

Neurodegenerative Disorders

Neurocognitive disorders are a major global health concern. Given the current lack of disease-modifying treatments and the ageing of our population, early detection and finding ways to delay or prevent the clinical onset of neurocognitive disorders are of great importance from a clinical and public health perspective. Two of our prevalence studies, one conducted in 1995 and the other in 2005, showed that the prevalence of dementia in Hong Kong had doubled during that 10-year period. We have also succeeded in validating and testing the applicability of a wide range of cognitive screening instruments, which are now widely used throughout Hong Kong. Additionally, we have identified various risk and protective factors for neurocognitive disorders and conducted a series of randomised controlled trials of non-pharmacological interventions for improving cognitive function that have received worldwide attention.

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We have also discovered genetic predisposing factors to Alzheimer's disease as well as the clinical response to cholinesterase inhibitors in the local Chinese population. Apart from our study of Alzheimer's disease, we have demonstrated that rapid eye movement (REM) sleep behaviour disorder (RBD) is highly predictive of future synucleinopathy neurodegeneration, the second most common neurodegenerative disorder. Our current projects in sleep and neurodegeneration include a longitudinal cohort study of typical RBD with in-depth measures of clinical, biochemical and sleep biomarkers, along with a family cohort and national registry of RBD. Our long-term goal is to facilitate the search for biomarkers that predict the onset of neurodegeneration and to develop strategies for its prevention.

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Epidemiology

Following a strong tradition of community psychiatric epidemiological research since the 1980s, the Department continues to provide and disseminate a wealth of locally relevant data on the prevalence, distribution, correlates, treatment and outcome of mental disorders in Hong Kong. Our findings have had a widely-felt local impact, including the introduction of broad-based mental health advocacy and new government policy on mental health service and training. Our collaboration in the World Mental Health Surveys has contributed to the understanding of mental disorders by examining the prevalence, risk factors, disease burden, interventions and barriers to service use. From the data we have produced, we have disproved the myth that mental disorders such as depression and anxiety are uncommon in Chinese society. In our latest territory-wide face-to-face community survey, the Hong Kong Mental Morbidity Survey, we further demonstrated that while mental disorders are as common in Hong Kong as in developed Western countries (13% of the local population), the under-utilisation of mental health services and under-treatment are highly prevalent. This is a matter of great urgency for public health. Moreover, contrary to the widespread perception that common mental disorders often resolve spontaneously, our longitudinal data indicate that in the absence of effective interventions they are persistent and can worsen with comorbid complications over time. In addition, our series of large-scale community-based studies identified not only the epidemiology of common sleep disorders and problems, such as obstructive sleep apnoea, insomnia, nightmares and parasomnia across the lifespan, but also developmental issues in sleep disorders and their relationship with mental and physical problems.

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Psychiatry

According to the World Health Organization, mental health is an integral component of health. Mental health problems are common and lead to significant mortality and morbidity. They bring about marked personal distress and functional impairment. They also place a heavy burden on carers and have multiple negative impacts on society. Today, mental illness is the leading cause of disability-adjusted life years (DALYs) and has the greatest economic impact among all non-communicable diseases. Although mental disorders are both treatable and preventable, they remain underrecognised, undertreated and heavily stigmatised. Over the past three decades, our Department has systematically investigated the spectrum of mental health morbidities in Hong Kong from neurodevelopmental, neurodegenerative, and psychosocial perspectives. Some of the findings of our studies have contributed to better clinical practice, formulation of international diagnostic guidelines and the making of mental health policy in Hong Kong and the international arena.

DEPARTMENT OF PSYCHIATRY

“ No health without mental health.

The complexity, high prevalence, and heavy health care burden of mental health problems need multidisciplinary probes into the understanding of their epidemiology, aetiology, mechanisms and intervention. Our Department will continue the multidisciplinary and multidimensional approach by integrating clinical practice and translational neuroscience research. We aim to provide state-of-the-art education to our undergraduate and postgraduate students and deliver high impact translational research that will ultimately benefit patients and society. ”

Yun Kwok WING
Chairman



Neurodevelopmental Disorders

Our group has conducted a series of studies on behavioural, biomarker, and neuropsychological research in neurodevelopmental disorders, including autism and attention-deficit hyperactivity disorder (ADHD) in children. Our findings highlight the psychiatric and physical comorbidities that are highly prevalent among children with neurodevelopmental disorders. We have also validated various instruments that have been used for assessing autism and ADHD in western countries. The Chinese versions of these instruments are now being widely used in Hong Kong. Recently, we have embarked on the study of the psychopathology and cognitive and functional impairments in young adults with a previous clinical diagnosis of ADHD in childhood.

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Consultation-liaison Psychiatry

The neuropsychiatric consequences of cerebrovascular accidents (stroke) have often been overlooked. In collaboration with CUHK neurologists and radiologists, we have determined that cerebral microbleeds not only increase the risk of depression in stroke survivors but also have an impact on the course of post-stroke depression. We have also collaborated with the CUHK Institute of Digestive Disease and Institute of Integrative Medicine to provide a combined clinical and research programme for functional gastrointestinal disorders. Current research includes a magnetic resonance spectroscopy and functional magnetic resonance imaging study of functional dyspepsia, and intervention trials of electroacupuncture and yoga for different types of irritable bowel syndrome.

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Neuroimaging Studies and Neuromodulation Treatment

Major depressive disorder, or depression, can have a devastating effect not only on individuals but on society at large. Despite its high toll, there has been little improvement in treatment efficacy for this disorder. Recently, the Department has established navigated neuromodulation treatment facilities. It has also conducted clinical trials, funded by the Research Grants Council (RGC) and Health and Medical Research Fund (HMRF), of neuromodulation interventions such as transcranial direct current stimulation (tDCS) and transcranial magnetic stimulation (TMS) for treatment-resistant depression, bipolar affective disorder, and neurocognitive disorders. Within the Department and in cooperation with the University Medical Center Utrecht (UMC Utrecht), we have embarked on several synergistic neuromodulation research projects. The objective of these projects is to devise clinical interventions for mood-disordered patients and examine the structural connectivity map that explains the functional connectivity and treatment response trajectory of their illness. By combining neuroimaging and navigated neuromodulation, this research approach has the potential of identifying network-based neural biomarkers. The latter can then be utilised in hypothesis-driven treatment studies that target TMS on selected biotypes of depression.

In addition, the Department has begun a multimodal research programme — Prospective Evaluation of Affective Complex symptoms and Etiological Factors (PEACE) — to study the relationships of brain energy metabolism, structure and functional connectivity in bipolar and related disorders. This programme involves the prospective evaluation of young adults with unipolar and bipolar disorders, using systematic phenomenological evaluation, neuropsychological assessment, magnetic resonance spectroscopy, and functional magnetic resonance imaging.

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Substance Use Disorders

Substance abuse is a serious social and medical problem worldwide. Among various psychoactive drugs, ketamine is one of the most commonly abused substances in Hong Kong. Using neuroimaging methods and biochemical techniques, we have conducted a series of major studies to explain how psychoactive drugs such as ketamine alter the structure and function of the brain and how these brain alterations affect mental functions in subjects with psychoactive drug abuse or dependence. Comprehensive data from these studies have been published, detailing the psychiatric comorbidities, cognitive impairment and evidence of brain damage among local ketamine users.

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Circadian Rhythm and Sleep Disorders

The close reciprocal relationship between sleep and mental disorders is clearly recognised today. Our findings, which have implications for early intervention, have suggested that puberty is the critical period for the development of insomnia symptoms and emergence of sex differences. In addition, our group has identified that sleep loss and deprivation are very common in Hong Kong children and adolescents, and are closely related to an array of mental and physical health conditions. These findings have subsequently been translated into a sleep education programme and delayed school start-time intervention. We also established the Sleep Assessment Unit (SAU) at Shatin Hospital, which provides both clinical service for local patients with sleep disorders and professional training to clinicians and technicians in sleep medicine from all over the world. The SAU is actively involved in epidemiological, translational and clinical studies in sleep disorders, as well as circadian rhythm disorders in various medical and mental disorders.

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