7th NATIONAL NUTRITION SURVEY: 2008

Anthropometric Survey Component

Pre-school children, Adolescent, Adults, Pregnant and Lactating Mothers
Objectives:

- To assess the nutritional status of 0-10 year-old children, 11-19 year-olds, pregnant and lactating women, and other adults 20 years and over using anthropometric indicators of growth.

- To compare results from previous surveys.
METHODOLOGY

Height and weight measurements

Measurement of standing height using microtoise and recumbent length (<2 years) using infantometer

Measurement of weight using Detecto weighing scale
Cut-off points used in classifying the nutritional status of children, 0-10 years old, based on NCHS/WHO International Reference Standards

**Classification**

- Underweight / Short / Thin
- Average / Normal
- Overweight / Tall

**Cut-off Point**

- Weight-for-Age/
  - Height-for-Age/
  - Weight-for-Height
- Underweight / Short / Thin: <-2SD
- Average / Normal: -2SD to +2SD
- Overweight / Tall: >+2SD
RESULTS

Children, 0 to 5 Years Old
Percentage distribution of children, 0-5 years old, by nutritional status classification using NCHS/WHO IRS: Philippines, 2008
## Estimated number of malnourished 0-5 year-old children based on NCHS/WHO IRS

<table>
<thead>
<tr>
<th>Nutritional Status</th>
<th>Prevalence %</th>
<th>Estimated No. (in million)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>26.2</td>
<td>3.35</td>
</tr>
<tr>
<td>Underheight</td>
<td>27.9</td>
<td>3.57</td>
</tr>
<tr>
<td>Thinness</td>
<td>6.1</td>
<td>0.78</td>
</tr>
<tr>
<td>Overweight</td>
<td>2.0</td>
<td>0.26</td>
</tr>
</tbody>
</table>

*Using NSO 2008 Projected Population based on 2000 Census
Percentage of underweight-for-age children, 0-5 years old, by single-age group: Philippines, 2008

- 0yr.: 12.4%
- 1yr.: 30.3%
- 2yr.: 31.3%
- 3yr.: 28.4%
- 4yr.: 26.4%
- 5yr.: 28.1%
Percentage of underheight-for-age children, 0-5 years old, by single-age group: Philippines, 2008
Percentage of underweight-for-height children, 0-5 years old, by single-age group: Philippines, 2008

Percentage of underweight-for-height children, 0-5 years old, by single-age group: Philippines, 2008

% Prevalence

0yr. 1yr. 2yrs. 3yrs. 4yrs. 5yrs.

6.7 14.0 5.4 4.1 3.7 3.7

0 5 10 15 20 25 30
Percentage of underweight, underheight, and thin children, 0-5 years old, by single-age group: Philippines, 2008
WAZ distribution curves among children, 0-5 years old, using NCHS/WHO IRS: Philippines, 2005 and 2008
HAZ distribution curves among children, 0-5 years old, using NCHS/WHO IRS: Philippines, 2005 and 2008
WHZ distribution curves among children, 0-5 years old, using NCHS/WHO IRS: Philippines, 2005 and 2008

- Normal curve
- 2005
- 2008
Trends in the prevalence of malnutrition among children, 0-5 years old, using NCHS/WHO IRS: 1990-2008
Present trend and challenges ahead in the reduction of the prevalence of underweight-for-age among 0-5 year-old children using NCHS/WHO IRS

- 1990: 34.5%
- 1991: 34.0%
- 1992: 30.8%
- 1993: 32.0%
- 1994: 30.6%
- 1995: 26.9%
- 1996: 26.2%
- 1997: 24.6%
- 1998: -1.29%
- 1999: 17.2%

MDG
Prevalence of underweight children, 0-5 years old, by region: Philippines, 2008

Philippines: 26.2%
Prevalence of underheight children, 0-5 years old, by region: Philippines, 2008

Region

% Prevalence

Philippines: 27.9
Prevalence of thin children, 0-5 years old, by region: Philippines, 2008

- Philippines: 6.1%
Classification of worldwide prevalence ranges of low weight-for-age and low height-for-age among children, 0-5 year-old (WHO, 1995)

<table>
<thead>
<tr>
<th>PREVALENCE GROUP</th>
<th>Low weight-for-age (Underweight)</th>
<th>Low height-for-age (Underheight/Stunting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>&lt;10</td>
<td>&lt;20</td>
</tr>
<tr>
<td>Medium</td>
<td>10 – 19</td>
<td>20 – 29</td>
</tr>
<tr>
<td>High</td>
<td>20 – 29</td>
<td>30 – 39</td>
</tr>
<tr>
<td>Very High</td>
<td>&gt;30</td>
<td>&gt;40</td>
</tr>
</tbody>
</table>
Magnitude of underweight children, 0-5 year-old, by province: Philippines, 2008

Phil. Ave.: 26.2

<table>
<thead>
<tr>
<th>PREVALENCE GROUP</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>1</td>
<td>1.3</td>
</tr>
<tr>
<td>Medium</td>
<td>11</td>
<td>14.1</td>
</tr>
<tr>
<td>High</td>
<td>38</td>
<td>48.7</td>
</tr>
<tr>
<td>Very High</td>
<td>28</td>
<td>35.9</td>
</tr>
</tbody>
</table>

Legend
- Very High (>=30)
- High (20-29)
- Medium (10-19)
- Low (<10)
Magnitude of underheight children, 0-5 year-old, by province: Philippines, 2008

Phil. Ave.: 27.9

<table>
<thead>
<tr>
<th>PREVALENT GROUP</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>11</td>
<td>14.1</td>
</tr>
<tr>
<td>Medium</td>
<td>21</td>
<td>26.9</td>
</tr>
<tr>
<td>High</td>
<td>38</td>
<td>48.7</td>
</tr>
<tr>
<td>Very High</td>
<td>8</td>
<td>10.3</td>
</tr>
</tbody>
</table>

Legend
- Very High (>=40)
- High (30-39)
- Medium (20-29)
- Low (<20)
RESULTS

Children, 6 to 10 Years Old
Percentage distribution of children, 6-10 years old, by nutritional status classification using NCHS/WHO IRS: Philippines, 2008

- **Weight-for-Age**
  - Underweight/Underheight: 1.6%
  - Normal: 72.8%
  - Overweight/Tall: 25.6%

- **Height-for-Age**
  - Underweight/Underheight: 0.4%
  - Normal: 66.5%
  - Overweight/Tall: 33.1%
**Estimated number of malnourished 6-10 year-old children based on NCHS/WHO IRS: Philippines, 2008**

<table>
<thead>
<tr>
<th>Nutritional Status</th>
<th>Prevalence (%)</th>
<th>Estimated No. (in million)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>25.6</td>
<td>2.58</td>
</tr>
<tr>
<td>Underheight</td>
<td>33.1</td>
<td>3.34</td>
</tr>
<tr>
<td>Overweight</td>
<td>1.6</td>
<td>0.16</td>
</tr>
</tbody>
</table>

*Using NSO 2008 Projected Population based on 2000 Census*
Percentage of underweight-for-age children, 6-10 year-old, by single-age group: Philippines, 2008

- 6 yrs.: 29.2%
- 7 yrs.: 27.6%
- 8 yrs.: 25.3%
- 9 yrs.: 22.4%
- 10 yrs.: 23.6%
Percentage of underheight-for-age children, 6-10 year-old, by single-age group: Philippines, 2008
Percentage of overweight-for-age children, 6-10 year-old, by single-age group: Philippines, 2008

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 yrs.</td>
<td>1.7</td>
</tr>
<tr>
<td>7 yrs.</td>
<td>1.9</td>
</tr>
<tr>
<td>8 yrs.</td>
<td>1.8</td>
</tr>
<tr>
<td>9 yrs.</td>
<td>1.4</td>
</tr>
<tr>
<td>10 yrs.</td>
<td>1.2</td>
</tr>
</tbody>
</table>
Percentage of underweight, underheight and overweight children, 6-10 year-old, by single-age group: Philippines, 2008

Underweight-for-age:
- 6yrs.: 29.2%
- 7yrs.: 27.6%
- 8yrs.: 25.3%
- 9yrs.: 22.4%
- 10yrs.: 23.6%

Underheight-for-age:
- 6yrs.: 1.7%
- 7yrs.: 1.9%
- 8yrs.: 1.8%
- 9yrs.: 1.4%
- 10yrs.: 1.2%

Overweight-for-age:
- 6yrs.: 29.1%
- 7yrs.: 32.6%
- 8yrs.: 32.6%
- 9yrs.: 32.8%
- 10yrs.: 32.2%
WAZ distribution curves among children, 6-10 years old, using NCHS/WHO IRS: Philippines, 2005 and 2008
HAZ distribution curves among children, 0-5 years old, using NCHS/WHO IRS: Philippines, 2005 and 2008
Trends in the prevalence of malnutrition among children, 6-10 years old, using NCHS/WHO IRS: 1990-2008
Present trend and challenges ahead in the reduction of the prevalence of underweight-for-age among 6-10 year-old children using NCHS/WHO IRS
Prevalence of underweight children, 6-10 years old, by region: Philippines, 2008

Region

Philippines: 25.6
Prevalence of underheight children, 6-10 years old, by region: Philippines, 2008

Philippines: 33.1
Magnitude of underweight children, 6-10 year-old, by province: Philippines, 2008

Phil. Ave.: 25.6

<table>
<thead>
<tr>
<th>PREVALENCE GROUP</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>3</td>
<td>3.8</td>
</tr>
<tr>
<td>Medium</td>
<td>14</td>
<td>17.9</td>
</tr>
<tr>
<td>High</td>
<td>35</td>
<td>44.9</td>
</tr>
<tr>
<td>Very High</td>
<td>26</td>
<td>33.3</td>
</tr>
</tbody>
</table>

Legend
- Very High (≥30)
- High (20-29)
- Medium (10-19)
- Low (<10)
Magnitude of underheight children, 6-10 year-old, by province: Philippines, 2008

Phil. Ave.: 33.1

<table>
<thead>
<tr>
<th>PREVALENCE GROUP</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td>4</td>
<td>5.1</td>
</tr>
<tr>
<td>Medium</td>
<td>18</td>
<td>23.1</td>
</tr>
<tr>
<td>High</td>
<td>31</td>
<td>39.7</td>
</tr>
<tr>
<td>Very High</td>
<td>25</td>
<td>32.1</td>
</tr>
</tbody>
</table>

Legend
- Very High (>=40)
- High (30-39)
- Medium (20-29)
- Low (<20)
RESULTS
Pre-adolescents / Adolescents, 11 to 19 Years Old
Cut-off points used in classifying the nutritional status of adolescents, 11-19 years old based on BMI-for-age (Must, et.al)

**Classification**
- Underweight
- Mild
- Normal
- Overweight

**Cut-off Point**
- <P5
- P5 to <P15
- P15 to P85
- >P85
Percentage distribution of adolescents, 11-19 years old, by nutritional status classification using BMI-for-age: Philippines, 2008

- Male:
  - Underweight: 21.7%
  - Mild: 14.8%
  - Normal: 52.5%
  - Overweight: 11.7%

- Female:
  - Underweight: 21.1%
  - Mild: 14.8%
  - Normal: 69.0%
  - Overweight: 11.7%

- Both:
  - Underweight: 18.1%
  - Mild: 17.0%
  - Normal: 60.3%
  - Overweight: 11.7%

- Percentage distribution for both genders combined.

<table>
<thead>
<tr>
<th>Gender</th>
<th>2005</th>
<th>2008</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>20.5</td>
<td>21.7</td>
</tr>
<tr>
<td>Female</td>
<td>11.1</td>
<td>11.7</td>
</tr>
<tr>
<td>Both</td>
<td>16.0</td>
<td>17.0</td>
</tr>
</tbody>
</table>
Comparison in the prevalence of overweight among 11-19 years old by gender: Philippines, 2005 & 2008
Prevalence of underweight adolescents, 11-19 years old by region: Philippines, 2008

- Philippines: 17.0

% Prevalence

Region

I 17.2
II 13.0
III 18.2
CAR 18.9
NCR 17.7
IV-A 19.1
IV-B 21.1
V 20.8
VI
VII 16.1
VIII 15.3
IX 16.6
X 12.0
XI 14.8
XII 12.6
CARAGA 13.0
ARMM 15.5
RESULTS

Adults, 20 years old and above
Cut-off points used in classifying the nutritional status of adults, 20 years old and above, based on BMI WHO

<table>
<thead>
<tr>
<th>Classification</th>
<th>Cut-off Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic Energy Deficient</td>
<td>&lt;18.5</td>
</tr>
<tr>
<td>Normal</td>
<td>18.5 to &lt;25.0</td>
</tr>
<tr>
<td>Overweight</td>
<td>25.0 to 30.0</td>
</tr>
<tr>
<td>Obese</td>
<td>&gt;30</td>
</tr>
</tbody>
</table>
Percent distribution of adults, 20 years old and over, by age group and BMI classification: Philippines, 2008

<table>
<thead>
<tr>
<th>Age Group</th>
<th>CED</th>
<th>Normal</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-29y</td>
<td>13.7</td>
<td>70.3</td>
<td>2.9</td>
<td>13.1</td>
</tr>
<tr>
<td>30-39y</td>
<td>7.2</td>
<td>62.3</td>
<td>6.1</td>
<td>24.4</td>
</tr>
<tr>
<td>40-49y</td>
<td>7.2</td>
<td>59.7</td>
<td>6.8</td>
<td>26.3</td>
</tr>
<tr>
<td>50-59y</td>
<td>11.5</td>
<td>57.5</td>
<td>6.3</td>
<td>24.8</td>
</tr>
<tr>
<td>60-69y</td>
<td>17.7</td>
<td>57.5</td>
<td>4.6</td>
<td>20.1</td>
</tr>
<tr>
<td>≥70y</td>
<td>27.0</td>
<td>56.2</td>
<td>2.4</td>
<td>14.4</td>
</tr>
</tbody>
</table>
Comparison in the prevalence of CED and overweight among adults, 20 years & over: Philippines, 2003 & 2008

- CED:
  - 2003: 12.3%
  - 2008: 11.6%

- Overweight/Obese:
  - 2003: 24.0%
  - 2008: 26.6%
Prevalence of CED among adults, 20 years old and over, by region: Philippines, 2008

<table>
<thead>
<tr>
<th>Region</th>
<th>Prevalence %</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>14.4</td>
</tr>
<tr>
<td>II</td>
<td>13.0</td>
</tr>
<tr>
<td>III</td>
<td>11.1</td>
</tr>
<tr>
<td>CAR</td>
<td>8.0</td>
</tr>
<tr>
<td>NCR</td>
<td>9.6</td>
</tr>
<tr>
<td>IV-A</td>
<td>11.5</td>
</tr>
<tr>
<td>IV-B</td>
<td>14.1</td>
</tr>
<tr>
<td>V</td>
<td>14.6</td>
</tr>
<tr>
<td>VI</td>
<td>15.4</td>
</tr>
<tr>
<td>VII</td>
<td>9.7</td>
</tr>
<tr>
<td>VIII</td>
<td>9.1</td>
</tr>
<tr>
<td>IX</td>
<td>12.7</td>
</tr>
<tr>
<td>X</td>
<td>9.4</td>
</tr>
<tr>
<td>XI</td>
<td>10.3</td>
</tr>
<tr>
<td>XII</td>
<td>10.6</td>
</tr>
<tr>
<td>CARAGA</td>
<td>9.1</td>
</tr>
<tr>
<td>ARMM</td>
<td>13.6</td>
</tr>
</tbody>
</table>

Philippines: 11.6
## Prevalence of overweight and obese adults, 20 years old and over, by region: Philippines, 2008

<table>
<thead>
<tr>
<th>Region</th>
<th>% Prevalence</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>19.6</td>
</tr>
<tr>
<td>II</td>
<td>18.7</td>
</tr>
<tr>
<td>III</td>
<td>23.8</td>
</tr>
<tr>
<td>CAR</td>
<td>24.4</td>
</tr>
<tr>
<td>NCR</td>
<td>24.8</td>
</tr>
<tr>
<td>IV-A</td>
<td>23.3</td>
</tr>
<tr>
<td>IV-B</td>
<td>23.3</td>
</tr>
<tr>
<td>V</td>
<td>16.8</td>
</tr>
<tr>
<td>VI</td>
<td>16.2</td>
</tr>
<tr>
<td>VII</td>
<td>17.5</td>
</tr>
<tr>
<td>VIII</td>
<td>22.4</td>
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<td>IX</td>
<td>19.2</td>
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<td>X</td>
<td>23.1</td>
</tr>
<tr>
<td>XI</td>
<td>23.4</td>
</tr>
<tr>
<td>XII</td>
<td>20.9</td>
</tr>
<tr>
<td>CARAGA</td>
<td>23.9</td>
</tr>
<tr>
<td>ARMM</td>
<td>14.3</td>
</tr>
</tbody>
</table>

**Philotippines**: 26.6
RESULTS

Pregnant and Lactating Mothers
Cut-off points used in classifying pregnant women based on weight-for-height (Magbitang, 1988)

**Classification**

- Nutritionally at-risk: $< P_{95}$
- Not Nutritionally at-risk: $> P_{95}$
Percentage distribution of pregnant women by nutritional status and by age group: Philippines, 2008

- **< 20 y**: 35.1% at-risk, 64.9% not at-risk
- **≥ 20 y**: 25.1% at-risk, 74.9% not at-risk
- **All**: 26.3% at-risk, 73.7% not at-risk
Percentage distribution of pregnant women by nutritional status: Philippines 2005 and 2008

- 2005:
  - Nutritionally-at-risk: 28.4%
  - Not nutritionally-at-risk: 71.6%

- 2008:
  - Nutritionally-at-risk: 26.3%
  - Not nutritionally-at-risk: 73.7%
Prevalence of nutritionally at-risk pregnant women, by region: Philippines, 2008

Region

Philippines: 26.3

% Prevalence

Region

I  II  III  CAR  NCR  IV-A  IV-B  V  VI  VII  VIII  IX  X  XI  CARAGA  ARMM

31.2  28.9  24.4  16.9  21.8  30.0  40.0  31.0  20.8  22.2  31.6  22.8  16.8  29.2  34.3
Cut-off points used in classifying nutritional status of lactating mothers based on BMI for adults (NCHS/WHO, 1978) and BMI-for-age for adolescents (Must, 1991)

<table>
<thead>
<tr>
<th>Classification</th>
<th>Adolescents</th>
<th>Adults</th>
</tr>
</thead>
<tbody>
<tr>
<td>Underweight</td>
<td>&lt; P5</td>
<td>&lt; 18.5</td>
</tr>
<tr>
<td>Mild</td>
<td>P5 to &lt; P15</td>
<td>18.5 to &lt; 25.0</td>
</tr>
<tr>
<td>Normal</td>
<td>P15 to P85</td>
<td>18.5 to &lt; 25.0</td>
</tr>
<tr>
<td>Overweight</td>
<td>&gt; P85</td>
<td>25.0 to &lt; 30.0</td>
</tr>
<tr>
<td>Obese</td>
<td></td>
<td>&gt; 30.0</td>
</tr>
</tbody>
</table>
Percentage distribution of lactating mothers by nutritional status and by age group: Philippines, 2008
Percentage distribution of lactating mothers by nutritional status: Philippines, 2005 and 2008

- Underweight: 13.9% in 2005, 13.0% in 2008
- Normal: 66.3% in 2005, 70.9% in 2008
- Overweight: 19.8% in 2005, 16.1% in 2008
Prevalence of underweight lactating mothers, by region: Philippines, 2008

Region

Philippines: 13.0

% Prevalence

0 5 10 15 20

I II III CAR NCR IV-A IV-B V VI VII VIII IX X XI XII CARAGA ARMM
Undernutrition (base on weight-for-age and height-for-age) remains to be a public health problem, affecting nearly 3 out of 10 children.

Between 2005 and 2008, the proportion of undernourished children has significantly increased, particularly more prevalent in selected provinces in MIMAROPA, Bicol, and selected areas in Visayas and Mindanao.
About 2 out of 10 children are overweight (base on weight-for-age). However, this remains to be the same from 2005.

Underweight is nearly 2 out of every 10 adolescents (base on BMI-for-age), with males being more at-risk than females.
Among adolescents, 11 to 19 years old

- Between 2005 and 2008, undernutrition among this age group has significantly increased while overnutrition has decreased.

- Regions found to be most at-risk to undernutrition among adolescents are MIMAROPA, Bicol, and Western Visayas.
About 1 in every 10 adults are chronic energy deficient, while 3 out of 10 are overweight.

The proportion of CED has decreased while overweight and obese has increased between 2003 and 2008.

CED is more prevalent among the regions in Ilocos, Cagayan, MIMAROPA, Bicol, Western Visayas, Zamboanga Peninsula, and ARMM.
Between 2005 and 2008, the proportion of nutritionally at-risk pregnant women has significantly decreased.

The nutritionally at-risk pregnant women are mostly found in Ilocos, MIMAROPA, Bicol, Western Visayas, Zamboanga Peninsula, and ARMM.

Undernutrition and overnutrition among lactating mothers have decreased significantly from 2005.
End of presentation.