Tackling childhood obesity in Greece

‘A whole school approach’
Introduction

- Greece has one of the most rapidly rising death rates due to CVD in Europe
- One of the highest prevalences of overweight and obesity in Europe
- Dietary habits, sedentary lifestyle and limited health awareness of contemporary Greeks
- Accumulative evidence that these burdens of disease have their roots in childhood
- School-based nutrition and physical activity programmes have a strong preventive potential
Obesity in Greek Children

Source: Int J Obes, 2004:28 (Suppl 1); 72
Supporting policies

- WHO Global Strategy on Diet, Physical Activity and Health
  - Adopted by WHA 2004
  - 9 recommendations to address the risk factors that lead to chronic diseases including school policies to improve health literacy, promote a healthy diet and provide physical education and facilities

- European Network of Health Promoting Schools
  - Joint WHO-EC-CE project
  - Greece joined 1992

  - ‘schools provide a valuable opportunity to influence the dietary habits of young people at an influential stage in their life’ ‘most effective initiatives adopt a whole school approach’
Studies on childhood obesity in Greece

- **Hellenic Medical Association of Obesity (2004)**
  - First national epidemiological survey
  - N=18000 1-19yrs
  - 7-12yrs 11.9% overweight 8.6% obese
  - 13-19yrs 16.3% overweight 6.1% obese

- **Dept. of paediatrics ‘Ag Sofia’ Children’s hospital (2003)**
  - N=10 000 1-18yrs
  - Female 18 yr olds 2kg heavier than US counterparts
  - Male 18 yr olds 3 kg heavier than US counterparts

- **Panagia Hospital, Thessaloniki (2001)**
  - N=2 500 7-17yrs
  - Boys 25.9% overweight 5.1% obese
  - Girls 19.1% overweight 3.2% obese

- **HSBC Health Behaviour in School-Aged Children (1996)**
  - N=4 300
  - Boys 21.7% overweight 2.5% obese
  - Girls 9.1% overweight 2.5% obese
Nutrition policies & interventions in Greece

- **Statutory legislation**
  - Nutrition policy statement as part of environmental policy
  - No policy on fortification
- **Food based dietary guidelines (FBDG) (1999)**
  - Supreme Scientific Health Council
  - National Nutrition Policy Committee
  - To develop key strategy to tackle nutrition related issues
- **Hellenic Medical Association of Obesity**
- **Hellenic Heart Foundation**
- **Greek Network of Health Promoting Schools**
- **The Hellenic Ministry of Sports:**
  - Sports for All
  - Youth Sports

Stakeholder analysis matrix 1 – How are they affected by the obesity problem?

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>How affected</th>
<th>Capacity/motivation to participate in addressing the problem</th>
<th>Relationship with other stakeholders</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.Children</td>
<td>○ Potential ↓ concentration, hyperactivity &amp; psyc. stress (bullying)&lt;br&gt;○ Limited ability for PA – unhappy children, health problems</td>
<td>○ Mixed motivations</td>
<td>○ Partial or full cooperation with teachers</td>
</tr>
<tr>
<td>2.Headteachers/teachers</td>
<td>○ Difficulties in protecting ow/ob children from stigma and bullying&lt;br&gt;○ Affect school rating</td>
<td>○ High motivation</td>
<td>○ Full cooperation with children &amp; parents</td>
</tr>
<tr>
<td>3.Parent/Governor</td>
<td>○ Family may become frustrated when unable to tackle obesity</td>
<td>○ Mixed motivation</td>
<td>○ Willingness to collaborate with teachers &amp; children</td>
</tr>
</tbody>
</table>
Stakeholder analysis matrix 2 – How are they affected by the obesity problem?

<table>
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<tbody>
<tr>
<td>4. Food Industry</td>
<td>- Sales of high-fat, high sugar products</td>
<td>- None</td>
<td>- Profits, conflict with other stakeholders</td>
</tr>
<tr>
<td>5. Local GPs, paediatricians, dietitians</td>
<td>- More cases</td>
<td>- High workload</td>
<td>- Cooperation with parents, children</td>
</tr>
<tr>
<td>6. Media</td>
<td>- More educational programmes on obesity &amp; related diseases to ↑ awareness</td>
<td>- Mixed motivation, possible participation</td>
<td>- Possible cooperation with Gov. &amp; food industry</td>
</tr>
</tbody>
</table>
| 7. NGOs (Hellenic Med. Ass. Ob. & Hellenic Heart F.) | - Became more active, larger action plan to tackle obesity  
|                                           | - ↑ Research                                      | - Increased awareness & motivation                           | - Lack of partnership & cooperation with Gov. |
### Stakeholder analysis matrix 3 – How are they affected by the obesity problem?

<table>
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<tr>
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<td><strong>8. Govern./MoH</strong></td>
<td>o Obesity &amp; related diseases’ cost (prevention &amp; treatment)</td>
<td>o Not always encourage intervention</td>
<td>o Gaps in terms of cooperation with other stakeholders (NGOs &amp; indus)</td>
</tr>
<tr>
<td><strong>9. MoE</strong></td>
<td>o School ranking not as good as EU (re: physical education/activity etc)</td>
<td>o Mixed</td>
<td>o Co-operation with scientists &amp; researchers therefore funding other stakeholders (MoH)</td>
</tr>
<tr>
<td><strong>10. Peer Influence (Other children)</strong></td>
<td>o Indirect way</td>
<td>o Possible</td>
<td>o Depending on situation: encourage/discour obese peers</td>
</tr>
</tbody>
</table>
### Stakeholder analysis matrix 4 – How are they affected by the obesity problem?

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<tbody>
<tr>
<td><strong>11. Scientists/Researchers/National Nutrition Committee</strong></td>
<td>- Conduct more studies/surveys/projects to identify prevalence of obesity or evaluate the effectiveness of interventions</td>
<td>- High</td>
<td>- Working in collaboration with the food industry/MoH &amp; MoE &amp; NGOs avoiding bias &amp; corruption.</td>
</tr>
</tbody>
</table>
Problem tree – shift from traditional Greek diet

Effect

Shift from traditional Greek diet

Cause

- Lower micro nutrient levels being consumed
- Greater % of energy from fat and sugar
- Increased morbidity and mortality rates from chronic diseases
- Rising levels of obesity
- Energy intakes exceed requirements of lifestyle

- Availability/consumption of cheap energy dense processed foods
- Consumption of energy dense convenience foods
- Less prep of trad foods & lower consumption of high fibre trad foods i.e. pulses, cereals

- Globilisation & industrialisation
- Recovery from food scarcity, e.g. WWII
- Urbanisation

- More women working
- Higher disposable incomes
- Influence of aspirational food advertising
- Higher levels of education

- Higher morbidity and mortality rates from chronic diseases
Problem tree – less physical activity

Effect

Cause

Psycho-social problems

Increased morbidity and mortality rates from chronic diseases

Rising levels of obesity

Energy intakes exceed requirements of lifestyle

Less physical activity

Increased technology

> levels of OW/OB*

TV watching

Air pollution

Car ownership

Improved roads and public transport

Children more sedentary

Computer games/Internet

Less space for playgrounds

Playing outdoors less safe

More women working (less interaction)

Breakdown of traditional families and communities

Adults more sedentary

Increased white colour jobs

Higher disposable incomes

Higher levels of education

Urbanisation/Industrialisation

Greater % of body composition fat v. lean muscle

*OW – overweight, OB - obese
TO REDUCE OBESITY IN GREECE

To reduce the prevalence of overweight/obesity in primary school children aged 6-12 yrs by 10%, in Athens

Improve dietary habits

* Nutrition education
* ↑ accessibility of healthy snacks, F+V
* Healthy Schools’ Network Awards (incentives)
* Healthy snacks/recipes Newsletter (parents)
* Parents’ Evening
* Posters in classrooms
* Excursions (farms/factories)

Increase physical activity

* ↑ sports & physical education
* School courtyard gardens
* ↑ free piece of fruit/day/child
* After school farmers’ market (tasting & selling)
* School Mini-Olympics
* Posters in classrooms

* ↑ access to sports & recreational areas
* Excursions to Olympic facilities
* Bus transport/walks to local swimming pools
* Local council playgrounds (safe parks – Volunteer scheme)
* Famous sports celebrities involvement
## Project log frame

<table>
<thead>
<tr>
<th>Project Description</th>
<th>Key indicators</th>
<th>Means of verification</th>
<th>Assumptions</th>
</tr>
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<tbody>
<tr>
<td><strong>Goal</strong></td>
<td>To reduce obesity in Greece</td>
<td>Prevalence of obesity in Greece</td>
<td>Secondary data European union (EU) data National Institute of Child Health (Greece)</td>
</tr>
<tr>
<td><strong>Purpose</strong></td>
<td>To reduce the prevalence of overweight and obesity in Primary school children, aged 6-12 years, in Athens by 10% in 6 years.</td>
<td>% Reduction in the prevalence of obesity in children.</td>
<td>Surveys Growth charts/ BMI measurements School records Secondary data</td>
</tr>
<tr>
<td><strong>Objective 1</strong></td>
<td>To promote the principles of the Greek traditional Mediterranean diet using the whole school approach</td>
<td>No. of schools actively engaged in programme</td>
<td>Local Council/ Ministry of Education records Internal project evaluation records</td>
</tr>
</tbody>
</table>

Data is available, reliable & representative
Data has been triangulated
Baseline data is available
Stability of macro level factors

Good liaison between Education/Health authorities and project coordinators
## Objective 1: Promote Greek diet in schools

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<tr>
<td><strong>Output 1</strong></td>
<td>No. of students enrolled in N&amp;D yearly</td>
<td>University records</td>
<td>Pilot study is effective</td>
</tr>
<tr>
<td></td>
<td>No. of university students giving nutrition promotion talks.</td>
<td>School records/timetables</td>
<td>University of Athens and the schools are willing to continue with the programme</td>
</tr>
<tr>
<td></td>
<td>No. of hours per term allocated to nutrition education in primary schools</td>
<td>Staff evaluation forms</td>
<td>Culturally acceptable</td>
</tr>
<tr>
<td></td>
<td>No. of activities related to food and nutrition.</td>
<td>Quiz</td>
<td>Parents', teachers' &amp; children's cooperation</td>
</tr>
<tr>
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<td>% improvement in knowledge and awareness of nutrition amongst pupils &amp; teachers</td>
<td>Internal project evaluation records</td>
<td>Undergraduates are supervised by university staff member during lesson</td>
</tr>
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<td></td>
<td></td>
<td></td>
<td>KAP(knowledge-attitude-practice) is effective</td>
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## Objective 1: Promote trad diet in schools

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<td><strong>Output 2</strong></td>
<td>The accessibility of healthy snacks such as fruit and vegetables in schools will have been increased.</td>
<td>% increase in uptake of fruit &amp; vegetables in schools&lt;br&gt; % decrease in sales of 'unhealthy snacks' (foods high in saturated fats &amp; sugar)&lt;br&gt; Improvement in pupils concentration and behaviour&lt;br&gt; Improvement in children's grades</td>
<td>Sales records&lt;br&gt; Observational survey on healthy snack consumption&lt;br&gt; % reduction in 'unhealthy' snack litter (wrappers)&lt;br&gt; Programme's records (to form part of health intervention evaluation)&lt;br&gt; Observational/ staff feedback&lt;br&gt; School's records&lt;br&gt; Internal project evaluation records</td>
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## Objective 2: Increase physical activity amongst Athens school children

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<td>% Reduction in the prevalence of obesity in children.</td>
<td>Surveys&lt;br&gt;Growth charts/BMI measurements&lt;br&gt;School records&lt;br&gt;Secondary data</td>
</tr>
<tr>
<td><strong>Objective 2</strong></td>
<td>To increase physical activity in public primary school children in Athens</td>
<td>No. of schools actively engaged in programme</td>
<td>Local Council/Ministry of Education records&lt;br&gt;Internal project evaluation records</td>
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<td></td>
<td>Physical education undergraduate students will have been placed in all primary schools to teach the importance and benefits of regular physical activity (theory &amp; practical).</td>
<td>No. of students enrolled in Physical education degrees/diplomas yearly, No. of university students participating in physical education programme, No. of hours per term allocated to physical education, No. of activities related to PA per week, % improvement in knowledge and awareness of the importance &amp; benefits of PA amongst pupils &amp; teachers</td>
<td>University records, School records/timetables, Quizzes, Staff evaluation forms, Internal project evaluation records</td>
<td>Culturally acceptable, Parents', teachers' &amp; children's co-operation, KAP (knowledge-attitude-practice) is effective, Schools/ councils have facilities, University of Athens, Faculty of Physical Education are willing to comply, Undergraduates are supervised by university staff member during lesson</td>
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<td>Output 2: Increasing accessibility to facilities (ie. parks, open spaces, Olympic facilities)</td>
<td>% increase in uptake of sport/activities in schools, No. of areas available for PA, No. of sports equipment in school, % increase in sports budget, Improvement in pupils PA level</td>
<td>School sports records, Internal project evaluation records, School financial accounts, Observational/ staff feedback</td>
<td>Culturally acceptable, Parents’, teachers’ &amp; children’s co-operation, KAP is effective, Schools have facilities for PA</td>
</tr>
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Scientific evidence

- **Manios et al. (2002)**
  - School-based intervention in Crete
  - Case-control study over 6 years
  - Biological & behavioural parameters measured
  - Biochemical & anthrop. Indices significantly better than CG
  - Significantly lower increase in total energy, fat & sfa in IG than CG

- **Lock et al. (2005)**
  - Estimated impact of increasing F&V consumption to 600g/ day on the global burden of disease
  - Would reduce total worldwide burden by 1.8%
  - Ischaemic heart disease 31%, Ischaemic stroke 19%
  - Cancers: stomach 19%, oesophageal 20%, lung 12%, colorectal 2%
Summary

- University of Athens and Institute of child health, are key players in studying childhood obesity trends and therefore potential partners in school intervention strategy
- Low cost required due to lack of investment in nutrition by the government
- ‘Life course approach’: tackling child obesity prevents adult obesity
Potential funders

- MoE
- MoH
- Industry (olive oil)
- European Network of Health Promoting School:
  - WHO (and Member States)
  - EU
  - CE (Council of Europe)
  - Philanthropic Funders