Well-being of the Singapore Elderly Survey

April 2011 – March 2014

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Institute of Mental Health
WiSE Study Team

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Aims of the WiSE Study

Conduct a population based epidemiological study to establish the prevalence of dementia and depression among the elderly population (aged 60 years and above) in Singapore.

- Identify the risk factors associated with dementia.
- Describe the current use of healthcare services and elucidate the unmet needs of people with dementia.
- Estimate caregivers’ burden.
- Evaluate the economic burden comprising indirect and direct costs among those with dementia in Singapore.
Conducting Population Surveys-
Complexity and Challenges
Population Surveys are Complex

- Assess available Knowledge and identify need
- Research questions and study design
- Questionnaire selection, design, testing and modification
- Interviewer training
- Progress monitoring and quality control
- Data collection
- Analysis and interpretation of findings
Questionnaire design, testing and programming

Availability of instruments in limited local languages/ Dialects

Translated all Instruments into Malay and Dialects

Appropriateness of the language used in the questionnaires

Cognitive interviews with 70 participants using the four languages

Programming questionnaires into NIPO software

- Computerised data collection using iPads
- Dual language on screen
- Aids data collection, quality control and reduces administrative burden
Interviewer training

10-day Training

- Lectures
- Talks by Clinicians
- Videos
- Role play demonstrations
- Round Robin Practice sessions
- Mock and Real Respondent interviews
Ongoing Monitoring

- Refusal Conversion and validation
- Field Observations
- Monthly Monitoring Visits
Pre-launch Press Briefing

DEMENTIA & DEPRESSION: IMH to conduct $4.4m study on elderly

THE STRAITS TIMES
THURSDAY, OCTOBER 4, 2012

Study looks at dementia and depression

Three-year research project will also assess the financial burden

By POOK CHAIH REH

A NATIONAL study on dementia and depression is being carried out to gauge the status of mental illness in the elderly.

The $4.4 million study will examine how common these two illnesses are. It will also try to pin-point gaps in the health-care system and identify the kind of help families need.

Studies on dementia and depression have been carried out before in Singapore. However, the Ministry of Health will be the first to assess these issues.

The three-year study, which will also assess the financial burden, will involve 5,000 respondents.

The study will be carried out by the新加坡精神健康研究所 and the Singapore Institute of Social Sciences.

More than 5,000 respondents will be interviewed. About 2,000 will be aged 60 and above, and the others will be from family caregivers of the elderly.

The data will be used to assess the quality of care elderly patients receive.

The study will also examine how much of the cost of caring for elderly patients is borne by individuals and how much is borne by the government.

The study will also look at the impact of dementia and depression on the elderly and their families.

The study is expected to be completed by 2017.

How much does it cost for the daughter to give up her job to look after her mother?

In an eight-month pilot study that ended this April, several sites of the elderly were visited by social workers to assess the cost of caring for elderly patients.

Social workers, who are in the front line of the elderly, said the cost of caring for elderly patients is significant.

They said the cost of caring for elderly patients includes the cost of food, clothing and medical care.

“Those who are unable to afford these costs are at a higher risk of medical illnesses,” said a social worker.

The social worker added that the elderly are living longer and are more prone to illnesses.

They are more likely to have mental illnesses.

The study is expected to be completed by 2017.

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### WiSE Survey

#### Sampling Strategy

**Study Design:**
Cross-sectional epidemiological study

**Target population:**
All Singapore Residents, aged 60 years and older

**Source population:**
560,600 residents

**Sampling frame:**
National database of all residents in Singapore

**Sampling method:**
Disproportionate stratified sample

**Sample list:**
10,000 residents
Chinese 38.5%; Indian 30%; Malay 30%; Others 1.5%

**Required sample size:**
2500 residents

#### Study Population

**Inclusion criteria**
- Singapore citizens and PRs
- Respondent: Age ≥ 60 years
- Informant: Age ≥ 21 years
- Ethnicity: Chinese, Malay, Indian and Other ethnic groups

**Exclusion criteria**
- Not Singapore citizens / PRs
- Ineligible language
- Residence outside Singapore during the survey

#### Survey questionnaire

- 10/66 survey questionnaires
- Used extensively in over 12 countries
- GMS-AGECAT was used in the 2003 NMHS-E Study in Singapore
WiSE Survey

- The field work for the survey was completed in **Nov 2013**
- A total of **4986** interviews were completed
- Elderly residents: **2565**, Informants: **2421**
Response Rate

• 5 replicates with a total of 4700 residents were released to the field.

• Of these, 787 were ineligible due to ineligible language, resident out of the country, vacant housing unit, etc.

• Of the remaining 3913 residents, 2565 participated in the survey.

• Response rate: Overall: 65.6%

Weight Adjustment

The sample was adjusted to the population using appropriate weights.
Second Level Assessment

• All clinicians who were part of the study team met to decide on structured format and logistics for second-level clinical assessment.

• Clinical DSM-IV criteria was used to validate dementia diagnosis obtained from survey questionnaires.

• Except for 2 team members involved in case selection, all raters were blinded to the diagnosis.

• Clinicians made home-visits with a team member to conduct the clinical assessment.

• Altogether 133 cases and non-cases were assessed.

• **High sensitivity and specificity was established.**
WiSE: A Rich Data Source

- Prevalence of dementia
- Prevalence of chronic conditions
- Risk factors for dementia
- Disability
- Economic cost of care
- Care arrangement and caregivers’ burden
- Database of respondents willing for re-contact

Images will go in for each point, but the size was too big, hence deleted them from this file.
WiSE: A Rich Data Source

- Prevalence of dementia
- Prevalence of chronic conditions
- Risk factors for dementia
- Economic cost of care
- Database of respondents willing for re-contact
- Disability
- Care arrangement and caregivers’ burden
Chronic conditions and associated disability: Background

• Chronic conditions refer to both physical and mental disorders.

• Comorbidity or the presence of two or more chronic conditions that affect a person at the same time, are very common among the elderly.

• One in four older adults have at least two chronic conditions and more than half of older adults have three or more chronic conditions.

• Chronic conditions and comorbidities interact in complex ways resulting in difficulties in performing daily tasks and activities, therefore impacting on or determining the need for care.

• They are also associated with adverse health outcomes, including higher mortality, reduced functioning, unnecessary and/or prolonged hospitalizations, higher cost per discharge and adverse drug events.
Chronic conditions and associated disability: Method

Following informant was collected

- From either elderly respondent or informant
- Self-report on chronic conditions: “Have you (your relative) ever been told by a doctor that you have .... and a list of chronic conditions was provided.
- WHO-DAS – II for assessing health and disability in six domains
  - Cognition – understanding & communicating
  - Mobility– moving & getting around
  - Self-care– hygiene, dressing, eating & staying alone
  - Getting along– interacting with other people
  - Life activities– domestic responsibilities, leisure, work & school
  - Participation– joining in community activities
# Chronic conditions and associated disability: Results

<table>
<thead>
<tr>
<th>Condition</th>
<th>n</th>
<th>Adj. %</th>
<th>WHODAS disability score</th>
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</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>1478</td>
<td>60.6</td>
<td>13.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>772</td>
<td>26.4</td>
<td>14.3</td>
</tr>
<tr>
<td>Heart Problems</td>
<td>426</td>
<td>13.0</td>
<td>18.9</td>
</tr>
<tr>
<td>Depression</td>
<td>232</td>
<td>8.3</td>
<td>18.7</td>
</tr>
<tr>
<td>Stroke</td>
<td>192</td>
<td>7.6</td>
<td>38.8</td>
</tr>
<tr>
<td>COPD</td>
<td>135</td>
<td>5.7</td>
<td>18.3</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>53</td>
<td>2.3</td>
<td>20.8</td>
</tr>
<tr>
<td>TIAs</td>
<td>69</td>
<td>1.9</td>
<td>28.7</td>
</tr>
</tbody>
</table>
Care arrangement and Caregivers’ burden: Background

Why have Caregivers become so Important?

- More Older Adults
- Prefer to Stay at Home
- Increased Need for caregivers
Care arrangement and Caregivers’ burden: Background

Caregiving is . . . .

- Paying Bills
- Running Errands
- Feeding Someone
- Checking on Someone
- Worrying about Someone
- Bathing Someone

and much, much more...
**Care arrangement and Caregivers’ burden: Method**

**During the WiSE survey**
- One informant or caregiver was interviewed for each elderly respondent.
- The informant / caregiver was someone who knew the elderly respondent well and was either a ‘hands-on’ (directly provided care) or ‘organisational’ caregiver (made care arrangements and decisions)
- Informants were aged 21 years and above

**Informant interview included**
- **Neuropsychiatric Inventory (NPI-Q)** (to assess behavioural and psychiatric symptoms of dementia in the elderly and associated distress in the caregivers)
- **Self-reporting questionnaire (SRQ-20)** to assess emotional problems in the caregivers
- **Zarit Burden Inventory (ZBI)** (for caregivers’ burden)
- Report on care needs and care arrangements of the elderly
Study Limitations

• Most interviews were conducted in household settings, few conducted in care settings (only 18).

• Non-response rate of 34%.

• Cross-sectional design that precludes establishment of causal relationships.

• Medical data not accessed thus there could be over-reporting of treatment gap and under reporting of care.