National Health & Morbidity Survey 2015; NCD Risk Factors

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Introduction

- The National Health and Morbidity Survey (NHMS) is a nationally representative health survey of population in Malaysia.

- NHMS was first initiated in 1986. The 2nd NHMS was conducted ten years later in 1996 than followed by the 3rd NHMS in 2006.

- The Minister of Health had suggested a more frequent survey to ensure timely information for policy makers particularly to support the implementation of health care transformation and the 5-yearly Malaysia Plan.
Introduction

- Starting from 2011, the survey was planned to be conducted as 4 yearly cycles with annual data collection (2011-2014).

- NHMS 2015 was conducted as the first survey in a new cycle of NHMS (2015-2018).
Objectives

- To supplement community-based data on the pattern of common health problems, health needs and expenditure on health in the community to enable the Ministry of Health to review priorities and activities of programmes, plan future allocation of resources.
Scopes of NHMS 2015

1. Healthcare Demand

2. Non-Communicable Diseases & NCD risk factors
   a. Non-Communicable Diseases
      • Diabetes Mellitus
      • Hypertension
      • Hypercholesterolemia
   b. NCD risk factors
      • Nutritional Status & Obesity
      • Dietary Practice
      • Physical Activity
      • Smoking

3. Family Health

4. Others
A. Non-Communicable Diseases

I. Diabetes Mellitus
II. Hypertension
III. Hypercholesterolemia
I. DIABETES MELLITUS

Prevalence of Diabetes, ≥18 years

- Known DM: 8.3%
- Undiagnosed DM: 9.2%
- Total DM: 17.5%
- 3.5 million people affected
Trend of Diabetes, ≥ 18 Years
## Prevalence of Diabetes, ≥18 Years, By Age Groups (NHMS, 2015)

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Known</th>
<th>Undiagnosed</th>
<th>Total diabetes</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-19</td>
<td>5.5</td>
<td>0.7</td>
<td>5.5</td>
</tr>
<tr>
<td>20-24</td>
<td>5.9</td>
<td>1.4</td>
<td>7.3</td>
</tr>
<tr>
<td>25-29</td>
<td>7.4</td>
<td>3.4</td>
<td>10.8</td>
</tr>
<tr>
<td>30-34</td>
<td>8.9</td>
<td>3.4</td>
<td>12.3</td>
</tr>
<tr>
<td>35-39</td>
<td>10.6</td>
<td>3.4</td>
<td>14.0</td>
</tr>
<tr>
<td>40-44</td>
<td>12.9</td>
<td>6.9</td>
<td>19.8</td>
</tr>
<tr>
<td>45-49</td>
<td>17.6</td>
<td>11.0</td>
<td>28.6</td>
</tr>
<tr>
<td>50-54</td>
<td>22.0</td>
<td>14.8</td>
<td>36.8</td>
</tr>
<tr>
<td>55-59</td>
<td>27.0</td>
<td>12.4</td>
<td>39.4</td>
</tr>
<tr>
<td>60-64</td>
<td>32.9</td>
<td>11.8</td>
<td>44.7</td>
</tr>
<tr>
<td>65-69</td>
<td>38.3</td>
<td>13.6</td>
<td>51.9</td>
</tr>
<tr>
<td>70-74</td>
<td>38.0</td>
<td>11.2</td>
<td>49.2</td>
</tr>
<tr>
<td>≥75</td>
<td>39.1</td>
<td>12.6</td>
<td>51.7</td>
</tr>
</tbody>
</table>

- Known prevalence of diabetes
- Undiagnosed prevalence of diabetes
- Total prevalence of diabetes

**Chart:** Prevalence of diabetes by age group, showing the percentage of known, undiagnosed, and total diabetes cases across different age ranges from 18 to 75 years and older.
Prevalence of Diabetes, ≥18 Years, by Sex (NHMS, 2015)

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Known DM</td>
<td>7.6</td>
<td>9.1</td>
</tr>
<tr>
<td>Undiagnosed DM</td>
<td>9.1</td>
<td>9.2</td>
</tr>
<tr>
<td>Total DM</td>
<td>16.7</td>
<td>18.3</td>
</tr>
</tbody>
</table>

Prevalence (%)
### Prevalence of Diabetes, ≥18 Years, by Ethnicity (NHMS, 2015)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Total Diabetes</th>
<th>Known Diabetes</th>
<th>Undiagnosed DM</th>
<th>IFG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malay</td>
<td>14.6</td>
<td>9.0</td>
<td>9.8</td>
<td>5.2</td>
</tr>
<tr>
<td>Chinese</td>
<td>12.0</td>
<td>7.7</td>
<td>7.7</td>
<td>3.8</td>
</tr>
<tr>
<td>Indian</td>
<td>10.7</td>
<td>6.8</td>
<td>8.6</td>
<td>3.1</td>
</tr>
<tr>
<td>Other Bumiputras</td>
<td>7.4</td>
<td>2.5</td>
<td>8.1</td>
<td>4.3</td>
</tr>
<tr>
<td>Other</td>
<td>10.0</td>
<td>7.7</td>
<td>11.9</td>
<td>7.7</td>
</tr>
</tbody>
</table>

- **Total Diabetes**: Total number of people with diabetes, known and undiagnosed, excluding IFG.
- **Known Diabetes**: People with diabetes who are diagnosed and treated.
- **Undiagnosed DM**: People with diabetes who are not aware of their condition.
- **IFG**: Impaired Fasting Glucose, a condition where blood sugar levels are high but not high enough to be diagnosed with diabetes.
Prevalence of Diabetes, ≥18 Years, By Locality (NHMS 2015)

Prevalence (%)
II. HYPERTENSION

Prevalence of Hypertension, ≥18 years

NHMS 2015

Known Hpt
13.1%

Undiagnosed Hpt
17.2%

Total Hpt
30.3%
6.1 million people affected!!
Trend of Hypertension, ≥ 18 Years
Trend of Hypertension, ≥ 30 Years
Prevalence of Hypertension, ≥18 Years by Age Groups, (NHMS, 2015)
Prevalence of Hypertension, ≥18 Years By Sex, (2015)
Prevalence of Hypertension, ≥18 Years By Ethnicity, (NHMS, 2015)
Prevalence of Hypertension, ≥18 Years
By Locality, (NHMS, 2015)

<table>
<thead>
<tr>
<th>Prevalence (%)</th>
<th>Urban</th>
<th>Rural</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total hypertension</td>
<td>29.3</td>
<td>33.5</td>
</tr>
<tr>
<td>Known</td>
<td>13.2</td>
<td>12.8</td>
</tr>
<tr>
<td>Undiagnosed</td>
<td>16.1</td>
<td>20.7</td>
</tr>
</tbody>
</table>
Prevalence of Hypertension, ≥18 Years
By State, NHMS(2011 & 2015)
Prevalence of Hypercholesterolemia, ≥18 years, NHMS 2015

- Known hypercholesterolemia: 9.1%
- Undiagnosed hypercholesterolemia: 38.6%

Total hypercholesterolemia: 47.7%
9.6 million people affected!!

4 out 5 affected people were unknown cases

Prevalence (%)

<table>
<thead>
<tr>
<th>Year</th>
<th>NHMS 1996</th>
<th>NHMS 2006</th>
<th>NHMS 2011</th>
<th>NHMS 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHMS 1996</td>
<td>11.7</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHMS 2006</td>
<td></td>
<td>28.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NHMS 2011</td>
<td></td>
<td></td>
<td>43.9</td>
<td></td>
</tr>
<tr>
<td>NHMS 2015</td>
<td></td>
<td></td>
<td></td>
<td>56.8</td>
</tr>
</tbody>
</table>
Prevalence of Hypercholesterolemia, ≥18 Years by Age Groups, (NHMS, 2015)
Prevalence of Hypercholesterolemia, ≥18 Years By Sex, (NHMS, 2015)

- **Male**
  - Total Hypercholesterol: 43.5%
  - Known: 8.5%
  - Undiagnosed: 35.0%

- **Female**
  - Total Hypercholesterol: 52.2%
  - Known: 9.8%
  - Undiagnosed: 42.4%
Prevalence of Hypercholesterolemia, ≥18 Years
By Ethnicity, (2015)
Prevalence of Hypercholesterolemia, ≥18 Years By Locality, (2015)

- Overall Chol: Urban 47.7, Rural 47.7
- Known: Urban 9.7, Rural 7.1
- Undiagnosed: Urban 38.0, Rural 40.5
Prevalence of Hypercholesterolemia, ≥18 Years
By State, NHMS (2011 & 2015)
B. NCD RISK FACTORS

I. Nutritional Status including Obesity
II. Dietary Practices
III. Physical Activity
IV. Smoking
V. Alcohol consumption
I. NUTRITIONAL STATUS

(Aged ≥ 18 years old)
Trend of Overweight and Obesity, ≥18 Years

Prevalence of Overweight and Obesity, ≥18 Years by Sex (NHMS, 2015)

Prevalence (%)

<table>
<thead>
<tr>
<th></th>
<th>Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overweight Male</td>
<td>31.6</td>
</tr>
<tr>
<td>Overweight Female</td>
<td>28.3</td>
</tr>
<tr>
<td>Obesity Male</td>
<td>15.0</td>
</tr>
<tr>
<td>Obesity Female</td>
<td>20.6</td>
</tr>
</tbody>
</table>

- Overweight: Male (31.6%) > Female (28.3%)
- Obesity: Male (15.0%) < Female (20.6%)
### Prevalence of Overweight and Obesity, ≥18 Years by Ethnicity (NHMS, 2015)

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>Overweight</th>
<th>Obesity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malays</td>
<td>31.0</td>
<td>25.3</td>
</tr>
<tr>
<td>Chinese</td>
<td>28.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Indians</td>
<td>35.0</td>
<td>27.1</td>
</tr>
<tr>
<td>Bumiputras</td>
<td>31.2</td>
<td>18.0</td>
</tr>
<tr>
<td>Others</td>
<td>0.0</td>
<td>7.7</td>
</tr>
</tbody>
</table>

**Overweight:**
- Malays: 31.0%
- Chinese: 28.1%
- Indians: 35.0%
- Bumiputras: 31.2%
- Others: 0.0%

**Obesity:**
- Malays: 25.3%
- Chinese: 11.7%
- Indians: 27.1%
- Bumiputras: 18.0%
- Others: 7.7%
Prevalence of Overweight and Obesity, ≥18 Years by Locality (NHMS, 2015)
Prevalence of Obesity, ≥18 years
By State, NHMS (2011 & 2015)
NUTRITIONAL STATUS

(Aged < 18 years old)
Trend of BMI-For-Age, (Aged < 18 years old)
NHMS (2006*, 2011* & 2015**)
Prevalence of Body Mass Index for age * by Sex, (NHMS, 2015)

- Thinness (BMI for age <-2SD): Male 8.7%, Female 6.9%
- Normal (BMI for age -2SD < +2SD): Male 77.7%, Female 83.1%
- Obesity (BMI for age > +2SD): Male 13.6%, Female 10.0%
Prevalence of Body Mass Index for age * by Locality, (NHMS, 2015)

- Thinness (BMI for age <- 2SD): Urban 8.0, Rural 7.2
- Normal (BMI for age - 2SD - < + 2SD): Urban 79.8, Rural 81.6
- Obesity (BMI for age >> 2SD): Urban 12.1, Rural 11.2

* WHO 2006 & WHO 2007 Reference
II. DIETARY PRACTICES
Prevalence of Adequate Intake of Fruits or Vegetables (≥ 5 Servings) by Sex (NHMS, 2015)
Prevalence of Adequate Intake of Fruits or Vegetables (≥ 5 Servings) by Ethnicity (NHMS, 2015)
III. PHYSICAL ACTIVITY

- NHMS 2006 – respondents aged 18 years and above
- NHMS 2011 & 2015 – respondents aged 16 years and above
Prevalence Of Physically Active Adults by Locality, (NHMS, 2015)

Prevalence (%)

Urban: 65.0
Rural: 71.3
Prevalence of Physically Active Adults by Age Groups, (NHMS, 2015)
IV. TOBACCO USE
Prevalence of Current Tobacco Smoker by Sex, ≥ 18 Years (NHMS 2015)

- Male: 41.4%
- Female: 1.1%
Prevalence of Current Tobacco Smoker by Age Groups, ≥ 15 years, (NHMS, 2015)
Prevalence of Current Tobacco Smoker by Ethnicity, ≥ 15 years, (NHMS, 2015)
Prevalence of Current Tobacco Smoker by States, ≥ 15 years (NHMS 2015)
Thank You

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