

## Department of Psychiatry

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### General Summary

Our research activities cover a wide range of topics: disorders at the psychological and biological levels, from childhood and adolescence, through adulthood, to the senile period. Sociologic, psychological, physiologic, and biochemical methods were used.

### Research Activities

#### *Psychopathology, psychotherapy and child study group*

We have performed research in psychotherapy, psychopathology, and child psychiatry. Our child psychiatry group has investigated care systems for developmental disorders in the psychiatry unit. The treatment of children and adolescents with psychiatric disorders has been limited to a few specialized facilities in Japan. However, cases of psychiatric disorders among children have become common in general outpatient units. Thus, such cases should also be treated in general psychiatric inpatient units. However, the treatment of such cases requires particular strategies. Therefore, since 2000, we have been investigating various treatment strategies for 156 cases in general psychiatric inpatient units. On the basis of observations from this investigation, we have devised new treatment strategies for these cases in general psychiatric inpatient units.

We then began to study the attention problems of developmental disorders and psychotic disorders. This study found that the quality of attention was maintained more in autistic spectrum disorders than in schizophrenia but also found that when many tasks were added, the quality of attentions tended to decrease. In the field of psychotherapy, we attempted to develop a prototype of dialectical behavior therapy for Japanese patients, diary therapy to maintain self-esteem in patients with autistic disorders, and cognitive functions for patients with developmental disorders.

#### *Morita therapy group*

In cooperation with psychotherapists of other schools for such treatments activities as cognitive-behavioral therapy and psychoanalysis, we have been developing programs and materials to train young psychiatrists to master the basic techniques of the clinical interview. We have been continuously promoting comparative studies between Morita therapy and “the third generation” of cognitive-behavioral therapies. Recently, we started practical research towards the application of Morita therapy to adolescent patients. In addition,

we continued the following studies: the psychopathology of social anxiety disorders, factors in the recovery of patients with depression through inpatient Morita therapy, and the application of Morita therapy in the field of palliative medicine.

#### *Psychopharmacology group*

In basic research, we performed the following studies in rodents: 1) effect of novel psychotropic on monoamine neurotransmission using microdialysis and radioimmunoassay technique, 2) formation mechanism of drug addiction, 3) neural basis of addiction-related impulsivity, and 4) development of novel anti-craving agent (the final 3 subjects were performed in collaboration with the NTT Communication Science Laboratories and the Department of Psychology, Senshu University). In clinical research, we performed the following studies in humans: 1) the developmental and the psychological and social predictors of recovery in patients with schizophrenia study, 2) effects of antipsychotics on dopamine transporter binding using positron emission tomography, 3) regulation of the salience network with dopamine D2/3 receptors via antipsychotic agents, 4) qualitative research on adherence in patients with schizophrenia, 5) the effect of modified electroconvulsive therapy on regulatory factors for gene expression, and 6) symptomatology in menstruation-related mental disorders, atypical psychosis, and acute psychosis. Integration between basic and clinical research is a fundamental concept of the Psychopharmacology group.

#### *Psychophysiology group*

Our studies included: 1) a study of changes in sleep structures and cognitive function with the menstrual cycle by means of the cyclic alternating pattern method, 2) empirical research regarding the efficacy of group cognitive behavioral therapy for primary insomnia and depression, 3) clinical research with the multiple sleep latency test of hypersomnias of central origin, and 4) an investigation of biomarkers of fatigue for obstructive sleep apnea syndrome.

#### *Psychogeriatric group*

We are performing several studies investigating the neural basis of neuropsychiatric symptoms and social function in patients with neurodegenerative disorders and other psychiatric disorders among elderly persons using neuropsychological evaluation and neuroimaging methods, such as brain magnetic resonance imaging and single-photon emission computed tomography. One study focused on the compensatory neural mechanism of anosognosia in Alzheimer's disease (AD) and investigated the neural correlates of anosognosia in AD. We found that anosognosia in AD could be correlated with executive dysfunction and functional compensation through the semantic memory system. Another study revealed that the presence of subcortical white matter hyperintensities in patients with late-life somatoform disorders was a predictor of disease severity. Cognitive dysfunction appeared to play a role in the advancement of disease severity. We are planning to perform a longitudinal study and investigate further effects of these symptoms on the daily lives of patients and the burden on caregivers.

*General hospital psychiatry group*

In a study of interventional therapy based on cognitive-behavioral therapy aimed at preventing recurrences of depression, a computer system and sleep evaluation methods were introduced in addition to a previous evaluation system for more effective presentations and for more precise estimation, respectively. Furthermore, an investigation of new indications for this intervention for atypical depression, bipolar depression, and insomnia was performed. Another study investigated the issues associated with mental care services for patients with digestive tract cancers.

*Clinical electroencephalography group*

We are performing a clinical study of the management of pregnancy in woman with epilepsy. We discussed changes in the serum concentrations of antiepileptic drugs during the pregnancy. Furthermore, we reported a case of epilepsy which was induced by a specific situation and showed a peculiar clinical course. A study was performed to prevent the recurrence of depression in patients with epilepsy. We examined the safety and efficacy of psychotropic drugs in several forms of psychosis associated with epilepsy.

*Clinical psychology group*

We have continued to discuss and study psychotherapeutic processes and the treatment techniques of cognitive behavior therapy, Morita therapy, relief care, psycho-oncology, and social skill training. We have also examined the characteristics of developmental disorders and higher brain dysfunctions through psychological assessments. We invited Ms. Yukiko Kurokawa to a clinical conference and studied “psychotherapy for the aged,” and how to use it clinically. Furthermore, we trained graduate students of a clinical psychological course.

**Publications**

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**Nakayama K (Juntendo Univ).** Association between DNA methylation of the BDNF promoter region and clinical presentation in Alzheimer's disease. *Dement Geriatr Cogn Disord Extra*. 2015; **5**: 64-73.

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