



*Loving Hearts, Beautiful Minds*

Information updated as at 10 October 2013.

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## Media Release

18 November 2011

### **Latest study sheds light on the state of mental health in Singapore**

1. The Singapore Mental Health Study (SMHS) conducted in 2010 and spearheaded by the Institute of Mental Health (IMH), has been completed. This nationwide epidemiological study gives insight into some of the common mental illnesses in the adult Singapore resident population, the associated factors of these illnesses, the delay in seeking treatment, and the period of delay among those who eventually sought treatment.

2. Key findings from the study show that:

- Among the illnesses assessed in this study, Major Depressive Disorder (MDD), Alcohol Abuse and Obsessive Compulsive Disorder (OCD) emerged as the top three most common disorders in Singapore. One in 17 people in Singapore have suffered from MDD at some time in their lifetime, while Alcohol Abuse and OCD affected one in 32 and one in 33 people, respectively.
- Socio-demographic characteristics such as age, gender, ethnicity, education and employment status were associated with the prevalence of mental illness.
- The majority of the mental illnesses occurred by the age of 29 years.
- The majority of the people with mental illness were not seeking help.

### **Affective Disorders**

3. According to the study, MDD was the most common mental illness in Singapore. 5.8% of the adult population in Singapore suffered from MDD at some time in their lifetime. In the previous 12 months (prior to the survey), 2.2% of the adult population had MDD.
4. The illness affected over 57,000 adult men and about 102,000 adult women during their lifetime. Depression was also associated with chronic physical illnesses. About half (49.2%) of people with MDD had at least one chronic physical illness.
5. 1.2% of the adult population in Singapore suffered from Bipolar Disorder. It affected men and women equally.

### **Anxiety Disorders**

6. Both Generalised Anxiety Disorder (GAD) and OCD are anxiety disorders. About 100,000 individuals in our local population suffered from anxiety disorders during their lifetime. Overall, 3.6% suffered GAD and OCD during their lifetime. Nearly half of those with GAD (40.2%) also had a chronic physical illness.
7. OCD was more common than GAD (3.0% and 0.9% respectively). In the previous 12 months (prior to the survey), 1.1% and 0.4% of the adult population had OCD and GAD respectively.

### **Alcohol Use Disorders**

8. About 3.1% and 0.5% of the population suffered from Alcohol Abuse and Alcohol Dependence respectively at some time in their life. Over the previous 12 months, the prevalence of Alcohol Abuse and Alcohol Dependence was 0.5% and 0.3%, respectively. More men were found to abuse alcohol than women (ratio of 4:1). Overall, the prevalence rate is low compared to other countries like US, Europe, China, Australia and New Zealand.
9. There was a large gap in help-seeking behaviour among those with alcohol abuse, with 96.2% of those affected not seeking help.

### **Nicotine Dependence**

9. At the point of the survey, 4.5% of the population were found to suffer from Nicotine

Dependence. Men and those with lower education were more likely to have Nicotine Dependence.

### **Age of Onset of Illness, Time to Seeking Help and Treatment Gap**

10. Most people who suffered from a mental illness had their first onset of illness when they were in their twenties.

11. The study found that a large gap in help-seeking behaviour (also known in the scientific literature as the “treatment gap”) exists for the majority of mental illnesses. This means that people with mental illness were not seeking professional help.

12. The average time (median) taken to seek help from the start of illness was for those with Alcohol Abuse (14 years); followed by Bipolar Disorder and OCD (9 years), GAD (6 years) and MDD (5 years).

13. Among all the people with a mental illness in their lifetime, 22.1% had consulted a psychiatrist. The majority had seen a professional care-giver in the community – 21.6% went to a counselor, 18% went to a GP, and 12.0% went to a religious or spiritual healer.

### **Comorbidity**

14. There was an association between mental illness and chronic physical illness. 14.3% of those with a chronic physical illness also had a mental illness. Among those with mental illness, 50.6% had a chronic physical illness.

15. “This survey has provided a rich body of information on the prevalence of mental illnesses and problems. We hope it will serve as useful data to inform the development and refinement of policies and mental health services, ” said A/Prof Chong Siow Ann, the principal investigator of the study, and Vice-Chairman, Medical Board (Research), IMH.

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**About the Institute of Mental Health**

The Institute of Mental Health is the only tertiary mental health centre in Singapore. It offers a multi-faceted and comprehensive range of psychiatric, rehabilitative and counseling services to meet the needs of three groups of patients – children and adolescents, adults and the elderly. IMH also runs mental health education programmes for the general public. These programmes aim to promote mental wellness and raise awareness of the importance and benefits of prevention, early detection and treatment of mental disorders.

## **Annex 1**

### **ABOUT THE SINGAPORE MENTAL HEALTH STUDY**

The study was undertaken by a multi-disciplinary team led by the Institute of Mental Health and is a collaborative effort between four centres – IMH, Ministry of Health (MOH), Nanyang Technological University (NTU) and RAND Health, a research division within RAND Corporation, an American non-profit research organisation. The \$6.9 million study was funded by the Singapore Millennium Foundation (SMF) and MOH.

The Principal Investigator of this study is A/Prof Chong Siow Ann, Vice Chairman Medical Board (Research) IMH, and Senior Clinician-Scientist Investigator, National Medical Research Council. Other than A/Prof Chong, the team is also led by Dr Mythily Subramaniam and Ms Janhavi Vaingankar, from the Research Division in IMH.

A total of 6,616 Singapore Residents (including Singapore Citizens and Permanent Residents) aged 18 years and above living in households Singapore were interviewed in depth for the study during the field research phase in 2010. The first household was contacted on 2<sup>nd</sup> Dec 2009 and the last interview was completed on 5<sup>th</sup> Dec 2010. The response rate was 75.9%.

## **Annex 2**

### **DESCRIPTION OF MENTAL ILLNESSESS ASSESSED IN THE SMHS**

#### **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 lead to suicidal attempts or even actual suicide.

#### **Bipolar Disorder**

This disorder is characterized by mania which is an abnormally elevated, expansive, or irritable mood. Together with this, there may be an inflated sense of self-esteem or even grandiosity, decreased need for sleep, and talkativeness, agitation and a tendency to engage in activities which while pleasurable, would have painful consequences like spending sprees, without the money to pay for them, increased sexual activity, reckless driving, rash business and personal decisions. This state is often severe enough to seriously affect the person's life and often hospitalization is required to protect the individual from the damaging consequences of the lack of restraint and judgment. A subtype of bipolar disorder is the occurrence of mania with a major depressive episode.

#### **Generalised Anxiety Disorder**

The essential feature of generalised anxiety disorder (GAD) is a general feeling of excessive anxiety and worry that is difficult to control. These feelings are not related to any specific event or object but may be about a number of events and activities. They are often accompanied by other symptoms like restlessness, fatigue, irritability, and or disturbed sleep. GAD can be chronic and recurrent in nature, impair family life, and reduces social adjustment and functioning. Typically GAD develops over a period of time and may not be noticed until it is significant enough to cause problems with functioning.

## **Obsessive-Compulsive Disorder**

Obsessive-compulsive disorder (OCD) is characterized by the occurrence of either obsessions, compulsive rituals or, most commonly, both recurrent and persistent thoughts, impulses, or images that are experienced as intrusive and cause great anxiety. They are not simply excessive worries about real life issues; the affected individual attempts to ignore, suppress, or neutralise them with some other thought or action and recognizes that these thoughts are a product of his or her mind. Examples of obsessions include unwanted thoughts or images of harming loved ones, persistent doubts that one has not locked doors or switched off electrical appliances, and intrusive thoughts of being contaminated. Compulsions are repetitive behaviours (eg, repetitive hand washing or checking) or mental acts (eg, repetitive praying, counting, or thinking good thoughts to undo or replace bad thoughts) that the affected individual feels compelled to do in response to an obsession, or according to rigid rules (eg, checking that a light switch is turned off by switching it on and off exactly ten times).

## **Alcohol Abuse**

Alcohol abuse is diagnosed when one or more of the following occurs:

- a) Recurrent alcohol use resulting in failure to fulfill major role obligations at work, school, or home (e.g., repeated absences or poor work performance related to alcohol use; alcohol-related absences, suspensions or expulsions from school; or neglect of children or household)
- b) Recurrent use in situations in which it is physically hazardous (e.g., driving a car while under the influence of alcohol)
- c) Having alcohol-related legal problems (e.g., arrests for alcohol-related disorderly conduct).
- d) Continuing to use alcohol despite having persistent or recurrent social or interpersonal problems caused or worsened by the effects of alcohol (e.g. arguments with wife over consequences of being drunk, fights)

## **Alcohol Dependence**

Alcohol dependence is defined as a maladaptive pattern of alcohol use, leading to clinically significant impairment or distress, and the essential feature of which is a cluster of cognitive, behavioral and physical symptoms. These include tolerance (a need for markedly increased amounts of alcohol to achieve intoxication or desired effect), unpleasant withdrawal symptoms when intake is stopped or reduced, a consuming preoccupation to obtain and use alcohol at the expense of other important social,

occupational and recreational activities. Despite this, the person would persist in using alcohol and even with the knowledge of having a recurrent physical or psychological problem that is likely to have been caused or exacerbated by the alcohol (e.g., continued drinking despite recognition that an ulcer was made worse by alcohol consumption).

## **DESCRIPTION OF KEY TERMS**

### **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.

### **12- month Prevalence**

Annual or 12-month prevalence is the number of people in a population that have had a disorder during a specific year divided by the total number of individuals in the population. It includes cases arising before but extending into that year and new cases identified in that year. It is often used to estimate impact of a disorder within a population in that year.

### **Treatment Gap**

Treatment gap is the proportion of people having a disorder yet not receiving treatment for it. In this study, under each diagnostic section, respondents are asked whether they had ever in their life talked to a medical doctor or other professional about the disorder under investigation. Example of the question from Depression module: "Did you ever in your life talk to a medical doctor or other professional about your (sadness/or/discouragement/or/ lack of interest)? (By professional we mean psychologists, counselors, spiritual advisors, herbalists, acupuncturists, and other healing professionals)."

### **Sampling and Weight adjustment**

Disproportionate sampling was used to randomly select residents for the survey (i.e. the percentage of residents belong to different age groups and ethnicities were not similar to their distribution in the Singapore population), and therefore people belonging to Malay and Indian ethnicity and those above 65 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, if you apply weight adjustment to prevalence rates for respondents who are 30 % Chinese, 30% Malay and 30% Indian you will be able to get rates for a population with 70% Chinese, 12 % Malay and 8% Indian.

### **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 it is 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 a chance occurrence, with a value ranging from zero to one. P-values can be derived using various methods and are used for detecting statistical differences between two populations. For example, if the P value is 0.04, it means that there is a 4% chance of observing a difference as large as observed between the two populations even if there were in reality no differences. Values less than or equal to 0.05 are often used as a cut off to infer a statistical difference between two groups.

## **Annex 3**

### **About the Singapore Millennium Foundation and Temasek Trust**

Established in February 2002, the Singapore Millennium Foundation (SMF) is a Singapore Institution of a Public Character and a non-profit philanthropic organisation set up jointly by the then Singapore Technologies and Temasek Holdings. The SMF aims to promote research 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**

### **Researchers' Profile**

#### **Chong Siow Ann**

MBBS, MMED, MD, FAMS

Associate Professsor Siow-Ann Chong is the Vice Chairman of Medical Board (Research), Senior Consultant Psychiatrist and Chairman of the Clinical Research Committee at the Institute of Mental Health, as well as a member of the National Medical Research Council of Singapore. He was a Senior Consultant to the Health Service Research and Evaluation Division of the Ministry of Health of Singapore, and a member of the Director of Medical Services Taskforce on the National Mental Health Blueprint and Policy among other committees.

His research interests are psychosis, psychiatric genetics, epidemiology, and health service research. He has published widely and is the Associate Editor of a few journals and sits in the Editorial Board of several journals.

He has won several research awards – including the Inaugural 2006 World Health Organisation and State of Kuwait Prize for Research in Mental Health Promotion, the Clinical Scientist Investigator Award (Category A) from the Biomedical Research Council and National Research Council of Singapore in 2007, the Inaugural 2008 National Medical Excellence Award (team) from the Ministry of Health (Singapore), the National Healthcare Group Distinguished Award (2008), the Galloway Memorial Lecture and Gold Medal (2011) awarded by the Singapore Academy of Medicine.

He is the Principal Investigator of the Singapore Mental Health Study and the Flagship Translational and Clinical Research Programme in Neuroscience which is a 5-year multinational study which sets out to determine the biomarkers of schizophrenia and related psychoses.

**Mythily Subramaniam**

MBBS, MD

Dr Mythily Subramaniam is the Deputy Director of Research at the Institute of Mental Health. She has over ten years of experience in mental health research.

Her research interests are in the areas of psychosis, addictions, epidemiology, and health service research. She has worked on several research projects with the Ministry of Health, Singapore Prison Authority, Ministry of Defence, Ministry of Community Youth and Sports Development, and the Agency for Integrated Care. She has published extensively and is a reviewer for several scientific journals.

She is a co-investigator of the Singapore Mental Health Study and the 5-year, 25-million-dollar Flagship Translational Clinical Research Programme in Neuroscience. She will be leading a national-wide study of the elderly population in Singapore to establish the prevalence of dementia and the burden of care.

**Janhavi Vaingankar**

MSc (Epidemiology)

Ms Janhavi Vaingankar is a Manager and Researcher at the Research Division of the Institute of Mental Health. Trained as an epidemiologist from the London School of Hygiene and Tropical Medicine, University of London, she has over ten years of experience in facilitating and conducting research studies and has been a co-Investigator for several research projects, including projects undertaken for the Ministry of Health, Ministry of Community Development, Youth and Sports, Singapore, and the Agency for Integrated Care.

She is a recipient of the National Medical Research Council (Singapore) Medical Research Scientist Award. Her areas of research are psychiatric epidemiology, mental well being and health services research and she has published in these areas.

She is a Co-Investigator of the Singapore Mental Health Study and has taken the lead in developing and validating a culturally valid instrument to measure positive mental health in the Singapore population.