Multisensory integration, Social Cognition, Social deficit

Keywords: social interactions are based on multisensory integration with auditory and visual stimuli and offer a basis for social cognition. In other words, multisensory integration can affect simple stimulus perception to social cognition but also individuals’ cognitive level. These investigations showed severe dysfunction in social cognition.

Conclusions: Therefore, it is possible to explain that multisensory integration not only help simple perception but also individuals’ cognitive level. These investigated combinations of auditory and visual stimuli have powerful relationship with each other. Since social cues are the key signals to individual interaction, these aspects of multisensory integration can affect from simple stimuli perception to social cognition level. Moreover, patients who have deficit on perceptual integration showed severe dysfunction in social cognition.

Results: Multisensory integrations not only help simple perception but also individuals’ cognitive level. These investigated combinations of auditory and visual stimuli have powerful relationships with each other. Since social cues are the key signals to individual interaction, these aspects of multisensory integration can affect from simple stimuli perception to social cognition level. Moreover, patients who have deficit on perceptual integration showed severe dysfunction in social cognition.

Keywords: Multisensory integration, Social Cognition, Social deficit

Early Menarche and Risk Taking Behavior in Korean Adolescence
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Abstract
Objectives: The aim of this study is to assess the association between early menarche and risk-taking behavior in a representative sample of Korean adolescents.

Methods: Data were drawn from cross-sectional, national and representative sample of 33,829 female adolescents (grades 7–12) based on the 2014 Korean Youth Risk Behavior Web-based Survey. Logistic regression analysis was conducted to test the association between early menarche and risk-taking behavior.

Results: Girls who experience an earlier age of menarche tend to have an earlier initiation of sexual intercourse (OR=4.61, 95% CI:3.05–6.98, p<0.001), smoking (OR=4.29, 95% CI:3.75–4.9, p<0.001), alcohol drinking (OR=1.13, 95% CI:1.02–1.24, p<0.001) and substance use (OR=25.16, 95% CI:18.78–33.72, p<0.001). They are also at a greater risk of early pregnancy (OR=4.05, 95% CI:2.56–6.41, p=0.01) and sexually transmitted diseases (OR=2.35, 95% CI:1.66–3.33, p<0.001).

Conclusions: Early menarche is significantly associated with risk-taking behavior in Korean adolescent students. This finding underlines that early educational intervention and social programs are needed for female adolescents with early menarche.

Keywords: Menarche, Risk-taking, Adolescent,

Association between overweight and the risks of lifetime psychiatric disorders and suicidality: a general population-based study in Korea
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Abstract
Many epidemiological studies suggest that being overweight is associated with an elevated risk of psychiatric disorders and suicidal tendency. However, findings vary across studies, and some studies suggest contradicting results. We investigated the relationship between being overweight and a range of psychiatric disorders and suicidality in the Korean general population.

A multistage, cluster sampling design was adopted, and 6,022 participants aged 18–74 years completed face-to-face interviews (response rate, 78.7%). All the respondents completed an interview, including assessment of psychiatric disorders (using the Korean version of the Composite International Diagnostic Interview 2.1), suicidality (using the modified Suicide Prevention Multisite Intervention Study on Suicidal Behaviors), and height and weight (by self-report).

Being overweight (defined as a body mass index of ≥ 25 kg/m²) was associated with increased in lifetime prevalence of depressive disorders (adjusted odds ratio [AOR], 1.38; 95% confidence interval [CI], 1.07–1.77), suicidal ideas (AOR, 1.42; 95% CI, 1.20–1.68), and suicidal plans (AOR, 1.44; 95% CI, 1.02–2.03), controlling for age, sex, educational attainment, marital status, and employment status. A subgroup analysis revealed that being overweight was associated with depressive disorders only in women aged 18–44 years (AOR, 1.75; 95% CI, 1.07–2.89) and with suicidal ideas (AOR, 2.08; 95% CI, 1.53–2.82) and suicide plans (AOR, 2.59; 95% CI, 1.25–5.37) only in men aged 18–44 years. Being overweight was associated with increased odds of nicotine use disorders in women aged 18–44 years (AOR, 2.35; 95% CI, 1.02–5.43), but with decreased odds in men aged 45–74 years (AOR, 0.64; 95% CI, 0.43–0.94).

Being overweight was associated with an increased odds of depressive disorders, suicidal ideas, and suicidal tendency. Sociodemographic factors such as sex and age influenced the association between overweight and psychiatric disorders and suicidality.

Benefits of traditional styles of Japanese diet for mental health
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Abstract
Although Japanese diet is believed to be balanced and healthy, the benefits have been poorly investigated. Especially, its effect on mental health has not been reported. Previous nutritional research results showed the relationship between high fat diet and brain function, glycemic index affected to brain function and so on. Thus, it is assumed that dietary patterns relate physical and mental health. In the present study, we investigated dietary patterns in Japanese population as well as physical and mental health by epidemiological survey to demonstrate the benefit of Japanese diet for health.

Questionnaires to assess dietary habits, quality of life, sleep quality, impulsivity and degree of depression severity were distributed to randomly-selected 550 adults. Participants with diagnosis of any diseases were excluded. Finally, 280 participants were selected for statistical analysis. Scores for each questionnaire were computed, and linear trend was tested by the Jonckheere-Terpstra test to assess associations of health indexes and food intake. In order to assess indirect effect, path
analysis with structural equation modeling was performed for correlation between Japanese diet and health.

As the result of the trend test, intake of rice and miso (fermented soybean paste) was correlated with sleep quality (trend p=0.006 and 0.003, respectively) and rice consumption is also correlated with impulsiveness (trend p=0.007). Fish consumption was correlated with impulsiveness (trend p=0.027). The path analysis indicated that rice consumption improves impulsiveness, depressiveness and sleep quality via indirect effect of miso consumption (p values for sum of indirect were 0.046, 0.037 and 0.010, respectively). The statistical analysis didn’t show direct effect of bread consumption on physical and mental health, as well as the path analysis showed no significant fit for the indirect effect between bread consumption via miso consumption. Thus, rice-based diet, especially with mizo consumption, is suggested to maintain mental health.

PT739
Rice is nice: benefits of rice consumption for brain health
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Abstract
Previous investigation has suggested that Japanese diet is associated with mental health and specified that rice, miso (soybean paste) and fish consumption affected to quality of life, sleep quality, impulsiveness and depressiveness. Furthermore, the study showed combination of rice and miso was supposed to be associated to mental and physical health. The Japanese diet consists of rice and other dishes with vegetable, fish and meat. Combinations of rice and other dishes have been developed over the centuries in order to have nutritionally balanced diet. We hypothesized rice-based diet impacts mental and physical health and investigate the consequences of dietary intervention of rice.

The study is a randomized, open trial, parallel-groups clinical trial where 60 participants were screened with inclusion criteria, which is (1) eating regularly 3 meals per day and (2) eating staple foods other than rice one or more times. Participants were randomly assigned to have rice-based meals or no rice-centered meals other than rice one or more times. Participants were surveyed sleep quality, quality of life, anxiety scale and dietary pattern before and after the experimental period. As well as questionnaire surveys, biochemical changes focusing on orexin A, cortisol and eotaxin-1 were measured in the blood.

The sleep quality index scores showed improvement after the intervention of rice-based meal. In addition to the subjective assessment, blood plasma eotaxin-1 levels substantially reduced by the intervention. Several molecular studies demonstrated that eotaxin-1 impaired neurogenesis, synaptic plasticity and cognition, thus the molecule is suggested negative modifier of central nervous system. Although the relationship between sleep quality and blood plasma eotaxin-1 level has not been cleared so far, findings of the present study support that rice-based diet benefits brain health.

PT740
Prediction of Circadian Clock with Combination of One point Expression Profiles of Ten Circadian Clock Genes of Circadian Rhythm Prediction Model
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Abstract
Considering the importance of circadian rhythm on human pathophysiology and social behavior, it is of important to determine a man’s real circadian clock on a certain time of a day. In the present study, we developed a realistic method to predict a man’s circadian clock with combination of standard circadian clock genes’ expression profiles and circadian clock prediction model (CPM) which is based on a machine learning program. At first, hair follicle cells were collected at 8, 11, 15, 19, and 23 o’clock for 2 days from 18 normal persons, and standard expression profiles of 10 circadian clock genes (Per1, Per2, Per3, Clock, Arntl, Cry1, Cry2, Npas2, Nr1d1 and Nr1d2) were established. The expression of each clock genes were then conducted to cosine curve fitting with the frequency of 24 hours, because every circadian clock gene expressions have 24 hour periodicity. The circadian clock prediction model (CPM) was designed by the inverted form of the circadian rhythm function (i.e. Circadian Time = f(gene)), and the accuracy of CPM was evaluated with model validation technique such as leave one out cross validation (LOOCV). The mean absolute error (MAE) using 10 circadian clock genes is 3.43, which means the prediction error of collection time is 3.43 hours. When using 6 clock genes such as Per1, Per3, Clock, Cry2, Npas2, and Nr1d2, the MAE is lowest and its value is 3.24 hours. In conclusion, by using CPM, we can predict a man’s real circadian clock time with only a single point biological sample at any time of a day, and the accuracy of prediction time is within 3.24 hours.

Keywords: circadian rhythm, circadian clock gene, circadian clock prediction model, machine learning

PT741
Association between Morningness-Eveningness, Temperament, and Character Traits
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Abstract
Temperament, and Character Traits
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