

**Methods:** Cynomolgus monkeys were divided as follows: Control, 6–12 months (M1), 3–4 (M2) and 7–9 (M3) years, and more than 11 years (M4). After the administration of METH in cynomolgus monkeys on an age-dependent dose (2 mg/kg, intramuscular injection in M1, M2, M3 and M4), transcriptome profiling in the hippocampus was performed using RNA-seq technology. The functions and networks of analyzed DEGs were classified using GO analysis tool (DAVID) and IPA software.

**Results:** In METH-treated animals, the correlation of DEGs between M1 and M4 was higher than other groups, showing the possibility that biological mechanisms in the hippocampus of M1 and M4 are similarly affected by METH. Based on the GO analysis using the DEGs, transmission of nerve impulse (GO:0019226) and synaptic transmission (GO:0007268) were significantly ranked within top three of GO biological process (BP) terms in all age monkeys exposed to METH compared to the control. On the other hand, neuron development (GO:0048666) was ranked within top five of GO BP terms in M1, M2 and M3 monkeys except for M4. Peroxiredoxin 3 was highly upregulated in METH-treated groups, while HSPB6 was downregulated compared to the control.

**Conclusions:** Our results suggest not only molecular mechanisms related to the DEGs in the impaired hippocampus but also a clue for developing METH addiction marker according to ages.

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## PT722

Prevalence and associated factors of falls, injuries, and external causes of morbidity and mortality in psychiatric patient, patients with neurological disorders, and patients treated with psychotropic medications from 9 years Siriraj Hospital database

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#### Abstract

**Background:** Nowadays, mental disorder contributes to a great deal of disabilities in Thai patients. Injuries, accidents, and falls are the known consequences of both mental disorder and psychotropic medications.

**Objectives:** To determine the prevalence and the associated factors of falls, injuries, and external causes of morbidity and mortality in patients with psychiatric and neurological disorders, and patients treated with psychotropic medications in Siriraj Hospital.

**Method:** Database from 2006 to 2014 comprised of 1,632,449 subjects. We categorized data into 2 groups by ICD-10 diagnosis: 1. Mental and behavioral disorders (F00-F99) and/or diseases of the nervous system (G00-G99) 2. Other ICD-10 categories. We analyzed data to compare the prevalence of falls, injuries, and external causes of morbidity and mortality (S00-Y34) and determine the associated factors by Logistic Regression Analysis.

**Results:** 215,333 subjects diagnosed with Mental and behavioral disorders and/or diseases of the nervous system, 17.64% were recorded with falls, injuries and external causes of morbidity and mortality, whereas subjects with other ICD-10 categories were recorded so with less rigid of 11.5% (OR = 1.65, 95%CI = 1.63–1.66,

$p < 0.001$ ). Within the records of falls (W00-W19), 8.02% of subjects diagnosed with Mental and behavioral disorders and/or diseases of the nervous system were found, whereas those with other ICD-10 categories also resulted with the less rigid of 2.9% (OR = 2.92, 95%CI = 2.87–2.97,  $p < 0.001$ ). The determination of associated factors would be in the further analysis.

**Conclusion:** This study primarily demonstrated the prevalence of falls, injuries and external causes of morbidity and mortality in the patients diagnosed with mental and behavioral disorders and/or diseases of the nervous system which result greater than that of patients with other ICD-10 categories with statistical significance. The further analysis of associated factors from the completed study would contribute the prediction and the better management for patients with psychiatric and neurological disorder.

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## PT723

Familial Aggregation of psychiatric disease for first-degree relatives in Taiwan: First Large-Scale National Population-Based Study from 2001 to 2011

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#### Abstract

**Background:** First-degree relatives of patients with major psychiatric disease appear to be at higher risk of major psychiatric disease, but estimates for risks of different psychiatric disease in first-degree relatives are still lack or unreliable.

**Methods:** Using the Taiwan National Health Insurance Research Database from 1996 to 2011, a population-based cross-sectional family study (N = 23258175) was conducted and of these 431887 subjects had psychiatric disease. Relative Ratios (RRs) with 95% CIs were calculated to identify the risk for major psychiatric disorders in first-degree relatives. We also estimate the gene (heritability), shared and non-shared environmental factors to psychiatric disease susceptibility.

**Result:** Subjects with at least one first-degree relatives with psychiatry disease were more likely to have 2.48-fold prevalence of suffering psychiatric disease (prevalence, 5.4% v.s. 2.2%). The Relative risks (RRs) were 3.09 (3.04–3.15) for developing bipolar disease, 2.58 (2.56–2.61) for major depressive disorder (MDD), 2.27 (2.24–2.31) for schizophrenia and 2.24 (2.23–2.26) for depression. No obvious sexually dimorphic was found except higher schizophrenia risk in first-degree relative for female patients with psychiatric disease and higher depression risk for male patients with psychiatric disease. In addition, compared to other ages, for subjects having psychiatric disease diagnosed under twenty years old, higher RR in their first degree relatives were found that revealed 4.44 for psychiatric disease, 4.8 for bipolar disease, 4.4 for MDD, 4.3 for schizophrenia, and 3.8 for depression.

**Conclusion:** This first large-scale epidemiological study has provided the evidence of risk in genetic transferring among the first-degree relatives of patients with different major psychiatric disease, especially for bipolar disorder. More concerning should be considered when counseling families with affected patients, and