symptoms.

Results: Compared with disaster victims without change in sleep duration, those who had shorter sleep duration after disaster had higher risk of significant PTSD symptoms ($OR = 2.89$, 95% $CI = 2.31-3.62$, $p < 0.001$). However, those who had longer sleep duration after disaster show no significant association with significant PTSD symptoms. In the mediating study, resilience levels significantly mediated the relationship between reduced sleep duration and PTSD symptoms (direct effect: $\beta = 0.208$, 95% $CI = 0.166-0.250$, $p < 0.001$; indirect effect: $\beta = 0.007$, 95% $CI = 0.002-0.011$, $p < 0.001$; total effect: $\beta = 0.215$, 95% $CI = 0.173-0.257$, $p < 0.001$). However, there was no interaction between resilience levels and sleep duration change after disaster.

Conclusion: This study revealed that reduced sleep duration after disaster had higher risk of significant PTSD symptoms while increased sleep duration did not. In addition, there was the mediating effects of resilience levels on the relationship between reduced sleep duration and significant PTSD symptoms.

EP-1011 | Association of sleep duration and working hours with suicidal ideation in shift workers: The Korean National Health and Nutrition Examination Survey 2007–2018

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Purpose: This study investigated whether sleep duration and working hours were associated with the risk of suicidal ideation.

Materials and method: Data from 13,628 shift workers (age ≥ 19) were obtained from the nationwide cross-sectional Korea National Health and Nutrition Examination Surveys conducted in 2007–2018. We included healthy shift workers without depressive disorders and chronic medical illnesses. Sleep duration, working hours, and suicidal ideation were assessed using a self-reported questionnaire. Logistic regressions were used to examine the association of sleep duration and working hours with the risk of suicidal ideation. We examined interactions between sleep duration and working hours in association with suicidal ideation. In addition, interactions of sex were also analyzed.

Results: Shift workers sleeping for <6 and ≥ 10 hours/day were associated with suicidal ideation compared with those sleeping for 7 to <9 hours/day. Individuals working >52 hours/week had a higher risk of suicidal ideation compared with those working ≤ 40 hours/week. In terms of interaction by sex or age groups in the association between working hours and the risk of suicidal ideation, the relationship was stronger for men than for women and for those aged <45 years than for those aged ≥ 45 years.

Conclusion: Shorter or longer sleep durations, and long working hours were associated with a higher risk of suicidal ideation. Under long working hours, male shift workers or those aged <45 years were more vulnerable to suicidal ideation.

OP-1031 | A qualitative study of the psychosocial distress of health care workers during the COVID-19 outbreak

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Purpose: Due to its high infectivity, the coronavirus disease 2019 (COVID-19) outbreak that occurred in Wuhan attracted global attention. The COVID-19 pandemics have led to profound emotional and social burden especially in health care professionals.

Materials and method: We conducted focus group interviews with 12 health care professionals about stress related to COVID-19 and analyzed the interview data using the Consensual Qualitative Research (CQR) method.

Results: Several domains and core ideas were identified within four interview groups: psychological distress during the outbreak, problems

regarding the response to the outbreak, positive experiences, and future directions for enhancing mental health intervention/prevention during the outbreak. Psychological consequences were affected by the characteristics of an emerging infectious disease (EID) and by the structure and the process of institutional or governmental response to the outbreak of MERS. Mental health services and psychosocial support lessened their negative impact on psychological distress.

Conclusion: The COVID-19 outbreak gave rise to emotional and social burdens to health care professionals; some of those can be long-lasting constraints in their lives. Preparedness in a society's response to a pandemic considering mental health in related parties can minimize negative psychological consequences and enhance resilience in an individual and a society level.

EP-1062 | The association between unstable employment and suicidal behavior in precarious workers

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Purpose: Precarious workers have increased over the past two decades in South Korea. Employment instability, especially among young adults, is considered a serious social problem. The unstable employment status of precarious workers has negative impacts on their mental health, such as suicidal behavior. This study aims to identify the effect of the unstable employment conditions of precarious workers on their suicidal behavior.

Materials and method: An online survey was conducted with a panel sample of South Korean adults ($N = 797$) who were precarious workers aged between 25–34 years. We applied Model 6 of SPSS PROCESS MACRO 3.5 to examine the multiple mediation effects of depression and anger in the relationship between employment instability and suicide.

Results: Unstable employment had no direct effect on suicidal behavior. The path of unstable employment to suicidal behavior via depression and anger had a significant indirect effect. However, employment and anger were negatively related. The indirect effect of depression and anger on the relation between unstable employment and suicidal behavior was statistically significant.

Conclusion: This study suggests an association between unstable employment and suicidal behavior, mediated by depression and anger. Specifically, a high level of unstable employment status increased depression. In contrast, a low level of unstable employment status increased anger, which ultimately led to an increase in suicidal behavior. These contrasting findings are likely to reflect the heterogeneity of precarious workers. Further longitudinal studies are necessary to identify the causality between precarious employment and suicidal behavior over time.

EP-1101 | Internet addiction in a junior high school in Taiwan**PEI Kuo***Department of Health Education, Ching Cheng High School, Taiwan*

Purpose: Internet became the essential need of life, when most of our life connected to the internet. However, internet addiction is the following problem. It is also a serious problem in teenagers around the world. Our aims of the study are to investigate the prevalence of internet addiction in the junior high school in central Taiwan, and the relationship between internet addiction severity and health education learning performance.

Materials and method: This study is a cross-section survey study. We used internet user behavior screening scale and internet addiction scale modified from internet addiction scale of Kimberly for internet addiction assessment. We collected the addiction scale and the Grade of health education performance in the first grade students in a junior high school in central Taiwan.

Results: Totally, 667 students were recruited in the study, including 361 male and 306 female students. 139 students (20.84%) have risky internet use in the assessment of internet user behavior screening scale. 87 students (13.04%) have risk of internet addiction in the assessment of internet addiction scale modified from internet addiction scale. There are negative associations between Grade of health education performance and internet user behavior screening scale ($p < 0.01$) or internet addiction scale modified from internet addiction scale ($p < 0.01$).

Conclusion: The prevalence of internet addiction in students of junior high school is not low. There is significant association between Grade of health education performance and internet addiction. Teachers and parents should pay attention for the risk of internet addiction in adolescents.

EP-1005 | A Study on the Level of depression among homosexual people In Dala Township, Yangon, Myanmar**Yan Lin Aung¹, Nilar Kyu², Tin Mar Cho²***¹Department of Mental Health, Thingangyun General Hospital, Yangon, Myanmar²Department of Psychology, University of Yangon, Myanmar*

Purpose: To study the prevalence of depression and to find out the association between depression and educational as well as employment status among homosexual people in Dala Township, Yangon, Myanmar.

Materials and method: A total of 100 homosexual participants who gave written informed consent were involved in this study. Socio-demographic characteristics including age, educational status and employment status of the participants were assessed by structured questionnaires. Beck Depression Inventory-II (BDI-II) was used to assess depression in this study.

Results: According to the findings in this study, minimal or no depression was found to be 66%, mild depression was 26%, moderate depression was 6% and severe depression was only 2%. Association between depression and educational level as well as employment

status of homosexual people were analyzed by "t" test, and ANOVA analyses. It was found that depression among homosexual people was significantly associated with educational level ($p < 0.001$) and employment status ($p < 0.01$).

Conclusion: The findings in this study highlight the awareness of depression in homosexual people. Significant association between depression and educational status as well as employment status among homosexual people figured out that they need supports not only to obtain better education and occupation but also to reduce discrimination and stigma.

EP-1020 | Association between long working hours and depressive symptoms: A population-based study**Eunsoo Choi¹, Kwan Woo Choi², Hyun-Ghang Jeong³, Moon-Soo Lee³, Young-Hoon Ko⁴, Changsu Han³, Byung-Joo Ham², Jisoon Chang⁵, Kyu-Man Han²***¹Department of Psychology, Korea University College of Liberal Arts, Korea²Department of Psychiatry, Korea University Anam Hospital, Korea³Department of Psychiatry, Korea University Guro Hospital, Korea⁴Department of Psychiatry, Korea University Ansan Hospital, Korea⁵Department of Psychiatry, Seoul Metropolitan Eunpyeong Hospital, Korea*

Purpose: There has been cumulative evidence that long working hours can be a risk factor for depression, however, little is known about the potential moderating factors of the association between them. This study aimed to investigate the association between working hours and depressive symptoms and to explore potential moderating effect of gender, income level, and job status on the association between them in adult working population in South Korea. Furthermore, we explored potential mediating effects of perceived usual stress level or self-rated health on the association between them.

Materials and method: The data of 7,082 workers aged 19 years or older were obtained from the Korea National Health and Nutrition Examination Surveys (KNHANES), conducted in 2014, 2016, 2018 in South Korea. Working hours were categorized into 35–39, 40, 41–52, 53–68, and ≥ 69 hours/week according to a previous study. Depressive symptoms were evaluated using the Patient Health Questionnaire-9 (PHQ-9).

Results: Individuals working ≥ 69 hours/week (odds ratio [OR] = 2.05, 95% confidence interval [CI] = 1.22 – 3.42) or 53 – 68 hours/week (OR = 1.69, 95% CI = 1.12 – 2.55) were more likely to have moderate to severe depressive symptoms (PHQ-9 ≥ 10) compared to those working 40 hours/week. In the subgroup analysis, the association between longer working hours and depressive symptoms was more prominent in female workers, standard wage workers, and workers with low income level. We observed significant partial mediation pathways between working hours and PHQ-9 scores through both perceived usual stress level and self-rated health in total sample.

Conclusion: In this study, we found that working longer than the legal upper limit of 52 hours/week puts the workers at greater risk for

depression. We also found more vulnerable groups namely, females, low income workers, and wage workers from negative consequences of long working hours on mental health.

EP-1037 | The impact of COVID-19-related stress and depression in public sector workers

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Purpose: The current coronavirus pandemic is an unprecedented challenge to public and mental health. Public sector workers are under considerable strain and seem to be at high risk for psychiatric distress and burnout. The aim of the present study was to investigate the extent of stress, depression, and psychological impact of the current pandemic among COVID-19-related public sector workers.

Materials and method: 531 COVID-19-related public sector workers were recruited through the Gwangmyung Mental Health Care Center webpage and completed the Korean version of the Perceived Stress Scale (PSS), Patient Health Questionnaire-9 (PHQ-9) and the Impact of Event Scale-Revised (IES-R-K). Student's t-test, ANOVA test were performed in order to compare group means and Pearson's correlation analysis was performed to explore the correlation between gender, age, types of occupation and current psychometric scores.

Results: Participants reported more than moderate level of stress (75.1% of the 531 participants), depressive symptoms (22.2%), and post-traumatic stress symptoms (38.8%) Pearson and Spearman correlation analysis indicated significant associations between PSS total score and the following variables: PHQ-9 total score($r = 0.66$, $p < 0.01$), IES-R total score($r = 0.61$, $p < 0.01$), IES-R Intrusion factor ($r = 0.61$, $p < 0.01$), IES-R Avoidance factor($r = 0.54$, $p < 0.01$), IES-R Hyperarousal factor ($r = 0.60$, $p < 0.01$), and IES-R Sleep & emotional factor ($r = 0.48$, $p < 0.01$). PSS total score, PHQ-9 total score, and IES-R total scores each correlated inversely with age (Pearson correlation coefficient, -0.206 , $p = 0.000$; -0.181 , $p = 0.000$; -0.121 , $p = 0.005$).

Conclusion: Our result suggests that public sector workers experience significant stress and depression, with self-ratings of stress correlating significantly with scores on depressive symptoms during the current pandemic. The present findings call for the need of clinical and policy strategies to support healthcare, social, and education workers as well preventive measures for burnout and psychological distress.

EP-1086 | Gender differences of long working hours associated with suicidal ideation among Korean employees

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Purpose: This study aimed to investigate the impact of long working hours and differences by gender on suicidal ideation among Korean full-time workers.

Materials and method: Participants were employees from 54 organizations in Korea, aged 19 to 68 years, who completed a self-reported questionnaire comprising items on sociodemographic factors, perceived daily stress, resilience, depressive symptom and suicidal ideation. Completed questionnaires were collected from 15 360 persons, and we excluded participants who work less than 44 hours, because we defined the word "full-time workers" as employees who work more than 44 hours (median value of all initial respondents). The final sample size was 7,998 (5,100 males, 2,898 females). Hierarchical logistic regression analyses were performed using suicidality as the dependent variable.

Results: Results of the logistic regression analyses indicated that among the sociodemographic factors, age(34 to 44 years old), being female, being separated, divorced and widowed, and job grade(not being executives) were statistically associated with suicidal ideation. A high level of perceived daily stress, low resilience, and severe depressive symptom were also associated with suicidal ideation. Long working hour was not associated with suicidal ideation for women. But for men, Long working hour was a significant factor for suicidal ideation after adjusting for all other variables.

Conclusion: In this study, we found that long working hour was associated with suicidality among Korean male, full-time workers. And for female, other factors were more associated with suicidality. These differences suggest that we should develop Suicide prevention measures by gender.

EP-1094 | The effect of working hours on depressive symptoms in Korean employees

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Purpose: Many studies have reported noticeable increases in the proportion of employees working either relatively short or relatively long hours. Such trends have been accompanied by an increasing concern that how much subjective mental well-being of employees would be influenced by their hours of work. The aim of this study was to investigate association between work hours and depressive symptoms.

Materials and method: Participants were employees of a total of 51 private companies and local government organizations in Korea, aged 19 to 65 years. A self-report questionnaire that included items on working-hour, job stress, levels of depression, and socio-demographic factors, was administered to 15 361 Korean employees, with 14 477 valid responses. We performed Mann-Whitney-U tests, and chi-square tests to analyze subjects categorized with and without depression. Hierarchical linear regression analyses, adjusted for socio-

demographic factors, job related demographic factors, job stress, were used additionally to estimate the association between working hours and depressive scores.

Results: Working <44 hours/week (the average working hours per week in our data) was negatively related to depressive mood, after adjusting for demographic variables and the level of job stress. On the other hand, the other working ≥ 44 hrs/week was positively related to depressive mood. Younger age ($\beta = -.105$, $\beta = -.074$), being female ($\beta = 1.320$, $\beta = 2.891$), and lower education ($\beta = -1.074$, $\beta = -.348$) were statistically significantly associated with greater depressive mood in both working <44 and ≥ 44 hours/week groups.

Conclusion: Based on the results of the current study, both of working excessively long hours and short hours were significantly associated with prevalence of depressive symptoms. Providing proper office-hours for employees is critical to improving the quality of working condition and maintaining their mental health. Based on the results of the current study, both of working excessively long hours and short hours were significantly associated with prevalence of depressive symptoms. Providing proper office-hours for employees is critical to improving the quality of working condition and maintaining their mental health.

OE-1120 | Development of hospital-based case management for suicide in high-risk group using delphi technique

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Purpose: Suicide accounts for 4.6 percent of all deaths in South Korea, 2018. To reduce suicide rates and increase the use of hospital services, emergency room-based case management for those who attempted suicide is carried out with government funding in South Korea. But hospital-based case management is not enough. Aim of this study is to develop a model to prevent suicide attempts through continuous provision of mental health services even after discharge from acute care.

Materials and method: We selected 15 mental health specialists who are conducting emergency room-based suicide case management in South Korea. Two-round Delphi survey was conducted on them to reach an agreement on the qualification requirements, guidelines, medical fee etc. for hospital-based case management. In the first round, each question was evaluated from 1 point to 9 point. In the second round, questions failed to meet criteria were deleted or revised. Also the average value for each question was presented so participants could be answered again compared to their own responses.

Results: The first Delphi survey consisted of 8 areas and 39 questions. Among them, 30 questions drawn agreement above the reference value, which was Content Validity Ratio(CVR) >0.49 and Coefficient

of Variation (CV) <0.5. The second Delphi survey, consisted of 37 questions, resulted in 32 above-standard questions, which considered agreed finally.

Conclusion: In developing hospital-based case management services for suicide high-risk groups, this study conducted two Delphi surveys with experts in suicide prevention in Korea. As a result, suicide prevention experts agreed on the necessity of hospital-based case management, and most of the developed operational plans were agreed on. In the future, it is expected that the hospital-based case management service based on the evidence will be implemented as a new model that activates cooperation across the country, thereby contributing to the reduction of suicide rates in Korea.

OE-1196 | Association between COVID-19 outbreak and Internet search trend reflecting on psychological stress

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Purpose: This study aimed to investigate the relationship between the search volume of COVID-19-related information in representative portal sites, which can reflect the fear/anxiety of the general population, and the COVID-19 outbreak trend.

Materials and method: We performed the Pearson correlation analysis and multiple linear regression analysis for evaluation the association between two variables through the DataLab of NAVER, which is the representative portal site in South Korea.

Results: Internet search volume was negatively associated with number of confirmed cases ($\beta = -2.950$, $P < 0.001$), and was positively associated with daily mortality ($\beta = 0.323$, $P = 0.035$).

Conclusion: These results could reflect the public anxiety which information from unclear sources caused at the beginning of COVID-19 outbreak, and the desensitization which is diminished an anxiety after continuous exposure to stimulating information. This study suggests that changes of internet search trend is a meaningful indicator which a psychological quarantine is needed as a response to the COVID-19 outbreak.

SUBSTANCE-RELATED DISORDERS

EP-1071 | Stress, executive function, and the kynurenine pathway in addictive disorders: A focus on alcohol use disorder and Internet gaming disorder

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Purpose: Stress plays a role in the pathophysiology of addictive disorders, and the kynurenine (KYN) pathway, which is involved in

neuromodulatory and cognitive functions, is activated in times of stress. However, neuroimmunological-neurocognitive mechanisms involved in the role of stress in addictive disorders remain unclear.

Materials and method: Ninety-nine young adults aged 18–35 years (alcohol use disorder [AUD], $N = 30$; Internet gaming disorder [IGD], $N = 34$; healthy controls [HCs], $N = 35$) participated in this study. Stress levels, resilience, addiction severity, and neurocognitive functions were assessed, and blood samples were collected to determine serum levels of tryptophan (TRP), 5-hydroxytryptamine (5-HT), KYN, and kynurenine acid (KYNA) using liquid chromatography coupled to tandem mass spectrometry.

Results: Both addictive disorder groups exhibited increased levels of stress, decreased resilience, and executive deficits compared to the HC group. Importantly, patients with AUD exhibited significantly increased KYN levels and KYN/TRP ratios as well as decreased KYNA levels and KYNA/KYN ratios compared to HCs. Patients with IGD exhibited KYN levels and KYNA/KYN ratios intermediate between those of patients with AUD and HCs. Furthermore, in patients with AUD, KYN metabolites had more widespread relationships with levels of stress, resilience, and executive functions than in patients with IGD.

Conclusion: Stress can induce imbalance in downstream KYN pathway metabolites, and the KYN/TRP ratio can be considered a neuro-mediator between stress and behavioral changes in both addictive disorders. Regulation of the KYN pathway is of critical importance and may serve as an important target for the development of future treatment modalities for addictive disorders.

EP-1081 | Video cue-induced craving in alcoholics: A quantitative EEG study

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Purpose: Most findings on the pathophysiology of alcoholism are based on studies using resting-state electroencephalography (EEG). Studies on cue-induced craving and on its utility as an electrophysiological index are scarce. We examined quantitative EEG activities in alcoholics and social drinkers exposed to video cues, and compared their association with subjective alcohol craving and other related psychiatric symptoms including anxiety and depression.

Materials and method: Design: Between-subjects design. Participants were exposed to craving-inducing and neutral stimuli. Associations between qEEG results and other factors were examined by correlation analysis and one-way analysis of covariance.

Setting: Chuncheon, Korea.

Participants: Adult male alcoholics ($n = 34$) and healthy social drinkers ($n = 33$).

Measurements: Measures used were visual analog scale (VAS) for subjective alcohol craving, Alcohol Urge Questionnaire (AUQ), Michigan Alcoholism Screening Test (MAST), Beck Anxiety Inventory (BAI), and Beck Depression Inventory (BDI) scores. EEGs were recorded while the participants were presented with craving-inducing and neutral video cues.

Results: One-way analysis of covariance with age in cue-induced craving condition showed that alcoholics had significantly increased beta activity in the right dorsolateral prefrontal cortex (DLPFC) (F4 electrode) ($F = 4.029$, $P = 0.049$), compared to social drinkers. Beta activity at F4 electrode was positively correlated with AUQ ($r = 0.323$, $P = 0.008$), MAST ($r = 0.381$, $P = 0.001$), BAI ($r = 0.450$, $P = 0.000$), BDI ($r = 0.366$, $P = 0.002$), and changes in VAS ($r = 0.272$, $P = 0.026$) scores in both alcoholics and social drinkers. In alcoholics, beta activity was significantly correlated with BAI ($r = 0.372$, $p = 0.030$).

Conclusion: Beta activity in right DLPFC is significant during cue-induced craving. Its association with affective symptoms in alcoholism implies functional importance of hyperarousal and negative emotions upon exposure to craving-inducing cues. The reported EEG activities could serve as an objective electrophysiological index of craving in alcoholism.

EP-1160 | Cannabis induced psychosis and harmful behaviors: A case series

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Purpose: The use of cannabis increased over the past 3 years in Taiwan. Compared to the United States, there is little domestic epidemiological data describing the characteristics and psychiatric complications among cannabinoid users.

Materials and method: Here we present 3 cases of cannabis induced psychoses (CIP).

Results: Mr. C was a 39-year-old man with virologically suppressed HIV infection. He presented to the emergency department (ED) with violence behaviors, visual hallucinations and delusions of being monitored for days after cannabis use. After intramuscular injections of haloperidol 5 mg, lorazepam 2 mg and hours of observations, he showed improved sense of reality, decreased severity of symptoms. Mr. D, a 28-year-old Taiwanese Filipino, stayed in acute psychiatric ward for 42 days due to acute exacerbated mood lability, irrelevant speech, illogical thoughts and destructive behaviors after large amount of cannabis use. He was discharged home under quetiapine 400 mg/day and valproate 1000 mg/day. In outpatient follow-up, he showed sustained remission. Mr. T was a 36-year-old man with persistent depressive disorder. Few days before ED visit, he used cannabis and developed persecutory delusions, auditory hallucinations, impulsivity, suicide threatening with pesticide, violence towards the passersby with a shovel. After 2-day observation with one injection of haloperidol 5 mg/day and two doses of risperidone 1 mg/day, he was discharged home.

Conclusion: Cannabis is of risk for schizophrenia, first-episode psychosis, especially in the ultra-high risk populations. The incidence of psychosis among cannabis exposure is 31%. The vulnerability hypothesis, related sociodemographic factors, shared genetic factors may partially account for the causal relationship. Cannabidiol enhances striatal and mesocorticolimbic dopamine levels, dysregulating cognition, motivation and emotion, related with development of psychotic

symptoms. In view of the international trend of cannabis use, longitudinal follow-up may help distinguish the long term psychiatric profiles and risks among CIP patients.

TRANSCULTURAL PSYCHIATRY

EP-1009 | Considering health and rights of labor migrants and international students on sex and reproduction: Focusing on Vietnamese' narratives

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Purpose: Japanese society is working to facilitate access to medical care for labor migrants by providing medical insurance and medical interpreters, taking into account language and cultural differences. While this is commendable, in recent years the problems of “pregnancy, abortion and unwanted births” of labor migrants have been frequently covered in the mass media. In order to support the settlement of labor migrants from a medical and health perspective, it is time to turn our attention to protecting sexual and reproductive health and rights, which are an important part of people's lives.

Materials and method: A questionnaire survey and interviews were conducted with 85 consenting individuals at a specified skilled worker sending institution in Ho Chi Minh City, Vietnam, about their experience of sexual activity and attitudes towards contraception.

Results: The average age of the participants was 25 years old, the ratio of males to females was equal, 60% of the participants said they had no religion. The most common contraceptive methods used by the Vietnamese were condoms, external vaginal ejaculation and the oral pill, in that order. Perceptions of contraceptive failure rates were low and there were few opportunities to discuss contraception between partners. In the first place, sex education was not actively promoted at home or in educational institutions, and information about contraception was obtained from social networking sites. Attitudes towards abortion were permissive, and after arriving in Japan, many of them wanted to know information about medical facilities that offer abortion to foreigners.

Conclusion: The psychological education on sexual and reproductive health may be necessary to support the settlement of labor migrants. In doing so, it is important to understand the customs and values of each ethnic group with regard to sexual activity and to teach them how to protect their own health and that of their partners.

OTHERS

EP-1144 | Effect of a group music intervention on cognitive function and mental health outcomes in the institutionalized elderly: A randomized controlled study

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Purpose: The purpose of this study was to determine the effects of a group music intervention (using a Korean Trot music) with rhythmic exercises program on cognitive function and mental health outcomes (depression, anxiety, and life satisfaction) in the Korean institutionalized elderly.

Materials and method: A randomized controlled study design was employed, in which the experimental group (n = 20) received a biweekly group music intervention with rhythmic exercises program and a regular activities program, and the control group (n = 20) received only a regular activities program provided by the long-term care facilities. We measured cognitive function, depression, anxiety, and life satisfaction at the beginning and end of the 12-week intervention using the Mini-Mental State Examination-Korean Version (MMSE-K), Geriatric Depression Scale Short Form-Korean Version (GDS-SF-K), Geriatric Anxiety Inventory-Korean Version (GAI-K), and Life Satisfaction Scale. The chi-square test, Fisher's exact probability test, or t-test were used to determine the homogeneity of the descriptive variables of the groups at baseline. A repeated measures ANOVA was performed to examine the effect of the music intervention on the study variables.

Results: The results suggested that the group music intervention with rhythmic exercises program significantly increased the levels of cognitive function and life satisfaction and decreased the levels of depression and anxiety in the experimental group compared to the control group. These findings suggest that our musical intervention can be used to enhance cognitive function, psychosocial well-being, and life satisfaction among long-term care facility users.

Conclusion: In conclusion, we think that our intervention comprising group music program and rhythmic exercises can be a significant non-pharmacological alternative addressing a number of cognitive and psychological symptoms among institutionalized elderly.

EP-1014 | Internalized stigma and drug attitude in patients with schizophrenia

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Purpose: The purpose of the study was to assess internalized stigma and drug attitude inpatients with schizophrenia in Mental Health Hospital, Yangon.

Materials and method: This study was hospital-based, cross-sectional descriptive study of 93 patients with schizophrenia treated as

inpatients. Socio-demographic data were collected. ISMI (Internalized Stigma of Mental Illness) scale was used to assess internalized stigma and DAI (Drug Attitude Inventory) was used to assess drug attitude. Then, the correlation between internalized stigma and drug attitude of the study population was examined by using Pearson's correlation coefficient and linear regression.

Results: There were no significant difference in socio-demographic characteristics. The mean ISMI score of patients was 81.0 ± 19.3 . The mean score of DAI was 15.7 ± 7.6 . It was found that DAI and total ISMI scores were also negatively correlated ($r = -0.158$). According to the results of linear regression, total ISMI score of a patient who had drug attitude score zero was 20.754 and DAI score was decreased by 0.062 with one unit increase in total ISMI score.

Conclusion: In this study, high level of internalized stigma and positive drug attitude were found among the study population. It was examined that drug attitude and total ISMI scores were also negatively correlated. Therefore, the findings of this study suggested that patients with schizophrenia who had high level of internalized stigma were found to have negative attitude on medications. By reducing internalized stigma, drug attitude was suggested to be good, which could further promote drug adherence of patients.

EP-1033 | Classification of eye condition based on electroencephalogram signals using extreme learning machines algorithm (ELM)

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Purpose: Electroencephalography or EEG signals is a biosignal that is rife in current research topics. EEG signals have many benefits such as the detection of epilepsy, sleep disorders, or input in a computer application. One input that can be detected based on EEG signals is the state of the eye. However, to be used as input in an application a classification with adequate performance is required. Therefore a study was conducted in which one method of learning Artificial Neural Networks, Extreme Learning Machine (ELM) will be implemented to classify eye conditions based on EEG signals.

Materials and method: The dataset used to train and test the model is an eye-state dataset donated by Oliver Roesler combined with a dataset from the University of California repository website, Irvine (UCI). There are seven corpus which consists of EEG recording done to four different people, then one corpus is added, which is a combination of all other corpus.

Results: From the test results, it was concluded that ELM can be used for the classification of eye conditions with an accuracy of 97.95% with a training time of only 0.81 seconds if each data is used separately, whereas the merging of the whole dataset only reaches an accuracy of 78.94% with 5.71 seconds training time.

Conclusion: By getting a model with good accuracy with training time that tends to be fast, the ELM algorithm can be utilized as a Brain-

computer Interface by previously conducting training based on the person's EEG signal with a short amount of time to build the model. However, because the model of 1 person cannot be used for different people, then for each different person who uses the system, the retraining process is necessary.

EP-1034 | Diagnosis of Alzheimer's disease using the expert system based on Tsukamoto fuzzy algorithm

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Purpose: The high mortality rate from Alzheimer's sufferers is due to a lack of public awareness of this deadly disease. In addition, lack of attention to elderly patients is considered an ordinary senile disease and is considered normal. Alzheimer's disease is indeed difficult to detect at the beginning of an attack because it resembles ordinary senility, but gradually the ability to think and the motoric abilities of sufferers decreases. At the peak, sufferers can no longer think normally. In the end, the sufferer can experience death after several years because his motoric ability is not functioning. As a solution, technology can help in solving existing problems as early as possible. By using technology information and computers, doctors and paramedics are expected to be able to detect the presence of Alzheimer's disease earlier quickly and easily. One technology that can be used is the Expert System.

Materials and method: This expert system will collect the necessary information, then the existing information is processed in a pre-determined rule and then draw conclusions from the data obtained. An expert system prototype for the early diagnosis of Alzheimer's disease, which the author developed is a model to support diagnosis decision making. By using Fuzzy Tsukamoto calculations the results of accuracy are high so that it can help doctors make decisions for patients.

Results: The author has tested 25 patients diagnosed samples obtained an accuracy of 0.92 or 92%. This shows that Fuzzy Tsukamoto Algorithm has a high level of accuracy to diagnose this disease.

Conclusion: Fuzzy Tsukamoto's calculation technique is proven to be able to solve the problem of diagnosing Alzheimer's disease quickly and accurately, where the prototype of this application can function as a decision-making tool for diagnosing Alzheimer's disease in someone early.

EP-1075 | Detection of electroencephalogram (EEG) signal based on Welch method and multi-layer perceptron backpropagation

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Purpose: Electroencephalogram (EEG) signals are signals that can be a source of information for research into brain function disorders such as epilepsy. EEG signals detected in epileptic seizures produce a pattern that allows doctors to distinguish them from normal conditions. However, visual analysis is not possible continuously. In this study, the proposed EEG signal classification method uses Power Spectral Density (PSD) based on the Welch method, Principle Component Analysis (PCA), and Multilayer Perceptron Backpropagation.

Materials and method: There are three main stages in this study, first processing EEG signal data using Power Spectral Density (PSD) based on the Welch method, then Principle Component Analysis (PCA) as a method of reducing dimensions in EEG signal data and Multilayer Perceptron Backpropagation to classify signals.

Results: Based on the results of the trial, the proposed method managed to get high accuracy for 80-20% training testing, namely 99.7%.

Conclusion: From the results of the evaluation, it was concluded that the proposed method can be used as an automatic classification process of EEG signals.

EP-1089 | The stereotyped image of death among elementary school children: A content analysis of school ethical education text book

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Purpose: The stereotyped image of death is formed within late child period. However, no study has focused on the depiction of death in educational medium with a view forward psychiatry. The aim of this study was to clarify how to describe death in school ethical text book, and discuss how the stereotyped image to be formed among late elementary school children.

Materials and method: The study design is a qualitative study using content analysis. Two researchers independently collected stories associated with death based on inclusion criteria, and extracted the information about the theme of a story, the cause of death, the method of representing death, the characteristics of the dying persons, the emotional distress of the dying persons and their family, and the spiritual message related death. Finally, two psychiatrists and a clinical psychologist discussed and conceptualized similarities and differences in the content, and made the definition for all categories.

Results: Of all the 227 stories, 38 were included in the analysis. Twenty-three (60.5%) stories were described death of the main

characters or their family, and 8 (21.1%) were reported death of many and unspecified persons from war, disaster, or accident. Twenty-three (60.5%) were described death by spiritual expression such as "go to heaven" or "become a star," though 30 (78.9%) were directly describe circumstance of death. Also, the number of description related emotional distress among the family were more than the dying persons.

Conclusion: The results indicate that most stories in ethical text book for late elementary school children focus the positive spiritual aspect of death and dying course, while physical or psychological distress at death is not described in detail. Elementary school children may receive a message that natural acceptance of death is normal for the dying persons and their families from these stories.

OE-1186 | Relationship of nurses physical and mental expenses with the application of safety patients in the COVID-19 pandemic period in Bulukumba

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Purpose: Based on data obtained in 2019 at Public Health Services (Puskesmas Caille), Bulukumba District, that nurses experienced a physical workload (20.5%) and mental workload (35.7%) in 2018. Then at Public Health Services (Puskesmas Jawi-Jawi), physical workload (24.9%) and mental workload (39.4%). The purpose of this study is to know the correlation between the physical and mental working loads with the application of patient safety by nurses at Public Health Services.

Materials and method: This type of research is quantitative using analytical survey methods and cross-sectional approaches. The population in this study were all nurses at Public Health Services (Puskesmas Caille and Jawi-Jawi), amounting to 40 people.

Results: Based on the chi-square physical workload statistical test, obtained P -Value = 0.019 so that P -Value $< \alpha$ ($0.01 < 0.05$) then H_0 is rejected with an Odds Ratio (RO) value of 0.198. The statistical test of mental workload using chi-square, obtained P -Value = 0.364 so that P -Value $< \alpha$ ($0.364 > 0.05$), then H_a is rejected with an Odds Ratio (RO) value of 1.857.

Conclusion: There is a relationship between the physical workload of nurses and the application of patient safety during the COVID-19 pandemic at the Inpatient Public Health Center, Bulukumba District and there is no relationship between the mental workload of nurses and the application of patient safety during the COVID-19 pandemic at the Inpatient Public Health Center, Bulukumba District. It is recommended to minimize unresolved work and the risk of errors in nursing actions.