

Media Release

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Study establishes prevalence of dementia among older adults in Singapore

1. The Well-being of the Singapore Elderly (WiSE) study conducted in 2013 and spearheaded by the Institute of Mental Health (IMH), has been completed. This nationwide epidemiological study established the prevalence and factors associated with dementia and depression among those aged 60 years and above in Singapore. The study also examined the burden of dementia among the elderly in Singapore, its economic costs and caregivers' burden associated with this condition.
2. The first part of the study results pertaining to dementia is now available while the information on depression will be presented once the analysis of the data is completed.
3. Key findings from the study shows:
 - a) **Prevalence of Dementia** - The WiSE study found that the prevalence of dementia was 10% in the elderly population i.e. those aged 60 years and above in Singapore (using the 10/66 dementia criteria).
 - b) Factors Associated with Dementia**
 - (i) **Age** - The significant factors associated with dementia were older age. The likelihood of dementia for those aged 75–84 years was 4.3 times and for those 85 years and over, it was 18.4 times higher compared to that of elderly aged 60–74 years.
 - (ii) **Association with stroke** - Those who reported that a doctor had ever diagnosed them with stroke in their lifetime had a higher risk of dementia compared to those who had never received the diagnoses.

- (iii) **Association with education and employment** - The study also found that other factors such as educational level and employment may be linked to dementia. Having a lower education as well as non-employment were factors which were associated with dementia.

The study also looked into caregivers looking after those with dementia.

Caregivers' roles and care needs of the elderly in Singapore

- (i) **Varying needs** - Care needs and care arrangements reported by caregivers varied for those with and without dementia. About 85% of people with dementia needed care "some or much of the time".
- (ii) **Level of support needed** - A significantly higher proportion (55.7%) of those with dementia needed care "much of the time" compared to just 2.4% of those without dementia.
- (iii) **Sources of help** - Differences in the help received from a paid caregiver were observed for those with and without dementia. A higher number of caregivers of those with dementia had paid help to assist them in care activities during the day and night.
- (iv) **Caregivers' stress and anxiety** - Caregivers of people with dementia reported significantly higher distress related to behavioural and psychiatric symptoms of dementia (the scale was administered to all informants) and psychological problems as compared to caregivers of people without dementia.

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About the Institute of Mental Health

The Institute of Mental Health (IMH) is the only tertiary psychiatric care institution in Singapore. Located on the sprawling 25 hectare campus of Buangkok Green Medical Park in the north eastern part of Singapore, IMH offers a multidisciplinary and comprehensive range of psychiatric, rehabilitative and counselling services. The 2010-bedded hospital aims to meet the needs of three groups of patients children and adolescents (age below 19 years), adults and the elderly. Besides providing clinical services, IMH also leads in mental health research and training the next generation of mental health professionals in Singapore. For more information, please visit: www.imh.com.sg.

Annex 1

ABOUT THE WELL-BEING OF SINGAPORE ELDERLY STUDY (WiSE)

IMH collaborated with international and local research investigators on this three-year nationwide epidemiological study. The aims of this comprehensive study were to establish high-quality data of the burden of dementia and depression among the elderly in Singapore and to bridge the knowledge gap on the associated factors, healthcare use and economic impact.

The study was undertaken by a multi-disciplinary team led by the Institute of Mental Health (IMH) and is a collaborative effort between IMH, Changi General Hospital (CGH), National University Health System (NUHS), Ministry of Health (MOH), Raffles Hospital and Institute of Psychiatry (IOP), King's College London. This S\$4.4 million study was funded by the Ministry of Health (S\$3.2m) and the Singapore Millennium Foundation (\$1.2m).

The Principal Investigator of this study is Professor Chong Siow Ann, Vice Chairman Medical Board (Research), IMH. The Co-PIs of this study are Dr Ng Li Ling, Senior Consultant Psychiatrist, Department of Psychological Medicine, CGH and Adj/Asst Prof Mythily Subramaniam, Director of Research, IMH.

A total of 4,986 Singapore Residents (including Singapore Citizens and Permanent Residents) were interviewed in depth for the study. These comprised 2565 older adults and 2421 informants. The study was carried out from Aug 2012 to Dec 2013. The response rate was 65.6% which is high for a study of this difficult nature. Participants were randomly selected from a list of all residents in Singapore, and the three major ethnicities were equally represented. Interviews were conducted with respondents and their informants. They were interviewed in their homes and in nursing homes if the respondents were residing there during the study period.

The instruments were adapted from the 10/66 protocol. They were available in English, Chinese, Malay and Tamil as well as Chinese dialects (Hokkien, Teochew and Cantonese). A professional survey firm, Ascentiq Pte Ltd, was appointed to conduct the survey.

Annex 2

DESCRIPTION OF MENTAL DISORDERS ASSESSED IN THE WISE

Dementia

Dementia is a clinical syndrome encompassing a range of organic brain diseases that result in progressive deterioration of memory, cognitive functions and behaviour. These symptoms not only interfere with a person's ability to perceive and interpret their surroundings, but also compromise an individual's functional capacity in all aspects of living.

Major Depressive Disorder

Major depressive disorder (MDD) is characterised by a depressed mood: a profound feeling of sadness, emptiness, worthlessness and hopelessness. Associated with this, is a range of other disturbances like loss of interest in activities and loss of pleasure in almost all activities, sleep disturbances (either not being able to sleep well or sleeping too much), loss of appetite with consequent loss of weight although in atypical cases, there might be overeating. Significant impairment in functioning is brought on by difficulty concentrating, loss of energy, tiredness and listlessness. The depressed person may have suicidal thoughts or intentions which might actually lead to suicidal attempts or even actual suicide.

DESCRIPTION OF KEY TERMS

10/66 Dementia Research Group

The 10/66 Dementia Research Group comprises a group of researchers carrying out population-based research into dementia, non-communicable diseases and ageing in low and middle income countries. 10/66 refers to the two-thirds (66%) of people with dementia living in low and middle income countries, and the 10% or less of population-based research that has been carried out in those regions. 10/66 is a part of Alzheimer's Disease International, and is coordinated from the Institute of Psychiatry, King's College London.

Epidemiological Study

It is the study of the rates, distribution and determinants of health-related states or

events (including disease), in other words it is the study of health in populations to understand the causes and patterns of health and illness. Information from such studies is important for policy formulation, service development, and for the rational allocation of resources. It can be used for the control of diseases and other health problems. In addition, it can also shed light on the possible causes and factors associated with diseases.

Informant

The informant was defined as 'a person who knows the older person best'. While some informants were caregivers, others were co-residents or other close contacts with no caregiving role. Time spent with the older person was used as a criterion for deciding the best informant in the situation where there were several co-resident family members.

Cognition

Cognition refers to mental abilities and processes such as attention, memory, judgement & evaluation, reasoning, problem solving, comprehension & production of language, etc.

Life-time Prevalence

Prevalence of any disorder is the proportion of people affected with that disorder in a given population at a specific time. Life-time prevalence is the number of people in a population that have had the disorder at any time in their life, divided by the total number of individuals in the population at the time of assessment. It estimates the extent of a disorder within a population over a certain period of time.

Sampling and Weight adjustment

Disproportionate sampling was used to randomly select residents for the survey (i.e. the percentage of residents belonging to different age groups and ethnicities were not similar to their distribution in the Singapore general population), and therefore people belonging to Malay and Indian ethnicity and those above 85 years of age were over sampled. This method was applied to identify an adequate number of people in these sub-groups with a mental disorder to allow statistically sound comparisons between sub-groups. Because of the complex sampling design of the survey, it is important to make use of sampling weights for weight adjustment to eventually produce representative estimates for the Singapore

resident population. For example, when weight adjustment is applied to prevalence rates for respondents who are 30 per cent Chinese, 30 per cent Malay and 30 per cent Indian, the rates for a population with 70 per cent Chinese, 12 per cent Malay and 8 per cent Indian will be attained.

Odds Ratio

The odds ratio (OR) is a statistical term used to assess the risk of a particular outcome (or disorder) in presence of a certain factor. It is a relative measure of risk that tells how much more likely that someone who is exposed to the factor will develop the outcome (or disorder) as compared to someone who is not exposed. For example, when investigating differences in prevalence of depression across men and women, gender is treated as exposure and depression is the outcome. Upon statistical analysis, if the OR is 1.8, it can be interpreted as women had 1.8 times higher odds of having depression as compared to men.

P-Value

P-value is a statistical term that gives the probability of chance, with a value ranging from zero to one. P-values can be derived using various methods and are essential for detecting statistical differences between two populations. For example, if the P value is 0.04, it means that possibility of the observed difference between two populations occurring only by chance (i.e. it is not a real difference) is 4%. Lower P-values provide stronger evidence for a true difference. Values less than or equal to 0.05 are often used as a cut off to infer a statistical difference between two groups.

Validity

Validity refers to the extent to which a tool actually measures a trait. Screening tools should be validated for the targeted population, setting, and disorder or diagnosis. Validity is important because validated tools have been proven to measure what they claim to measure in a specific population. A validated tool detects those who truly have the condition. Validity is measured by **sensitivity** and **specificity** and by **predictive value**. **Sensitivity** is a measure of how effective the tool is in detecting a disease or condition in those who have the disease or condition. **Specificity** is the extent to which a test gives negative results in those who are free of the disease or condition.

Annex 3

About the Singapore Millennium Foundation and Temasek Trust

Established in 2001, the Singapore Millennium Foundation (SMF) is a non-profit charitable organization supported by Temasek Trust. The SMF was set up to promote and advance scientific progress in Singapore and raise Singapore's international visibility as a centre of knowledge creation - a place where progressive researchers meet to exchange ideas, challenge findings and jointly advance the knowledge capital of the world.

Temasek Trust was established in 2007 to independently oversee the financial management of Temasek's philanthropic endowments and gifts, including the endowment disbursements to approved non-profit beneficiaries.

Annex 4

Factsheet about Dementia

What is dementia?

With normal ageing, elderly people become forgetful because of poor concentration. There are many causes for poor memory but forgetfulness is not equivalent to dementia. Most elderly people will say that their memory is not as good as previously and they may have trouble remembering where they left their house keys, but this does not mean that they have dementia.

Dementia is the loss of intellectual abilities (such as thinking, remembering and reasoning) which interferes with a person's daily functioning. It is not a disease in itself, but rather a group of symptoms that may accompany certain diseases.

It is an illness which affects the brain, causing the cells to die at a faster rate than normal, leading to failing memory, deterioration of intellectual function and personality changes. Dementia is not part of normal ageing.

Common types of dementia are Alzheimer's dementia and vascular dementia. In Alzheimer's dementia, progressive loss of brain cells is related to formation of insoluble proteins in and around brain cells.

Vascular dementia results from multiple stroke disease. Strokes can happen when a blood clot or fatty deposit blocks the vessels that supply blood to the brain, or when a blood vessel in the brain bursts.

What are the signs and symptoms?

The onset of Alzheimer's dementia is gradual and early dementia may be missed. Symptoms include poor short-term memory, repeatedly asking the same questions, difficulty with naming, misplacing things, personality changes and deterioration in functioning.

As the illness progresses, patients may lose track of time and events, wander and get lost, and may become irritable and agitated. In severe dementia, they may not even recognise family members and become totally dependent on others for their

activities of daily living.

Someone with dementia may:

- not only forget details but the entire event e.g. forgetting he had taken dinner when it was only an hour before
- lose the ability to perform everyday tasks such as dressing, eating or bathing
- become restless and more irritable
- lose the ability to make decisions
- gradually lose their sense of time and place
- face difficulty when doing simple tasks like washing, eating and dressing
- become less communicative, more reclusive
- lose their way around the familiar neighbourhood

Annex 5

IMH's Services and Facilities for Elderly Patients Diagnosed with Dementia

Memory Clinic

Operational in February 2013 and located at the IMH Clinic B, Buangkok Green Medical Park, the Memory Clinic takes in referrals for individuals of all ages presenting with signs or symptoms of cognitive impairment, such as, memory problems or personality change. Patients will undergo assessments for dementia and to determine the cause of memory loss.

Depending on the outcome of these assessments; the psychiatrist may refer the patient for a neuropsychological assessment by a psychologist, order blood investigations or a brain scan. The doctor may also prescribe the patient with medication for dementia.

This clinic is run by a multidisciplinary team consisting of a psychiatrist, memory clinic nurse, psychologist, occupational therapist and medical social worker.

Dementia Friendly Ward

IMH's Dementia Friendly Ward (also known as Sunshine Wing) is a 50-bed geriatric inpatient acute ward serving psychiatric patients 65 years old and above. Operational in December 2013, the ward is equipped with elderly and dementia-friendly features and unique facilities customised to improve patient care. These facilities include a therapeutic garden; a sensory room with state-of-the-art equipment designed to stimulate and soothe the senses; an activity room equipped with video games for limb exercises; a reminiscence room stocked with antique objects to evoke memories; a fitness corner with equipment specially chosen for the elderly, and more.

Aged Psychiatry Community Assessment and Treatment Service (APCATS)

APCATS is a community-oriented psychogeriatric outreach service for Singapore's central region. Initiated in 2006, it has two programmes: APCATS Clinical Service (CS) and Regional Eldercare Agencies Partnership (REAP).

APCATS Clinical Service (CS) provides assessments and treatments for

homebound or frail elderly with mental health disorders. It aims to:

- Provide mental health services to the elderly who are frail or who have difficulties accessing mental health services;
- Prevent unnecessary admissions and minimise the length of stay in wards / other inpatient mental health services;
- Promote ageing-in-place in the community by supporting caregivers and reducing their burden of care.

Regional Eldercare Agencies Partnership (REAP) was started in 2008. The APCATS – Regional Eldercare Agencies Partnership (APCATS REAP) is an extension of APCATS. It aims to:

- Extend partnership with community eldercare agencies and primary care practitioners to meet the psychosocial needs of the elderly in the community;
- Empower the community eldercare agencies and primary care practitioners to manage the elderly with mental disorders through training, consultation and support.
- Enhance awareness and facilitate early detection of mental disorders in the elderly.

Psychogeriatric Clinics

IMH's Psychogeriatric Clinics cater to the mental health needs of the elderly in Singapore. Assessments can be obtained at Clinic B and Sayang Wellness Clinic both located in IMH as well as at the Community Wellness Clinic located at Geylang Polyclinic and Queenstown Polyclinic.

Note: For more details on services and programmes for elderly patients, please check the Agency for Integrated Care's (AIC) website: www.aic.sg

Annex 6

Dementia Services available at Changi General Hospital

Dementia care in Changi General Hospital is provided by a collaboration between the Department of Geriatric Medicine and the Department of Psychological Medicine

The Geriatric Medical Centre (GMC)

The Geriatric Medical Centre is a one-stop service that provides affordable medical, psychological, rehabilitative and nursing care for elderly patients and specialist outpatient appointments. General geriatric clinics as well as specialist clinics for psychogeriatrics, falls, incontinence and memory are available. GMC houses the Geriatric Day Hospital which provides programmes for elderly persons with complex medical, nursing and rehabilitative needs, as well as support and training for the caregivers.

The Memory Clinics in CGH are a collaboration between geriatricians and psychogeriatricians and provide comprehensive assessments and management of patients over the age of 50 who complain of memory loss. Investigations are conducted when necessary and management is done by a multidisciplinary team consisting of doctors, nurses, psychologists, occupational therapists and physiotherapists.

The Community Psychogeriatric Programme (CPGP) is a community based project funded by the Ministry of Health which focuses on the mental health of the elderly in the East. Our emphasis is to empower our community eldercare partners through training, consultation and support. CPGP also provides clinical care to elderly with mental health problems in the community who are unable to go to the clinics or hospitals.

Dementia training in CGH

Under the Inpatient Dementia Project, nursing staff are being trained in dementia awareness, diagnosis and management. Teaching sessions include lectures as well as case discussions. The aim is to eventually train all the staff in the hospital to better look after people with dementia.

Annex 7

ENGLISH-CHINESE GLOSSARY

Institute of Mental Health	心理卫生学院
Professor Chong Siow Ann Vice Chairman, Medical Board (Research) Senior Consultant, Research Division & Department of Early Psychosis Intervention Institute of Mental Health	莊紹安教授 医疗委员会副主席(研究) 心理卫生学院研究部及初期治疗 错乱症治疗科高级专科顾问
Adjunct /Assistant Professor Mythily Subramaniam Director, Research Division, Institute of Mental Health	Mythily 助理教授 主任 心理卫生学院研究部
Dr Ng Li Ling Senior Consultant Psychiatrist Department of Psychological Medicine Changi General Hospital	黄丽玲医生 高级顾问 心里学部门 樟宜综合医院
Well-being of the Singapore Elderly - WiSE Study	新加坡年长人士身心健康 - WiSE 研究