Combating Obesity in the Emerging Economies: Malaysian Perspectives.

Mohd Ismail Noor FASc, FIUNS
President AOASO & MASO
Taylor’s University
Subang Jaya. Malaysia

UNU - IIGH International Conference
Obesity Crisis in Southeast Asia: Issues, Challenges, and Policy Pathways
17-18 May 2017
DK1 (Lecture Hall 1), Academic Block, Faculty of Medicine UKM
Outline of Presentation
(focus on Food Environment)

• Introduction
• Prevalence of Overweight and obesity
• Etiology of Obesity
• Obesity research in Malaysia
• Plan of Actions
• Activities to combat Obesity in Malaysia
• Challenges ahead
• Food for thoughts
NUTRITION TRANSITION IN MALAYSIA

• Malaysia is an upper middle income country with the national per capita income expanded more than 25-fold from US$402 (1970) to US$10,796 (2014).

• The accelerated phase of industrialisation and urbanisation in recent decades has inevitably marked changes in the Malaysian lifestyle, occupational patterns and dietary habits.

• These changes reflected in the morbidity and mortality patterns of the population.

(Nutrition Division, MOH)
MALAYSIAN SCENARIO BEFORE 2000’S...

• In 1970’s until 90’s great efforts are being made to combat communicable diseases and chronic nutrient deficiencies.

(Nutrition Division, MOH)
MALAYSIAN SCENARIO AFTER 2000’S...

• In 2000’s Malaysia has experienced an epidemiological transition from infectious diseases to growing prevalence of obesity and diet related non-communicable diseases (NCDs)

• Unhealthy dietary practices and lack of physical activity could be the contributing factors for overweight and obesity in the country, which affects nearly half of the adult population

Adult >18 years olds
- 48% (1:2)

School Children
7-12 years olds - 31.8% (1:3)

(Nutrition Division, MOH)

(NHMS 2015)
Prevalence

**Southeast Asia**
- Cambodia: Men 4.8, Women 7.6
- Indonesia: Men 1.3, Women 2.9
- Malaysia: Men 2.9, Women 5.4
- Maldives: Men 8.1, Women 8.3
- Myanmar: Men 4.5, Women 8.4
- Philippines: Men 4.1, Women 6.2
- Thailand: Men 1.5, Women 6.5
- Vietnam: Men 1.7, Women 4.8

**South Asia**
- Bangladesh: Men 3.4, Women 5.2
- Bhutan: Men 4.8, Women 3.8
- India: Men 2.2, Women 3.7
- Nepal: Men 2.7, Women 4.2
- Pakistan: Men 2.2, Women 4.5
- **High-Income Asia Pacific**
  - Brunei: Men 3.6, Women 5.3
  - Japan: Men 3.5, Women 4.2
  - Singapore: Men 3.3, Women 3.8
- South Korea: Men 3.8, Women 5.8
- **East Asia**
  - China: Men 2.1, Women 3.8
  - North Korea: Men 2.8, Women 4.3
  - Taiwan: Men 4.9, Women 5.8

**Notes:**
- Men
- Women
- Regional and National Estimates
- Prevalence of Obesity
- Asian Men and Women
- Aged ≥ 20 Years
- For 2013
- *The Lancet, Vol.384, 2014*

<table>
<thead>
<tr>
<th>Region</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>SOUTHEAST ASIA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>1.7</td>
<td>4.3</td>
</tr>
<tr>
<td>Indonesia</td>
<td>1.7</td>
<td>6</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.9</td>
<td>6</td>
</tr>
<tr>
<td>Maldives</td>
<td>2.8</td>
<td>7.2</td>
</tr>
<tr>
<td>Myanmar</td>
<td>2.1</td>
<td>4.2</td>
</tr>
<tr>
<td>Philippines</td>
<td>2.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Thailand</td>
<td>2.5</td>
<td>5.6</td>
</tr>
<tr>
<td>Vietnam</td>
<td>2.5</td>
<td>5.6</td>
</tr>
<tr>
<td><strong>SOUTH ASIA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bangladesh</td>
<td>1.5</td>
<td></td>
</tr>
<tr>
<td>Bhutan</td>
<td>2.3</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>2.5</td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>1.8</td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>1.7</td>
<td></td>
</tr>
<tr>
<td><strong>HIGH-INCOME ASIA PACIFIC</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brunei</td>
<td>1.6</td>
<td></td>
</tr>
<tr>
<td>Japan</td>
<td>2.7</td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>2.4</td>
<td></td>
</tr>
<tr>
<td>South Korea</td>
<td>3.1</td>
<td></td>
</tr>
<tr>
<td><strong>EAST ASIA</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>North Korea</td>
<td>1.1</td>
<td></td>
</tr>
<tr>
<td>Taiwan</td>
<td>0.9</td>
<td></td>
</tr>
</tbody>
</table>

OBESITY TRENDS IN MALAYSIA

Prevalence of Overweight and Obesity

- **Overweight**
  - NHMS (1996): 4.4%
  - NHMS (2006): 16.6%
  - NHMS (2011): 29.4%
  - NHMS 2015: 30.0%

- **Obesity**
  - NHMS (1996): 16.6%
  - NHMS (2006): 29.1%
  - NHMS (2011): 29.1%
  - NHMS 2015: 17.7%
Etiology of Obesity
Influences on Energy Balance and Weight Gain

ENVIRONMENTAL & SOCIETAL INFLUENCES

Individual / Biological Susceptibility

Dietary & Physical Activity Patterns

ENERGY REGULATION

INTAKE

FAT
CHO
PROTEIN

GAIN
STABLE WEIGHT
LOSS

EXPENDITURE

ACTIVITY
TEF
BMR

BODY FAT STORES

WHO, 1998
The Global Paradox

While wealthy industrialized nations spend significant amount of money to convince their populations to replace dietary fats with a simpler diet based on grains, vegetables and fruits, the developing nations use their growing incomes to replace their traditional diets, rich in fibers and grains, with diets that include a greater proportion of fats and sugars.

Drewnowski & Popkin, 1997
Dietary fat + sugar induce weight gain:
Malaysian fat intakes up 80% and sugar up by 33% from the early 1960s

Obesity epidemic is inevitable unless policies to reduce intakes substantially from fat & sugar with spontaneous increases in activity are introduced now

Adapted from Bray & Popkin, AJCN 1998; 68: 1157-1173 with data from FAO 2005, CFNI and recent national surveys
Available calories for various food in Malaysia

Prof. Boyd Swinburn, WHO Consultant to MOH on Obesity Prevention
Filling the world’s belly
## Fast food industries in Malaysia – a selected list (2000)

<table>
<thead>
<tr>
<th>Brand (origin)</th>
<th>Year (Est)</th>
<th>No. of Outlets</th>
<th>Market Share (%)</th>
<th>Sales (RM million)</th>
</tr>
</thead>
<tbody>
<tr>
<td>KFC (USA)</td>
<td>1973</td>
<td>294/580</td>
<td>45</td>
<td>578.7</td>
</tr>
<tr>
<td>Mc Donald’s (USA)</td>
<td>1982</td>
<td>141/265</td>
<td>30</td>
<td>349.6</td>
</tr>
<tr>
<td>Pizza Hut’s (USA)</td>
<td>1984</td>
<td>85</td>
<td>8</td>
<td>120.0</td>
</tr>
<tr>
<td>A &amp; W (USA)</td>
<td>1961</td>
<td>44</td>
<td>4</td>
<td>47.8</td>
</tr>
<tr>
<td>Marry Brown (Local)</td>
<td>1981</td>
<td>88</td>
<td>4</td>
<td>NA</td>
</tr>
<tr>
<td>Sugar Bun (Local)</td>
<td>1981</td>
<td>45</td>
<td>*</td>
<td>36.1</td>
</tr>
<tr>
<td>Kenny Roger (USA)</td>
<td>1994</td>
<td>25</td>
<td>*</td>
<td>36.1</td>
</tr>
<tr>
<td>Domino’s Pizza (USA)</td>
<td>1997</td>
<td>17</td>
<td>*</td>
<td>NA</td>
</tr>
</tbody>
</table>

*Others combined 9%

Data from website for 2013-2014. No info. on other outlets, one can only assume it has increased too.

EDGE publication (2000)
Eating out: Meals

64.1% of the Malaysian individuals eat at least one meal per day outside of the home. 12.5% of individuals eating only at home have at least one meal that comes from outside.

Prof. JP Poulain – FBS Taylors University 2014
Research on Obesity
<table>
<thead>
<tr>
<th>Subjects</th>
<th>Age (yr)</th>
<th>Male</th>
<th>Female</th>
<th>PAL</th>
<th>WHO recommendation – PAL 1.75</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adolescent¹</td>
<td>12-14</td>
<td>5.08</td>
<td>4.80</td>
<td>1.55</td>
<td></td>
</tr>
<tr>
<td>Adolescent²</td>
<td>16-18</td>
<td>5.76</td>
<td>5.02</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Young Adults³</td>
<td>18-30</td>
<td>5.85</td>
<td>4.77</td>
<td>1.61</td>
<td></td>
</tr>
<tr>
<td>Adults³</td>
<td>30-60</td>
<td>5.66</td>
<td>4.79</td>
<td>1.68</td>
<td></td>
</tr>
<tr>
<td>Elderly⁴</td>
<td>&gt;60</td>
<td>4.92</td>
<td>4.37</td>
<td>1.50</td>
<td></td>
</tr>
<tr>
<td>Armed Forces⁵</td>
<td>20-30</td>
<td>5.74</td>
<td>NA</td>
<td>2.10</td>
<td>NA</td>
</tr>
<tr>
<td>Elite Athlete⁶</td>
<td>20-30</td>
<td>6.84</td>
<td>5.39</td>
<td>2.18</td>
<td>10.67</td>
</tr>
</tbody>
</table>

Overall Summary (based on local studies)

Malaysians have a sedentary lifestyle

- Energy cost of habitual activities are lower as compared to Caucasians
- Predictive Equation (FAO/WHO/UNU 1985) overestimates BMR of adults and adolescents between 9-13% and 1-10%, respectively
- In most studies, TDEE were found to be lower than the current RNI for energy.

With food available almost around the clock (in urban areas) ALL factors above adds up to be a “recipe for disaster” for Malaysians

(Ismail, 2000)
Daily Pedometer step count* of children aged 7-12 years

Both boys and girls had average step counts below recommendation

<table>
<thead>
<tr>
<th>Steps Count</th>
<th>Boys (n=254)</th>
<th>Girls (n=342)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9438±3647</td>
<td>8169±2440</td>
<td></td>
</tr>
</tbody>
</table>

* Assessed by using pedometer.

Recommended daily step counts for:
- Boys – 15000 steps/day
- Girls – 12000 steps/day


Percentage children aged 7 – 12 years achieving recommended daily step counts*

- More than 75% did NOT meet recommended daily step counts

- Boys: 78.3% Did not meet recommendation, 21.7% Met the recommendation
- Girls: 76.3% Did not meet recommendation, 23.7% Met the recommendation

* Recommended daily steps count for:
  - Boys – 13000 steps/day
  - Girls – 11000 steps/day


Mapping the Implementation of Priority Food Environment Policies to Tackle Diet-related NCDs in Malaysia: A situational analysis

Date : 11th April 2017 (Tue)
Venue : Taylor’s University, Lakeside Campus
Room : C6.04 - TGS’s Seminar Room 1
International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support (INFORMAS)

1. Global network of public-interest organizations and researchers.

2. Aims to monitor, benchmark and support public and private sector actions to create healthy food environments and reduce obesity, NCDs and their related inequalities.

Swinburn et al. (2013)
Food environment

Food environments

1. Physical (availability, quality, promotion)
2. Economic (costs)
3. Policy (rules)
4. Socio-cultural (norms, beliefs)

Diets

Swinburn et al. 2013
INFORMAS monitoring framework

How much progress have (international, national, state and local) governments made towards good practice in improving food environments and implementing obesity / NCDs prevention policies and actions?

*(University of Auckland)*
Food-EPI tool

Swinburn et al. 2013
Process driven by existing or formed National Coalition of informed public health non-government organisations and researchers

1. Context analysis
2. Collection of relevant policy documents
3. Policy scan to gather evidence
4. Validation of evidence by government officials
5. Rating of government policies and actions
6. Weighting and aggregation of scores and calculation of the Food-EPI
7. Qualifying comments and recommendations
8. Feedback of results

Swinburn et al, 2013
1. Malaysia Scorecard
2. Prioritised list of actions for the government
3. Technical reports dissemination to all government stakeholders (in particular Economic Planning Unit, Prime Minister’s Office)
4. Academic outputs
5. Plan is to repeat this assessment on a regular basis (~5-10 years)
6. International comparisons

Example: Scorecard for New Zealand
Mapping the implementation of priority food environment policies to tackle diet-related non-communicable diseases in South-East Asia: Comparison between three countries.”
Plan of Action & Research Priorities
THE NATIONAL PLAN OF ACTION FOR NUTRITION OF MALAYSIA (NPANM) SERIES

The NPANM series is Malaysia’s commitments towards the Declaration on Nutrition arising from the International Conference on Nutrition (ICN) held in Rome 1992 and 2014. The implementation of NPANM is using trans and multi-sectoral approach to address food & nutrition challenges in the country.

Based on analysis of the Malaysia nutrition situation, the NPANM I (1996-2000) was formulated to eliminate starvation and reduce malnutrition & micronutrient deficiencies.

Following the rapid demographic and nutrition transition in 21st century known to be associated with increase of prevalence of obesity and NCDs, the NPANM II was formulated to address double burden of malnutrition. It was also in line with the National Nutrition Policy of Malaysia (2003) strategies. Whilst, the NPANM III (2016-2025) is the continuity of the NPANM II and in accordance to the international, regional and national policies, frameworks & guidelines related with nutrition.

(Nutrition Division, MOH)
SUMMARY OF NPANM III, 2016 – 2025 INDICATORS
- 46 indicators
- 170 activities
- More than 70 ministries & agencies involved

Under nutrition and Food & Nutrition Security
(9 indicators)

Maternal, infant & Young child nutrition
(10 indicators)

Healthy Eating
(11 indicators)

Overweight, obesity & NCDs
(16 indicators)

(Nutrition Division, MOH)
Incorporating nutrition objectives, consideration and components into national development policies and action plans.

TOWARDS ACHIEVING OPTIMAL NUTRITIONAL WELL-BEING OF MALAYSIANS

Goal

Objectives

To ensure food and nutrition security
To enhance nutritional status
To reduce diet-related NCD

Promoting maternal, infant and young child nutrition
Promoting healthy eating and active living
Preventing and controlling nutritional deficiencies

Preventing and controlling obesity and other diet related NCD

Promoting sustainable food systems for healthy diets
Promoting food safety and quality

Enabling strategies

Facilitating strategies

Providing standard nutrition guidelines for various age groups
Promoting continuous assessment and monitoring of the nutrition situation
Strengthening food and nutrition research and development
Ensuring only appropriate qualified professional practices in nutrition and dietetic

Strengthening institutional and community capacity for nutrition

Foundation strategy

Incorporating nutrition objectives, consideration and components into national development policies and action plans.
Research Priority (Area 5) 2016-2020

Overweight and Obesity

Conceptual framework on the Purpose and Scope of Obesity Research Priority Area (TWG Research, NCCFN) 2016
Activities to Combat Obesity
Activities to combat Obesity in Malaysia

- ASM Task Force on Obesity
- Obesity Task Force chaired by Deputy DG of Health Malaysia (Policy Options for food and physical activities)
- Palm oil expert committee chaired by Deputy DG of Health Malaysia (PO labelled as “cheap source of fat”)
- National Plan of Action for Nutrition Malaysia (2016-2025) (Obesity prevention highlighted)
- Nutrition Research Priorities (2016-2020) (Obesity research priorities listed)
- MyBFF intervention programme in school, home and workplace
- Mygrants, Science Funds, international grants e.g. IAEA
- Prevention and Advocacy programmes by MOH
- MASO obesity camps
- NMM in April annually by NSM, MDA & MASO
ASM Report

Prioritizing Food Policy Options to Reduce Obesity in Malaysia
POLICY OPTIONS TO COMBAT OBESITY IN MALAYSIA
(Plan of Action)
Task Force on Obesity (MOH)
## Summary of Policy Options To Combat Obesity in Malaysia by category and settings

<table>
<thead>
<tr>
<th>No</th>
<th>Setting</th>
<th>Food</th>
<th>Physical Activity</th>
<th>Overarching</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Schools and Institution of Higher Education</td>
<td>6</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>Workplace</td>
<td>1</td>
<td>14</td>
<td>2</td>
</tr>
<tr>
<td>3</td>
<td>General / Population</td>
<td>19</td>
<td>13</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td><strong>TOTAL</strong></td>
<td><strong>26</strong></td>
<td><strong>29</strong></td>
<td><strong>3</strong></td>
</tr>
</tbody>
</table>
### An Example

<table>
<thead>
<tr>
<th>NO</th>
<th>POLICY OPTION</th>
<th>SETTINGS</th>
<th>JUSTIFICATION</th>
<th>LEAD AGENCIES</th>
<th>INDICATOR</th>
</tr>
</thead>
</table>
| 7  | Excise and/or GST on unhealthy foods (foods high in fats, salt and sugars) e.g.: sweetened creamer, condensed milk, sugar sweetened beverages (SSBs) carbonated drinks, juices, processed foods | General / Population  | • Excise duty on unhealthy foods especially sugar sweetened beverages (SSBs) is very important and its implementation in other countries has shown its impact in reducing the consumption of SSBs. The initiative is also in line with WHO recommendation.  
• This initiative can be implemented through a proposal to MOF by 2017, to be included in the 2018 Budget Speech. | MOH, MOF, Royal Malaysian Customs Department      | Included in Budget 2018 |
MASO Initiatives and other contributions

- Clinical Practice Guidelines on Management of Obesity 2004
- Strategy for the Prevention of Obesity - Malaysia 2005
- Recommended Nutrient Intakes for Malaysia 2005
- Malaysian Dietary Guidelines for Children and Adolescents 2010
- Malaysian Dietary Guidelines 2013
- Recommended Nutrient Intakes for Malaysia 2017
Challenges Ahead
Obesity is a complex, multi-faceted problem.
"Today’s food environments exploit people’s biological, psychological, social, and economic vulnerabilities, making it easier for them to eat unhealthy foods... Regulatory actions from governments and increased efforts from industry and civil society will be necessary to break these vicious cycles."

The Lancet Obesity, February 2015
FOOD CULTURE & DIETARY PRACTICES

- Malaysia being a food haven
- Malaysian culture – multi ethnicity
  - celebrations/functions
- Eating out culture
- Lack of supportive environment for healthy eating.
  - 24hrs food outlets & fast food restaurants
  - abundant supplies of processed foods in the market
  - uncontrolled of unhealthy food & beverages advertisement in all media.
- New phenomena – food trucks
  - social media viral post on unhealthy foods
It’s too late for supper

A new ruling by the Selayang Municipal Council will see more than 200 eateries in residential areas closing their doors by midnight. >283
Midnight food stalled

Minister in the Prime Minister’s Department Datuk Seri Shahidan Kassim wants restaurants and stalls near housing areas to close their doors by midnight to curb social ills. But patrons and late night workers say they will miss their late suppers and a place to hang out while watching football. > See Page 4 for report by MARTIN CARVALHO
MALAYSIA BOLEH!!!(A “Political Will” that MALAYSIA can do without and ill-afford!)
Prof Ismail, President MASO
Sunday STAR, 28 June 2015
THE FOOD SYSTEM

The big issue for nutrition

Carlos Monteiro, Geoffrey Cannon
Renata Bertazzi Levy, Rafael Claro, Jean-Claude Moubarac
Ana Paula Martins, Maria Laura Louzada, Larissa Baraldi, Daniela Canella,
Diana Parra, Carla Martins, Maluh Barciottte, Euridice Martines

Centre for Epidemiological Studies in Health and Nutrition (NUPENS)
School of Public Health, University of São Paulo. Brazil
Because of their ingredients, ultra-processed products are nutritionally unbalanced. As a result of their formulation and presentation, they tend to be consumed in excess, and to displace real foods. Their means of production, distribution, marketing, and consumption damage culture, social life, and the environment.

Brazilian Dietary Guidelines (2014)
The share of ultra-processed foods (% of energy) in national food baskets (1991-2010)

* Estimated from national household food expenditure surveys for Brazil (HBS), Canada (FOODEX), Chile (EPF), Colombia (ENIG), Peru (ENAPREF) Mexico (ENIGH), Uruguay (EGIH), and the Data Food Networking (DAFNE) for all European countries, except UK (LCF).
The challenge we faced

- The unmet needs for evidence-based actions that can cope up with the huge public health problem induced by the global epidemic of obesity are challenging.

- Population-based science in the obesity field frequently produce results that are in apparent conflict either with natural expectations or with other results from the same arena or from clinical or biological sciences.

- Obviously, this will often create obstacles to the translation of the results to public health actions.
Food For Thought!
“Absence of evidence does not necessarily mean evidence of absent!”
(good/best practices)
“Nagoya Declaration 2015”, in which a concept of “obesity disease” was proposed by JASSO and chaired by Prof. Ismail.
In a statement published today in the leading journal *Obesity Reviews*, the World Obesity Federation confirms its support for defining obesity as a chronic, relapsing disease. The statement was prepared by a scientific committee of the Federation which concluded that obesity fits the epidemiological model of a disease process except that the toxic or pathological agent is diet-related rather than a microbe.

*Wednesday May 10th, 2017, London*
A model showing the relation of obesity in the centre and the diseases with which it is associated.
The EIU report investigated direct cost (cost of healthcare) and indirect cost (productivity losses from absenteeism and early deaths) in selected ASEAN countries.

For Malaysia following data: direct cost 0.35 % of total GDP, indirect costs 0.75 % of total GDP.

Or as % of healthcare spending:
- 8.46 % direct cost and 18.16 % indirect costs.
- Obesity is costing Malaysia between US$4.0 to 7.0 Billion annually.

Note: The launching of the study report will be held on 6 June 2017 in Kuala Lumpur.
TREAT OBESITY SERIOUSLY!

Thank You

16-17 years

Adults

8 years

11 years

4 years

10 years