

## 6.L. Pitch presentations: Food & Obesity

### Socio-demographic determinants of obesity in a cross-sectional study of adults in Cyprus

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#### Introduction

Obesity is one of the most important public health problems whilst its prevalence is increasing worldwide. Knowledge of socio-demographic determinants of obesity is important in designing targeted policies to reduce its prevalence and burden  
Aims: To investigate the prevalence and socio-demographic determinants of obesity in adults in Cyprus

#### Methods

This study was part of a health survey conducted in year 2009 amongst adults aged 24–65 years, using the Countrywide Integrated Non-communicable Diseases Intervention (CINDI) methodology. The study population was country representative and was selected based on a stratifying sampling approach. Height and weight were self-reported and obesity was defined as BMI > 30. Socio-demographic variables included age, gender, marital status, urbanization, occupational social class, family net income, employment status and educational attainment. Logistic regression models were used to investigate the association socio-demographic determinants and obesity adjusting for age and gender.

#### Results

The total number of participants was 3021 (46.1% male). The prevalence of obesity was 21.5% in males and 16.5% in females. Higher family net income and higher educational attainment were associated with reduced odds of obesity. For example university graduates were 2 times less likely to be obese compared to individuals that completed primary education (OR 0.43, 95% CI 0.26–0.72). Higher odds for obesity were associated with increasing age (p value for trend < 0.001) and with unemployment (OR 1.68, 95%CI 1.01–2.79) and being a housewife (OR 1.93, 95% CI 1.45; 2.57) as

opposed to full time employment. Interestingly, individuals residing in rural areas had 30% higher likelihood of being obese compared to those living in urban areas (OR 1.30, 95% CI 1.06–1.59).

#### Conclusion

The prevalence of obesity amongst adults in Cyprus is high whilst indicators associated with higher socioeconomic position seem to be protective

#### Key messages

- Obesity prevalence is high amongst male and female adults in Cyprus
- Socio-economic factors are important predictors of obesity prevalence amongst Cypriot adults

### Childhood overweight determinants related to the first year of life

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#### Background

Overweight in school aged children is a public health problem that has risen in recent decades. Recently, factors related to the first year of life have been proven to be decisive in occurrence of obesity during childhood. We aimed to determine the effect of various determinants of the 1st-year-of-life, in the occurrence of overweight (pre-obesity and obesity) during childhood.

#### Methods

Weight and height were assessed by trained health professionals, according to WHO guidelines, in samples of children from sentinel schools (56 in 2008 and 68 in 2010 and 2013) of the Northern Region of Portugal, of three data points of a time series – 2008, 2010 and 2013. Food, health, social and demographic variables were collected by direct application of

a questionnaire to parents. Risk assessment and statistical significance were performed by Logistic Regression analysis.

### Results

Children (1272 – 2008; 1321 – 2010; 1511 – 2013) aged between 6–10 years (mean:  $7.2 \pm 0.6$ ) were evaluated. 60.9%, 59.0% and 64.7% (2008, 2010 and 2013 respectively) of children were normal weight, whereas 39.1%, 41.0% and 35.3% (2008, 2010 and 2013 respectively) were overweight. Weight at birth higher or lower than recommended represented a risk factor for overweight (2008: OR 1.5 –  $p < 0.05$ ; 2010: OR 1.1 –  $p = 0.698$ ; 2013: OR 1.1 –  $p = 0.727$ ), as well as not breastfeeding or doing it only up to 5 months (2008: OR 1.2 –  $p = 0.231$ ; 2010: OR 1.2 –  $p = 0.218$ ; 2013: OR 1.1 –  $p = 0.673$ ). Protective factors were introduction of solid foods between 4–6 months (2010: OR 0.97 –  $p = 0.815$ ; 2013: OR 0.94 –  $p = 0.688$ ) and formula feeding  $\geq 6$  months of life (2010: OR 0.79 –  $p = 0.178$ ).

### Conclusion

These results point out determinants of overweight in childhood acting as risk factors, which can be targeted for preventive actions during the prenatal period and first year of life, as well as protective factors that determine normal weight, which are important to be promoted in pregnant women and infants.

### Key messages

- Healthy habits during the 1st year of life have a clear impact on the child's weight development, reducing the occurrence of overweight in childhood
- Good control of fetus development in uterus, breastfeeding until 6 months of age and introduction of solid foods between 4–6 months can reduce overweight in childhood, avoiding weight deviations

## Body mass index and waist-to-height ratio among Polish pupils with visual impairment –report 2014

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### Background

Obesity in young people with disabilities ranges between 18.4% - 40%. Visually impaired young people have limited access to various forms of health promotion programmes or physical activities. There is limited information about the prevalence of obesity, overweight and waist-to-height ratio (WHtR) among young blind people and those with low vision. The aim of the study was to assess the prevalence of overweight or obesity among pupils with visual impairment and the percentage of students demonstrating increased cardiometabolic diseases risk.

### Methods

A total of 238 blind and low vision pupils aged 7–23 (mean  $15.5 \pm 3.9$ ) attending special schools participated in the study. The majority (83.6%) were low vision persons and the rest were blind. Body mass index (BMI) results were interpreted in accordance with the IOTF in the 7- to 18-year-old group. Overweight was considered if  $25 \leq \text{BMI} < 30$  and obese if  $\text{BMI} \geq 30$ . The subjects were diagnosed with increased cardiometabolic risk when  $\text{WHtR} \geq 0.5$ .

### Results

18.5% of students were overweight and 7.1% obese and 31% of blind and 25% of low vision persons have excessive weight. Blind students are three times more at risk of being overweight than low vision students in the group of late adolescents ( $\text{ch}^2 = 6.131$ ;  $p = 0.013$ ). Every third male student and every

fifth female student was found to have  $\text{WHtR} \geq 0.5$  ( $\text{ch}^2 = 5.019$ ;  $p = 0.025$ ). 87.9% of male students and 67.8% of female students with obesity and overweight had detected increased cardiometabolic outcomes ( $\text{ch}^2 = 3.62$ ;  $p = 0.057$ ). Normal weight and concomitant  $\text{WHtR} \geq 0.5$  was observed in males three times more than females ( $\text{ch}^2 = 6.61$ ;  $p = 0.019$ ). The blind pupils had three times more normal weight and concomitant  $\text{WHtR} \geq 0.5$  than low vision ( $\text{ch}^2 = 1.68$ ;  $p = 0.195$ ).

### Conclusions

Males and the blind are at a higher risk of cardiometabolic outcomes and should be provided with treatment to avoid potential health and social costs in the future.

### Key message

- Talking medical devices will facilitate work with the visually impaired. Cardiometabolic diseases preventative actions are necessary in the pupils with visual impairment

## The variation and temporal changes of soft drink intake in the Capital Region of Denmark

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### Background

To implement relevant public health strategies it is important to monitor the prevalence and temporal changes of specific risk factors for chronic diseases. This study aimed to: 1) to determine the temporal changes of soft drink intake in the Capital Region of Denmark from 2007 to 2013, 2) examine whether there is an association between intake of soft drinks and municipality deprivation, and 3) examine whether this association is modified by individual educational level.

### Methods

Data from three health surveys in 2007, 2010 and 2013 in the Capital Region of Denmark was linked to data on sex, age and education from central registers. The study populations included residents aged 25–79 years,  $n = 36476$  (2007);  $n = 49806$  (2010);  $n = 41356$  (2013). Information on soft drink intake  $\geq 3$  times/week was derived from questionnaires. The 38 municipalities were categorised in 4 social classes (MSC 1–4) according to the distribution of income, educational level and employment status. MSC1 being the most privileged socioeconomic class. Logistic regression analyses were carried out and adjusted for age, sex and education.

### Results

Soft drink intake decreased from 24% in 2007 to 13% in 2013. The intake is significantly higher in MSC3–4 compared to MSC1 (1,24(1,63–1,31) and 1,17(1,10–1,25)), however there were no differences in changes over time between the MSC groups. Individuals with low educational level living in deprived municipalities drink more often three or more soft drinks compared to individuals with low educational level living in privileged municipalities ( $p > 0,0001$ ).

### Conclusion

The prevalence of high soft drink intake has decreased substantially in the Capital Region of Denmark from 2007 to 2013. There is social gradient in intake across MCS groups. A social gradient is observed across individual educational level in each MSC. These findings suggest that intake of soft drinks may be influenced by neighbourhood factors such as culture and accessibility.

### Key messages

- There is a social gradient in soft drink intake across municipality social class (MSC) and within each MSC across educational level
- Intake of soft drinks may be influenced by neighbourhood factors such as culture and accessibility

## Small lunch restaurants do not follow nutrition recommendations in Finland

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Workplace lunches are partly supported, eaten daily and thus their nutritional quality is important and can enhance public health. Even 328 million lunches were offered in workplace canteens and restaurants in Finland 2013. Nutritional recommendations guide menu planning, but the compliance is low in restaurants. No studies on small lunch restaurants are available.

The aim of this study was to assess the nutritional quality of meals offered and the availability of the healthy meals for customers in small lunch restaurants.

### Methods

The data were collected from small lunch restaurants (n = 17) by interviewing chefs and photographing the buffet from the customer's perspective. All small lunch restaurants in Hämeenlinna were included in the study. The photos (n = 191) were analyzed by the criteria based on nutritional recommendation and previous research.

The results from the interviews showed that none of restaurants (0/17) calculated nutritional values or salt content of the meals. Only 4/17 restaurants used standardized recipes, but 7/17 calculated the prices. Salt exceeded recommendation, 8/17 restaurants used salt in vegetables and 15/17 in cooking rice, pasta or potatoes. The photos showed that none of the restaurants (0/17) provided nutrition or allergen information. Visible fat was observed in 13/17 and visible cream in 11/17 main meals. However, some healthy meal components were offered: oil based salad dressing (17/17), good salad buffets (15/17), right order in buffet (14/17), bread choices (14/17), low fat milk and warm vegetables (10/17).

### Conclusions

The nutritional quality of meals offered in small lunch restaurants did not follow the nutritional recommendations and choosing healthy meals was difficult and often impossible. The results showed clearly that nutritional quality is neglected in menu planning and cooking, but salads were supporting healthy eating. Nutritional quality of daily meals wherever they are eaten should be good and enhance public health.

### Key messages

- Small lunch restaurants should follow nutritional recommendations, provide customer information and offer healthy choices in order to enhance public health and health of workplace canteen customers
- Nutritional quality of lunch restaurants should be evaluated, and a nutrition policy is needed for workplaces to support only restaurants offering healthy lunches

## Joint efforts against childhood obesity: EU Joint Action on Nutrition and Physical Activity 2015–2017

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### Issue/problem

Despite actions at many levels, regular consumption of foods high in sugar, fat and salt, combined with more sedentary lifestyle have led to a worrying increase in childhood obesity

over the past few decades in Europe. Although there is emerging evidence that the increase is slowing in a small number of countries, it is plateauing at very high levels. Unless properly addressed, the morbidity and disease burden will likely continue to rise and represent a serious burden to healthcare systems and to society.

### Problem

Childhood obesity is a complex issue that requires integrated actions against several diverse contributory factors. In 2014, the European Union agreed to jointly respond to the challenge and adopted the 'Action Plan on Childhood Obesity 2014–2020'. In order to contribute, a Joint Action on Nutrition and Physical Activity (JANPA), co-funded by Member States and the 3rd EU Health Programme, was developed.

### Results

JANPA will foster the discussion and sharing of good practices among 25 Member States using four technical work packages. As outcomes, JANPA will promote: 1) advocacy based on an estimation and forecast of economic cost of childhood overweight and obesity; 2) improvement in implementation of interventions to promote nutrition and physical activity for pregnant women and for families with young children; 3) to foster integrated actions in pre-school and school settings; and 4) to increase the use of nutritional information on food and diet by public health authorities, stakeholders and families as well as for nutrition policy purposes and to promote food reformulation.

### Lessons

Establishing joint action against childhood obesity is an important step to demonstrate the shared commitment of Member States and to strengthen cooperation between policy makers, scientific experts and other relevant stakeholders from different sectors.

### Key messages

- JANPA will support the Member States which are developing their policies and actions against childhood obesity, tailored to their national contexts and priorities
- JANPA will facilitate sharing knowledge and will develop tools for use by decision makers

## Are eHealth interventions for obesity prevention effective? A systematic review of reviews

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### Background

In the last ten years, research on the use of technology for health promotion has produced an increasing number of studies and reviews. This paper aims to summarise the review evidence and assess its methodological quality, in order to draw conclusions about the effectiveness of eHealth interventions for weight management.

### Methods

Systematic methods were used to identify and assess the review evidence about technology-based interventions for addressing behaviours associated with weight management and weight related outcomes. We searched 16 databases for articles published up to December 2014. Following a review protocol (PROSPERO: CRD42014010323), two reviewers independently selected review articles and applied the AMSTAR checklist to assess their methodological quality.

### Results

We identified 16 systematic reviews that discussed the effects of interventions using both mobile and/or web-based technologies on weight management (12 narrative syntheses and four meta-analysis). All reviews provide suggestive, albeit mixed evidence of the effectiveness of such interventions.

The meta-analysis on social networking sites showed that interventions produced a modest, significant reduction in BMI. Few studies differentiated between web and mobile technologies, when evaluating intervention effects. Using the AMSTAR checklist, the average methodological quality was low, with only two out of 16 reviews being of high quality (one meta-analysis of B quality and one systematic review of A quality).

#### Conclusions

The available review evidence suggests that eHealth interventions may produce positive effects on weight-related outcomes. However, the evidence cannot be considered conclusive, due to limitations in the methodological quality of the reviews. Good quality review evidence is needed to compare the effectiveness across different delivery modes and examine whether the results are generalizable.

#### Key messages

- eHealth interventions might produce positive effects on weight-related outcomes, but the evidence is not conclusive
- Good quality review evidence is needed to examine in more detail the content of eHealth interventions, identifying which components are associated with larger effects

### Highly integrated childhood obesity prevention programs: a systematic review with meta-analysis

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#### Background

Childhood obesity (CO) is a global public health issue. 1 out of 10 children is obese or overweight, with differences among geographical areas. CO impact is impressive for morbidity, expectation of life reduction, direct and indirect costs. Integrated actions to face this issue are needed. Highly integrated prevention programs are proactive multi-tiers/multi-setting/multi-component interventions tailored to

specified targets. The aim of this study is to assess these programs to highlight their effectiveness in reducing prevalence of overweight and obesity in childhood population.

#### Methods

A systematic review has been conducted up to February 2015. The search was performed querying Medline and Scopus databases through the keywords: prevention and control, childhood obesity, coordinated program, community based, integrated approach. Meta-analysis was carried out with RevMan 5.3. Begg and Egger tests, one-way sensitivity analysis, when appropriate, and subgroup analyses for different geographical areas were performed.

#### Results

Out of the 335 retrieved studies 25 were finally included describing 13 'highly integrated' community prevention programs all facing childhood overweight and obesity with a multi-component and multi-setting approach, based on diet and physical activity. Meta-analysis confirmed the reduction of overweight and obesity prevalence among the participants in the communities of intervention (RR = 0.90; 95%IC = 0.84–0.96) with a  $p$  for heterogeneity = 0.01;  $I^2 = 58\%$ . Differences were found related to geographical area with a RR = 0.80 (95%IC = 0.64–0.99;  $p = 0.03$ ;  $I^2 = 72\%$ ) obtained for Europe and a RR = 0.80 (95%IC = 0.68–0.95;  $p = 0.004$ ;  $I^2 = 82\%$ ) for Australia.

#### Conclusions

Highly integrated targeted prevention programs have been shown to be effective in facing CO. The goal is to build an activated community in a single public health program coordinated across the partner organisations and the three different tiers (strategic, delivery, community) within a defined area.

#### Key messages

- Such highly integrated community programs can represent an important instrument aimed at fighting the obesity epidemic among children especially in countries where wellness is part of their culture
- Structured/multi component cooperation among health authorities, schools and communities in childhood obesity prevention is more powerful than a single action