



Addressing the socioeconomic determinants of



healthy eating habits and physical activity levels among adolescents



Tuscany Region, Italy



WHO Collaborating Centre for Health Promotion Capacity Building in Child and Adolescent Health



Health Behaviour in School-aged Children



WHO Collaborating Centre for Health Promotion and Public Health Development

A World Health Organization Cross-national Study

Addressing the socioeconomic determinants of

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The WHO Regional Office for Europe is one of six regional offices throughout the world, each with its own programme geared to the particular health problems of the countries it serves. The European Region embraces some 870 million people living in an area stretching from Greenland in the north and the Mediterranean in the south to the Pacific shores of the Russian Federation. The European programme of WHO therefore concentrates both on the problems associated with industrial and post-industrial society and on those faced by the emerging democracies of central and eastern Europe and the former USSR. To ensure the widest possible availability of authoritative information and guidance on health matters, WHO secures broad international distribution of its publications and encourages their translation and adaptation. By helping to promote and protect health and prevent and control disease, WHO's publications contribute to achieving the Organization's principal objective – the attainment by all people of the highest possible level of health.

The WHO European Office for Investment for Health and Development, which coordinated – in conjunction with a dedicated Task Force (see Annex 4) – the activities leading to this publication, was set up by the WHO Regional Office for Europe, with cooperation and support from the Ministry of Health and the Veneto Region of Italy. Its key responsibility is to provide evidence, and support Member States in acting on the socioeconomic determinants of health.

For more information regarding the contents of this report and the WHO/HBSC Forum process, please write to the WHO European Office for Investment for Health and Development at info@ihd.euro.who.int

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Abbreviations and acronyms

AESA	Agencia Española de Seguridad Alimentaria (the Spanish food safety agency)
ASL	Azienda Sanitaria Locale (local health unit)
BMI	body mass index
BzgA	Bundeszentrale für gesundheitliche Aufklärung (German federal centre for health education)
CAHRU	The Child and Adolescent Health Research Unit
CES	Consejo Económico y Social de Canarias (social and economic council of the Canary Islands)
Children's NSF	National Service Framework for Children, Young People and Maternity Services in Wales
CINDI	Countrywide Integrated Non-communicable Diseases Intervention
Código PAOS	Código de autorregulación de la publicidad de alimentos dirigida a menores, prevención de la obesidad y salud (the PAOS Code: code of self-regulation of the advertisement of food products directed to minors, prevention of obesity and health)
CORELA	Laboratoire de Recherche sur la Consommation (laboratory on research and consumption)
COSLA	Convention of Scottish Local Authorities
DAFNE	Data Food Networking
ENCA	Encuesta nutricional de Canarias (nutritional survey of the Canary Islands)
ENHPS	European Network of Health Promoting Schools
ESC	Encuesta de salud de Canarias (health survey of the Canary Islands)
ESSSCAN	Escuela de Servicios Sanitarios y Sociales de Canarias (Canary Islands school of medical and social services)
Estrategia NAOS	Estrategia para la Nutrición, Actividad Física y prevención de la Obesidad (strategy for nutrition, physical activity and obesity prevention)
EU	The European Union
EUSUHM	European Union for School and University Health and Medicine
FAO	Food and Agriculture Organization of the United Nations
FAS	family affluence scale
GES	Gruppo di Educazione alla Salute (health education group)
GTA	Growing through adolescence
HBSC	Health Behaviour in School-aged Children
HEBS	Health Education Board for Scotland
HPE	Health Promotion and Education
HPS	Health Promoting Schools
ICAPS	Intervention centred on adolescents' physical activity and sedentary behaviour
ICT	Information and Communications Technology
INCA	Enquête individuelle et nationale sur les consommations alimentaires (individual and national survey on food consumption)
INPES	Institut National de Prévention et d'Education pour la Santé (national institute for prevention and health education)

INRA	Institut National de la Recherche Agronomique (French National Institute for Agricultural Research)
IOTF	International Obesity Task Force
IVAC	Investigation-Visions-Action-Change
LEA	Local Education Authority
MANOVA	multivariate analysis of variance
MD	[Degree of] Doctor of Medicine
NGO	nongovernmental organization
NHS	National Health Service
ObEpi	Enquête épidémiologique nationale sur l'obésité et le surpoids en France (national epidemiological survey on obesity and overweight in France)
ONPES	Observatoire National de la Pauvreté et de l'Exclusion Sociale (national observatory on poverty and social exclusion)
OR	odds ratio
P	P-value
PASS	Physical Activity in Scottish Schoolchildren
PESS	Physical Education and School Sport
PNNS	Programme National Nutrition–Santé (national nutritional health programme)
QA	quality assurance
QA-P	quality assurance for prevention
r	Spearman's rank correlation coefficient
Radio ECCA	Emisora Cultural de Canarias y África Occidental Española (Canary Islands radio station cultural network)
REHIS	Royal Environmental Health Institute of Scotland Elementary Food and Health
ReNNPP	The resolution on the [Slovenian] national programme of food and nutrition policy
SCW	Sports Council for Wales
SEEDO	Sociedad Española para el estudio de la obesidad (Spanish society for the study of obesity)
SES	socioeconomic status
SHPSU	The Scottish Health Promoting Schools Unit
SIAN	Servizio Igiene Alimenti e Nutrizione (food hygiene and nutrition service)
SMT	School Management Team
SNHPS	Slovenian Network of Health Promoting Schools
UKE	Universitätsklinikum Hamburg–Eppendorf (Hamburg University Hospital)
WHO	World Health Organization
WNHSS	Welsh Network of Healthy School Schemes





Section 1: Foreword

Foreword

About the WHO/HBSC Forum process

Action on socioeconomic determinants of health among adolescents is an essential component of an equity-orientated strategy for child and adolescent health, as expressed in the *WHO European strategy for child and adolescent health and development*.

To support Member States in integrating measures to address the socioeconomic determinants of health into policies and interventions promoting young people's health, the WHO Regional Office for Europe called for an annual Forum process to review the latest emerging evidence and synthesize lessons learnt in policy design and implementation.

The resulting WHO/HBSC Forum process was initiated in 2006, with the specific aim of providing know-how to European Member States for:

- reducing socioeconomically determined health inequities among young people;
- scaling up intersectoral policies and interventions to promote adolescent health;
- translating research on young people's health and health inequities into policies and action within and beyond the health sector;
- involving young people, families, schools and communities in the design and implementation of policies and interventions that promote adolescent health.

Forums are attended by more than 100 interdisciplinary policy-makers, health promotion practitioners, education system specialists, United Nations system representatives, members of nongovernmental organizations and professional associations and communications experts from throughout the WHO European Region.

Each Forum is focused on evidence collection and know-how exchange, serving to raise awareness and build capacity for the promotion of adolescent health. Interdisciplinary national/sub-national teams prepare case studies on relevant policies and interventions. Background papers, outcome reports, capacity-building materials and media outreach are prepared.

Forums are co-organized by the WHO Regional Office for Europe, the Health Behaviour in School-aged Children (HBSC) Network, the Tuscany Region (Italy) and the WHO Collaborating Centre for Health Promotion Capacity Building in Child and Adolescent Health.² The WHO Collaborating Centre for Health Promotion and Public Health Development played a key role in the organization of Forum 2006.

² WHO/HBSC Forums are organized within "The Framework Cooperation Programme between the World Health Organization Regional Office for Europe and La Regione Toscana", signed on 7 January 2004. The WHO European Office for Investment for Health and Development serves as coordinator of the Forum process, in conjunction with a dedicated Forum Task Force (see Annex 4). Additional technical support is provided by the WHO Regional Office for Europe units for child and adolescent health and development, and, for Forum 2006, nutrition and food security. Valuable support is also provided by the Health Promotion Programme of the A. Meyer University Children's Hospital, which was designated as WHO Collaborating Centre for Health Promotion Capacity Building in Child and Adolescent Health on 24 May 2006.

Why address the socioeconomic determinants of young people's health?

Health is largely determined by the socioeconomic, cultural and environmental conditions in which we live. According to the 2001/2002 survey of the Health Behaviour in School-aged Children study – which covered approximately 162 000 adolescents aged 11, 13 and 15 years in 35 countries of Europe and North America – adolescents from less-affluent families report worse health and increased exposure to certain risk factors than those from more affluent backgrounds.

Adolescents from poorer socioeconomic groups typically have fewer opportunities to maintain and promote their health. They tend to experience:

- home, school and neighbourhood environments that are less conducive to healthy growth and development;
- less access to quality education and fewer opportunities for advanced studies, with lower levels of family member education;
- economic precariousness at household and community levels, with fewer overall job opportunities and limited access to professional jobs that offer socioeconomic mobility;
- the transgenerational continuity of poor socioeconomic circumstances and associated health problems;
- increased exposure to health-damaging behaviours such as smoking, substance misuse, unhealthy eating habits, unsafe sex and lack of physical activity, often in clusters;
- less social capital, lower levels of self-esteem and life expectations, and decreased resilience;
- less access to quality health services.

Tackling health inequities demands that the wider determinants of health throughout the life-course be addressed. Adolescence (defined by WHO as the period between 10–19 years of age) requires particular attention. Many life-lasting health behaviours and attitudes, including self-esteem and resilience, are formulated during this period. In addition, ill health acquired during adolescence can have lasting impacts on health status into adulthood.

Forum 2006: addressing the socioeconomic determinants of healthy eating habits and physical activity levels among adolescents

Without the engagement of a wide range of sectors and stronger health systems for better prevention and control, large numbers of people will continue to die every year from mostly preventable diseases.[...] Seven leading risk factors – high blood pressure, tobacco, alcohol, high cholesterol, overweight, low fruit and vegetable intake and physical inactivity – account for almost 60% of all ill health in the Region.

WHO Regional Office for Europe Press Release EURO/05/06

The first WHO/HBSC Forum was held on 10–11 March 2006, and was dedicated to the socioeconomic determinants of healthy eating habits and physical activity levels among adolescents. The Forum 2006 agenda is shown in Annex 1. This publication presents the WHO/HBSC Forum 2006 outcomes statement, the HBSC background paper, and 10 case studies produced through the Forum 2006 process.

The selection of healthy eating habits and physical activity as the theme for Forum 2006 corresponds to the marked rise in child and adolescent obesity in Europe. Obesity represents one of the greatest public health challenges for the 21st century, with particularly alarming trends in several parts of the world, including the WHO European Region. In this regard, the WHO/HBSC Forum 2006 contributed to evidence gathered through the consultations leading to the WHO European Ministerial Conference on Counteracting Obesity (Istanbul, November 2006).

Unhealthy diets and physical inactivity are major contributors to overweight and obesity, which are among the leading risk factors for many non-communicable diseases. The most significant consequences for health of overweight and obesity include hypertension and hyperlipidaemia (major risk factors), coronary heart disease, ischaemic stroke, type 2 diabetes, certain types of cancer, osteoporosis and psychosocial problems.

Opportunities for physical activity and healthy eating habits are largely determined by social, economic and cultural factors and physical environments that influence access, availability and uptake. As a result, overweight and obesity have the greatest impact on the poorest people within communities and have significant long-term consequences for one of societies' most vulnerable groups – children. In order to be effective, policies and interventions to tackle overweight and obesity must address the socioeconomic determinants of unhealthy diets and physical inactivity.

Erio Ziglio

Head, WHO European Office for Investment for Health and Development







Section 2: Summary of outcomes – WHO/HBSC Forum 2006

Why address the socioeconomic determinants of healthy eating habits and physical activity levels among young people in the WHO European Region?

Donnelly P

Rapporteur for the WHO/HBSC Forum 2006 (see disclaimer at the end of this section)

1. What is the problem?

- Obesity among children and adolescents – which is strongly determined by social, cultural and economic factors and the physical environment – is on the rise in many Member States of the WHO European Region.
- Within many Member States, young people from poor backgrounds are disproportionately affected.

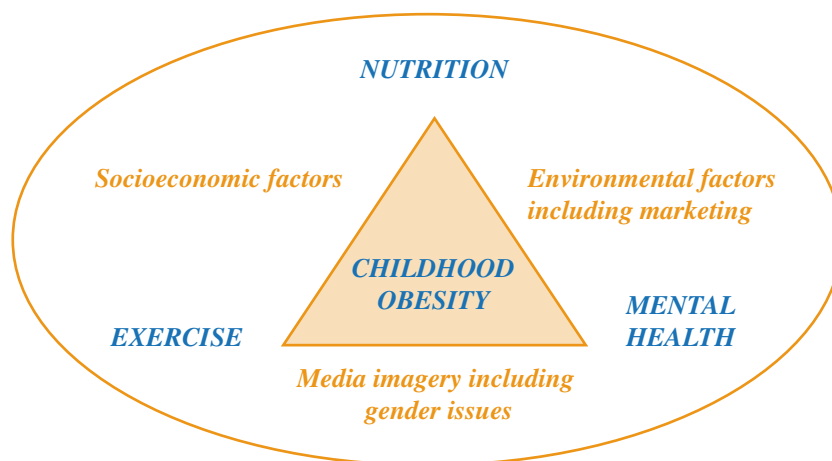
2. How do we know about this problem?

The above statements are supported by a number of national and international studies that allow comparisons to be made across countries and over time. Central to these is the WHO collaborative cross-national study Health Behaviour in School-aged Children (HBSC). The findings of the HBSC study in the areas of obesity, eating habits, physical activity and mental health (including life satisfaction and body image) were central to the discussions at the WHO/HBSC Forum on this subject held on 10–11 March 2006 in Florence, Italy.

Increased child obesity is best understood by considering Figure 1.

Figure 1:

Childhood obesity
(Presentation at the
WHO/HBSC Forum 2006 of
Dr Candace Currie)



3. How has the problem of obesity in children and adolescents arisen?

- Young people are now surrounded by products which are high-sugar, high-salt, high-fat, attractive, palatable and durable, but in many cases are nutritionally poor. In many countries, these products typically cost less and are more readily available than more healthy options, a reality that is largely determined by food and agricultural policies and trade practices.
- Manufacturers and marketers can expend significant resources promoting products directly to children, using branding techniques that can feature cartoon characters or other images that are recognisable and appealing to children.

- In some countries, expansion in the availability of television channels and computer games targeting children, compounded by changes in culture and family composition, has contributed to an increase in the number of hours children spend in sedentary activities. Children's energy expenditure has been further decreased by reductions in levels of human-powered transportation schemes (walking and cycling) and, in some cases, fewer school and community opportunities for engaging in sporting activities.
- Studies show that many young people, particularly young women, are very conscious of their bodies, and feel inadequate when they compare themselves to heavily promoted, digitally enhanced media stereotypes of ultra-thin models. The same may be true of some young males and their perception of sporting icons. Negative body image and lower levels of self-esteem can lead to psychosocial problems and exacerbate health-damaging behaviours.
- A poor child typically has increased exposure to unhealthy home and community environments, decreased access to quality education and health services, and a higher probability of a clustering of transgenerational health problems and unhealthy behaviours. These negative health influences account for a social gradient in obesity. The gradient is reinforced by difficulty in accessing or affording the healthiest food choices and opportunities for physical activity.

Our young people, particularly those from low-income households, now grow up in an obesogenic environment. In other words, they grow up in an environment that makes it more likely that they will become overweight.

4. Why does this matter?

Overweight children tend to become overweight adults. Overweight adults live shorter lives and suffer a number of illnesses, particularly diabetes and ischaemic heart disease, to a greater degree during those shorter lives.

Obesity and overweight in children and adolescents may interfere with normal psychosocial, emotional and physical development. Self-consciousness or lack of physical fitness may prevent children from taking part in sport and physical activities, therefore denying them the physical, mental and social benefits that they would otherwise obtain. Poor nutrition, particularly the missing of breakfast or its substitution with high-sugar foods and drinks, may adversely affect a child's ability to learn during school hours. Finally, a child's sense of self-worth and confidence may be undermined further if he or she is teased because of weight.

When taken as a whole, it is clear that poor nutrition and, in particular, calorie over-consumption, especially if combined with a lack of physical exercise and low levels of self-esteem, predisposes children to obesity. Obesity predisposes children and adolescents to ill health in adult life, while also having immediate effects on the health of adolescents, as indicated by the earlier appearance of type 2 diabetes.

Children and adolescents are not adult consumers. They cannot be expected to assume full responsibility for their eating and physical activity patterns. They have a right to be brought up in an environment that is health promoting and that enables them to make increasingly informed choices about their lifestyle.

It is becoming clear that social, cultural and economic factors and the physical environment are major contributors to the obesity problems being recorded across Europe. If we are serious about stopping and reversing this trend, policies need to move beyond the individual focus and take an intersectoral approach to counteracting obesity.

5. Why act now?

There is no evidence that the trend in growing childhood obesity is flattening off, let alone reversing. It is therefore imperative that Member State governments and international agencies, including WHO, agree a set of actions now. Otherwise, growing obesity rates may lead to a financial crippling of health services as they seek to deal with the consequences of this epidemic in decades to come.

6. What would help tackle this problem?

The following principles would be important in all cases:

- cross-government action with very senior political leadership;
- an explicit recognition that the obesogenic environment described above and its socioeconomic determinants need to be tackled;
- a commitment to taking a population-wide approach to promoting healthy eating habits and physical activity levels, while targeting resources where the need is greatest to reduce health inequities;
- a determination not to blame the victims.

The following proposals would be worth consideration.

- That systematic engagement by the health sector of other sectors – including city and regional planning, agriculture, education, transport, social protection and welfare, environment, and sport and culture – is required to address the wider determinants of eating habits and physical activity among children and adolescents.
- That healthy food, particularly fresh fruits and vegetables, must be affordable and accessible to all population groups.
- That legislation should ensure that the private sector meets guidelines – including those regarding marketing to children – for corporate social responsibility.
- That, in light of the influence of marketing and “pop” culture on young people’s health and health behaviours, interventions should include education for youth on how to become informed consumers.
- That all food provided in the context of formal education must meet nutritional guidelines – forming part of a varied and balanced diet – and that snacks high in sugar and salt and carbonated sugary drinks should be eliminated from all school and nursery facilities.
- That increased resources need to be directed towards intercepting the passing of obesity from mother to child.
- That school curricula should include the opportunity for all children to participate in between 30 minutes to one hour of physical activity per day, and that schemes to develop safe and active routes to schools for all young people should be promoted with the collaboration of parents, education, urban planning and environment departments.
- That further research is required on mental health aspects that result from obesity, and those that make some young people more vulnerable to obesogenic environments.

7. What would we like policy-makers to consider?

To explicitly acknowledge:

- that childhood obesity is a problem for all Member States and that – in many countries – it disproportionately affects those of lower socioeconomic status, who also suffer a cluster of other disadvantages;
- that unless tackled, childhood obesity will increasingly affect the physical and mental health of young people and the quality of their lives;
- that unless tackled, childhood obesity can give rise to diabetes and ischaemic heart disease and other difficulties in adult life, which can measurably shorten life expectancy and greatly increase health care costs;
- that childhood obesity cannot be blamed on either children or their immediate families, and it is largely the product of our modern physical environments and their social, cultural and economic determinants;
- that there is a need to tackle obesogenic environments using levers such as agricultural policies, market restraints on advertising to children, health-promoting city planning, integration of health-promotion strategies into social protection/welfare policies, and sustained integration of measures promoting healthy eating habits, physical activity and mental well-being opportunities into schools;
- that the above actions need to be supported through intersectoral governance mechanisms that enable stewardship by all relevant sectors.

To commit all Member States to building a culture of healthy physical activity in our schools and in our communities.

To commit all Member States to further monitoring and evaluating the impact of policy changes and interventions on eating habits, physical activity and mental well-being among children and adolescents, and to support further research on child obesity and best practices for its prevention and treatment.

8. What immediate steps can policy-makers take?

To adopt the European Charter on Counteracting Obesity, submitted by Member States at the WHO European Conference on Counteracting Obesity, 15–17 November 2006 in Istanbul. The charter gives political guidance and provides a strategic framework for strengthening action on obesity in the WHO European Region.

To review, develop and implement policies and strategies in line with the “*WHO European strategy for child and adolescent health and development*” as recommended by the Regional Committee for Europe at its meeting in 2005.

To undertake a national or sub-national audit of obesogenic-related factors and their socioeconomic determinants.

To create governance mechanisms that ensure intersectoral action on childhood obesity, with sustained high-level backing in ministries and the power to ensure sector-specific action plan alignments and sustained budgetary allocations.

This summary was prepared by Professor Peter Donnelly,⁵ MD, for the WHO European Office for Investment for Health and Development, following the WHO/HBSC Forum in March 2006, in his role as summarizer of conference proceedings. In addition to reporting back on the discussions at the Forum, it also incorporates lessons learnt and policy implications documented in the Forum background paper and case studies.

⁵ It should not be assumed that this paper reflects the author's personal views, those of his employer (the Scottish Executive), or those of the United Kingdom as a WHO Member State. These views have not been adopted/approved by all meeting participants or WHO. They should not be relied upon as a statement of the participants, the World Health Organization, case study or background paper authors, or meeting co-organizers.





Section 3: The HBSC background paper

Overweight in school-aged children in 35 countries: associations with eating habits, physical activity, socioeconomic status and perceived health

*Haug E, Samdal O, Morgan A, Ravens-Sieberer U, Currie C
HBSC International Scientific Writing Group for Forum 2006*

1. Introduction

The dramatic increase in body weight affecting all age groups has been defined by the World Health Organization as a global epidemic with immense consequences for public health (1,2). The development is, to a large extent, a result of reduced physical activity and changes in eating and dieting habits as a consequence of environmental changes. These changes are related to urbanization, industrialization, economic development and increasing food market globalization. It has been stated that without robust and decisive approaches to prevention and treatment of obesity, substantial and long-lasting health and social consequences will result for global societies.

Identifying children and adolescents as key target groups for overweight prevention and intervention is of critical importance. The prevalence of childhood overweight has increased disturbingly since the 1980s. Published data suggest that overweight among children and young people has doubled, and obesity has increased fourfold in some regions (3). Close to one in four schoolchildren in the 25 European Union (EU) Member States is overweight, with the number increasing by more than 400 000 new cases every year (4).

As overweight prevalence rises, the body of evidence documenting health consequences of paediatric obesity grows. Obese young people are at greater risk of health problems such as poor glucose tolerance, hyperinsulinemia, type 2 diabetes, hypertension and asthma (5). Overweight and obesity in young people persist into adulthood to compromise long-term health through their association with morbidity and increased risk of premature mortality from coronary heart disease, arteriosclerosis and certain types of cancer (5).

The psychological effects of obesity may be perceived by children and adolescents as more important than the physical. Evidence increasingly suggests that overweight and obesity in children and adolescents are associated with low self-esteem, low psychological well-being, a high level of psychosomatic complaints and low life satisfaction (5,6). Children and adolescents with obesity report that they do not like their own body, feel sad and lonely, anxious and unsure, and do not have as many social contacts as children with normal weight. Differences in psychological well-being within the group of obese children are connected to the severity of obesity: the greater the body mass index (BMI), the worse the subjective ratings of psychological well-being.

Overweight-prevention strategies might have greater effects when targeted at children and young people for several reasons (7):

- children, based on their height-growth potential, are more likely to return to a normal growth parameter if weight is controlled;
- lifestyle behaviours are formed in childhood and continue into adulthood;
- young people might be more flexible in their capability to change living patterns.

In order to develop and implement the most effective intervention strategies, there is a need to:

- identify and monitor overweight and obesity development among children and young people;
- identify the most vulnerable groups.

This background paper presents a “map” depicting the overweight prevalence among nationally representative samples of school-aged children in 35 countries participating in the WHO cross-national Health Behaviour in School-aged Children study 2001/2002 (8). The paper also describes physical activity patterns, sedentary behaviours, eating habits and perceived health for the study sample, and presents documented associations between these factors and BMI. Finally, the association between each of the variables and socioeconomic determinants is addressed.

2. Prevalence of overweight

Students' BMI was calculated in the HBSC study through self-reported weight (kg)/height (m²). Age and gender-specific cut-off points were used to calculate the prevalence of pre-obese (corresponding to adult BMI values of 25–29.9) and obese (corresponding to adult BMI values of 30 or more) (9). The combination of pre-obese and obese is used as a measurement of overweight.

Figures 1 and 2 show the percentages of overweight (pre-obese and obese) 11, 13 and 15 year-old boys and girls in countries and regions that participated in the HBSC 2001/2002 study. The overall proportion of 11, 13 and 15 year-olds being overweight was 15% for boys and 9% for girls. A similar gender difference was seen cross-nationally, with the exception of a few countries.

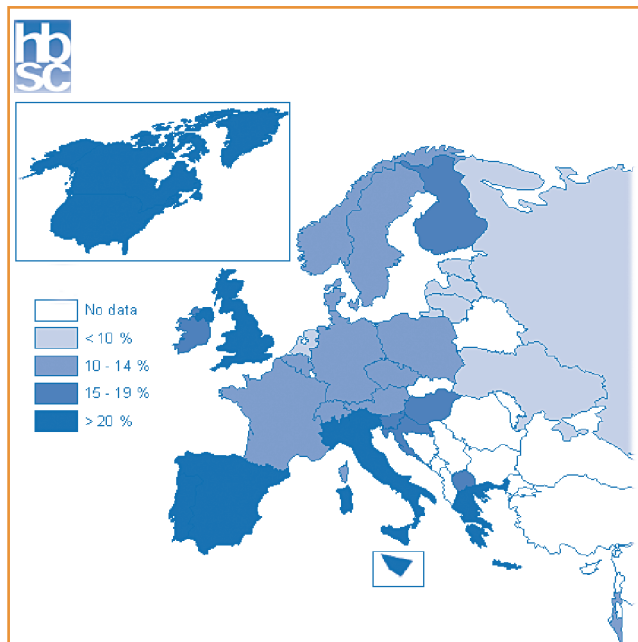
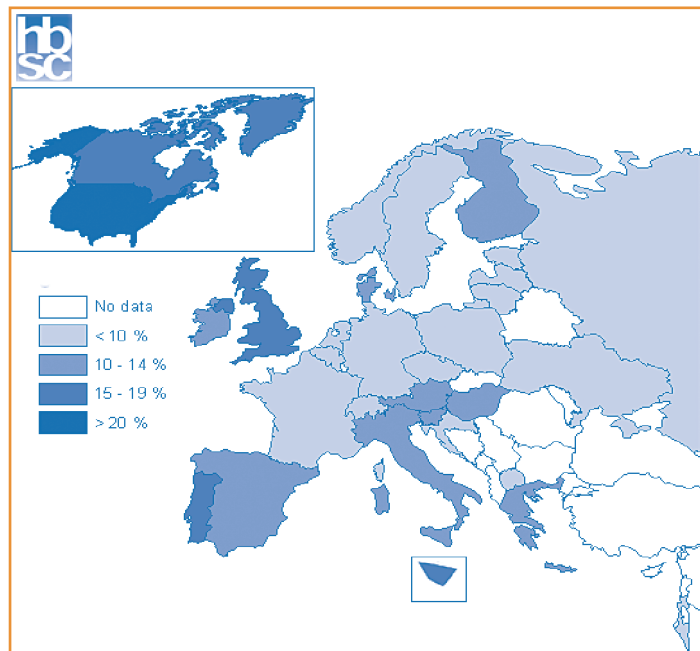


Figure 1:

Overweight among 11, 13, and 15 year-old boys (HBSC survey, 2001/2002).

Figure 2:

Overweight among 11, 13, and 15 year-old girls (HBSC survey, 2001/2002).



There appears to be a geographic pattern of overweight, with enormous variation across countries and regions (4–32%). The study identified a particularly high prevalence of overweight in countries located in North America, the United Kingdom and south-western Europe, with Malta showing the highest prevalence (32% for boys). Scandinavian and central European countries had a lower proportion of overweight schoolchildren, and the prevalence was lowest in the Baltic states and the eastern half of the WHO European Region. There was a clear relationship between the prevalence of pre-obesity and the development of obesity; countries with higher percentages of pre-obesity also report a higher prevalence of obesity.

Socioeconomic differences in overweight

Although socioeconomic status (SES) differences in childhood and adolescent obesity have been difficult to identify and to interpret (5,10), the general pattern in the developed world is that childhood obesity is inversely associated with SES, with more disadvantaged groups at greatest risk. In contrast, children with higher socioeconomic status in most developing countries are at greater risk of obesity (1,11).

The odds of being overweight increased twofold from high to low social class with Norwegian fourth and eighth graders (12), with similar patterns being found in the Norwegian HBSC data. Veugelers and Fitzgerald's study showed that Canadian children in high-income neighbourhoods were half as likely to be obese as their peers living in low-income neighbourhoods (13). Among Canadian schoolchildren participating in the HBSC survey, Janssen et al. (14) found that obesity was associated with both individual-level SES measures (low material wealth and perception of family wealth) and area-level SES measures (a high percentage of residents with less than a high school education, high unemployment rate, and low average income).

Analyses of the HBSC data identify SES differences in overweight in 11 year-olds and to some extent in 13 year-olds, but no such differences were observed with 15 year-olds. This may be related to family socioeconomic aspects having a stronger impact on children than on adolescents.

3. Eating habits

A balanced and appropriate diet during childhood and adolescence is likely to reduce the risk of overweight and obesity (15). Eating habits examined in the HBSC 2001/2002 study were:

- meal frequency and stability
- intake of sweets and soft drinks
- intake of fruit and vegetables.

The percentage of young people who have breakfast every morning on school days was on average 69% for boys and 60% for girls. Major geographic differences were found in relation to eating breakfast, and gender differences became more pronounced with age. Breakfast consumption fell 9% among boys and 17% among girls between the ages of 11–15. The decrease with age was most evident in girls in the Netherlands, with a 29% decrease.

The consumption of soft drinks and sweets compromise the intake of more nutritious foods and may impede compliance with current dietary guidelines (16). Overall, 32% of boys and 25% of girls drank sugared drinks daily. Daily consumption of sugared soft drinks was as high as 40% in Israel, Malta, the Netherlands, Slovenia, Scotland (United Kingdom) and the United States. Consumption was lowest for all age groups in the Scandinavian countries (except Norway), the Baltic states, Greece and Ukraine, where less than 20% reported drinking soft drinks daily. More boys than girls drank soft drinks every day in most countries and regions and across all age groups.

Almost one third of 11, 13 and 15 year-olds ate sweets or chocolates once or more every day, and a similar proportion (29%) consumed such foods once a week or less. Young people reported eating sweets less frequently in Denmark, Finland, Norway, and Sweden. Malta had the highest percentage of daily consumers (54%), followed by Scotland (United Kingdom) and Ireland (45% and 49%, respectively). Overall, age and gender differences in the consumption of sweets and chocolate were minor compared to those that applied to the other food and drink items surveyed.

The total proportion of young people who ate fruit five days or more during the week was 45% for boys and 51% for girls, with responses ranging from 30% to 67%. More girls reported eating fruit every day in nearly all countries and regions, but there was considerable geographic variation. Less than 50% of all young people reported eating vegetables daily. Again, girls in general reported eating vegetables more often than boys (34% and 28% respectively). The difference exceeded 10% in three countries and regions (Belgium [Flemish], Finland and Germany). Comparison of the three age groups showed a small overall drop (about 4–5%) in daily vegetable consumption between the ages of 11 and 15.

Socioeconomic differences in eating habits

A study of 28 European countries participating in the 2001/2002 HBSC study revealed that fruit consumption increased with family material wealth and higher parental occupational status (17). The same study showed that pupils of parents with higher occupational status reported lower soft drink consumption in northern, southern and western European countries, but not in central and eastern European countries, where a significant increase in soft drink consumption with increasing family affluence was found.

Janssen et al. (18) found that low area-level SES (a high percentage of residents with less than a high school education) was associated with unhealthy eating among Canadian schoolchildren participating in the HBSC study. The same was not true for individual-level SES measures (low material wealth and perception of family wealth). Further, in the Irish HBSC data, no significant association between adolescents' dieting status and age or social class was found (19). More research is required to fully understand the relationship between SES and eating habits within countries.

Associations between eating habits and overweight

Elgar et al. (20) found a relationship between obesity, snacking and skipping breakfast in their HBSC 2001/2002 study of Welsh young people, in which obese adolescents indicated skipping breakfast nearly twice as often as normal-weight adolescents.

A national study of Norwegian fourth- and eighth-graders showed that the respondents who had breakfast five times or fewer per week were more likely to be overweight than those who had breakfast 6–7 times per week (12). Other meals have also been found to influence weight; based on the HBSC 2001/2002 data, Veugelers and Fitzgerald (13) found that children who bought lunch at school were at increased risk of overweight, while those who brought their lunch from home were less likely to be overweight. Janssen et al. (18), however, found no association between overweight status and the intake of fruits, vegetables and soft drinks in Canadian school-aged children.

4. Physical activity

Physical activity has a number of positive effects on child and adolescent health, with good evidence for beneficial effects on adiposity in normal-weight and overweight children and young people (21). About a third of the 11, 13 and 15 year-olds (34%) in the HBSC 2001/2002 study reported undertaking the recommended levels of physical activity for 60 minutes at moderate intensity on five or more days a week. There were great variations, with proportions for boys ranging from 26% in Belgium (Flemish) to 57% in Ireland, and from 12% in France to 44% in the United States for girls.

On average, boys reported being physically active for at least 60 minutes a day on 4.1 days per week. Girls reported lower frequencies, with an average of 3.5 days per week. Again, countries and regions varied widely, with levels for boys ranging from 3.4 days in Belgium (Flemish) to 4.9 in Ireland, and from 2.7 days in France to 4.1 in Canada for girls. The frequency of physical activity declined with age, with the decline being more pronounced in particular countries and regions and, for the most part, being more apparent among girls.

Sedentary behaviours

There are concerns that increasing levels of sedentary behaviour in children and adolescents are reducing energy expenditure while energy intake remains unaltered, resulting in a rising prevalence of overweight and obesity. More than a quarter of all respondents (26%) in the HBSC 2001/2002 study reported high levels (≥ 4 hours a day) of television watching every weekday, rising to 45% during weekends. Young people watched more television during weekends than they did on weekdays in all countries and regions except Israel. Countries and regions varied widely, with levels ranging from 11% in Switzerland to 46% in Israel for weekdays and from 28% in Italy to 70% in Ukraine for weekends. Some countries were consistently in the top quartile (Estonia, Latvia, Lithuania and Ukraine) or bottom quartile (Austria and Switzerland) for both weekday and weekend viewing for all age groups. Slightly more boys reported high television use in the majority of countries and regions and across all age groups, but the absolute gender difference rarely exceeded 10%.

In all countries and regions more boys than girls reported high levels (≥ 3 hours or more) of computer use both on weekdays (21% boys and 7% girls) and during weekends (35% boys and 15% girls). Relative gender differences were lowest in Canada and the United States and highest in Denmark and Finland, where the percentages for boys were about six times those for girls for weekday computer use and about five times higher for weekend use. The marked gender difference appeared in all three age groups, but was most pronounced at age 15.

In a recent HBSC publication examining the relationship between lower SES and TV watching, it was found that those from the lowest SES group were more likely to spend more time in front of the TV compared to higher SES groups (22). Inchley et

al. (23) found that Scottish children from low SES backgrounds reported lower levels of physical activity compared to those from higher SES backgrounds, but the same study indicated that gender was also an enhancing factor, with girls from higher-SES groups reporting lower levels of physical activity than boys from low-SES groups. Individual-level SES measures (low material wealth and perception of family wealth) were associated with physical inactivity in the study of Canadian schoolchildren by Janssen et al. (14), but this was not the case for area-level SES.

Associations between physical activity, sedentary behaviour and overweight

HBSC 2001/2002 data indicated that television viewing and physical inactivity are strongly associated with overweight and obesity among Canadian young people (18). Elgar et al. (20) showed in their study of Welsh adolescents that sedentary behaviour and physical activity in early adolescence influenced body mass in late adolescence. Most child studies that examine the relationship between sedentary behaviour and prevalence of overweight and obesity have found a positive relationship between TV viewing and overweight (12,13). The study of Janssen et al. (18) supports these findings, with results indicating higher frequency of TV viewing among overweight young people compared to normal-weight. Based on their survey among Norwegian students in grades four and eight, Andersen and colleagues (12) suggest there may be a threshold in the relationship between TV viewing and overweight, with those who watch TV more than four hours a day being more likely to be overweight than those who watch two hours or less.

TV viewing and consumption of foods

HBSC 2001/2002 findings showed that those who watched more TV were more likely to consume sweets and soft drinks on a daily basis and less likely to consume fruits and vegetables daily (22). A positive association between TV viewing and the consumption of unhealthy food was also found in a study among Greek adolescents (24), and Veugelers and Fitzgerald (13) indicated that decreased frequencies of time eating supper in front of the TV were associated with decreased risk of overweight, while those who eat supper with their family three or more times a week had a reduced risk of being overweight.

Psychological well-being

Psychological well-being, psychosomatic health complaints and life satisfaction

People's subjective experience is a central indicator of health and is often investigated by asking them to rate their own health and well-being. Health complaints tend to cluster; subjective health complaints can be viewed as a syndrome in which an individual regularly experiences two or more complaints simultaneously. These range from the occasional headache that most young people experience, to clinical manifestations of somatic or affective symptoms that impair everyday functioning. Multiple recurrent complaints such as headache, stomach ache, backache, feeling low, irritable or bad tempered, feeling nervous, difficulties in getting to sleep and feeling dizzy represent a significantly heavier burden on daily functional ability and well-being than single symptoms.

The findings presented here focus on young people with obesity who report multiple health complaints several times a week, or even daily. Such impairment has been associated with lower academic performance, increased demand for primary care services and increased use of medicine (25–27).

Sociodemographic and socioeconomic differences in psychological well-being

Although most young people are satisfied with their lives in all countries and regions, geographical differences in the HBSC 2001/2002 study were substantial and remained consistent across age groups. Scores were consistently high in Finland and the Netherlands and low by comparison in Latvia, Lithuania and Ukraine (28). The HBSC study found that girls reported multiple subjective psychosomatic health complaints more often than boys and that levels increased with age, while those for boys changed little. Gender differences also increased with age in most countries and regions and were notably high for

15 year-olds in the Baltic states and some seven countries in the European region, including Croatia, Greece, Italy, Portugal and Spain (29).

The 2001/2002 HBSC study also showed that levels of multiple subjective psychosomatic health complaints differed substantially across countries and regions, ranging, for example, from 15% in Germany to 43% in Italy among 11 year-old boys. They were consistently higher among young people in Greece, Italy and Israel and consistently lower in Austria, Germany and Switzerland (29). Children and young people from lower SES groups were more likely to report reduced psychological well-being in terms of lower life satisfaction and more self-reported psychosomatic health complaints (30).

Association between psychological well-being, health complaints and overweight

The HBSC 2001/2002 survey found an association between overweight or obesity and psychological problems. Obese children and adolescents showed significantly higher levels of confirmed and borderline psychological ill health than children and adolescents with normal weight. These analyses of HBSC data and data from European studies using HBSC indicators show that obesity is associated with multiple recurrent psychosomatic complaints (31).

A summary of key findings is offered in Box 1.

Box 1. Summary of key findings

HBSC cross-national data from the 2001/2002 survey in 35 countries confirmed that the overweight prevalence among schoolchildren is disturbingly high across countries and regions. The overall proportion of overweight across countries was 15% for boys and 9% for girls, with enormous geographical variations (4–32%).

Boys were considerably more likely to be overweight than girls; in some countries (Malta and the United States), around a third of the boys were overweight.

There were substantial cross-national variations in eating habits among the schoolchildren. Overall, close to one third of 11, 13 and 15 year-olds drank sugared soft drinks daily. The same proportion ate sweets or chocolates once or more a day.

Countries with high rates of daily consumption of sugared soft drinks, sweets and chocolates, such as the United States, Malta and Scotland (United Kingdom), also had alarmingly high prevalence of overweight.

Two-thirds of the schoolchildren ate breakfast on school days, but the number decreased with age, especially among girls.

About half of the schoolchildren reported eating fruit five days a week or more, while less than half reported eating vegetables daily. Fruit and vegetables consumption was higher in girls in nearly all countries.

Overall, only a third of the young people were physically active at a level that meets current recommendations of 60 minutes five or more days a week. Boys were more physically active than girls, but the frequency of physical activity declined with age for both genders.

More than a quarter of respondents reported high levels (≥ 4 hours a day) of television watching every weekday, and this nearly doubled during weekends. A substantial number of boys reported high levels (≥ 3 hours or more) of computer use during both weekdays (21%) and weekends (35%).

Young people who had high levels of TV watching were more likely to consume sweets and soft drinks and less likely to consume fruits and vegetables on a daily basis.

Reduced psychological well-being and increased health complaints were associated with overweight and obesity in European countries.

There was evidence across HBSC countries that low SES was related to unhealthy eating habits, sedentary behaviour, low levels of physical activity and higher levels of ill health.

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Section 4: Case studies

Case studies: an introduction

A core element of the WHO/HBSC Forum 2006 process was the production of the case studies⁶ on national and/or sub-national policies and interventions that address the socioeconomic determinants of healthy eating habits and physical activity levels among adolescents.

Case studies review national data gathered through the HBSC 2001/2002 study and other sources on eating habits, physical activity, sedentary behaviour, body image and self-esteem among adolescents. Studies provide an overview of the national and sub-national policy context for promoting healthy body weight among children and adolescents. They describe specific intersectoral strategies, initiatives and/or resources for promoting healthy eating habits and physical activity levels among young people. Lessons learnt for effective implementation and areas requiring greater policy focus and stakeholder commitment have been identified in multiple case studies.

The “Young Minds” case study differs from the others in that it explores the role of young people in the design and implementation of strategies for the promotion of healthy body weight.

Case studies were produced through the WHO/HBSC Forum 2006 process by authors from the following Member States: Croatia, Denmark, France, Germany, Italy (Piedmont Region), Norway, Slovenia, Spain (Canary Islands), and the United Kingdom (Scotland and Wales).

Figure 1:

Schoolchildren listen to the story “En busca de la alimentación perdida” (“In search of lost nutrition”) during a nutrition education teaching session. (©Proyecto Delta de Educación Nutricional. Gobierno de Canarias, 2006.)



⁶The views expressed in these case studies are those of the authors and not necessarily WHO or the Member State described therein. The selection of these studies (and their topics) for inclusion in this report does not imply the identification by the WHO/HBSC Forum 2006 co-organizers of best practices.

Croatia: developing guidelines for children and youth health care – can we tackle inequalities and well-being?

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1. Introduction

The importance of socioeconomic determinants of health has been broadly acknowledged. The last summit on “Tackling health inequalities”, held in London in 2005, stressed that inequalities in health exist within and between European Union (EU) and non-EU countries. Research shows that socioeconomic status and education could have an impact of up to ten years in healthy lifespan. People who feel healthy are more productive, stay active for longer and make fewer demands on national health insurance infrastructures. Investment in health should therefore be considered an investment not only in people’s well-being, but also in countries’ economic development potential.

The increasing prevalence of overweight, obesity and eating disorders has been recognized as an important issue worldwide, with recent literature indicating that the problem is causing great concern. There is general agreement on the high risk of an obese child becoming an obese adult. Unhealthy diets and lack of physical activity are the leading causes of avoidable illness and premature death in Europe. Available evidence on overweight and obesity in Croatia has reflected the rising trends observed in Europe and elsewhere.

The HBSC 2001/2002 survey shows that socioeconomic factors influence health and well-being, and that lifestyle, body weight and body image also correlate with health and well-being. This underlines the need for action among children of school age.

School health services, with their emphasis on preventative health care measures, are ideally placed to act on overweight and obesity prevention. They have the opportunity to reach all schools and all children, ensuring that each child has not only the same opportunities, but also that those who require more intense interventions can have their needs addressed.

The purpose of this case study is to present the development of guidelines for children’s and young people’s health care as a means of establishing and coordinating overweight and obesity prevention measures. The overall goal is to ensure that all schoolchildren and young people in Croatia have opportunities to achieve and preserve the highest possible state of health and well-being, particularly in relation to healthy weight, healthy eating and physical activity.

Adolescence is a complex time of life in which multiple factors can affect normal development. It was considered appropriate, therefore, to focus not only on weight and physical activity, but also to develop a holistic approach that encompassed a wide range of health behaviours and lifestyles.

2. Policy framework

The importance of preserving and promoting health and well-being in children and young people has been acknowledged in many policy documents in Croatia. Protection of children and people with disabilities is defined in the Constitution as everyone’s responsibility. The Health Care Act gives each person a right to health care, and children have the right to have their health and life protected through the Family Law Act.

Inequalities in health and the need for special protection of vulnerable groups have been addressed in policies developed through the parliamentary process. People who have the right to health insurance are defined in the Health Insurance Act and include those who are unemployed, the chronic sick and those with disability. The Health Care Measure Plan and Programme sets out health priorities, with special emphasis being placed on the needs of women, infants and young children, school-aged children and young people (including full-time students and young people within the active working population); these are defined as “vulnerable groups”. The National Programme Acting for Youth lists the following as aims:

- promoting activities aimed at helping young people adopt healthy life habits and promoting young people’s health;
- ensuring equal life opportunities and reducing risk based on social exclusion and inequality for young people living in unfavourable circumstances, the disabled, and those who find themselves in adverse positions for a variety of reasons.

The core policy for action in promoting the well-being of children, including education and health issues, is the National Plan for Activities Aimed at Protecting the Rights and Interests of Children for the period 2006–2012, which has been adopted by the Government as a continuation of Priority Activities for Children’s Well-being 2003–2005. The plan signals the following actions for health promotion, involving children in programme design and promoting healthy eating habits.

1. Ensuring promotion of children’s and young people’s health.

Responsible bodies: Ministry of Health and Social Welfare; Ministry of the Family, Veterans’ Affairs and Intergenerational Solidarity; Ministry of Science, Education and Sport; Croatian National Institute of Public Health; county public health institutes; local and regional authorities; hospitals; professional associations; and nongovernmental organizations NGOs.

2. Involving children in creating, conducting and following up illness prevention programmes.

Responsible bodies: Ministry of Health and Social Welfare; Ministry of Science, Education and Sport; Croatian National Institute of Public Health; universities; local and regional authorities; professional associations; and NGOs.

3. Creating healthy eating programmes for preschools, schools and other institutions for children.

Responsible bodies: Ministry of Science, Education and Sport; Croatian National Institute of Public Health; Ministry of Agriculture, Forestry and Water Management; Croatian Medical Association – Croatian Society for Preventative and Social Paediatrics; Croatian Paediatric Society; and Croatian Society for School and University Medicine.

4. Ensuring implementation of healthy eating programmes in all preschools, schools and other institutions for children.

Responsible bodies: Ministry of Science, Education and Sport; Ministry of Health and Social Welfare; Croatian National Institute of Public Health; local and regional authorities; Croatian Medical Association; and NGOs.

5. Raising awareness about the importance of healthy eating in obesity prevention and other disease-prevention programmes.

Responsible bodies: Ministry of Science, Education and Sport; Ministry of Health and Social Welfare; Croatian National Institute of Public Health; Croatian Medical Association - Croatian Paediatric Society; Croatian Society for School and University Medicine; local and regional authorities; and NGOs.

6. Spreading knowledge about the importance of healthy eating in obesity prevention and in prevention of other disease.

Responsible bodies: Ministry of Science, Education and Sport; Ministry of Health and Social Welfare; Croatian National Institute of Public Health; Croatian Medical Association - Croatian Pediatrics Society; Croatian Society for School and University Medicine; local and regional authorities; and NGOs.

Relevant deadlines, indicators and required financial support are defined in the document for each activity stream.

The following policy documents are also of importance in addressing healthy eating habits and physical activity:

- Croatian Food and Nutrition Policy (1999)
- National Programme for Prevention of Cardiovascular Diseases (2001)
- Croatian Food Guidelines (2002)
- Croatian Food Guidelines for Children (still under development).

The Dubrovnik Declaration on School Health Care in Europe (13th EUSUHM Congress, 15 October 2005) defines the role of school health care in promoting healthy eating and physical activity in children and young people and emphasizes the impact of health inequalities during childhood and adolescence. Important societal changes during recent decades in almost all countries of the European Region have led to remarkable negative shifts in health-related behaviours in children and adolescents, with the increasing prevalence of overweight, obesity and eating disorders being one consequence.

School health care should be evidence-based as much as possible, but defining the legal parameters for school health care practice is also important. This is achieved in Croatia through the Health Care Act, Health Insurance Act and Health Care Measure Plan and Programme. School health services are part of the regular national health system and are funded by compulsory health insurance in accordance with numbers of children and university students. Their work plan, defined through annual programmes, has been developed and delivered at national level to reflect and complement the National Health Care Measure Plan and Programme.

3. Organizational framework

A network of school health services is in place in many European countries, providing regular checks on the health of nearly all children of school age. These services are therefore not only key players in promoting primary prevention, but are also important in the early detection of health and developmental problems, including overweight and obesity.

School health services in Croatia have traditionally been a well-organized part of the national health system. Although the health sector in general has undergone many changes, school health services have remained a separate and distinct service for children and young people characterised by specific preventative and health-promoting approaches.

School health services were responsible for comprehensive (curative and preventative) health care until 1998, but reforms introduced that year defined their role as one exclusively focused on designing and delivering preventative health care measures for schoolchildren, young people and university students, with general practitioners assuming responsibility for children's and young people's illness services.

The 1998 reforms also heralded an organizational shift from community health centres to county institutes of public health. School health services are currently situated in 21 county institutes of public health, with the National Public Health Institute taking the central, coordinating role. School health services embrace approximately 155 medical teams, with one school doctor and nurse working in each team. Each team takes care of about 5000 schoolchildren and university students.

Medical doctors in school health services need to undertake mandatory training consisting of a three-year course in school medicine, which gives them a recognized specialist qualification equal to family medicine or occupational medicine, followed by obligatory postgraduate training lasting four months. In school year 2004/2005, 113 school health specialists, 24 residents in school medicine (in the process of achieving the specialist qualification) and 16 medical doctors with no specialization worked in school health services.

Areas of work embrace a wide range of preventive measures, with the annual programme developed at national level specifying the need for regular systematic examinations, check-ups and screening, vaccination, health education and health promotion, counselling and health care for chronically ill children and children with special needs. School doctors are also involved in multidisciplinary projects at national or local level. All school health service activities are carried out in collaboration with other professionals in the education and health sectors, including:

- school professionals, teachers, psychologists and educationalists involved in all fields of work;
- clinical psychologists and psychiatrists interested in risk behaviours, mental health and learning difficulties;
- rehabilitation services in relation to learning difficulties and chronic illness;
- gynaecologists and obstetric services;
- family physicians and other medical specialists.

School health services act as a “bridge” connecting and filling in the gaps on both sides. There are advantages in school health services being separate services for children and young people, but also disadvantages in that the potential for interventions are felt to be too limited and need to be enhanced. Guideline development is therefore an essential part in the progress of school health services in Croatia.

4. Research

The HBSC 2001/2002 survey studied different elements of socioeconomic determinants of health and created the family affluence scale (FAS) as a measure of socioeconomic status. The FAS takes into consideration the number of cars in the family, number of computers, single-occupier bedrooms and holidays spent with the family. The percentages of families with poor and average socioeconomic status in Croatia are identical (43% poor and 43% average), with socioeconomic status being calculated as “good” for 14%.

The HBSC survey showed that subjective feelings of being healthy decreased with age and were consistently lower in girls. Satisfaction with life depends on many factors and reflects complex issues, but is an important measure of health status. Measured on a ten-point scale, life satisfaction also decreased with age and was lower among girls. Correlation between FAS and subjective feelings of health and life satisfaction was statistically significant (Pearson’s coefficient 0.168 and -0.118 respectively, $p < 0.01$). Children from families with higher FAS scores were more satisfied with their life and assessed their health as being better.

Higher self-rated health status in the Croatian sample (in both sexes) was associated (Spearman’s correlation, $p < 0.01$, 2-tailed) with:

- having breakfast more regularly (rho boys -.038; girls -.085)
- higher level of fruit consumption (rho boys -.126, girls -.147)
- higher level of vegetable consumption (rho boys -.083; girls -.129)
- higher level of physical activity (rho boys -.163; girls -.178)
- going hungry to bed or school less often (rho boys -.111; girls -.096).

Body weight and height in the HBSC survey were self-reported measures, and consequently are of limited value. We used them, however, to assist in the analysis of satisfaction with self image. Analysis of body image satisfaction and body mass index BMI showed that at the age of 15, only 35% of girls with BMIs within the “normal” range were satisfied with their body

weight; 41% wanted to be thinner and 16% were on a restrictive diet. The situation is somewhat different for boys ($\chi^2=22.23$, $p<0.01$), with 64% within the “normal” range being satisfied with their body weight. Seventeen per cent wanted to be thinner and 3% were on a restrictive diet, but 19% wanted to gain weight.

Analysis of life satisfaction and BMI also showed the following:

- girls satisfied with their weight expressed the highest life satisfaction, compared to underweight and overweight girls (7.1 on the ten-point scale, mean value 6.6);
- boys satisfied with their weight expressed the highest life satisfaction, compared to underweight or overweight boys (7.2 on the ten-point scale, mean value 6.9).

According to the survey, eating habits among 11–15 year-olds in Croatia are rather poor:

- 14.8% never have breakfast during weekdays
- only 69.7% of children have breakfast each weekday
- 87% of children eat breakfast on weekends
- no more than a third of children eat fruit and vegetables each day, which decreases with age.

Physical activity and sedentary behaviour data reveal many undesired behaviours. Physical activity decreases with age so that by the age of 15, only 33.5% of boys and 16.8% of girls are physically active one hour or more per day. At the same age, 31.4% of boys and 25.2% of girls watch TV at least four hours a day (on weekdays).

Evidence on prevalence of overweight and obesity in Croatia was derived from three different sources.

1. The HBSC survey, which showed through self-reported height and weight that 13% of boys and 6.1% of girls in Croatia were overweight. This rises with age for boys, among whom 16.2% are overweight at the age of 15, and remains the same for girls (6.1%).
2. School health services’ systematic health examinations (primary school: enrolment into 1st class, 5th class and 8th class; secondary school: 1st class). Part of these check-ups involves follow-up of students’ growth and development (body weight and height). Using national centile (c) distribution (1), medical records of check-ups from school years 1997/1998 until 2002/2003 show that about 5% of children were under 10c and about 9% over 90c.
3. Regular assessments of the nutritional status of schoolchildren carried out by the Medical Ecology Service of the Croatian National Institute of Public Health. Over 14 000 schoolchildren aged 7–15 have been covered by these assessments in recent decades.

Croatian data for the period 1997–2002 show the following averages for children and young people:

- healthy weight–69.5%
- underweight–13.4%
- very underweight–0.9%
- overweight–11%
- obese–5.2%.

The trend in numbers of obese children and young people has increased since 1997.

5. Practice issues

An anonymous questionnaire focusing on clinical practice in detecting and treating overweight children was sent to all school health services in Croatia in the preparatory project phase. Findings are summarized below.

Most school doctors “always used/often used” multiple methods to assess overweight: 81.3% used clinical impression, 94.9% weight-for-height percentile (1), less than 10% skinfold (8.2%) or waist-hip ratio (6.1%), and 23% used BMI.

In family history assessment, 96.9% of school doctors “always/often” asked about overweight family members and family history of cardiovascular disease (89.9%), hypertension (93.9%), diabetes mellitus (83.5%) and eating disorders (83.5%). Less frequently, they explored dyslipidemia (64.6%) and gallbladder disease (41.1%).

In relation to environmental contributing-factors assessment, 94.9% asked “always/often” about general dietary habits (typically about daily food intake, 93.9%), and 96.9% asked about physical activity (unstructured physical activity or free play, 94.8%) and sedentary behaviours (88.8%). Questions about meal content and frequency were used more by doctors who had been in practice longer ($p=0.020$), and these more experienced clinicians were also more likely to ask about “readiness to make changes to manage weight” ($p=0.032$) and “family dynamics” ($p=0.005$). Sixty-nine per cent of school doctors enquired “always/often” about the psychological and emotional status of overweight children.

Most (85%) school doctors regularly used general somatic examination during the systematic check-ups and searched for striae (92%) and for testicular retention (86%). All examined blood pressure. Treatment in therapeutic groups was always provided by 7% of the responders, and 7–32% of them stated that they always refer to specialists. Laboratory tests requested varied from 53% for glucose levels to 6% for insulin levels.

Seventy-six per cent of responders provided health education for pupils and 65% provided health promotion activity. Experienced doctors were more engaged in family involvement ($p<0.01$), in parents’ health education and in school diet interventions ($p<0.05$). There was a tendency for more experienced doctors to perform physical examinations, promote lifestyle change and engage with families more readily than opting for laboratory tests.

Although national guidelines and recommendations are not yet available, practices in identifying and assessing risk factors in child obesity are generally appropriate and consistent, but a strong need for harmonisation has emerged.

6. Aim of the international guidelines

School doctors deal with the most important issues regarding health, health behaviour and health habits through check-ups and guidance services. Taking into account the importance of overweight and obesity in childhood and adolescence, the demand for action targeting children at risk has grown. Monitoring needs to be conducted on the basis of agreed standardized definitions of terms such as “obese”, “overweight” and “normal weight” for specified genders and ages, and standards for early detection and specific guidelines for working with these groups and individuals are also necessary.

An international collaboration initiative has been launched, supported by the European Union for School and University Health and Medicine (EUSUHM). The joint project involving Belgium (Flemish), Slovenia and Croatia has been outlined and proposed, building on existing organizational structures for children’s and young people’s health care in the three countries.

The task for the joint project has been defined as developing a methodology for guidance on dealing with overweight and obesity in children of school age. The project is subsidized by the Belgium (Flemish) Government within the framework of their “Cooperation programme with central and eastern Europe” initiative.

The partners in the project are:

- Belgium (Flemish): the Catholic University of Leuven, Department of Youth Health Care and The Flemish Society for Youth Health Care (K. Hoppenbrouwers);
- Slovenia: University of Ljubljana, Faculty of Medicine, Department of Public Health-Hygiene (M. Jurčič), Slovenian School and University Doctors Society (M. Visnjevec Tuljak);
- Croatia: Society for School and University Medicine (V. Juresa), Croatian National Institute of Public Health (M. Kuzman), and University of Zagreb, Department of Social Medicine (Z. Šošić).

It can be seen that a similar combination of scientific (universities) and practice-related (professional associations) partnerships has been created in each of the three countries.

Scientific evidence is necessary to drive all components of an effective and efficacious school-based programme for the prevention, early detection and treatment of overweight and obesity. Cost-effectiveness, applicability in daily practice and standardization of screening and follow-up procedures (with scope allowed for local flexibility) are key issues to be taken into consideration when outlining a preventative programme. The project aims not only to produce a first European school health guideline for the early detection and treatment of children with overweight and obesity, but also to develop a model for European guidelines in school health care.

As a starting point, the Flemish methodology for guideline development will be used. We aim to implement a methodology for guideline development within two years, adapted to local situations and constraints. The capacity of the Croatian Society for School and University Medicine should be increased to enable it to act as coordinator for the development and implementation of guidelines in school health care in the future.

Guidelines development will promote consensus and standardization of procedures. Professional consensus should be attained around the scientific background of the guideline and standardization of procedures should not stifle professionals' ability to adapt their work to local cultures and needs. Ultimately, the developed guideline should be scientifically based, approved through a broad consensus within professional groups, and be applicable in daily practice.

The project timeframe

The duration of the project is two years.

Guideline development is a stepwise procedure. Altogether, 10 steps are envisaged: seven will be completed within the timeframe of the project, with the last three being prepared by each country separately. Currently, we are at Step 5.

The 10 steps of the project are the following.

Step 1. The first step was selection of subjects for guideline development by priority status. Priorities are based on importance of the health problem, need for the guideline, relevance to society, available scientific evidence, level of existing consensus and public health policy. All partners jointly agreed that the focus of the project was prevention of obesity and overweight in children.

Step 2. The second step was the appointment of scientific co-workers and the installation of study groups of field workers. Scientific co-workers were assigned in all three countries; two in Croatia and one each in Slovenia and Belgium (Flemish). Two study groups were installed in Slovenia and Croatia, each with six to ten members.

Step 3. The third step was a systematic review of the scientific literature focusing on definition, early detection, primary prevention, secondary prevention of overweight and obesity, further referral and management and procedures.

Step 4. The fourth step was the outline of practice related to the chosen subjects. It was produced following the questionnaire survey of all school doctors in Croatia on detection and management of overweight in their daily practice (see above). The results of the survey have been presented to all partners in the project and study groups, and inform the further development of the guideline.

Step 5. The fifth step is creation of the first draft of the guideline. The first draft was based on the literature search and was presented for discussion to members of the Croatian and Slovenian study groups. They have consistently highlighted the difficulties in devising a uniform guideline, especially in relation to respecting the cultural traditions of particular groups and communities and in taking socioeconomic inequalities into consideration. It has become clear that adjustment and alterations to reflect national and regional characteristics will be needed. This difficult and comprehensive task will reflect differences between the three countries as well as within them, and will be based on study group recommendations.

Step 6. The sixth step will be submission of the “study group-approved” draft of the guideline to a panel of experts to obtain broad scientific consensus.

Step 7. This will involve submission of the “expert-approved” draft to an advisory board, seeking consensus around feasibility. Experts will be asked to give scientifically valid comments on the guideline in relation to its applicability to preventative health care.

Step 8. The eighth step is preparation of a protocol of collaboration with other health services and professionals.

Step 9. Dissemination of the guideline to relevant authorities and target professional groups.

Step 10. Preparation of a strategy for implementation.

It is expected that all three countries will finish the first seven steps of the project by the end of 2006. The last three steps could be implemented outside of the project timeframe.

7. Conclusion

The major implications concern the following:

- collaboration among the three countries
- bringing together practice and science
- organizing health care for schoolchildren.

Collaboration among the three countries

Joint work involving professionals from three countries, based on scientific knowledge and mediated by specific organizational structures in each country, could have several implications and challenges:

- acknowledging differences between countries;

- recognizing advantages and disadvantages in different organizational structures;
- understanding the practical implications of implementation for fieldwork, and recognising differences between countries;
- using examples of good practice to enhance fieldwork;
- harmonizing school health work.

Bringing together practice and science

Guideline development is based on scientific evidence. All identified interventions cannot always be used in practice, so the applicability of specific interventions will be assessed and ensured through study-group involvement. Everyday work experience will also be of great importance in areas in which scientific evidence is limited, particularly in relation to specific vulnerable groups and minorities.

Organizing health care for schoolchildren

Although organizational structures vary between countries, availability and accessibility of school health services is guaranteed. School health services have a big presence in schools, emphasizing the importance of school as a setting for health promotion. They work with parents as well as pupils, providing school-based and family-based interventions that have been shown to be effective in obesity prevention. Having access to each schoolchild and his or her family allows for tailoring of the intervention to meet the individual child/family's needs. It must be recognized, however, that practice can be influenced by many different factors (such as the remoteness of some areas, extent of parental involvement and professional assessment techniques). School health service working conditions must be of sufficiently high quality to facilitate project implementation.

Adopting the professionally developed and agreed guidelines, tailored to local circumstances, could contribute to the harmonization of work with schoolchildren through parental involvement, individual approaches and gradual changes in behaviour.

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France: the French nutrition policy framework

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1. Introduction

Food and nutrition are critically involved in the development and clinical expression of illnesses, including cardiovascular diseases, cancers, obesity and type 2 diabetes, which today are the most widespread diseases in France and all industrialised and developing countries.

Obesity is probably the most visible of all these illnesses. Its prevalence in France has increased dramatically over recent years within adult and child populations. According to the ObEpi study (1), the prevalence of obesity has increased from 8.2% to 11.3% between 1997–2003 in the French population aged 15 and over. In the same period, the prevalence of overweight in the same population rose from 36.7% to 41.6%. A national survey (2) conducted between 1990–1993 showed an overweight prevalence of 8.3% (of which 2.4% were obese) among children aged 5–6; in 1999/2000, the prevalence in the same age group was 10.4% (3.9% obese). The issue of obesity particularly concerns lower socioeconomic groups, as described below.

Overweight and obesity occur when energy intake exceeds expenditure. Genetic characteristics and early environmental factors can determine a predisposition to excessive weight gain, but the increase in the prevalence of overweight and obesity over the last few years has its source in changes in eating habits and the rise in sedentary lifestyles.

Obesity has multiple consequences in terms of public health: excessive weight for adults is a risk factor for cardiovascular diseases, type 2 diabetes and some cancers. Obesity also has psychological and social repercussions, as obese people are often victims of stigmatization and discrimination.

As weight during childhood is predictive of weight in adulthood, maintaining a healthy weight concerns all stages of life, especially adolescence, which is the topic analysed by the present case study.

2. The socioeconomic determinants of health in French adolescents

The following section presents some results from the 2001/2002 HBSC survey in France (3) and from the main French studies related to eating habits, physical activity, sedentary lifestyles and body weight, as well as the socioeconomic determinants of health in adolescents.

Data from the 2001/2002 HBSC survey

Eating habits

More than half of French young people state that they do not eat fruits or vegetables every day. This proportion increases with age. Despite all recommendations, less than 20% of young people eat fruits and vegetables more than once a day. In addition, 42% consume sweets or soft drinks daily. Overall, girls make healthier food choices than boys.

These results confirm that there is room for improvement in the eating behaviours of adolescents. Comparisons with other countries in which the HBSC study is conducted show that France is about average for eating fruits and sweets and consuming

soft drinks. It is worth noting, however, that France is between fourth and seventh position (depending on age) in relation to vegetable consumption.

Physical activity, sedentary behaviour

French young people say they take part in physical activity for at least one hour 3.1 days a week (on average). Boys are significantly more active than girls at all ages. Less than one in five French students has a level of physical activity that meets the current international recommendations (one hour a day of moderately intense physical activity).

The average amount of time spent in sedentary activities (television/videos, computer usage and homework) per week varies between 9–12 hours. It is greater among boys and increases with age. Overall, a significant proportion of adolescents spend several hours a week in sedentary activities, with watching television and videos being the most common pursuits. On average, boys spend more time in front of a computer than girls. The time devoted to homework increases with age for both genders.

Boys and girls who are sufficiently active are much less likely to spend several hours in front of their computer, but these two groups devote the same amount of time to television and homework.

French students are far less active than their foreign counterparts. They rank in the last or next-to-last positions in terms of meeting international recommendations for physical activity. However, French students are one of the groups of HBSC-surveyed adolescents who spend the least number of hours in front of a screen.

Body image, weight and weight control

Just over half of French students think their body is “more or less the right weight”. One in four or five boys thinks he is too fat. The proportion of girls who think they are too fat is higher (three or four in 10), especially among the oldest age groups. More girls than boys state that they are following a diet or need to be following one (46.2% vs. 25.4%). In girls, this proportion increases with age. Almost all of those who think they are “too fat” believe they ought to follow a diet.

According to their declared heights and weights in the survey, 8.7% of young people in France are overweight, with the prevalence being higher in boys. The prevalence of obesity is around 1.5% and increases with age. Overall, body perception is coherent with reported weights. Likewise, proportionally more overweight adolescents follow a diet or think they should follow one than adolescents of a normal weight.

French students are average regarding the perception of their body, dieting and the prevalence of overweight and obesity.

Socioeconomic determinants of health in HBSC

The French 2001/2002 survey shows that, compared to children of high socioeconomic status (as measured using the HBSC FAS), daily consumption of fruits and vegetables are significantly lower in low socioeconomic categories, while soft drinks and sweets consumption are higher.

The proportion of students who meet the current international recommendations for physical activity significantly rises with socioeconomic status. In other words, students of high socioeconomic status are more active than their counterparts of lowest status.

The prevalence of obesity (based on declared height and weight) is significantly lower among students of high socioeconomic status, as is the prevalence of overweight. The proportion of students who are on a diet or think they should be dieting is the same in both categories.

These findings are in line with those from the previous French version of the HBSC study (4).

Other French studies

The links between dietary habits and socioeconomic determinants for adults are well-documented. The consumption of fruits, vegetables and fish is lower in populations of low socioeconomic status, while the consumption of fats and soft drinks is greater than in populations with higher socioeconomic status (5). Fewer data are available regarding young people. Mantey et al. (6) showed that students aged 11–12 consume soft drinks during meals and eat snacks more often if they go to school in an economically deprived area. These results suggest that the eating patterns of disadvantaged populations are characterized by a diet rich in energy-dense foods and poor in micronutrient-dense, energy-low foods, which are also more expensive – in other words, an unhealthy diet that predisposes to weight gain and disease.

Sedentary lifestyles among children aged 3–14, as stated in the INCA study (7), are significantly related to parents' socioprofessional category. Children of unemployed or economically inactive parents or of manual workers spend more time watching television (around 2.5 hours per day on average) than children of executive or freelance parents (1.5 hour per day on average).

As a logical consequence, social and economic factors seem to play a great role in determining overweight and obesity. The INCA survey (8) shows a significant negative correlation between socioprofessional category of French parents and the prevalence of overweight among their children aged 9–14. The prevalence of overweight (including obesity) is 6.7% among children of executive or freelance parents and 30% among children of unemployed parents. Consistent results have been found for 10–11 year-old children (9), for whom overweight (including obesity) affects the children of manual workers more than those of executives and the children of unemployed fathers more than those of working fathers. Similarly, a study of 14–15 year-old students (2) indicates a gradient of overweight (including obesity) and obesity that depends on parents' socioprofessional category.

Feur et al. (10) showed that obesity among young people aged 10–18 is more frequent in reconstituted families, when the professional situation of the parents is precarious and when the food budget is limited. A study of 12 year-old adolescents (11) found overweight to be more frequent in economically deprived areas, with its prevalence being inversely associated with family income tax and the mother's and father's education levels. The study also suggests a predominant effect of the mother's education level, rather than the financial resources of the family.

All those studies show that overweight and obesity among adolescents and the behaviours that influence their development – unhealthy eating habits and sedentary lifestyles – are closely bound not only to various socioeconomic indicators such as the parents' education levels, financial resources and professional situations, but also to living in economically deprived areas.

3. Policy framework in France: the National Nutritional Health Programme

The National Nutritional Health Programme (PNNS: Programme National Nutrition-Santé) was launched in January 2001. Its overall objective is to improve the health of the general population by acting on one of its major determinants: nutrition.

The programme sets nine quantified priority objectives related to food consumption, physical activity and biological and anthropometric indicators. Nine non-quantified objectives that relate to specific population groups have been added to the priority objectives. The nine priority nutritional objectives are shown in Box 1.

Box 1. PNNS nine priority nutritional objectives.

To increase the consumption of fruits and vegetables in order to reduce by at least 25% the number of “low consumers” of fruits and vegetables.

To increase the consumption of calcium in order to reduce by 25% the number of people whose calcium intakes are below the recommended nutritional level, while reducing by 25% the prevalence of vitamin D deficiency.

To reduce the average contribution of total fat intake to less than 35% of daily energy intake, with a 25% reduction of the consumption of saturated fatty acids for the general population (less than 35% of total fat intake).

To increase the consumption of carbohydrates so that they contribute more than 50% of the daily energy intake by: encouraging the consumption of starchy carbohydrates; reducing current consumption of simple sugars by 25%; and increasing the consumption of dietary fibre by 50%.

To reduce alcohol intake among those who consume alcoholic drinks. This intake should not exceed the equivalent of 20g of pure alcohol per day (equivalent to two 10cl glasses of wine, two 25cl beers or 6cl of spirits). This objective targets the general population and stands in a nutritional context (excessive contribution to energy intake); it is not directed towards people who suffer from chronic alcoholism, who require specialised care.

To reduce by 5% the mean blood cholesterol level in adults.

To reduce by 10 mm Hg the systolic blood pressure in adults.

To reduce by 20% the prevalence of overweight and obesity (BMI>25 kg/m²) in adults and to halt the increase, particularly high over recent years, in the prevalence of obesity in children.

To increase by 25% the number of people who include the equivalent of at least 30 minutes of fast walking every day, consequently increasing overall daily physical activity levels. Sedentary lifestyles, which are a risk factor for chronic diseases, must be tackled in children.

The PNNS is driven by the Ministry of Health and brings together public and private sectors involved in the following fields of intervention: research, training and monitoring; local programmes, health promotion, prevention and care; and food production, distribution and control.

Six strategic aims were defined to reach the PNNS general objective.

1. To inform and guide consumers towards satisfactory food choices and nutritional status and to educate young people and create a favourable environment for satisfactory food consumption and nutritional status.
2. To prevent, screen for and limit nutritional disorders in the health care system.
3. To involve the food industry, including catering, and consumers through consumer organisations.
4. To implement dietary and nutritional surveillance systems.
5. To develop epidemiological, behavioural and clinical research in human nutrition.
6. To undertake complementary public health measures and actions targeted at specific population groups.

The nine priority objectives apply to all age groups, including young people. The latter were also identified as a population group with particular needs. They were consequently the target of the following specific objectives:

- to stop the increase in the prevalence of obesity in the young
- to improve iron, calcium and vitamin D status of children and adolescents.

A wide range of actions directed towards adolescents has been undertaken since 2001. The main initiatives related to nutrition education will be detailed further; the field of food supply and advertising was the subject of specific measures, as described below.

The Ministry of Education published “*Guidelines on the composition of school meals and food safety*” (Interministerial guidelines 2001–118) in 2001. The document first reminds catering managers and cooks of the specific nutritional needs of children and adolescents and emphasises the role of school in nutrition education and in the development of food preferences. It also provides recommendations on the structure and composition of meals, with a focus on portion sizes and frequency with which foods and dishes are served. Finally, the guidelines provide information and recommendations about food safety.

Additional guidelines concerning student health (Guidelines 2003–210) were published in 2003. They scheduled the installation of fresh water fountains in all schools for 2007. Food and drink vending machines have been forbidden in schools under the Public Health Policy Act (2004–806) since September 2005.

Legislative action was taken through the Public Health Policy Act and the Social Security Financing Act (2005–1579) to provide a framework for food advertising, which is strongly suspected to be a great influence on child and adolescent food choices. Advertisements for soft drinks and manufactured food products will be required to include a message promoting healthy eating. Otherwise, advertisers will have to pay a tax on their advertising investment.

4. Initiatives promoting healthy eating and physical activity in the school setting

Though families represent the most significant framework for the development of children and adolescents, school also bears an important responsibility in helping them to develop into adults. Health education in the school setting, especially nutrition education, is part of the learning process that gives students the means to build their future life. The school system is also a large network through which all young people can be reached regardless of their social origins, at least theoretically. As a consequence, the main PNNS initiatives specifically directed towards adolescents take place at school (described below). It must be emphasized, however, that adolescents also benefit from interventions targeted at the whole population outside the school setting (such as mass media campaigns, medical staff training and improvement of the nutritional quality of food).

A partnership between the Ministry of Health and the Ministry of Education was established in 2003 (Guidelines 2003–210) to reinforce the role of schools in health education. The formation of this partnership was aimed at defining common objectives in favour of child and adolescent health and at developing coherent actions in priority fields. The promotion of healthy eating and physical activity is one of those priorities. The most recent PNNS initiatives – the subjects of the present case study – are part of that interministerial partnership.

Actions implemented as part of the interministerial partnership

A national food guide was created in 2002, based on the PNNS objectives. It aimed to provide a practical reference document for the general population, with information for daily food choices and clarification on what “a balanced diet” means. This national food guide has been adapted in various versions, including:

- a nutrition guide for parents, with a specific section about adolescents, published in 2004
- a nutrition brochure for adolescents, published in 2005 (all documents are available at www.mangerbouger.fr).

The brochure aimed to give adolescents the keys to healthy eating, based on personal preferences and enjoyment of food. It showed, in a personalized way, how important eating choices are to growing well, thinking well, feeling well and maintaining

a healthy weight. The brochure also provided tips and quick recipes that allow teenagers to balance their meals with the types of food they like. Various profiles are proposed so that everyone can identify themselves in the guide and find solutions that are adaptable to their own situations: for example, “I love sugar”, “I like eating in fast food restaurants” and “I feel too fat” are three of the profiles described in the document.

The brochure for adolescents was distributed to all 12–13 year-old students via their biology teachers. A parallel circulation was implemented through a large network of sport and leisure associations (almost 10 000 sites) to reach more young people. During Spring 2006, the brochure was promoted through partnerships with a radio station web site and a TV channel that are mainly visited by adolescents.

A multimedia nutrition education tool for students aged 11–15 is being conceived by Inpes. It is intended for education and health professionals in the school setting and aims to encourage students to develop a critical attitude towards the links between their environment and eating habits and to enhance their abilities to make healthy choices adapted to their needs, tastes and habits. A letter announcing the publication of the tool will be sent to all French schools as part of the interministerial partnership. The tool will be available for free on request.

Other national and local actions

A PNNS logo was created in 2001 and has been used as a signature for all campaigns, documents and tools produced by authorities as part of the programme. Since 2004, nongovernmental bodies⁷ can also apply to use the logo on their communication and information media. An expert committee examines the applications with regard to their conformity with the PNNS objectives. Several associations and catering companies have proposed nutrition education tools for adolescents that have been validated on scientific and education criteria through the logo attribution procedure.

A wide range of local initiatives, co-financed through health-nutrition grant programmes, are conducted by various bodies. Two of those projects are of particular interest as part of the present case study: the “Val-de-Marne” project and ICAPS (Intervention centred on adolescents’ physical activity and sedentary behaviour) (12). Both are primary prevention programmes focusing on adolescents that are implemented at school and are based on the promotion of healthy eating and/or physical activity. They have already shown good results in terms of behaviours and BMI.

Free fruit distribution is organised once or twice a week in many schools in deprived districts thanks to local funding.

5. Conclusion

There has been strong mobilization of different authorities and local and non-government bodies since the beginning of the PNNS. The partnership between the ministries of health and education has paved the way for a profitable collaboration in the field of health promotion that has already proven fruitful.

It is now necessary to go further. Some tasks are under way, and must be supported. For instance, an expert group formulated recommendations for the orientation of school curricula in the field of nutrition in 2003, but those recommendations have not yet had any impact on curricula.

It is widely recognized that food choices and physical activity are determined by individuals as well as by environmental, social and political factors. Many of the actions undertaken so far have come under nutrition information and education

⁷ In this sense, “nongovernmental bodies” refers to non-state organizations, including local public organizations, associations, private companies (such as catering companies), etc.

that can orientate individuals' choices towards healthy behaviours. On the other hand, fewer initiatives have been related to collective responsibility, including changes in environment and food supply. Such changes are essential to the development of a positive framework for healthy eating and physical activity.

The progressive implementation of the measures described above in schools is a step in the right direction, but is not sufficient. Adolescents only spend a limited part of their time at school; their family and leisure environment and the availability of food outside of school determine their diets and physical activity levels to a great extent. As a consequence, more actions in those fields, coherent and complementary with those taken in school, are necessary to achieve consistent behavioural changes.

Authorities have identified this issue, and will orientate the PNNS towards a better balance between individual effort and collective responsibility. It will also consider the possible side-effects of nutrition interventions, such as obesity stigma or the worsening of health inequalities, that have not sufficiently been taken into account.

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Germany: preventive care for obese children and adolescents – quality and deficiencies of programmes and interventions

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1. Introduction

In Germany, as in other industrialized countries, obesity in younger people seems to be increasing significantly, as the German Health Behaviour in School-aged Children (HBSC) study findings show (1). In view of concerns about how representative these data are, additional evidence from regular school entrance diagnoses was consulted. This confirmed the increasing prevalence rates and consequent health-risk burdens (2–8).

One of the central factors among the socioeconomic determinants of unhealthy eating habits and physical inactivity is inequalities in gaining access to sociocultural resources and opportunities to develop coping competences and patterns of resilience. Programmes established to prevent and reduce obesity and associated diseases in children and adolescents should comply not only with evidence-based guidelines, but also with sociocultural expectations of target populations.

2. Background: health promotion and education in Germany

Health promotion and education (HPE) in Germany exists within an environment of institutions, activities and providers (3). There are approximately 250 health insurance companies under public law – ranging in numbers of members from several thousand to several millions – and more than 100 private health insurers. Most of them match marketing and sponsoring strategies with particular preventative approaches and profiles of health care supply. Many organisations, institutions (such as schools) and federal agencies participate in HPE, providing funding to support diverse programmes and projects.

The federation of health insurance companies publishes annual reports summarizing their preventative activities. The reports are based on guidelines which present standardized quality criteria for interventions in several HPE fields, such as stress, obesity and addiction, and for fieldwork projects. Local insurance company representatives tend to use the criteria differently, however, meaning that reliable data on programme quality and extent of implementation are scarce.

Studies on HPE in Germany show positive health outcomes, but also severe deficiencies in the conceptual and procedural quality of many projects (10–13).

3. The study

The Hamburg University Hospital's Institute of Medical Psychology (UKE) and the German Federal Centre for Health Education (BzGA) have carried out a national survey to assess available resources and capacity for HPE for obese children and adolescents in Germany. Research targets were to:

- give an account of existing health care programmes and institutions in the field;
- assess the quality of providers, treatment settings (clinical instruction, outpatient treatments, counselling, school fitness programmes) and institutional branches (hospitals, individual practitioners, information centres);

- describe strengths and weaknesses of types of institutions, programmes and providers to address the potential for quality improvement and offer recommendations for empirically guided systematic development of health care in this field.

Methods: a representative survey and quality assessment of institutions and programmes

The project was carried out in several steps.

First, a brief questionnaire based on professional knowledge, scientific evidence and the dimensions of an evidence-based quality assurance system for HPE (Quality Assurance for Prevention, QA-P) was developed and pre-tested. Fifteen comprehensive criteria were extracted from obesity prevention and care guidelines. The criteria selected were discussed and validated by an expert group coordinated by the BZgA in cooperation with prestigious scientific societies. The resulting survey questionnaire contained 150 items (two pages) addressing:

- structural characteristics of providers (treatment setting, number of participants, duration time and cost of treatment, average frequency of interventions and number of annually administered treatments);
- quality criteria of programmes and interventions; most of the criteria contained several sub-criteria, meaning that almost 30 guideline-based criteria were integrated (Table 1, overleaf).

All relevant categories of providers – hospitals, general and paediatric practitioners, information centres and local health authorities, for instance – were identified via internet searches and listings of scientific and professional societies. A random sample to receive the questionnaires was then drawn for every relevant branch.

Around 2400 questionnaires were sent out, commencing February 2004, with 1100 responses. Only responses that indicated activities directed at the prevention and treatment of obesity and associated health problems and diseases were considered, with unspecified health promotion interventions excluded from the sample. The resulting data set contained 436 providers, plus a further 56 who sent delayed answers and were considered in later analyses.

All findings were compared to several former studies to assess their validity and to identify changes in supply patterns. Analyses were done by common multivariate statistical procedures (correlation and regression analysis, t-tests, U-tests, cluster analysis, factor analysis, MANOVA).

In the final stage, the survey findings were empirically controlled by an in-depth quality assessment. Data were gathered from 38 providers selected as a representative sample of typical interventions from eight provider clusters defined empirically by cluster analysis. Quality profiles were generated by means of QA-P, a field-tested quality assurance system for HPE developed by UKE and BZgA. This system for measurement, feedback of results to ensure continuous quality improvement and monitoring of central quality dimensions in HPE consists of several distinct structural elements: data generation, quality assessment, analysis and feedback, and health care monitoring.

Quality dimension	Comprehensive and sub-criteria included
Structural quality	programme handbook inclusion criteria for age groups exclusion criteria defined or considered dropout statistics available
Targets of intervention	intervention goals defined on several levels: <ul style="list-style-type: none"> • physical activity levels • BMI • eating habits families/parents defined as a specific target group; practical involvement of families/parents in treatment
Diagnostics at the beginning of the treatment	assess motivation levels for lifestyle modification exclusion of somatic diseases exclusion of mental illness general diagnostic, describing: <ul style="list-style-type: none"> • eating habits • physical activity patterns • psychologically relevant aspects • BMI diagnostics in laboratory
Treatment procedures	multidisciplinary team comprising: <ul style="list-style-type: none"> • medical doctor • psychotherapist • physical activity/sports expert • nutrition expert multimodal treatment comprising: <ul style="list-style-type: none"> • physical activity elements • nutrition modification • behaviour/lifestyle modification • health information and education
Diagnostics at the end of the treatment	general diagnostics, describing: <ul style="list-style-type: none"> • eating habits • physical activity patterns • psychologically relevant aspects • BMI
Follow-up treatment	active follow-up interventions (not merely information leaflets)

Table 1:

Criteria for a survey of preventive activities for obese children and adolescents.

QA-P measures seven central evidence-based quality dimensions by means of highly structured and reliable experts' assessments in seven main and 22 sub-dimensions of quality in HPE.

1. Quality of concept (definition of health targets, intervention goals, output objectives and indicators, target groups, scientific foundations and professional approach).
2. Quality of planning (initial analysis of health problems and specific settings conditions, overall design of the intervention, formal institutional cooperation).
3. Participants (staff, professional qualifications, networking and professional cooperation).
4. Method of intervention and dissemination (publicity, education elements and approaches).

5. Project monitoring and management.
6. Available evaluation results or monitoring of output and health outcomes.
7. Sustainable quality development of the programme or intervention.

Nineteen expert raters nominated by the most prestigious scientific societies (medicine, paediatrics, psychology, dietetics, nutrition science and science of sport) participated in the assessments. The results from QA-P confirmed all aspects of the survey findings.

Findings: obesity prevention for children and adolescents in Germany

This national survey is the most comprehensive data source available on obesity prevention and treatment both in terms of number of providers and in relation to detailed data on the quality of their interventions and programmes. The data received enabled the calculation of a statistical projection model of the amount of activities currently dedicated to the prevention and treatment of obesity in Germany. Analyses resulted in a description of intervention quality and of specific categories of institutions, a typology of interventions and a description of their strengths and deficiencies.

The projection yielded an estimate of 708 providers offering 44 000 treatment places per year. Supply is balanced by an (increasing) prevalence of 1 million obese or slightly obese children and adolescents in Germany. Defining the potential intervention range for obesity in childhood and adolescence as a time span of 10 years, providers are able to treat a total of 44% (SE: 33–55%) of obese children and adolescents.

Two thirds of the providers work in an ambulatory setting, 19% in an inpatient or clinical setting, and 11% in a hybrid form of both. Only 4% offer interventions in genuine settings according to the principles of WHO's setting approach, particularly in kindergarten and schools.

Programmes in hospitals provide a third of treatment places, with nutrition information centres and local health authorities supplying a fifth. Practising physicians contribute only a small degree to HPE on obesity.

According to our estimates, the number of available treatment places has risen by approximately 70% between 2002–2004, making it a rapidly growing branch of HPE. The number of institutions offering interventions has risen by 19%.

Several severe deficiencies of supply quality concerning most categories and programmes were identified. Interventions reached an average of only 51.5% of the guideline-based quality criteria, meaning just under half are deficient. This is clear evidence of the need for further quality improvement in this field.

There is no clear-cut borderline between highly deficient, mediocre and high-level quality providers and programmes. Rather, there are gradual shades of quality and overlapping strengths and weaknesses among providers, with high variance in quality within institutional branches, professions and treatment settings.

Almost no providers have specialized in HPE for socially disadvantaged or other particular target groups, and gender-related approaches are lacking.

Providers working in inpatient or hybrid settings outmatch the ambulatory setting in many quality criteria. Providers in ambulatory programme settings comply with 49% of the guideline-based quality criteria; the figure is 57% in hybrid settings, and 62% in inpatient. Multimodal treatment (addressing eating habits, activity level, health information and general lifestyle) is found in only 10% of the ambulatory programmes, but 37% in hybrid and 41% in inpatient programmes. Multidisciplinary

intervention teams (consisting of a medical doctor, a psychotherapist and nutrition and sports experts) are found in only 19% of ambulatory programmes, but in up to 49% of hybrid and 71% of inpatient programmes. Relevant diagnostic standards to exclude somatic diseases are available in 77% of ambulatory programmes but achieve almost 100% in hybrid and inpatient programmes.

Conversely, ambulatory providers are more competent in integrating young patients' families into the treatment and follow-up plan and provide a higher number of intervention approaches. They are also dramatically less expensive. As a rule, however, there is almost no provision to secure continuous and sustainable interventions after inpatient treatment.

Different institutional categories are characterized by significant quality patterns. Hospitals comply with 63% of the quality criteria, while nutrition information centres achieve 46% and other information centres only 35%. Thirty-six per cent of the hospitals utilise multimodal treatments, versus less than 10% in the other branches, and 62% of hospitals provide multidisciplinary teams (for others, the figure is 10%). There is nevertheless high variance across all quality criteria within all categories, and some hospitals offer rather low programme standards.

Findings around the interaction of programme expenditure and programme quality prove highly relevant for health policy. There was tremendous variance of intervention costs, both in terms of treatment places (participation) and treatment duration (dose). In Germany, treatments are paid for by different institutions that must invest significantly differing amounts for programmes of similar quality and duration. Those interventions carried by the health insurance funds required an average of 800€ per person treated (43% of the programmes are paid for by the health insurance funds), in comparison to an average of 2300€ per person treated in programmes paid for by the pension insurance funds (5% of the programmes). Co-payment is common (almost 30% of the programmes); here, family costs amounted to 300€ per treatment. Higher costs did not, however, predict improved quality (the correlation is $r=-.29$ for programmes paid by the health insurance funds), with only 15% of variance in quality being dependent on differences in available funding. In this field, money and quality do not predict one another: there are comparatively cheap providers that offer good quality, and expensive programmes of rather poor quality.

Discussion and recommendations

The number of 44 000 treatment places available per annum represents a considerable contribution to tackling the problem of overweight and obesity. In view of increasing prevalence rates, any loss of providers would be extremely worrying. Our findings indicate striking variations in quality profiles and severe shortcomings in many programmes. Consequently, institutions and programmes should be encouraged to improve their performance, with continuous quality assurance and quality monitoring. Economic incentives without quality criteria are insufficient to develop adequate supply chains and enhance high-quality interventions, as there is a low correlation between programme costs and overall programme quality.

Other recommendations are:

- a broad array of quality enhancement approaches for the highly heterogeneous field of HPE is required;
- health insurance funds should establish and maintain quality standards;
- scientific and professional societies should launch information campaigns promoting a professionalization of interventions;
- regular quality monitoring should be introduced, organized by a neutral institution, with reliable quality assessments;
- providers should be offered accreditation to help patients find the right high-quality programmes for their needs;

- special programmes for specific target groups should either be developed or transferred from other countries and evaluated, particularly programmes that focus on social disadvantage and gender-sensitive approaches and interventions;
- children's and adolescents' social and cultural backgrounds should become a relevant feature of all interventions;
- campaigns should be launched to encourage individual motivation to change lifestyles and to participate in obesity programmes by concentrating on the positive prospects, the considerable likelihood of success and the efficiency of high-quality programmes.

The settings approach, using social systems and the modification of institutional structures and conditions, seems to be underestimated. Schools and elementary education settings are important arenas for the development and stabilization of healthy eating habits and physical activity. Comprehensive programmes for developing life skills should be developed, implemented and improved. Supply chains should be established to bridge HPE, prevention, treatment and follow-up interventions.

4. Conclusion

Studying supply structures is a worthwhile enterprise. Although methodologically immature, such research provides a valuable underpinning for systematic quality improvement and improved accessibility to prevention programmes.

The research design produced valid and relevant data, from which recommendations that are being transferred to other fields of HPE, particularly in schools and elementary education institutions, emerged. For health policy-makers, the findings that there may be severe deficiencies in HPE programmes and that high costs do not predict high quality, will be of particular interest.

In conclusion, we find that continuous quality monitoring and quality improvement programmes are to be recommended, as they enhance the specific quality criteria of prevention and HPE.

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Italy (Piedmont Region): health services, schools and local communities allied in promoting healthy eating habits and regular physical activity

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1. Introduction

Obesity is a significant risk factor for chronic-degenerative diseases (cardiovascular illness, arthropathy, dislipidemia, diabetes, hypertension and intestinal tumours). Dietary habits and lifestyles acquired in childhood are fundamental to creating the basis of a healthy adult life.

Between 1998–2000, the Italian National Health Plan established a series of objectives for dietary standards that aimed to prevent diet-related diseases, particularly cancer. The protective role of fruits and vegetables in human carcinogenesis has been extensively documented (1). A systematic review of the international literature has allowed qualitative classification of evidence of the carcinogenic or protective effects of certain dietary habits (2), leading to the development of specific recommendations in the dietary field.

The main problem in education programmes focused on prevention is assessing the impact of public health messages and their effectiveness in modifying dietary habits, particularly over the long term (3,4). A review published in 2002 (5) evaluated 217 intervention studies aimed at modifying dietary habits. The most effective strategies identified in these very varied studies were those involving:

- “personalized” interventions aimed at high-risk groups or groups with particular habits;
- methods involving periodic self assessment of results, followed by self correction (“audit-and-feedback”);
- active participation of subjects;
- mass-media campaigns with very specific messages aimed at particular subgroups;
- presence of healthy foods in the restaurant, industrial and institutional catering sectors;
- intersectoral initiatives such as pricing policies, information availability through mass media and health professionals and involvement of the agro-industrial production sector (6,7).

The literature (8,9) confirms that the most effective school interventions:

1. Have more than one objective:

- to increase consumption of fruits and vegetables;
- to reduce sedentary behaviours such as watching TV and playing videogames.

2. Develop integrated education programmes based on:

- teaching the benefits of eating fruit and vegetables;

- encouraging children to try a variety of foods;
- encouraging children's capacity to make innovative choices (developing their sense of self-efficacy).

3. Propose actions on several levels:

- classroom (learning moments);
- institution (improvements in school meals);
- parents (involvement in activities within the family);
- teachers (training).

2. Local and political context

This case study describes a series of initiatives in the territory of the Local Health Unit 21 of the municipality of Casale Monferrato carried out between 1998–2004.

Departments of prevention in local health units in Italy are the places where prevention and health education initiatives meet. They have specific statutory functions in relation to food services and the dissemination of guidelines on nutrition and food-borne disease prevention.

Responsibility for delivering on these functions has fostered a favourable climate for the development of alliances and collaborations among health professionals from related services such as the School Medical Service, the Mother and Child Department and Territorial Services. All of these services have extensive experience in the field of education programme planning, particularly in schools.

Several initiatives within the territory covered by the Local Health Unit of Casale Monferrato have favoured the consolidation of a true partnership that includes participants outside of the medical sphere, based on shared objectives and resources and with a view to promoting better health.

The Working Group on Health Education performed a survey of health needs in schools (including dietary needs) in 1995/1996 using a special grid prepared in collaboration with teachers. The municipality and schools of Casale Monferrato worked together during the same period on a project called “Do you know what you're eating?” This involved scholastic and extra-scholastic activities (school trips, guided visits and practical activities) to promote greater food awareness.

A five-year dietary education project called “In search of the lost pyramid” was launched in 1999. It used data from a childhood obesity screening programme carried out by paediatric services, which showed that 29.3% of third-graders in 1998 were overweight and 5% were obese.

Other information regarding dietary behaviours and lifestyles of children and other significant figures in school and family settings (teachers and parents) were obtained from studies performed in 2000 and 2001 by means of:

- teachers' classroom observations (pupils ate outside of mealtimes in 30% of classes, and the midmorning snack was hypercaloric in 40%);
- questionnaires on eating habits of families (only 20% of children ate vegetables prepared at home) and use of free time (time dedicated to TV and computer use rose from 90 to 120 minutes daily in the transition from nursery school/kindergarten to elementary school);
- focus groups with teachers on the relationship between diet and health.

Local health units, with the support of the Parents' Association, organized two evening events in 2000 dedicated to the theme of nutrition and well-being. The events were designed to promote awareness and interest among the families of school-aged children and were open to the general public.

SIAN (Food Hygiene and Nutrition Service) and the Casale Monferrato municipality promoted a conference entitled "School is served" in 2001, at which they presented nutritional guidelines prepared in collaboration with the Veterinary Service and Paediatric Service. The Gruppo di Educazione alla Salute (GES, health education group) was given the responsibility of consulting with members of the school meals commission (families, teachers, school directors, municipal government representatives, policy-makers and councillors in the public education and environment departments) and representatives from school meal suppliers on the most important aspects of school meal services. The findings, obtained using the "nominal-group technique", were distributed to all participants and communicated formally to the relevant city councillors.

In the same year, the Alessandria section of the Italian League for the Fight Against Cancer invited the Local Health Unit of Turin to participate in a project called "Eat us...we'll make you a champion". It aimed to encourage consumption of fruit and vegetables by elementary and middle-school pupils and to combat the cardio-oncological diseases caused by unhealthy eating habits and sedentary lifestyles.

Finally, experimental "one-dish" meals were introduced (replacing the traditional Italian meal consisting of several courses) in a nursery school and an elementary school in Casale Monferrato during the 2002/2003 academic year, with the aim of reducing excess consumption of animal proteins in school meals.

3. The project: main strategies used

The recent project "To school with relish", which was financed by the Piedmont Region, represents an organized attempt to introduce innovative strategies for nutrition in schools. Project planning was based on indications in the literature about theoretical efficacy and evidence of effectiveness in practice of the actions planned.

The intervention studies that form part of our healthy diet and physical activity projects have allowed us to examine the strengths and weaknesses of actions aimed at:

- developing teachers' competence in nutrition education and co-planning education interventions for pupils;
- introducing initiatives involving the school cafeteria environment and school meals;
- encouraging active involvement and participation of families;
- developing intersectoral alliances and synergies.

Training educators in the school setting

There has been an evolution over the years from "one-off" interventions conducted by external experts towards the development of training programmes that reinforce the role of teachers in health education, developing their capacity to plan education projects based on proven efficacy and characterized by continuity, which is fundamental to changing behaviour and lifestyles.

Our experience tells us that an in-depth feasibility study must be conducted and a formal statement of intent drawn up before a project is launched; this is necessary to gain schools' full participation in the project. Once a broad consensus has been reached on the project outline, it is essential to involve the relevant stakeholders (especially parents) through a participative approach that gives them a wider understanding of the intervention's context. This will avoid misunderstandings and support the phases of

community diagnosis and education needs analysis. These phases will be more successful if the people in charge of the project are able to facilitate decision-making processes using consultation techniques such as focus-group and nominal-group approaches.

We found it was crucial to:

- involve parents in planning and implementing the education intervention;
- prevent situations in which teachers try to delegate responsibility to outside experts;
- create access to resources, particularly the help of professionals specifically trained in adult learning.

It is also important to draw up a training plan explicitly stating objectives that are consistent with the education needs analysis performed, and to provide a teaching kit to be used in the classroom.

We have found the following to be important in the training programme:

- suitable spaces, acceptable timetables and course methods;
- acquisition of a “common language” and common way of thinking about the project among health workers and teachers;
- directives about times, methods and instruments for evaluating the process and results of the education project.

Finally, continuity is very important: initiatives and scholastic activities should be integrated into programmes designed to operate over several years, and projects should be included in school course choices.

Among the critical points we have observed during this phase are:

- shortage of material and financial resources
- the lack of a “control centre” to support the various aspects of the ongoing project
- insufficient parental involvement and participation.

Of no-less importance is the final phase of evaluation and publication of findings, during which particular attention must be devoted to expected and unforeseen outcomes.

To illustrate the importance of this phase, we will cite the results of the project “In search of the lost pyramid”, activated in 2000/2001 and involving four elementary schools (13 classes, 30 teachers and 264 pupils). At the end of the activity, there was:

- an improvement in diet quality for 37% of pupils;
- an increase in consumption of the fruit portion in school canteens in 11% of schools;
- organizational changes during break times in 58% of classes (for example, to favour the introduction of fruit into the mid-morning snack);
- a reduction in sedentary scholastic activities in 52% of classes.

Eighty per cent of teachers claimed they perceived an increase in the professional status of the role of health educator. The teachers also reported changes in their own behaviour: one third reported an increase in consumption of fruits/vegetables and daily physical activity.

On the down-side, parents' reactions were disappointing. Although most (over 84%) showed interest in their children's school activities, only 6% had direct participation in proposed initiatives, confirming the need to adopt new and more effective strategies and techniques to ensure parents' involvement and participation.

A further aspect that must be taken into account in this phase is feedback of results through the use of methods, formats and channels appropriate to the type of stakeholder. Rather than activating a traditional training course for teachers with the new project "To school with relish", we are designing with the teachers an itinerary which will allow better supervision of the programme, the co-design of instruments and methods for education, and experiential interventions and monitoring of the learning process and the overall results of the work.

Involvement of parents

We encountered the same difficulties in attempting to meet and involve parents as are reported in similar studies. Participants were usually well informed, willing to adopt healthy behaviours and act as positive role models at home, but we had a constant problem in reaching parents who didn't participate. Only six out of the nine information meetings planned for parents in the 2000/2001 phase of our project actually took place, and the participation rate, with rare exceptions, was only 10–15%.

Table 1 analyses several interventions and the strategies used by our working group, with particular attention given to critical points and results observed.

Table 1: Interventions and the strategies used by the working group.

INITIATIVE	MEANS OF INVOLVEMENT	TYPE OF INTERVENTION	RESULTS and CRITICAL POINTS
Evening seminars on healthy dietary habits conducted by experts and aimed at parents of elementary and middle-school pupils.	Proposed by schools, with voluntary participation by parents.	Formal lesson with time for questions.	Very limited participation. "The same parents always come, the ones who need it least, or the saboteurs."
Programme of meetings on various themes, including healthy diet, such as the "What it means to be well" project (Martiri School).	Originated from a preliminary questionnaire survey of parents and is based on needs/requests. Parents are asked at enrolment about their preferences for day and time of meetings.	Encounters based on information exchange and participation through interactive methods and small working groups.	Good level and continuity of participation. Involvement and development of a "group spirit" useful for possible future initiatives.
Programme of two evenings for the general public to inform and increase awareness of various dimensions of diet (such as epidemiology, nutrition and psychology).	Proposed to the local community in partnership with the Parents' Association.	Assemblies featuring talks by experts with interaction and debate with the public.	Good participation aided by word-of-mouth among association members. Levels of attention, involvement and information exchange depend partly on the communicative abilities of the conductor-facilitator.
Brief educational interventions aimed at individual groups/classes in particular circumstances (such as parties, school performances and distribution of report cards).	School allows a brief space within a formal assembly of families convened for other reasons.	Brief and direct intervention.	Effective for transmitting small amounts of simple information using a persuasive communicative style.
Guided group activities (including farm visits and snack times involving parents and pupils).	Proposed by the school as part of a specific project incorporated into the school curriculum.	Experiential.	Good participation in an initiative that is seen as a continuation of the school timetable. The education aim is facilitated by the presence of parent representatives and teacher participation.

We are presently experimenting with a sequential process in which the novel element is a series of meetings aimed mainly at parents acting as school and class representatives in the participating school. The aims of the project are presented along with the tasks, times and ways through which the group of parents will try to stimulate attention and interest in the other families. Consultations and surveys are planned, with the representatives acting as mediators to establish a minimum but shared level of active parent participation.

4. Other key initiatives

Building alliances

We have always worked with operators from other organizations and, in recent years, with those from outside of the health care field. The transition from a temporary collaboration to a working group based on a consolidated partnership does not happen spontaneously or by mere chance. A central aspect of the operator training has been instruction in how to develop potential alliances and keep them functioning smoothly. The following list of essential points in the organizational aspects of building an alliance for health was drawn up during the workshop on the Solidarity Pact, held in December 1998 at the Department of Public Health of the University of Turin:

- the interdependence of responsibilities among different work groups or teams or institutions involved must be recognized;
- the cultural norms of other groups must be respected;
- objectives must be agreed;
- an operative protocol must be drawn up, containing:
 - objectives of the alliance
 - roles of the various participants
 - rules for implementation
 - an assessment plan;
- the composition of the working groups must be formally confirmed;
- an information system must be established among all the operators involved;
- there must be a calendar and records of the meetings among the various work groups;
- resource sharing must be established and recorded;
- assessment-plan implementation must be recorded;
- periodic reports on the progress and results of the alliance's work must be produced.

Based on the above points, we created a task force on dietary promotion and education within the local health unit in 2000. It is composed of a GES, SIAN and paediatric service. Collaboration within this alliance has been consolidated through numerous activities, initiatives and projects.

A solid alliance was developed with the Alessandria section of the Italian League for the Fight Against Cancer (henceforth referred to as Cancer League) in 2000, building from a one-off collaboration. This has produced a series of mutual advantages:

- the possibility of preventive-education interventions over a wider territory;
- proposals for integrated interventions at various levels: communicative, informative, formative and educational;
- a persistent level of attention to the problem of nutrition due to the prestige, visibility and credibility of the Cancer League;

- realization of a wider and more complex range of interventions and initiatives, thanks to the network of volunteers and financial resources made available by the Cancer League and obtained through co-participation in public tendering competitions.

We are experimenting within our present project with the institution of a “round table” including participation of municipal administrators (mayor and councillors), school directors, directors of the local health unit project, teacher representatives and school meal suppliers. Periodic meetings of this group allow us to present details of work progress, deal with any problems by working together to identify possible corrective measures and act as advocates and negotiators for everyone involved in the project, particularly family representatives.

School meals

A decisive “push” towards a school system that promotes health through healthy diet and lifestyle has been instigated by the municipal administration of Casale Monferrato, in particular by the Public Education Council, which has acted through specific policies to improve the quality of school meals.

Of noteworthy importance has been the creation of school meal commissions, which not only provide families with the opportunity to check the meals served in schools, but also to involve them in consultations and decision-making. The commissions’ main responsibilities include:

- linking families, the municipal administration and school catering companies in collecting, evaluating and reporting users’ requests;
- monitoring the quality and tastiness of meals;
- providing information on the preparation and distribution of meals, food safety and nutritional balance with a view to introducing variety into school menus;
- promoting the educational value of mealtimes at school.

The municipal government, schools and health services have collaborated in the following initiatives:

- production of guidelines on school meals for teachers and parents;
- consultations with all stakeholders (political decision-makers, school directors, teachers, parents, school meal suppliers) on the determinants of quality school meals;
- organization of a public symposium to publicize the guidelines and survey findings.

Institutional representatives and political figures have also been sent a document summarizing perceived needs in relation to school meals, listing the following aspects (in order of priority):

1. environmental and organizational
2. educational and relational
3. user satisfaction
4. quality and tastiness of meals
5. hygiene guarantees
6. nutritional guarantees.

We have tried within our projects to publicize results on changes in behaviour at school mealtimes, following education interventions from teachers that require reinforcement from parents at home. Table 2 shows results for the 2000/2001 project, illustrating changes in consumption of certain foods during the academic year.

Course	Waste at beginning of year (portions refused)	Waste at end of year
Vegetables	57%	65%
Fruit	29%	18%
Meat/fish	20%	15%

Table 2:

Changes in food consumption in school canteens: comparison between beginning and end of academic year.

Table 2 shows an increase in fruit consumption (indicated by the reduction in leftovers) and, to a lesser extent, in the second course of meat or fish, and an increase in waste of vegetables. It emerged subsequently, however, that the vegetable on one of the observation days was salad, which is generally less popular. This underlined the importance of taking observations under standard and controlled conditions.

The 20% refusal of the “single-plate” meal (comparable to the refusal rate for the first course in the traditional two-course meal) during the 2002/2003 academic year was explained (after surveying teachers and parents) by the influence of adult figures who were still anchored to the idea of the two-course meal, a problem that should be resolved through specific training of these adults.

5. Conclusion

In the territory of the Local Health Unit of the Municipality of Casale Monferrato, childhood obesity data for 2004 can be favourably compared with the 1998 data, with reductions from 29.3% to 23.7% for overweight children and from 5% to 2.9% for obesity. It is reasonable to claim that this is (at least in part) the result of the preventive-education initiatives activated within our territory.

Our work at present is part of the Piedmont Region Nutrition Programme. It is linked to the Health Behaviour in School-aged Children (HBSC) study, which – in Piedmont – is coordinated by the Department of Public Health of the University of Turin in collaboration with Piedmont Region. Pupils in the elementary school involved in the programme will undergo a programme of nutritional monitoring when they advance to middle school, with anthropometric measurements and administration of a questionnaire on lifestyles and dietary habits of children between 11–15 years of age.

We would like to conclude with some simple recommendations derived from our experience:

- in institutional relations, create synergies and alliances based on mutual advantages derived from sharing paths, objectives and resources;
- in contacting operators and subjects involved, always work toward concrete goals;
- in applying education strategies, spread projects over a number of years and work simultaneously on nutritional imbalances and sedentary lifestyles;
- in choosing survey instruments, use personalized worksheets and diaries that permit continuous assessment and self-monitoring over time;
- in the phase of disseminating results, dedicate specific human resources to assessing progress and to communicating findings in a timely way to all subjects involved in the project;
- in evaluating outcomes, promote and make use of local networks and the activation of new work processes.

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Norway: physical activity and healthy eating in schools

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1. Introduction

WHO ratified “*The global strategy for nutrition, physical activity and health*” in the spring of 2004 (1). Norway has adopted the strategy, which emphasizes the significance of each individual Member State developing its own cross-sectoral strategy plan. The Norwegian Parliament White Paper No. 16 (2002/2003) “*Prescription for a healthier Norway*” prepares for this commitment by emphasizing the importance of physical activity and nutrition for the health and well-being of the population (2). A key target group in this work is children and young people.

Norway has had a national nutrition policy and recommendations for healthy eating since the 1950s. A focus on physical activity was included in the national policy in 1999, with recommendations developed. The National Directorate for Health and Social Affairs was established in 2002 and physical activity and nutrition were defined as two of the directorate’s 24 sections.

Norway was the first country to launch a National Action Plan for Physical Activity, in 2005 (3) (Figure 1). The action plan was developed collaboratively by eight ministries – Education, Environment, Health, Child Welfare, Transport, Regional, Work and Social Affairs – and has 102 actions addressing different areas. A similar action plan is now being developed for healthy eating.

National nutritional and physical activity recommendations were revised in 2005 as part of the development of common recommendations for the Nordic countries. Children and adolescents are special target groups across both topic areas, emphasizing the need for promoting healthy eating and physical activity habits early in life. In this context, school is seen as the key arena in which to initiate and promote healthy eating and physical activity.

Norway has until recently considered itself an egalitarian society with few socioeconomic inequalities in health. During the late 1990s, however, evidence demonstrated that socioeconomic inequalities in health were not only prevalent, but were increasing. The National Directorate for Health and Social Affairs initiated a summary of existing evidence for observed inequalities accompanied by an action plan to tackle these (4) (Figure 1). Both were launched in 2005. The Ministry of Health now aims to develop a national strategic plan in collaboration with the other ministries to meet the challenges of socioeconomic inequalities in health. Strategies to reduce inequalities in health behaviours such as physical activity and eating will be among the key areas addressed.

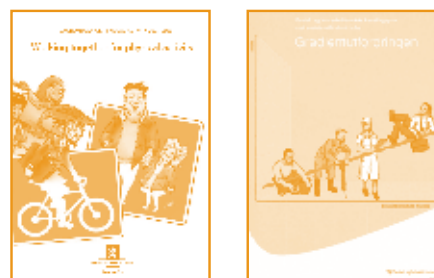


Figure 1:

National action plan for physical activity developed by eight ministries (left) and the action plan to meet health inequities developed by the Directorate for Health and Social Affairs (right).

2. The Norwegian situation

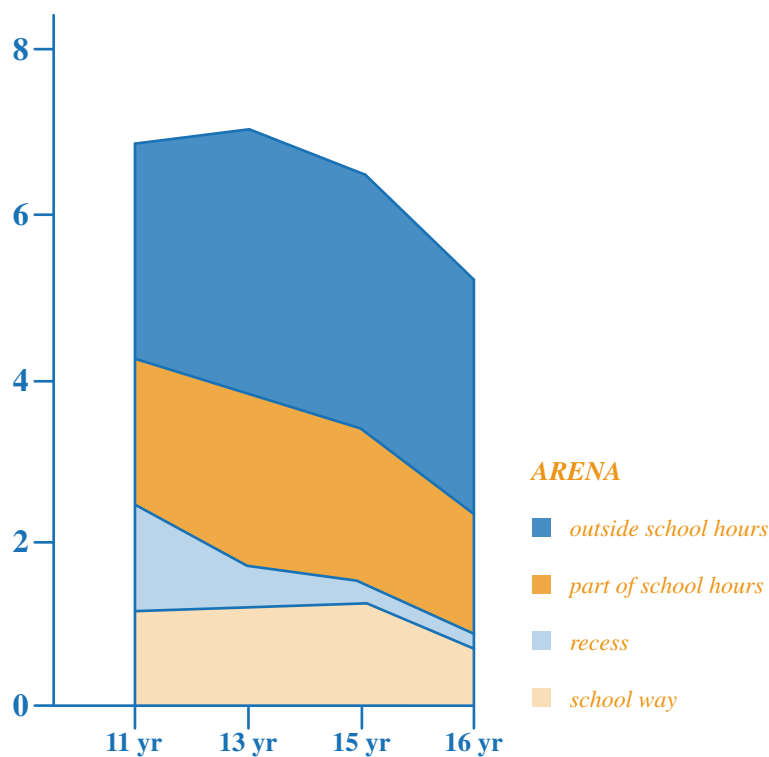
The Norwegian government has used nationally representative data on children and adolescent health from the Health Behaviour in School-aged Children (HBSC) study (5) in developing actions to improve physical activity and healthy eating to prevent the obesity epidemic from settling in Norway. The 2001 Norwegian HBSC data indicate that 13–16% of boys and 8–10% of girls can be classified as overweight. There was a clear pattern of socioeconomic differences in these numbers, suggesting that children and adolescents from lower socioeconomic groups were more likely to be overweight compared to their counterparts from higher socioeconomic groups (6).

The Norwegian HBSC data also show that while levels of physical activity have been quite stable since the mid 1980s, sedentary behaviours such as TV and computer use have increased dramatically (6). A social gradient pattern in physical activity is observed, indicating that children and adolescents from higher socioeconomic groups are more physically active than those from lower socioeconomic groups. No such pattern was found for sedentary behaviours.

Computer use among 15 year-old boys increased exceptionally between 1993–2001, from two to 17 hours per week. Compared to the rest of the HBSC countries, Norwegian boys came second in their reporting of time spent using computers (Israeli boys scored highest) (5). There is a decrease in physical activity from age 11–15 (Figure 2) and a clear increase in sedentary behaviours, particularly for boys (Figure 3). On average, an 11 year-old boy spends 10 hours a week playing computer games. When adding time spent using the computer, watching TV and doing homework, a 15 year-old boy spends six hours daily of outside school time sitting.

Figure 2:

Hours per week spent in physical activity (6).



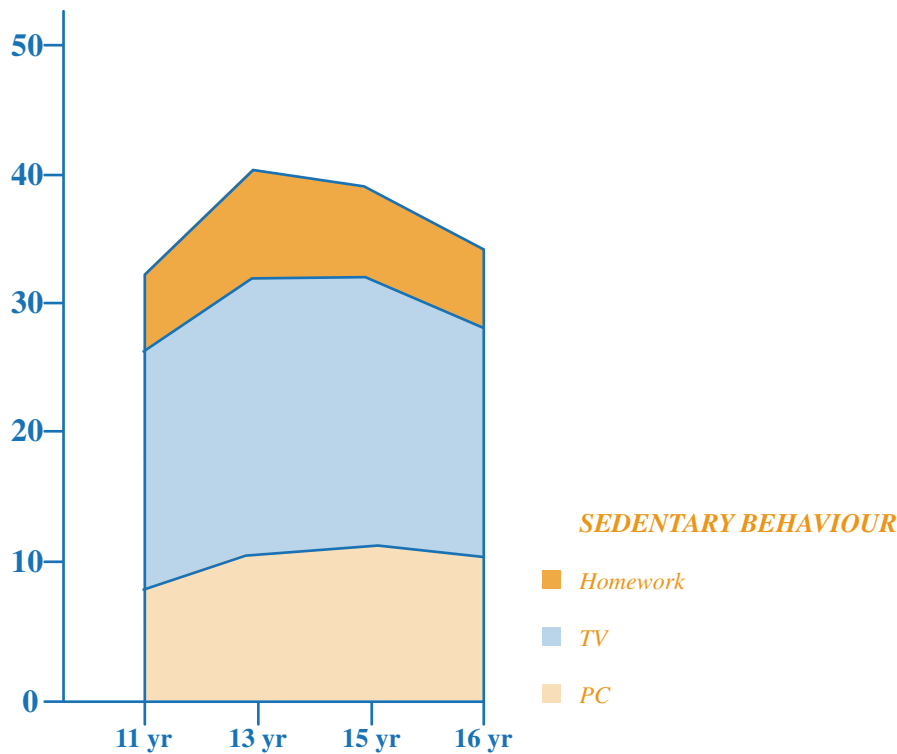


Figure 3:

Hours per week spent in sedentary behaviour (6).

In terms of eating behaviours, the Norwegian HBSC data show that while intake of fruits and vegetables decreased between 1985–2001, intake of sweets and soft drinks increased in the same period. Age is a strong indicator of the negative development of eating habits. The most recent data (for 2001) show that fruit and vegetable consumption decreases between the ages of 11–15 and intake of sweets and soft drinks increases (Figure 4). Boys eat less fruit and vegetables than girls and consume more soft drinks. A clear socioeconomic gradient is observed for fruit and vegetables, with children and adolescents from higher socioeconomic groups eating more than those from lower groups. This pattern is not evident for intake of sweets and soft drinks.

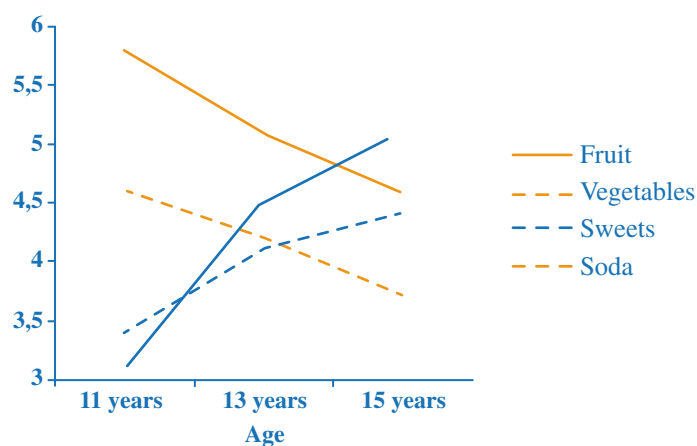


Figure 4:

Weekly intake of fruits, vegetables, sweets and soft drinks in Norwegian adolescents (6).

The nationally representative HBSC data demonstrate a need to increase physical activity, reduce sedentary behaviours and improve healthy eating in children and adolescents. The school setting is considered important for initiating actions and interventions, as actions have the potential to reach all children regardless of socioeconomic status (SES).

Schools have been offered a government-subsidised fruit and vegetable subscription since the 1990s, allowing a fruit or a vegetable to be served daily at school for the cost to parents of €0.30. Forty per cent of Norwegian schools participate in the programme, but these are mainly small schools, and only 13% of parents of Norwegian schoolchildren subscribe. There is therefore a need to develop better approaches to ensure fruit and vegetable consumption in school.

Based on this information and the new national focus on physical activity, a school-based intervention programme, “Physical Activity and Healthy Meals in School”, was launched by the ministries of education and health in 2004. The initiative is discussed in detail below.

3. Intervention programme: “Physical Activity and Healthy Meals in School”

The ministries of education and health have identified school as an important setting for increasing physical activity and access to healthy meals to meet their respective aims of improved learning and health. On this basis, it was considered important to establish a joint strategy.

The intervention programme “Physical Activity and Healthy Meals in School” aims to identify models to facilitate 60 minutes of daily physical activity in the course of the school day and ensure implementation of national guidelines for healthy meals in school. The guidelines (Figure 5) identify 20 minutes as a minimum time set aside for students to eat and emphasize that fruits, vegetables and other healthy lunch products should be available for students to purchase. Identified models will be disseminated to, and implemented in, all schools in Norway.

Figure 5:

National recommendations for healthy eating in school developed by Directorate for Health and Social Affairs.

Schools should offer:

- At least 20 minutes for eating
- Full supervision in grades 1-4
- Fruit and vegetables
- Low-fat milk
- Sandwiches for those who did not bring packed lunch
- Cold drinking water

School should not offer:

- Soda, salty snacks and sweets
- Cakes and sweet buns on daily basis

Secondary school should:

- Sell food from canteen



Participating schools and principles for planning and implementing actions

All 3500 primary and secondary schools in Norway were invited to apply to participate in the project in Spring of 2004. Two-hundred schools were selected and resourced with a small seeding grant to stimulate development of efficient models. More schools were included in 2005 and the project now includes 350 intervention schools from all 19 counties in Norway. Principles of how the schools should develop and implement strategies and activities to promote physical activity and healthy school meals have been developed, based on the planning and implementation principles developed in the Norwegian part of the European Network of Health Promoting Schools (ENHPS).

The planning and implementation principles were split into two types of recommendations: a set of compulsory approaches that all schools had to adopt; and a set of approaches from which schools were able to choose freely (Figure 6). The compulsory principles emphasized the importance of establishing ownership for the intervention project among students and staff as a crucial starting point. The school principal has a key role in facilitating consensus and anchoring the programme by continuously building motivation among staff and students and integrating the programme in the school policy.

The compulsory part of the principles also focused on the importance of addressing organizational and physical aspects in the school environment to facilitate physical activity and healthy eating, rather than aiming at changing students' motivation and knowledge of physical activity and healthy eating. Schools were requested to identify the resources they allocate to the project and report how they were spent and were asked to establish a project task force involving students, staff, school health services and other relevant partners.

The schools were recommended to limit and focus their actions and could select from the following foci: identifying special target groups (such as girls, who are found to be less active than boys during recess); addressing competence building among staff before initiating activities for students; or initiating collaboration with external partners such as parents or nongovernmental organizations (NGOs).



Figure 6:

Planning and implementation principles presented to the intervention schools.

Network approach

The project is organised through county- or municipality-level networks of participating schools with supervision from allocated education and health sector staff. Allocated staff at county level meet once a year with project management personnel for competence building and identification of guiding principles for the school networks. The guiding principles are then communicated to the schools through network meetings and the follow-up from county-level staff. Network meetings are

also considered important for schools' competence building, motivation, development of approaches and actions. The county and municipality networks are considered crucial for the dissemination phase of the network, which will be initiated when efficient models for facilitating 60 minutes of daily physical activity and healthy meals in schools have been identified.

Evaluating the intervention programme

The Research Centre for Health Promotion at the University of Bergen has been contracted to evaluate the programme and identify efficient models. The evaluation design involves 180 control schools in addition to the 350 intervention schools. Emphasis is given to identifying structural aspects important for facilitating physical activity and healthy meals in schools, including changes in organisational aspects and physical structures. Data on physical activity and eating behaviour have been collected from 18 000 students.

Results so far indicate that primary schools are better able to develop models where physical activity and healthy eating is integrated by all teachers into their daily teaching. Secondary schools seem more successful when they restructure the school day and set aside an hour in the middle of the day for physical activity, rather than leaving teachers to integrate physical activity in their teaching of subjects. Student activity levels are higher at schools where activities are organised by teachers, as opposed to students.

Students at schools that participate in the fruit and vegetable subscription report higher intake than students who do not have access to the programme at school. For students who bring their own fruit and vegetables, the highest increases in intake are found at schools that set aside a certain time during the school day for a fruit break, rather than encouraging students to eat fruit and vegetables with their lunch.

The joint approach taken by the ministries of education and health is considered successful. Ongoing discussions are taking place around including one hour of daily physical activity as a national requirement and providing free school meals. The major argument for this approach is to ensure that the same opportunities for physical activity and healthy eating are offered to all children, regardless of school initiatives and parents' SES. Other studies demonstrate that children who eat fruit and vegetables regularly at school also eat more of these products outside of school (7), and similar findings are suggested for physical activity.

4. Conclusion

The major lessons learnt from the national approach in Norway are the importance of partnerships and the need to anchor initiatives in policy at all levels. The fact that several ministries formed a partnership in the development of national policies for physical activity and healthy eating has provided a strong base for action and has placed physical activity and healthy eating high on the policy agenda of national- and local-level politics.

The particular focus given to young people and schools by the ministries of health and education and the partnership they formed in the national intervention project "Physical Activity and Healthy Meals in School" has had a major impact on the priority given by schools to this intervention. The emphasis at school-level on anchoring the initiative in the school's overall aims, local needs and action plans has been vital in the successful implementation of the intervention. Strong and visible leadership to facilitate the intervention has also been identified as crucial for success at school-level.

The major challenge related to the initiative now is to keep consistent focus over time with the changing political situation and shifting priorities in national and school-level agendas. The very broad consensus reached at national and school level is considered an important strength in facing this challenge.

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Slovenia: confronting the problem – the adoption of the Food and Nutrition Action Plan for Slovenia

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1. Introduction

Slovenian studies indicate that the proportion of children and adolescents with higher-than-normal body weight is increasing, as it is in other European countries. Systematic check-up data also reveal that more than four-fifths of children and adolescents have the recommended values for body mass index (BMI). Unhealthy practices in controlling body weight – in which energy intake is strictly controlled while energy expenditure is not intensified – have been identified, however, particularly among female adolescents.

Health Behaviour in School-aged Children (HBSC) research gives valuable insights into health behaviours and socioeconomic determinants related to the lifestyle of schoolchildren, adolescents and their families in the Slovene population, and enables us to compare Slovene data with that of other countries. These data also provide the base for designing health promotion activities at the National Institute of Public Health and regional public health institutes.

2. Health status of children and adolescents in Slovenia

Findings on health and health-related behaviour of children and adolescents in Slovenia (1) reveal that the emerging key public health concerns in relation to health and socioeconomic problems are:

- intentional and unintentional injuries
- tobacco smoking, alcohol use and use of illegal substances
- sexual risk behaviours/sexual risk taking
- low levels of physical activity and poor eating habits
- unhealthy use of leisure time
- failure to accomplish daily duties.

Injuries and poisoning are the leading causes of death among children and adolescents aged 5–19 years. A gender difference is also evident, with more boys than girls sustaining injuries that require medical treatment (ratio 3:1).

Findings on substance misuse reveal that alcohol misuse is embedded in youth culture, with both frequency of drinking and drunkenness above the European Union (EU) average. The age of onset of alcohol consumption is earlier.

Data on sexual behaviour indicate risk-taking behaviours, especially among inexperienced and younger adolescents. The mean age of first sexual intercourse is 14.4 years for girls and 14.1 for boys. Use of condoms during last intercourse is at 67.6% for girls and 68.4% for boys.

In relation to leisure activities, daily television viewing (1–3 hours) is the predominant pastime for 75% of children and adolescents; the viewing time is longer than four hours per day for 15.4%. A further significant influence on health is the burden of the school workload which has grown to the average workload of an adult by the time a child has reached fifth grade of primary school. The workload and consequent stress on pupils increases even further in secondary school, to an average of 10 hours per day. In addition, many pupils participate in extracurricular activities, again adding to the workload (1).

3. Nutritional status of Slovenian children and adolescents

The Association of Nutritionists and Dietitians concluded in 1998 that there were insufficient data on nutritional habits and status among children and adolescents (2). Several regional studies of eating habits of adolescents were conducted in succeeding years (3–5). These showed that adolescents in Slovenia had unhealthy eating habits and generally were pursuing unhealthy lifestyles.

The proportion of children and adolescents with higher body weight is increasing in Slovenia, as in other European countries. National systematic check-up data from the health system (2002) show that 8.4% of pre-school children and 13.6% of schoolchildren are under-nourished or over-nourished. The proportion of under-nourished and over-nourished children has increased over the past ten years. The lowest proportion of under-nourished or over-nourished children is in the pre-school population, and the highest among the adolescent population. Systematic check-up data also reveal that more than four-fifths of children and adolescents have the recommended values for BMI.

In a cross-sectional study of physical characteristics and physical activity of children and adolescents based on population data from 1983–2003 (6), adequate body weight, overweight and obesity were determined using BMI according to International Obesity Task Force (IOTF) standards, using the skinfold thickness of the upper arm. The study revealed that the proportion of male and female pupils aged 7–19 years with adequate body weight was lower in 2003 than 1983, while the overall proportion of overweight children had increased: 1.8% of girls and 2.2% of boys were obese at the age of 19. BMI, proportion of body fat mass and skinfold thickness of the upper arm all increased between 1983–2003, particularly among children aged 9–12 years. The research also showed that the number of female pupils with extremely low body weight and insufficient protective subcutaneous adipose tissue has been increasing.

Slovenian research data have shown that issues of underweight and eating disorders are also relevant problems. We have noticed lower values of BMI among girls and have seen that more than two-thirds of young girls are not satisfied with their weight. We can conclude from regional studies data that adolescent girls are using unhealthy practices in controlling their body weight. They are skipping meals, particularly breakfast and (less frequently) dinner, and are consuming food items containing animal fats such as meat, milk and dairy products less frequently. In addition, they are taking part in very low levels of physical activity during their leisure time.

Data indicate that adolescents who consume more daily meals also report more frequent intake of dairy products, fruits, vegetables and fish and take a hot meal every day. They also assign a higher score to the quality of all meals assessed (7). Low levels of physical activity in children and adolescents of both genders is also a significant problem in Slovenia, especially in older population groups (adolescents) and more so among girls.

HBSC data at national level confirmed regional data, indicating that girls are trying to restrict their food intake through lower meal frequency and not attempting to amend their energy intake-output ratio with higher energy expenditure (Figures 1 and 2). Girls are also less satisfied with their body image and are more frequently “on a diet” than boys (Figure 3).

Figure 1:

Frequency of eating breakfast and supper on weekdays among boys and girls; gender differences are statistically significant $p < 0.001$ (HBSC 2002, Slovenia, $n = 3919$).

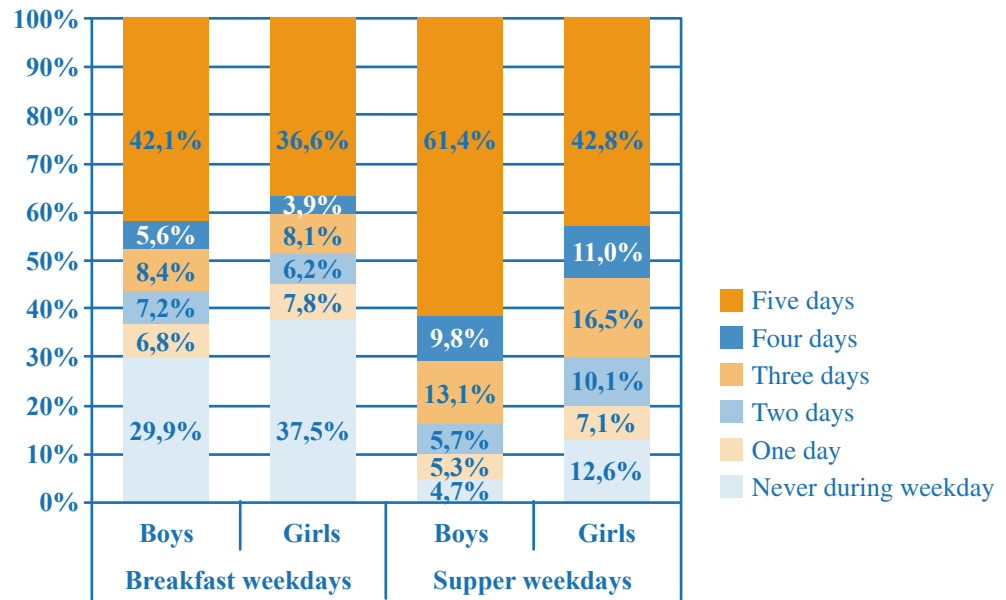


Figure 2:

Average physical activity in usual week (in days) among boys and girls; differences are statistically significant $p < 0.001$ (HBSC 2002, Slovenia, $n = 3830$).

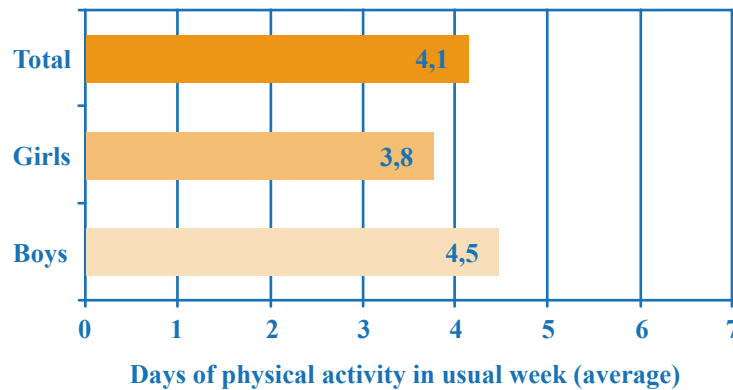
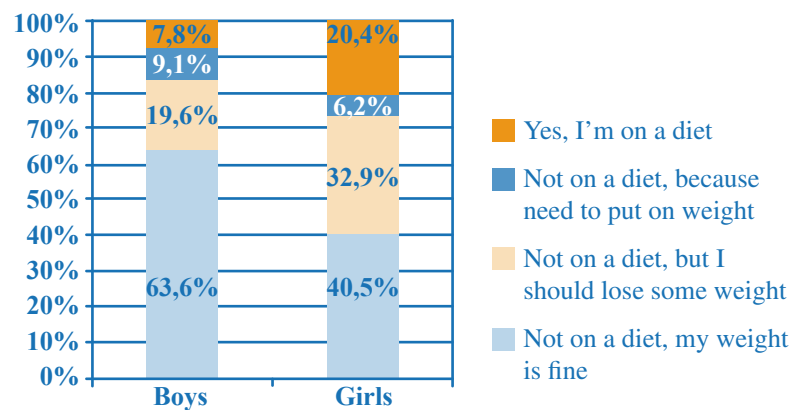


Figure 3:

Frequency of (not) being on a diet among boys and girls; differences are statistically significant $p < 0.001$ (HBSC 2002, Slovenia, $n = 3919$).



4. Using HBSC data in developing policies and designing programmes

Slovenia decided to participate in the HBSC study in 2001 because of the lack of national data. The results of the study have given valuable insights into different health behaviours and socioeconomic determinants related to the lifestyle of schoolchildren, adolescents and their families in the Slovene population, and enable us to compare our data with international data (8).

The HBSC international report was widely disseminated within Slovenia to academic institutions, schools, major libraries, collaborating partners and the European Network of Health Promoting Schools (ENHPS). It was also presented at a press conference.

HBSC data provide the base for designing health promotion and illness-prevention activities at the National Institute of Public Health and regional public health institutes. Numerous publications and education materials have been developed from the acquired data and these are being used to support systematic medical examinations in elementary and secondary schools and in vocational training for health care professionals, schoolteachers, nongovernmental organizations and other stakeholders. Results from HBSC research will also underpin the development of indicators for the evaluation of efficiency of health promotion in the school environment.

5. Policy context in Slovenia in relation to health and nutrition of children and adolescents

The Slovenian Network of Health Promoting Schools (SNHPS) was established in 1993 under the supervision and support of the Ministry of Health and the Ministry of Education and Sport. One quarter of Slovenian schools are now part of the national network. An intersectoral body involving the Ministry of Health and Ministry of Education was established in 2004 to disseminate experience and good practice within the project nationally and facilitate their integration into the curriculum (9).

SNHPS built a framework to integrate health promoting approaches through the development of school curricula and interactive and participatory teaching and learning methods. Schools are focused on safe and supportive psycho-social-physical environments. The concept of health promotion in the school curriculum is outlined in the document “*Health in the school curricula*”.

The main aim of the project is to establish strategic and sustainable health promoting school approaches, and the key components of success are systematic processes of planning and implementation of the programme with political support. SNHPS is working intensively on the following specific areas:

- mental health
- nutrition and physical activity
- prevention education on tobacco, alcohol and illegal drugs
- reproductive health
- non-violent behaviour
- eco-environmental education.

Other problems identified by individual schools are also being addressed (10).

The National School Nutrition Programme

Organized nutrition in education institutions – kindergartens and primary/elementary schools – has a long tradition in Slovenia. Kindergartens and primary schools, for instance, have had organized school meals (breakfast, morning snack, lunch and afternoon snacks) since 1950.

The aims of the National School Nutrition Programme have changed over the years. The focus in the 1970s and 1980s was directed towards improving the nutritional status of children and improving identified family nutrition deficiencies. Today, the programme for children and young people is an effective tool for the promotion of health, improvement of dietary habits and provision of nutritional education. It also presents guidance for today's families on meals, as the number of family daily meals is now declining due to lifestyle changes.

School nutrition at national level in Slovenia is well-supported by legislation, policies, guidelines and recommendations in the education and health sector, including the Framework Act on Education (1996), which requires that every school must provide at least one school meal every day.

Important health promotion priorities in the National Programme of Health Care of Slovenia (2000) include:

- reducing the risk of nutrition-related chronic diseases
- promoting healthy diets
- promoting physical activity
- providing nutrition education for young people.

The organization of school meals in secondary schools is nevertheless a cause of concern. Socioeconomic differences are evident in the quality of organized school meals in different types of secondary schools, with better organization in grammar schools than in vocational schools. The situation is beginning to improve, however.

Inequalities in health

Relatively low income inequality, a low poverty rate, high rates of social mobility due to universal education opportunities and a comparatively open society are characteristic of society in Slovenia. A well-developed and organized system of public primary health care centres, hospitals and public health institutes, combined with almost universal health insurance coverage for children and adolescents, is maintained as a central pillar of the health care system.

HBSC data nevertheless show differences in eating habits in relation to family affluence. Just over 20% of 11–15 year-old boys and girls live in low affluence, 48.1% in middle affluence, and 31.4% in high affluence.

Data show statistically significant differences ($p < 0.05$) in the frequency of eating breakfast during weekends in relation to family affluence: the higher the family affluence, the more frequent is the eating of breakfast during weekends. On average, 7% of children and adolescents never have breakfast during weekends (9.5% of those with low affluence and 5.5% with high); 80% usually have breakfast on weekend days (77% low affluence and 82% high).

As lunch is traditionally the central daily meal for the Slovene population, an average 80% of children and adolescents have lunch on all five days during weekdays and 90% on both weekend days. Overall, we observed that children and adolescents with lower affluence have lunch on weekdays less frequently than those with higher affluence (75% of those with low

affluence and 82% with high). The same is true for lunch during weekends (86% low and 92% high). Differences according to family affluence are statistically significant.

Differences in frequency of eating breakfast during weekdays were also observed in relation to gender. Girls have breakfast during weekdays less frequently than boys. The same statistically significant differences are observed in the frequency of eating dinner during weekdays and during weekends. Girls have dinner during weekdays and during weekends less frequently than boys.

The higher the affluence of the family, the more physically active children and adolescents are during the usual week. On average, 11–15 year-old boys and girls are physically active on 4.1 days of the usual week. Those with low affluence are on average physically active on 3.8 days of the usual week, those with middle affluence 4.1, and those with high 4.4. Seventeen per cent with low affluence are physically active on seven days of the usual week, 19% with middle, and 23% with high. It is also important to note that boys are more physically active than girls in a usual week (Figure 4).

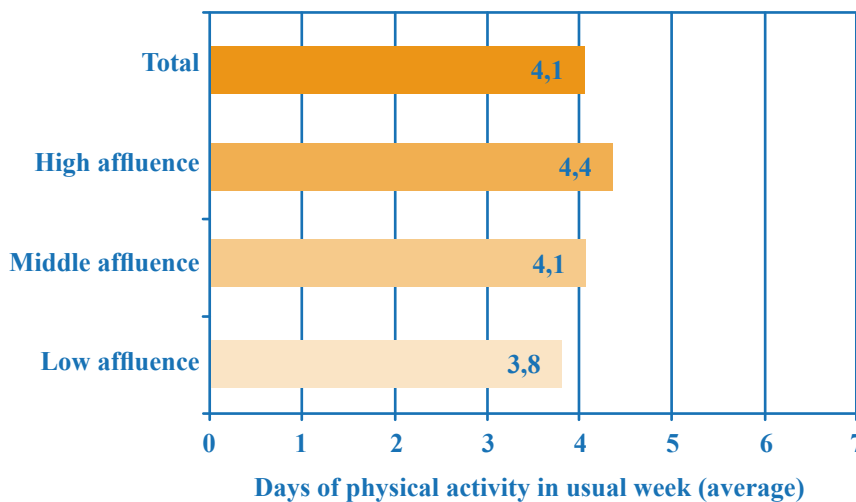


Figure 4:

Average physical activity in usual week (in days) as per FAS; differences are statistically significant – $p < 0.001$ (HBSC 2002, Slovenia, $n = 3830$).

6. Confronting the problem: the adoption of the Food and Nutrition Action Plan for Slovenia

Many activities undertaken in recent years in Slovenia have aimed to reduce obesity and help people to maintain a healthy body weight. The Ministry of Health had been trying since 2000 to develop a strategic national programme to improve dietary habits and reduce the harm caused by diseases related to unhealthy nutrition and lifestyles. The Resolution on the National Programme of Food and Nutrition Policy 2005–2010 (ReNNPP) was adopted at government level in 2005. It is a comprehensive document addressing three basic pillars – food safety, nutrition and sustainable food supply – with special emphasis on locally produced food.

The nutrition policy will be implemented by the state in cooperation with different public sector and civil organizations that promote healthy nutrition. It ensures systematic implementation and regulation of financing for preventative and promotional activities. One of main objectives of the ReNNPP 2005–2010 is to reduce the prevalence of obesity among adults and, especially, children and adolescents. Current data indicate that the situation is worsening rather than improving. Many programmes and activities for young children and adolescents have been undertaken within the framework of the Food and Nutrition Action Plan for Slovenia.

The Food and Nutrition Action plan identifies key issues (Table 1) and goals on nutrition standards and organized nutrition for children, adolescents and students have been set (Tables 2 and 3).

Table 1: Promotion of healthy nutrition in children and adolescents.

GOALS	TASKS AND ACTIVITIES	RESPONSIBLE MINISTRIES	RESPONSIBLE BODIES
Creation of healthy nutrition habits and healthy attitudes to nutrition in children and adolescents.	<p>Setting up and implementing activities for the promotion of healthy nutrition with children and adolescents and with parents, the media, schools, student residence halls and local communities.</p> <p>Promotion of recommendations for healthy nutrition for children and adolescents.</p> <p>Promotion of use of labelled foods.</p> <p>Setting up implementation of programmes for general promotion of health, healthy nutrition and healthy lifestyles of children and adolescents in kindergartens and primary schools.</p> <p>Introduction or upgrading the issues of healthy nutrition and healthy lifestyles in the curricula of primary schools, vocational and secondary schools, and of undergraduate studies in education and health.</p> <p>Development and systematic implementation of continuing education on healthy nutrition and healthy lifestyle issues for professional workers in kindergartens and schools.</p>	<p>Ministry responsible for health.</p> <p>Ministry responsible for education.</p> <p>Ministry responsible for higher education and science.</p>	<p>Institute of Public Health of the Republic of Slovenia.</p> <p>Regional public health institutes.</p> <p>CINDI Slovenia.</p> <p>The Office for the Development of Education in the Republic of Slovenia.</p> <p>National Education Institute of the Republic of Slovenia.</p> <p>Colleges.</p> <p>Faculties.</p> <p>Centre for vocational training.</p> <p>School dispensaries.</p> <p>Providers of education and training programmes in schools and kindergartens.</p>

Table 2: Introduction of contemporary nutrition standards, norms and recommendations in organized nutrition of children and adolescents.

GOALS	TASKS AND ACTIVITIES	RESPONSIBLE MINISTRIES	RESPONSIBLE BODIES
<p>Establishing standards and norms for healthy nutrition in the organized nutrition of children and adolescents.</p> <p>Strengthening knowledge and skills and preparation of guidelines for professional staff for planning and preparing healthy nutrition for children and adolescents.</p> <p>Consumption of health-beneficial beverages in kindergartens and schools (milk, water and sugar-free beverages).</p>	<p>Drawing up contemporary nutritional standards and norms for healthy nutrition of children and adolescents.</p> <p>Introducing standards and norms for healthy nutrition in kindergartens, schools and residence halls for students.</p> <p>Formulation of quality criteria for public procurement of food, which will assure good-quality and healthy nutrition.</p> <p>Ensuring the professional function of “food organizer” in the system of organized nutrition, taking account of education norms and in conformity with existing legislation.</p> <p>Implementation of an interdepartmental project on the possibilities and forms of continuing education and training for catering staff in kindergartens, schools and student residence halls.</p> <p>Ensuring healthy catering provision for schoolchildren where schools have no kitchens of their own.</p> <p>Ensuring proper control of nutrition in the education and training system.</p> <p>Recommendation to head teachers that they do not install vending machines for sweetened soft drinks in school buildings.</p> <p>Specifying the contents of vending machines that are already installed, in conformity with nutrition standards.</p> <p>Recommendation to head teachers for a hygienic supply of drinking water for school children (installation of drinking water points or drinking fountains).</p> <p>Introduction of school milk subsidies.</p> <p>Recommendation to head teachers for purchasing milk containing 3.5% fat in kindergartens and 1.5% fat in primary and secondary schools. Efforts towards unification of subsidies for partly skimmed and skimmed school milk within the EU.</p>	<p>Ministry responsible for health.</p> <p>Ministry responsible for education.</p> <p>Ministry responsible for higher education and science.</p> <p>Ministry responsible for agriculture and food.</p>	<p>National Education Institute of the Republic of Slovenia.</p> <p>Centre for vocational training.</p> <p>Institute of Public Health of the Republic of Slovenia.</p> <p>Regional public health institutes.</p> <p>Colleges.</p> <p>Faculties.</p> <p>Agency of the Republic of Slovenia for Agricultural Markets and Rural Development.</p>

Table 3: Systemic arrangement of organized nutrition in secondary schools and student residence halls.

GOALS	TASKS AND ACTIVITIES	RESPONSIBLE MINISTRIES	RESPONSIBLE BODIES
<p>Ensuring the conditions for organized healthy nutrition in all secondary schools and student residence halls.</p> <p>Measures and activities taken for the arrangement of organized nutrition in vocational and secondary schools and student residence halls.</p>	<p>Developing bidding criteria (ensuring expertise, professionalism and high quality of food providers) for the selection of external food providers for schools without their own supply, and co-operation with the relevant public health sector in the selection of the provider.</p> <p>Recommendations to head teachers that they do not install vending machines for sugar-containing soft drinks in school buildings. The contents of vending machines that have already been installed are defined in accordance with nutrition standards.</p> <p>Control of the quality of food supply in relation to standards, norms and guidelines for the preparation and supply of healthy nutrition, also with external food suppliers.</p>	<p>Ministry responsible for education.</p> <p>Ministry responsible for health.</p>	<p>Institute of Public Health of the Republic of Slovenia.</p> <p>Regional public health institutes.</p> <p>National Education Institute of the Republic of Slovenia.</p>

ReNNPP 2005–2010 has been coordinated with all important stakeholders at government level, such as: the Ministry of Education and Sport; Ministry of Agriculture, Food and Forestry; Ministry of Environment; and Ministry of Finance. A partnership with the Chamber of Government Commerce, academic institutes, the food industry and NGOs has also been established.

7. Response to the problem: health promotion activities, activities involved in the national action plan and other activities in the field of nutrition

Organization of one school meal – the morning meal/snack – at national level is part of the national programme, for which partial financing is provided by the Ministry of Education and Sport. Schoolchildren pay solely for the cost of the food. Other meals such as lunch or breakfast are administered under the non-profit programme.

New guidelines for healthy nutrition in kindergartens, primary schools and secondary schools have been launched by the Ministry of Health in partnership with the Ministry of Education and Sport for implementation in 2006/2007. The basic idea is to offer all children and adolescents healthy nutrition while at school; the main objective is to provide a supportive environment in kindergartens and schools for healthy choices in nutrition. Guidelines for kindergarten and school nutrition are the basic prerequisite for healthy nutrition in kindergartens and schools, and the new standards facilitate planning and provision of healthy meals.

The national campaign, “Enjoy!”, was launched by the Ministry of Health in 2004. World Food Day on 16 October marked the start of the promotion of physical activity and encouraging people to eat five portions of vegetables and fruits a day. All activities have been carried out at various levels and in various environments in schools, kindergartens and student hostels, among health staff, chemists, regional institutes of public health, health centres and hospitals, the Agricultural Advisory Service, societies of agricultural women and rural youth, NGOs and national and local media.

Two health education programmes which focus on body weight and physical activity and which will be presented during systematic examinations in seventh grade of primary or first grade of secondary school are under development. The aim is to equip the entire generation of adolescents with knowledge about normal body weight and the importance of physical activity. Short manuals for educators for a standard teaching lesson and booklets for adolescents have already been developed. The booklet “*Nutrition for youth*”, intended for use by home economics teachers in nutrition education in primary schools, has been introduced.

Several workshops were prepared by the National Institute of Public Health and regional institutes for secondary schoolteachers to empower them to include nutrition and physical activity topics in their teaching. The outcome of the programme was a practical manual for secondary schoolteachers. Regional institutes of public health are currently pilot-testing the programme in schools. Some regional public health institutes have also been active in developing programmes for primary schoolteachers.

The Regional Institute of Public Health in Celje region has prepared a web site called “*That’s me*”, which is intended for young children and adolescents. It poses many questions about diet, mental health and other relevant topics. It also offers individual consulting with experts in different fields (including psychology, nutrition, sociology and medicine).

Data on body weight and height are being collected during systematic examinations/check-ups by school medical doctors. This data-collecting system is being financed by the national action plan and will be undergoing modernisation in the near future.

Data on nutrient intake are not systematically collected, and knowledge on the issue is therefore lacking in Slovenia. We consequently joined the DAFNE V project (Expansion of the DAFNE databank to European Union Accession Countries: Data Food Networking, based on household budget surveys) in 2003. The aim of DAFNE is to develop a uniform methodology for data on food availability that should be comparable with other countries in the EU. DAFNE data provide information on food availability and specific dietary choices of the population, nutrition habits and association between diet and morbidity and mortality data, and provide the basis for the preparation of nutrition indicators and information on food supply.

8. Unique themes

Through the National School Nutrition Programme:

- all kindergartens in Slovenia offer breakfast, midmorning snacks, lunches and afternoon snacks;
- most primary schools offer breakfast, midmorning snacks, lunches and afternoon snacks;
- all primary schools offer at least two meals (midmorning snacks and lunches) every school day – unfortunately, the situation in secondary schools is not as good, although it is anticipated that the adopted guidelines will improve the current situation to enable one or two healthy meals to be offered to secondary school students by different providers;
- one daily meal is financially subsidized by the Ministry of Education and Sport in all Slovene schools;
- all Slovene primary schools involve home economics in their education programme/curriculum and as a main part of the programme in the obligatory curriculum;
- schoolchildren at primary level are included in health education activities after periodic health examinations.

A study on effective communication strategies for the promotion of healthy eating habits in the adolescent population (11) identified several facilitative factors and barriers to healthy nutrition in this target group. Barriers to healthy nutrition include:

- overworking and lack of time
- the “tyranny” of slenderness
- certain beliefs concerning the body, its abilities and renewal capabilities
- the price of healthy food products
- lack of sound nutritional recommendations
- the omnipresence of risk in modern society
- endeavours to have pleasure
- the tempting taste of “unhealthy” foods
- the wish to be “cool”.

Facilitative factors to healthy nutrition include:

- the wish to lose weight
- desire to be rid of acne
- availability of healthy food products
- the existence of healthier alternatives to energy-dense food products.

9. Conclusion

Health promotion and health education programmes in Slovenia focus on healthy body weight and not solely on obesity. Programmes aim to harmonize messages and activities for both body weight extremes (overweight and obesity and underweight associated with eating disorders). Programmes targeted at girls should focus on potential social pressures related to the ideal of (exaggerated) slimness.

Marketing of food products to children has substantially increased in Slovenia since the mid-1990s, and increasing trends towards sedentary lifestyles due to higher accessibility of computers and TV programmes have also been observed. Further research is required to support solutions for these growing problems.

We recognize the importance of further developing supportive environments and cultures that encourage and reinforce health behaviours in the school setting, with special emphasis on giving children and adolescents opportunities for physical activity during school time. Further action is also needed in linking the family environment and school setting and encouraging parental involvement.

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Spain (Canary Islands): tackling obesity among young people

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1. Introduction

The Canaries are one of the 17 autonomous communities of Spain and are composed of seven inhabited islands, one inhabited islet and five uninhabited islets. The total surface area is 7446 square kilometres, with 1114 kilometres of coast and 257 kilometres of beach.

The Canary Islands have 87 municipalities and their own economic and fiscal polices, which offer advantages to local companies. The official population in 2005 was 1 968 280 and the islands receive an average 10 million tourists every year. The average density of population is very high, with 264 inhabitants per square kilometre. The services and tourism industries are the main source of employment and wealth. The islands' infrastructure includes two universities, more than a thousand state schools, over a hundred of primary health care centres and an important network of hospitals.

2. Social determinants of health in the Canary Islands

As in the rest of Spain, cardiovascular diseases and cancer are the main causes of mortality in the Canary Islands. Mortality rates from cardiovascular disease surpass the national average. Especially worrying is the prevalence of complications from diabetes, which are up to 400–500% higher than the national average.

Several explanations have been offered for these high percentages, such as rapid demographic and cultural changes, unhealthy eating habits (in part due to foreign influences), social and geographic marginalization (the latter related to rural populations), unemployment and poverty, lack of adequate health education and genetic influences, but none has been confirmed as the single determinant. The most likely explanation is combinations of these factors.

Diseases among children in the Canaries typically arise as a result of unhealthy lifestyles coupled with a lack of health promotion. The alarming increase in childhood obesity and overweight is among the problems created.

3. Obesity in Spain

The standard definition of obesity adopted in this case study is a body mass index (BMI) greater than or equal to 30 (BMI \geq 30). The SEEDO'97 study (1) (Sociedad Española para el estudio de la obesidad) estimated that the prevalence of obesity in the Spanish population between the ages of 25–60 is 13.4% (11.5% of males and 15.2% of females). The cumulative prevalence of overweight and obesity (BMI \geq 25) was 58.9% of males and 46.8% of females.

The results of the enKid study (2) (nutritional survey in children and young people) estimated that 13.9% of the Spanish population between the ages of 2–24 are obese and 12.4% are overweight. Cumulatively, approximately 26.3% of the Spanish population is overweight or obese (3). The International Obesity Task Force (IOTF) ranks Spain sixth in the list of countries with the greatest prevalence of overweight and obesity in adolescents aged 10–16; Malta, United States and Wales (United Kingdom) are at the top of the list.

The prevalence of obesity in the Canary Islands

The prevalence of obesity in the Canary population over 16 years old is 17% – four percentage points higher than the national average. The BMI distribution in a representative sample of the Canary population younger than 16 years old according to the Encuesta de salud de Canarias (ESC-2004, Health survey of the Canaries) is presented in Tables 1 and 2.

	TOTAL Male+Female	Male			
		TOTAL	0 to 5	6 to 11	12 to 15
N	263 539	136 567	47 617	36 929	52 021
Mean	20.57	20.63	21.01	19.51	21.08
Standard deviation	10.64	10.92	15.54	9.00	5.77
5th centile	13.61	13.61	13.50	12.62	15.31
15th centile	15.31	15.56	15.08	14.82	16.89
50th centile	18.88	18.90	17.36	18.11	19.59
85th centile	24.54	24.73	24.89	23.87	24.97
95th centile	31.00	32.19	34.60	27.78	32.41

Table 1:

BMI mean and distribution. Distribution by sex and age group. Population under 16 years of age (ESC-2004).

	TOTAL Male+Female	Female			
		TOTAL	0 to 5	6 to 11	12 to 15
N	263 539	126 972	42 130	39 904	44 937
Mean	20.57	20.50	21.41	19.31	20.69
Standard deviation	10.64	10.33	16.73	4.98	3.89
5th centile	13.61	13.33	13.22	13.33	15.63
15th centile	15.31	15.08	14.79	14.80	17.65
50th centile	18.88	18.75	17.64	18.56	19.81
85th centile	24.54	24.17	23.11	23.97	24.84
95th centile	31.00	29.90	44.44	28.93	28.04

Table 2:

BMI mean and distribution. Distribution by sex and age group. Population under 16 years of age (ESC-2004).

The results of the ESC-2004 show favourable trends in the general population towards reducing alcohol and tobacco consumption, but eating habits remain a cause for concern.

Physical activity and sedentary lifestyles

The HBSC Survey 2001/2002 of Spanish adolescents showed:

- physical activity among adolescents is low: on average, adolescents take part in moderate physical activity on only half of the number of days recommended;
- boys take part in physical activity more than girls;

- physical activity decreases with age from the age of 13;
- watching TV, using computers and playing video games contribute to sedentary lifestyles.

The *Encuesta nutricional de Canarias* (ENCA 1997/1998, Nutritional survey of the Canaries) (4) found that 58.7% of the Canary population between the ages of 6–75 are significantly inactive during their leisure time. Fifteen per cent of children between the ages of 6–10 do not participate in any physical activity, increasing to 22.5% among adolescents aged 11–15 years.

Data related to physical activity and sedentary behaviour in the Canary population under 16 years are shown in Tables 3–5.

Table 3:

Frequency of physical activity (ESC-2004).

	6–10 year-olds	11–15 year-olds
Does not participate in any physical activity.	15.7%	22.5%
Participates in physical activity less than once a month.	20.1%	11.5%
Participates in physical activity once or several times per month.	12.6%	14.9%
Participates in physical activity once or several times per week.	50.3%	51.1%

Table 4:

Type of physical activity during leisure time (ESC-2004).

	2–15 year-olds
Reading, TV, activities which do not require physical activity.	32.6%
Walking, cycling, fishing, gardening.	30.4%
Jogging, swimming, gymnastics.	26.7%
Vigorous training several times a week.	3%

Table 5:

Time spent in different activities. Canary Islands, population between 2–15 years (ESC-2004).

	More than two hours	Between 1–2 hours	Less than one hour	Never	Don't know no answer
Watching TV	102 993 32.6%	123 976 39.3%	65 522 20.8%	17 441 5.5%	5 544 1.8%
Internet	15 216 4.8%	21 301 6.8%	28 541 9%	242 177 76.8%	8 241 2.6%
Playstation	22 527 7.1%	43 728 13.9%	63 344 20.1%	176 813 56%	9 064 2.9%
Reading	13 819 4.4%	53 616 17%	121 381 38.5%	111 373 35.3%	15 287 4.8%

Food and diet

The HBSC Survey 2001/2002 of Spanish adolescents shows:

- breakfast is the meal most frequently skipped by adolescents;
- approximately a quarter of adolescents report low consumption of fruits and vegetables and an elevated consumption of sweets and soft drinks;
- eating habits worsen as age increases;

- girls skip meals more frequently than boys;
- the percentage of girls who eat dinner every day has decreased over the last decade;
- girls feel more pressure to lose weight than boys.

Adolescents in the Canaries demonstrate the lowest consumption of vegetables and fruits in Spain. Consumption of dairy products is very high and consumption of meat and fish is very low (4).

A survey of the student population of Puerto de la Cruz, Tenerife (5) showed that:

- 13% of students do not eat dinner;
- 11% dedicate more than three hours per day to playing video games, board games or computer games;
- 22.9% of students watch TV for more than three hours per day;
- 43% get tired during class, especially between 8–10 o'clock in the morning; the influence of students' bedtime on this tiredness was statistically significant ($p < 0.01$).

A statistically significant correlation has also been established between breakfast habits and grades. Students who eat breakfast tend to perform better academically ($p < 0.05$); only 2% of children who do not eat breakfast obtain adequate grades in school, but this increases to 32% for students who regularly take breakfast and 60% for those who take breakfast at home and have a midmorning snack.

4. The political context for the prevention of obesity in Spain

The Ministry of Health and Consumer Affairs launched the Estrategia NAOS (Strategy for Nutrition, Physical Activity and Obesity Prevention) in February 2005 with the aim of reducing the prevalence of obesity and overweight and its public health and social consequences. Eight working groups and 80 organisations were involved, providing a comprehensive review of the problem of obesity including familial, education, health and commercial factors. The strategy is available in Spanish and English on the *Agencia Española de Seguridad Alimentaria* (AESA, the Spanish food safety agency) web site (<http://www.aesa.msc.es/aesa/>).

Among the actions developed by the Estrategia NAOS is an agreement adopted in the Interterritorial Council of Health in June 2005 to provide healthier food options on school menus and improve nutrition information for families. The Ministry of Health and Consumer Affairs has carried out several media publicity campaigns and has signed agreements with different initiatives and institutions to work together in preventing obesity.

The AESA has also promoted the Código PAOS. The main companies responsible for more than 70% of the total volume of food and drinks advertising in Spain have signed up to the Código PAOS. A follow-up commission has been established to ensure the code is observed, working with the Ministry Working Group for Food Advertising, which reviews all advertisements about food.

The Código PAOS, which took effect in September 2005, aims to ensure food advertising directed at children and young people promotes healthy lifestyles to prevent obesity. During the September–December 2005 period, 232 advertisements were analysed, from which 29 were rejected and 46 were given recommendations for modifications. The results can be found on the official web site of the Ministry of Health and Consumer Affairs (<http://www.aesa.msc.es/aesa/web/AesaPageServer?idpage=56&idcontent=6098>).

Intersectoral action for health promotion in the Canary Islands

The Intersectoral Plan for Social Measures is currently being implemented to reinforce government action on health promotion with disadvantaged populations in the Canaries. The plan complements the objectives and recommendations of the Health Plan of the Canaries and associated directives for 2003–2007 prepared by the Economic and Social Council of the Canaries (6).

The Pact for Health proposed by the Government Health Advisor of the Canary Islands includes a report that encourages making basic nutrition and healthier foods more affordable through fiscal improvements and prioritizing local production.

An example of intersectoral collaboration is the network of Health Promoting Schools (HPS), which consists of schools that integrate health promotion into their daily work activities. To be included in the network, an agreement needs to be signed between the school, city council, the Canary Health Service and the Ministry for Education, Culture and Sports.

In addition, the Healthy Classrooms initiative of the Health Ministry, in collaboration with the School of Sanitation and Social Services of the Canary Islands (7), develops education activities on health promotion for primary health care professionals with methodological tools and awareness-raising initiatives linked to the Health Plan of the Canaries and the Strategic Plan for Primary Care.

Obesity prevention and the Proyecto Delta

The Parliament of the Canary Islands approved a proposal for the development of a plan to combat obesity in January 2006. This unanimously approved proposal urges the government to promote physical activity and sports for people of all ages through media campaigns and to conduct further research into the eating habits of the population. The plan will be implemented by the Health Ministry, the Directorate General of Sports, the *cabildos* and the city councils.

The Healthy Nutrition Promotion Programme has been developing since 1992. The programme was reformulated in 2000 and again in 2005 to make way for Proyecto Delta, an educational platform that promotes healthy eating habits and physical activity levels. Proyecto Delta promotes healthy nutrition and physical activity within a health promotion framework. The proposal document describes the project, offers a rationale and sets out objectives, activities and systems for coordination and evaluation.

Proyecto Delta is coordinated through the Vice-presidency of the Government and is delivered via the Directorate General of Public Health. Intersectoral actions are coordinated by the Coordination and Planning Commission, which ensures compatibility between implementation and government policies.

The Health Ministry and the Ministry for Education, Culture and Sports work together in developing education programmes related to Proyecto Delta. Other institutions and nongovernmental organizations are also involved in implementation.

Methodologically, the Proyecto is based on nutritional objectives and eating recommendations for the Canary population defined in the ENCA 1997/1998, adapted according to the proposals of Estrategia NAOS. It takes into account objectives for nutritional education for children aged under 16 years. Proyecto Delta is also compliant with the recommendations in the Ruling of the Economic and Social Committee of Europe on “Obesity in Europe: the role and responsibility of civil society stakeholders”.

Education materials to support a nutrition guide inspired by the “food pyramid” were published in 1998 (8), aimed at children between the ages of 6–12. The food pyramid version created through Proyecto Delta (Figure 1) offers a novel approach to transmitting messages about health education, helping children to learn about what to eat and how to adopt healthy eating as

part of their lifestyle. Children are able to relate food products to their animal or vegetable origin through the illustrations and can discriminate healthy from unhealthy eating behaviours from the appearance of the characters in the pyramid. Prompts are offered to assist learning, such as the question mark above the illustration of a child who is wondering, “If this [cakes and sweets] is not healthy, why is it offered to me?” The educational message is that knowing how to say “no” to temptations is a powerful means of avoiding negative health consequences. Ideas such as this are spelled out in the accompanying resource, *“In search of lost nutrition. A walk through the pyramid”* (9).



Figure 1:

Food Pyramid, Delta 2005 (schools edition, ©Proyecto Delta, Government of the Canaries).

Proyecto Delta is a source of inspiration for the production of original education materials. Some examples are: *“Pirámides alimentarias Delta”* (*“Delta food pyramids”*), in versions for children and adults, *“Tabla Delta de los alimentos”* (*“Delta food table”*), *“Pirámide de la Vida Sana”* (*“Pyramid of healthy life”*) and the characters from the educational game *“¿Cómo te ves?”* (*“How do you see yourself?”*), the latter of which allows adolescents to work on basic ideas about obesity, anorexia and bulimia using the BMI. Some materials, such as inflatable giant pyramids and life-size characters from the story *“En busca de la alimentación perdida”* (*“In search of lost nutrition”*), inspire participation from both children and adults. The education initiatives are complemented and supported by previously produced materials such as *“Tejos”*, a traditional game, or *“Brincos”*, which promotes physical activity in younger children.

Although the Proyecto Delta focuses on schools, pupils, families and teachers, it has developed a strong presence in other environments such as sports centres, food markets and places where story-telling sessions are held, games are played and nutritional information is supplied. In the first five months of 2006, more than 20 000 people took part in Delta activities.

The experience of Radio ECCA Foundation

Radio ECCA (Canary Islands Radio Station Cultural Network) was established in 1965. It is a non-profit-making organization dedicated to training and educating adults and young people. Though initially established to provide literacy training and basic education, it now has programmes in almost all education fields in countries throughout Africa, the Americas and Europe.

Traditionally, Radio ECCA targets people who are illiterate or disadvantaged, either culturally or socially. Radio ECCA has adapted its education programmes in the Canary Islands for adult audiences (male or female) with low-to-medium levels of education, although audience education levels may be higher in language and technical courses.

The ECCA Foundation consists of a network of radio stations and workshops that are constantly being revised and renewed. It broadened its services to include television and the internet in 2005. Currently, there are 511 professionals on the staff: 357 in the Canary Islands and 154 on mainland Spain and the Balearic Islands. Radio ECCA teaches an average of nearly 70 000 people annually.

The ECCA education method's impact on nutrition education has been evaluated by external observers, and the evaluations have been published (10). Evaluation of the course "Nutrition and healthy cooking" (11), for instance, was conducted using a pre-post quasi-experimental epidemiological study design with a population sample of 1753 people from a total of 6846 course registrants. The course consists of 12 education units that focus on analysis of popular daily menus, nutritional guidelines, food composition tables and a cookbook with more than 50 recipes. The course was broadcast twice a week for six weeks.

The evaluation demonstrated that two months after completing the course, students had positively modified their eating habits. It also showed:

- a significant increase in physical activity ($p < 0.001$);
- a significant increase in weekly intake of salads ($p < 0.001$), stews ($p < 0.05$), fruits ($p < 0.002$), fish ($p < 0.01$) and cereals ($p < 0.002$), and a decrease in the intake of baked items ($p < 0.001$), sausages ($p < 0.004$), chips ($p < 0.02$) and pork ($p < 0.001$).

The Health Ministry has established collaboration agreements with Radio ECCA for health promotion. Available courses are:

- Diabetes education
- Nutrition and healthy cooking
- Food/nutrition manipulators
- Cardiovascular health.

Currently, the agreement is being extended to attain three new objectives:

- developing a programme for the prevention of childhood obesity that will offer 12 000 course places for students and 3000 for the general population;
- using the radio potential of the ECCA network to broadcast daily positive messages promoting healthy food and physical activity;
- creating a web page linked to Radio ECCA (<http://www.radioecca.org>) that displays information about the Delta project.

5. Conclusion

Obesity is an epidemic. Measures for prevention, monitoring and control need to be in place, as they are for any other major threat to health. Prevention includes acting on the socioeconomic determinants of obesity, which entails influencing economic and cultural factors that create obesogenic environments.

Isolated health promotion actions have little prospects of success. Intersectoral action, coordinated at the highest level, is necessary for success in counteracting obesity in the short, medium and long terms.

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United Kingdom (Scotland): from research to policies, practice and partnerships – a case study on health promotion and young people

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1. Introduction

This case study reviews the response by health promotion and education (HPE) practitioners in Scotland to the issues relating to young people and the maintenance of a healthy weight based on the insights provided by the Health Behaviour in School-aged Children (HBSC) study and other relevant research studies. It also describes the supportive generic policy framework created in Scotland to tackle the issue of health inequalities and the specific policies relating to young people and healthy weight. It describes partnership work involving NHS Health Scotland – the national health promotion agency – the education and health ministries of the Scottish Executive, the HBSC study and the Scottish Health Promoting Schools Unit (SHPSU). The themes prominent in the case study include:

- political support and consensus
- partnership-working
- building a supportive policy framework
- the school setting and transitions
- the core importance of mental health issues.

Scotland has maintained its own distinctive education traditions and system, a right that was established in The Act of Union of 1707. Scotland offers a flexible, less-centralised and less-specialised curriculum at secondary school level than is the case in England. Education policy is determined by the Scottish Executive, and the 32 local authorities are responsible for the provision of the education service. Over 95% of young people attend local authority schools from the age of five to 16 years and over 50% of young people remain at school post 16 years old. There are high levels of basic literacy in Scotland and national guidelines for health education in the 5–14 age group.

2. Introduction to Scotland

Scotland may be divided into three regions: the Highlands in the north, the Central Lowlands, and the Southern Uplands. In the east of the Central Lowlands is Edinburgh, Scotland's capital city. In the west is Glasgow, the hub of a large metropolitan area. Almost 90% of Scotland's population live in the lowlands. The population of Scotland is 5 078 400 and although the death rate currently exceeds the birth rate, the population is growing because of immigration, particularly from England and central Europe. Glasgow is Scotland's largest city with a population of 577 000, and Edinburgh has 448 300. The largest concentrations of social deprivation are associated with the cities.

The Industrial Revolution brought flourishing cities and towns and a rapidly expanding population to Scotland, with the creation of global industries such as cotton, jute, shipbuilding and engineering. The early development of urban life coincided

with an intellectual flowering, the Scottish Enlightenment. Exploitation by landowners, change in land use, the potato famine and the collapse of local industries forced many people from the land and waves of Scots emigrated, particularly to the United States, Canada and New Zealand, in the 18th and 19th centuries.

Glasgow prospered as a great industrial city and trading port and at the height of its powers had over one million inhabitants. Many of the health problems that Scotland suffers from today, however, can be traced to a move from a relatively healthy and active rural lifestyle in the 18th century to the rapid expansion of the cities.

Many 18th century Scots ate healthily (1). The potato had become widely available after the 17th century when it was first brought to Europe from the new world. In addition, a healthy oat-based bread was a staple part of the Scots diet until the modern roller mills replaced it with cheap refined white breads in the late 19th century. There is evidence of a surprising level of physical vigour in many elderly citizens from the statistical accounts that provide evidence of great longevity in some cases (2). This longevity might be as much about genetics as healthy eating, but it is likely that a healthy diet and an active life played a part in the recorded long lives of some rural Scots in the 18th and 19th centuries.

As the offspring of such people moved to the expanding cities, they experienced a separation from the land, and food quality dropped with mass-produced highly refined white bread, cheap margarine based on animal fats and sugar products dominating the urban diet. The origins of many of Scotland's dietary problems of today are probably to be found in this late Victorian period (1).

The second half of the 20th century saw the decline of traditional manufacturing industries on which much of Scotland's prosperity had relied, resulting in increased socioeconomic deprivation and resultant health problems. The late 20th century also saw a growth of political interest in Scotland, with Scotland eventually having more control over its own affairs through the rebirth of the Scottish Parliament, which was reconvened in 1999. Certain powers such as health and education are devolved to the Scottish Executive.

Scotland's health

Scotland's health problems have been well documented, with high mortality and morbidity statistics in areas such as coronary heart disease, specific cancers, obesity, alcohol-related problems and mental health. There is a significant link between these problems and socioeconomic status, but the relationship between health and wealth is complex. There is debate in Scotland as to whether there is, or is not, an additional "Scottish effect" (3) over and above the effects of socioeconomic status. The factors behind this increase of the effect of wealth on health, it has been suggested, include social and cultural norms (4) and issues associated with social capital in Scotland.

There are also significant signs of improvement in health in Scotland. For example, people in Scotland are living longer than ever before. With the exceptions of the first and second World Wars, average life expectancy for Scottish males has increased steadily from around 50 years in 1910 to 73.4 years in 2001 (5). Female life expectancy has increased even more and now stands at 78.7 years. Infant mortality rates have declined in Scotland to an extraordinary degree, with only six children in every 1000 failing to reach their first birthday, compared with 130 children a century ago and 20 children only 30 years ago.

Scotland's overall health profile has continued to lag behind that of England. The standardised mortality rates in 1991 were 12% higher than in England. Health inequalities within Scotland appear to be widening. In the 10 years to 2001, average male life expectancy in Scotland increased by 3%, but the rate of increase was more rapid in the most-affluent parts of the country, with the least-affluent areas falling behind. The gap in male life expectancy between highest and lowest of the 74 parliamentary constituencies in Scotland increased from 7.8 years in 1991 to 13.7 years in 2001 (6). The recent decline in death rates from common conditions such as cardiovascular disease has also been more rapid among the more affluent (7). Despite the overall improvements, the less-affluent sections of the Scottish population are falling behind.

3. Case study

The case study aims to review the response by practitioners in Scotland to the issues relating to young people and the maintenance of a healthy weight, based on the insights provided by the HBSC study and other relevant research studies. It also describes the supportive generic policy framework created by government in Scotland to tackle the issue of health inequalities and the specific policies relating to young people and healthy weight.

The paper has been prepared by a partnership group led by NHS Health Scotland, the education and health departments of the Scottish Executive, the HBSC national (and international) coordinator and the SHPSU. The SHPSU was established in 2002 to progress the health promoting school agenda. It is a partnership involving Learning and Teaching Scotland, who host the unit, NHS Health Scotland, the Convention of Scottish Local Authorities (COSLA) and the Scottish Executive health and education departments. The Child and Adolescent Health Research Unit (CAHRU) at Edinburgh University and NHS Health Scotland have worked in partnership to produce a resource, “*Growing through adolescence*” (GTA) (8), published in June 2005. The resource draws heavily on the HBSC data. HBSC is coordinated both nationally and internationally through CAHRU and gives important information in relation to health behaviour and social trends for 11–15 year-olds.

This case study focuses on the policy context relating to the provision of food in schools and on the capacity-building resource GTA referred to above.

The policy context in Scotland in relation to young people and the Health Behaviour in School-aged Children study

Policy documents relevant to young people’s health and well-being can be found across Scottish Executive departments. It is clear in these documents that good health is acknowledged as the building block for young people to achieve their full potential. For instance, The Standards in Scotland’s Schools etc. Act 2000 acknowledges that “the development of the personality, talents and mental and physical abilities of the child or young person” is the key to him or her reaching fullest potential.

In terms of overarching principles, there are three dominant themes in relation to young people’s policies:

- the need to recognise and address the full range of issues relevant for young people’s health and to develop a holistic and cross-sectoral approach;
- the need to involve young people in decision-making around policies that affect them;
- the need to reduce the inequality gap in young people’s health and well-being.

A cross-sectoral approach: health and education in partnership

A good example of the cross-sectoral approach in Scotland has been the partnership between the education and health sectors in establishing a specialist unit within the education sector – the SHPSU. In the 1980s and early 1990s, early development work in health promoting schools was initiated by the health sector in what is termed by Young the “Initial Experimental Phase” (9). This was followed by a strategic development phase in which the education sector started to perceive the benefits of health promoting schools in meeting social and education needs in their schools and communities.

The Scottish Executive report “*Towards a healthier Scotland*”, published in 1999, gave the Health Education Board for Scotland (HEBS) the lead role in establishing a health promotion unit in the education sector. This followed HEBS’ own research work in health promoting schools and the HBSC research study, both of which pointed to the need for such a unit. NHS Health Scotland (formerly HEBS) and the Director of the HBSC research team have played a key role in directing the work of the unit.

Health promoting schools in Scotland are now well-established. Policy statements on specific school initiatives are now placed in the context of *“Being well, doing well: a framework for health promoting schools in Scotland”* (10). This is also true of curriculum policy statements and food provision policy in schools, such as *“Hungry for success”* (11), which acknowledge fully the context of health promoting schools in relation to young people’s health.

The HBSC study provides a unique data set on the health of adolescents in Scotland over a 16-year period. The study takes a broad approach to examining young people’s health in the context of social factors, including family, peers, school and socioeconomic status and the developmental process of puberty. Gender and socioeconomic inequalities are evident in many aspects of health behaviour and well-being, especially in those that relate to healthy weight maintenance.

The study shows that girls are more likely than boys to diet and to feel “too fat”, in spite of many of them having normal body mass index (BMI); boys, on the other hand, are more likely to be overweight at the same time as feeling their weight is “about right”, are less likely to diet and are more likely to have poor eating habits. In general, girls are less positive about their own health and well-being, suffering more frequently from self-reported health complaints, including “feeling low”. Many of these gender inequalities are found not only in Scotland, but also in other countries. The findings are presented in Scottish HBSC Briefing Papers (12–14) and in the HBSC international report, *“Young people’s health in context”* (15–18).

These findings have been instrumental in the identification of the specific needs for health promotion among young people in Scotland, particularly in the area of healthy weight maintenance, leading to several specific developments in practice and policy. These include:

- a phase of work under the umbrella of the Health Promoting Schools framework in Scotland focusing on healthy eating;
- the production of a training resource, *“Growing through adolescence”*;
- the development of a policy initiative to improve school meals, *“Hungry for success”*;
- the development of a whole school approach to physical activity, *“Active Schools”*;
- clearly revised guidance for the provision of physical education in schools.

The mental health and well-being of young people in Scotland

When young people have been consulted on their thoughts on health, research has indicated that they place considerable emphasis on the following issues:

- body image
- social relations
- social activities for their well-being (19–22).

Specifically, the main health concerns cited in such studies were:

- a lack of self-confidence
- worry about achievement
- concern over interacting with others
- dealing with emotions and depression
- the desire to act autonomously and have control over their own decision-making.

These priorities, which all relate to mental health and well-being, were reflected in the Scottish Executive's consultation on "*Children and young people's mental health: a framework for promotion, prevention and care*".

The HBSC study cross-national comparisons in 1997/1998 place Scottish schoolchildren above average in terms of happiness, but low on confidence and perceptions of their appearance. Levels of reported happiness have increased in boys and girls between 1994–2002, but a significantly higher proportion of Scottish boys (51%) than girls (40%) report that they are happy. Happiness declines significantly for both genders with age (12).

A systematic review of universal approaches to mental health promotion in schools found value in a whole school approach aimed at the promotion of mental health, as opposed to prevention of illness (23, 24). HBSC research has also demonstrated that good mental well-being is associated with positive perceptions of school, good communication with parents and parental support, and having friends with whom the young person can talk (25).

Physical activity, healthy eating and healthy weight

For the HBSC Scottish sample as a whole, there is a significant association between reported participation in physical activity and those who define their health as good or excellent (13). In addition, some have argued that physical activity patterns that are established early on will be reflected later in life, with active children being more likely to be active adults (13).

The research findings on physical activity levels of boys and girls in Scotland present a complex picture. The Scottish Health Survey shows that boys and girls are in fact quite active, more so than their English counterparts. There are important gender issues, however. Boys and girls have similar activity levels up to about 10 years of age. Boys tend to maintain these levels during adolescence, but many girls do not, with widening gender inequalities developing through the teenage years in relation to the amount, intensity and type of physical activity undertaken (26, 27). Levels of physical activity fall for all young people after leaving school, but especially for females. Only one in three young women meet the minimum activity levels required for good health by the age of 16 (28). As a result of these trends, NHS Health Scotland commissioned CAHRU to mount a longitudinal investigation into physical activity behaviour among Scottish schoolchildren (Project PASS).

The Scottish Executive has established an overall strategy for physical activity, "*Let's make Scotland more active*", to help to address some of the issues outlined above. The strategy is focused on promoting regular, moderate physical activity. It recommended a fundamental review of the physical education curriculum; this has now been completed and resulted in the education ministers issuing clear guidelines that all schools should provide a minimum of two hours of quality physical education to all pupils per week. The strategy also led to increased investment in a whole school approach to physical activity; "*Active Schools*" encompasses school travel, play, dance, sports and games. Additional staff (Active School Coordinators) have been recruited to develop increased opportunities for school pupils.

A clear socioeconomic pattern exists in the area of healthy eating and young people. Those from lower socioeconomic backgrounds are more likely to have less-healthy diets, with more fat and sugar content, and less fruit consumption (29). Nevertheless, West and Sweeting (30) have found that in general, the diet of all young people in Scotland falls well short of what is regarded as good for their health. Recent research with disadvantaged young people and their families in Scotland has pointed to the importance of the school environment as a context for understanding young people's food choices (31). It is evident that other factors are also important, such as advertising, parental influence, peers and role models (21, 32).

Scotland ranked second in the 2001/2002 international HBSC study in soft drink consumption for every age, a high position maintained from previous surveys. At age 15, 54% of boys and 45% of girls reported consuming sugary soft drinks at least once a day. Thirty-eight per cent of boys and 23% of girls aged 15 years met physical activity guidelines, proportions similar to the HBSC averages for 15 year-olds. Twenty-five per cent of 15 year-old boys and 29% of 15 year-old girls reported eating

fruit at least once a day. The international average was 25% of boys and 33% of girls aged 15 years. Twenty-one per cent of boys and 52% of girls aged 15 years reported themselves to be “too fat”. Scottish schoolchildren are among the least satisfied with their bodies, at eighth position out of 29 countries (14).

Training and capacity building – “*Growing through adolescence*”

“*Growing through adolescence*” was developed in Scotland in 2005 to support teachers with the complex mental health and social health issues around young people, body image, self-esteem, dieting and eating behaviours. It is a capacity-building resource designed for trainers working with teachers of children, particularly in the age range 8–14 years.

GTA brings research data from a number of key sources into an easily accessible format for practitioners. The drivers that led NHS Health Scotland and its partners, CAHRU and the European Network of Health Promoting Schools (ENHPS), to develop GTA reflect developments in policy and research and the role of the national health promotion agency in Scotland in the delivery of the national health improvement agenda. Policies aim to tackle health inequalities by giving all young people in Scotland the best possible start in life and helping them to realise their potential, leading to a sense of self fulfilment.

The main research driver, however, came from HBSC studies showing that adolescents in Scotland are low in confidence and perceptions of their appearance. The final report of the ENHPS healthy eating project (33) indicated that teachers had identified issues around healthy eating as important, but were sometimes unsure of how to take health promotion forward in the school. Additional impetus for GTA came from concern over increasing levels of overweight and obesity among young people in Scotland. The potential role of advertising was also highlighted as an important issue to address (34) since the UK is less regulated in advertising terms than some other European Union (EU) countries.

GTA Scottish version is presented in two books with an accompanying CD. Book 1 is “*Evidence, overview and factsheets*”, and Book 2 “*Training materials*”. The dissemination strategy of GTA in Scotland has centred on training sessions for practitioners on a “training the trainer” model. A European version of GTA has been produced in collaboration with the WHO Regional Office for Europe (35) drawing on the cross-national findings from the HBSC study (15).

Developing policy at government level – the example of “*Hungry for success*”

Scotland set a whole-country policy framework within “*The Scottish diet action plan*” in 1995, but it was becoming evident from HBSC and other research that it had a problem with the eating patterns of many young people, and nutritional standards in areas such as school meals were not being set (36). The Scottish Executive set up an expert panel on school meals in 2001 and announced acceptance of the panel’s recommendations set out in their report, “*Hungry for success: a whole school approach to school meals in Scotland*” in 2003. Ministers committed to improving the provision of school meals by supporting:

...partnerships between children/young people, school, family and the community in offering access to attractively presented food of an appropriate nutrient composition within schools and in developing a wider understanding of food, nutrition and healthy lifestyles which can inform children’s choices and eating habits within and outside school and throughout life.

With the emergence of “*Ambitious, excellent schools*” (37), work is under way to embed health promotion into the core business of schools. A wide range of partners have been involved in taking forward national developments to support the implementation of “*Hungry for success*”. These include:

- the development of nutrient standards for school meals and a nutritional analysis software package that has been made freely available to all local authorities;
- the development of coherent approaches to health promoting schools, particularly in integrating priority areas such as food and health, physical activity and mental health and well-being;
- the establishment of a “*Hungry for success*” network consisting of representatives from throughout Scotland who have a responsibility for leading on the delivery of “*Hungry for success*” at local level;
- the production of a “*Hungry for success*” toolkit;
- a commitment to staff training and development, including the Royal Environmental Health Institute of Scotland Elementary Food and Health (REHIS) programme.

In addition to the above developments, which are specific to “*Hungry for success*”, other wider developments have been supportive of the work in schools. A National Food and Health Alliance was established to support improvements across the food industry in general, including: identification and procurement of local produce, supporting local production, influencing commercial suppliers, influencing promotion and marketing of food, and developing sustainable and profitable approaches.

Another important initiative has been the development of product specifications by the Food Standards Agency. These set nutrient thresholds for commercial food products used by education sector catering and have been hugely influential in driving progress by the food industry in providing better-quality food for school meals.

Prior to “*Hungry for success*”, the government inspectors for standards in schools did not monitor the quality of food provided in education establishments. This has now been introduced, providing an additional indicator that health promotion in schools is being institutionalised in the mainstream of the education system. The Inspectorate of Education has now devised a programme of monitoring in line with “*Hungry for success*”. Its inspections have shown that good progress is being made in improving school meals and other aspects of food provision in schools.

Understandably, high priority has been given to introducing the Scottish Nutrient Standards for School Meals, but work is also being done to take forward recommendations related to the seven underpinning principles. An important related development to this work can be found at international level, where the Council of Europe shared good practice across Europe in relation to food in schools at a forum in Strasbourg entitled “Eating at school – making healthy choices”, and Scotland’s was one of the influential voices at that event (38). Guidance and a supportive resolution from the Council of Ministers on healthy eating at schools was subsequently produced, and this has been made available to all Member States in Europe (39).

4. Conclusion

Main strengths in Scotland

The political will to change Scotland’s health record is demonstrable. Scotland now has a comprehensive policy framework in education, health, the environment and social justice to provide the support for tackling health inequalities and promoting the health of young people.

The devolution of political power in matters relating to both health and education and the changing political landscape of proportional representation and coalition government have been positive forces supportive of innovation in Scotland.

There has been more continuity in Scotland compared with many other countries in relation to the key organizations. For example, there has been a national health education/promotion agency funded by government in the National Health Service for over 35 years, and the education authority structure has only changed once in the last 30 years. There has also been continuity of funding for the HBSC study by the national health promotion agency over the last 20 years.

There is a good record of quality research relating to the health of young people, including the HBSC study, and there is clear evidence that this research has been influential in policy and strategy development and in the development of health promoting schools. Research also includes qualitative studies in which the voices and views of young people have been heard.

The health promoting school has been used as a unifying concept to build partnerships between the health and education sectors and innovations are viewed within this established conceptual framework.

There is a growing recognition that mental health issues of young people's body image, self-esteem and confidence are important factors in the issue of obesity and weight maintenance, in addition to the biological factors of nutrition and energy expenditure through physical activity. The capacity-building resource "*Growing through adolescence*" is attempting to address this complexity.

Issues that require further development

Translating policy into good practice that is effective and sustainable requires skill, persistence and an understanding of the barriers to progress. We need to celebrate our successes and conduct appropriate research that identifies our weaknesses.

Although there are some demonstrable improvements in young people's health behaviour in Scotland, there has not yet been a measurable impact on issues relating to inequalities. Many existing inequalities in health are persistent, and the impact of activities aimed at reducing inequalities need to be monitored more systematically and rigorously.

People in Scotland are optimistic about making continued improvements in the health of young people, but are also realistic about the importance of having supportive strategies at European and global levels. The WHO Regional Office for Europe has had some success in leading Member States towards a supportive health-promoting environment in areas such as tobacco control. It will be important to continue to work towards higher standards on contextual issues such as the nutritional quality of food products and on related issues like product labelling and marketing.

Similarly, the need for supportive transport and environment policies that protect and enhance spaces for children to walk and play should be prioritized.

Scotland has achieved much in developing policies and strategies for health improvement, but there is still much to be learned and much yet to achieve. We believe that we need to develop a better understanding of the whole cycle of research influencing (and being influenced by) policy and practice, and it is our belief that the WHO/HBSC Forum process will make an important contribution to that development.

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United Kingdom (Wales): summary of HBSC data to inform policy on nutrition and physical activity for children and young people

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Welsh Assembly Government

1. Introduction

Wales has a population of 2.9 million. Of this, 60.2% are of working age, 19.4% are under the age of 16, and 20.4% are over the state retirement age (currently 65 for men and 60 for women). The average life expectancy in Wales stands at 78.38 years, and is higher for women (80.96 years) than for men (75.94 years). These figures are consistent with those for the United Kingdom as a whole.

Economic deprivation in Wales is mainly concentrated in the former industrial heartland of the south-east “valleys”. In total, nearly one in five households with dependent children in Wales does not contain anyone in paid employment, and the proportion of households receiving income support or family credit is 25% (compared to 19% in England). The most deprived areas of Wales have been classed as “Communities First” areas and are the target of a number of Welsh Assembly Government programmes.

The National Assembly for Wales was first established in 1998 under the Government of Wales Act. Executive power remains derived from the Queen and is exercised by the Parliament of the United Kingdom at Westminster, with secondary legislative powers devolved to the National Assembly in Cardiff. The United Kingdom Parliament retains responsibility for passing primary legislation in Wales.

The National Assembly has regulatory authority over laws that are applicable to Wales and has limited power to vary these by secondary legislation. The main areas over which the National Assembly has secondary legislative powers are health and education. A new Government of Wales Bill has been passed and will provide an extension to the legislative powers of the Welsh Assembly, including provision for a possible future transfer of full law-making powers to Wales following a referendum.

The Welsh Assembly Government has set out its vision of a fairer, more prosperous, healthier and better-educated country in “Wales: a better country” (1). This document notes that reported levels of poor health are significantly higher in Wales than in the rest of the UK and are heavily associated with patterns of deprivation. A recent report on health and social care in Wales, “The Wanless report” (2), underlined that improving levels of health means not just providing better services to treat ill health, but emphasizing the role primary care plays and the promotion of healthy lifestyles to prevent ill health.

A raft of strategies specific to care of children and young people has been produced in support of “Wales: a better country”, including: “A fair future for our children” (3); “Children and young people: rights to action” (4); and the National Service Framework for Children, Young People and Maternity Services in Wales (Children’s NSF) (5).

The Assembly Government has adopted the United Nations Convention on the Rights of the Child (6) as the basis for all work for children and young people in Wales. This has been translated into seven core aims through which the Assembly Government works to ensure that all children and young people:

- have a successful and healthy start in life

- have a comprehensive range of education and learning opportunities
- enjoy the best possible health and are free from abuse, victimization and exploitation
- have access to play, leisure, sporting and cultural activities
- are listened to, treated with respect, and have their ethnic and cultural identities recognized
- have a safe home and a community that supports physical and emotional well-being
- are not disadvantaged by poverty.

Health Challenge Wales was introduced in 2003 with an emphasis on collaborative initiatives focusing on joint responsibility for health, calling on all people and organisations in Wales to work together for a healthier nation.

This case study will look at how the food and fitness consultation document, “Health Challenge Wales – action on food and fitness for children and young people” (7), and the final five-year implementation plan, “Food and fitness: promoting healthy diets and physical activity for children and young people in Wales” (8), have been developed to function with these strategies and how Health Behaviour in School-aged Children (HBSC) data have been used to inform and support that work.

2. Background

Addressing inequalities

The Welsh Assembly Government strategy for tackling child poverty, “A fair future for our children” (3), takes forward the commitment to tackle poverty and inequality among children and young people by setting out a long-term strategy for the Assembly Government and its partners towards combating child poverty. The strategy will make a major contribution towards meeting the UK Government’s challenge to eradicate child poverty in a generation and towards Health Challenge Wales (9), the new national focus for improving health in Wales. It will also connect with the Children’s NSF (5), which aims to improve the quality of service delivery and reduce variation in services throughout Wales by setting national standards.

“A fair future for our children” (3) addresses issues of physical activity and nutrition, specifically recommending:

- local council discount cards for sports and leisure pursuits;
- free swimming during school holidays;
- community facilities and activities programme grants to create or upgrade multi-use community facilities;
- a £3.5 million new investment in Safe Routes for Cycling or Walking to School schemes;
- the consideration of cashless school cafeterias to avoid embarrassment for pupils receiving free school meals;
- expansion of the free school breakfast initiative to all interested primary schools by January 2007;
- the expansion of the Network of Health Promoting Schools to all parts of Wales.

Many Assembly Government programmes are targeted at Communities First areas – communities identified as the most deprived in Wales. It is recognised, however, that developing mainstream universal services is crucial in tackling disadvantage, allied with a more-targeted approach that directs resources to the most deprived areas. Although only 26% of poor children in Wales live in Communities First areas, these areas account for only 12% of all electoral wards in Wales; there is therefore likely to be a higher concentration of child poverty in Communities First (and other deprived) areas than in other regions. The most disadvantaged and vulnerable groups require more positive action within a framework of universal services to promote equality.

3. The HBSC study in Wales

The HBSC study (10) collects cross-national data every four years to help measure and track aspects of adolescent health and health-related behaviours and their developmental and social contexts. The study was first undertaken in 1983/1984, and Wales first participated in 1986. Interim surveys are also conducted in Wales every two years.

Cross-national and national data provide a unique opportunity to develop the evidence base for policy and practice. This contributes to particular areas of adolescent health highlighted in, for example, the children and young people's action plan (11), "Healthy and active lifestyles in Wales: an action plan (12), "Climbing higher: sport and active recreation in Wales strategy for consultation" (13) and "Food and well being" (14).

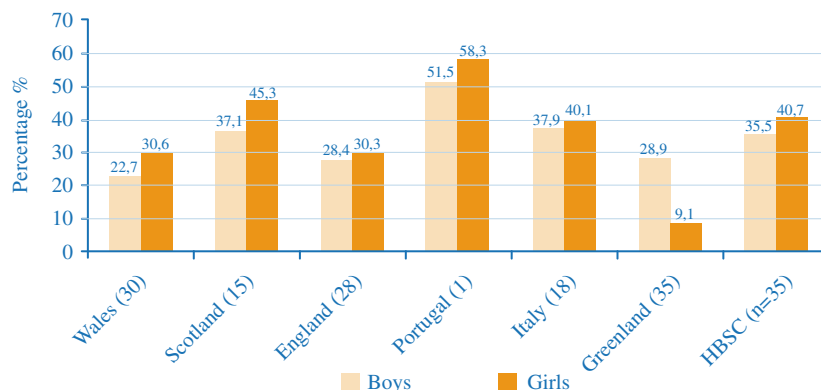
Childhood and adolescence are particularly important times in health terms. Certain behaviours are initiated during the adolescent years while some patterns of behaviour, such as eating and physical activity, can become established in earlier childhood (15). Research into young people's health and health behaviour – and the factors that influence them – is therefore essential for the development of evidence-based policy and practice in Wales.

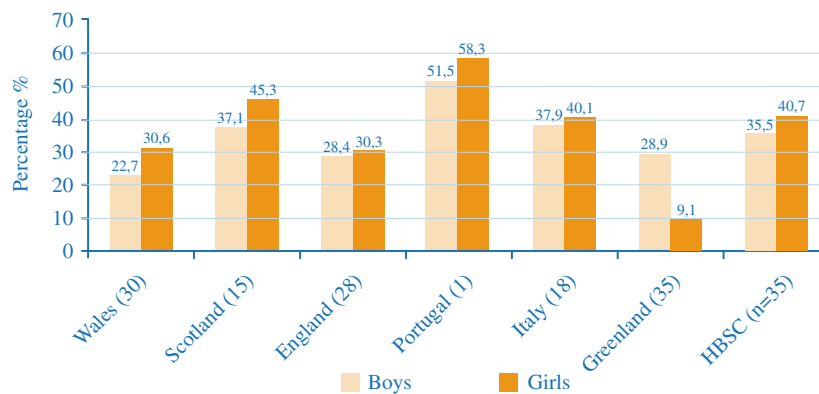
Nutrition, physical activity, sedentary behaviour and obesity in young people are priority health areas for the Welsh Assembly Government. A previous HBSC report on trends in Wales 1986–2000 (16) showed, for example, that fewer than half of pupils walk to or from school each day and that significant proportions of young people do not consume fruit every day or eat breakfast on a regular basis. Habits established early affect health-related outcomes later in life. For example, it is recognised that those who develop healthy eating habits early in life are likely to maintain them into adulthood and have reduced risks of chronic diseases such as cardiovascular disease, certain cancers, diabetes and osteoporosis (17). A balanced diet in adolescence is also likely to reduce the risk of more immediate health problems such as dental caries, overweight and obesity. Patterns of eating are also important; those skipping breakfast, for example, are most likely to have difficulty concentrating mid-morning (18) and to consume snacks high in fat, salt and sugar at other times during the day (19).

International comparisons for three selected items show that Wales has high levels of overweight and obesity, inadequate levels of fruit consumption and high levels of soft drink consumption. Wales was ranked fifth out of 35 participating countries for obesity in 15 year-olds. A gender difference was evident, with 17% of boys and 14% of girls pre-obese and 5% of boys and 3% of girls obese at age 15. The fruit consumption of 11 year-olds was ranked 30th, with only 31% of girls and 23% of boys reporting eating fruit every day at age 11; these percentages declined to 24% and 19% respectively by age 15. Welsh consumption of soft drinks was ranked 10th out of the 35 countries for 11 year-olds, with 33% of boys and 32% of 11 year-old girls reporting consuming soft drinks every day; these percentages rose to 41% and 35% respectively by age 15 (see Figures 1–3).

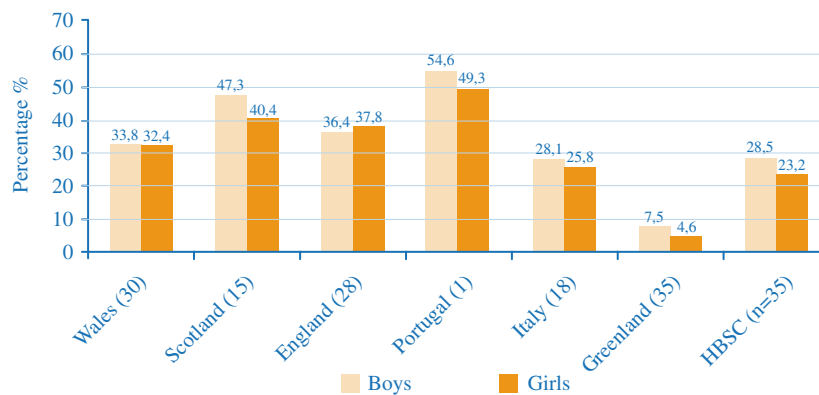
Figure 1:

Percentage of 15-year-olds obese. (HBSC 2001/2002)



**Figure 2:**

Percentage of 11 year-olds eating fruit every day. (HBSC 2001/2002)

**Figure 3:**

Percentage of 11 year-olds consuming soft drinks every day. (HBSC 2001/2002)

“Young people’s health in context” (20), the international report from the 2001/2002 HBSC survey, explores issues of inequality by utilising the Family Affluence Scale (FAS). The report shows an association between FAS and physical activity at recommended levels, but suggests that the mechanisms behind social inequalities in health are complex.

4. Influence of HBSC on policy development

The National Service Framework for Children, Young People and Maternity Services in Wales (Children’s NSF)

The Children’s NSF was issued for consultation in October 2004, with the final standards issued in September 2005. It sets standards for the quality of services that children, young people and their families have the right to expect and receive. The standards have been set not just for health and social care, but also for local government services that have a strong influence on the health and well-being of children, such as education, housing, leisure and transport.

One of the seven chapters deals with improving the health and well-being of all children and young people, with one standard stating: “All children, young people and their parents and carers have access to a range of services that promote health and well-being and prevent ill health.” HBSC data were used to inform the development of specific actions within this standard, including key actions to encourage breastfeeding, infant nutrition, promotion of healthy food options and the ready availability of drinking water. The provision of services and an environment that supports active play and physical activity is also identified as a key action.

Food and Fitness Action Plan for Children and Young People

The Welsh Assembly Government Sub-Committee on Children and Young People meets monthly. Its membership is:

- Minister for Children (Chair)
- First Minister
- Minister for Health and Social Services
- Minister for Culture, Sport and the Welsh Language
- Minister for Education and Life-long Learning
- Minister for Social Justice and Regeneration
- Minister for Economic Development and Transport.

This sub-committee identified nutrition and physical activity (abbreviated as “food and fitness”) as a priority action area in 2003/2004. As a result, March 2004 saw three conferences on food and fitness in children and young people in Wales aiming to establish causes for concern and ideas for future action. HBSC data were presented at all three conferences. The conferences were followed by the establishment of a Food and Fitness Task Group on Children and Young People co-chaired by the Minister for Health and Social Services. This group looked at existing evidence and advised on future action.

The first stage of this process was to identify existing action, some of which is detailed below.

Current action

General

The main school-based initiative is the Welsh Network of Healthy School Schemes (WNHSS), which has developed from the ENHPS pilot project. All 22 local authority areas in Wales have set up local schemes with support and guidance from the Welsh Assembly Government. Participating schools are assisted in assessing their current health status and developing actions for improvement. Local decisions are taken on targeting of schools, acknowledging the recommendation from the Acheson report on inequalities in health (21) which recommends that “the further development of health promoting schools [is] initially focused on, but not limited to, disadvantaged areas”.

Nutrition

School-based initiatives include:

- the incremental introduction of free breakfasts to primary schools in Wales, with the scheme to initially target Communities First areas and eventually include all primary schools (those for 3–11 year-olds) that wish to participate;
- the encouragement of healthy vending via an initial pilot programme in three secondary schools (for 11–18 year-olds) and subsequent guidance made available to all secondary schools (22);
- the provision of water coolers to schools in Communities First areas and guidance on the benefits of water consumption, “Think water” (23), made available to all schools in Wales;
- the encouragement of fruit tuck shops through the WNHSS and guidance produced on the implementation of fruit tuck shops in primary schools (24);
- the “Gimme 5” computer games and screen savers developed by the Food Standards Agency (Wales).

A number of community initiatives target action for children and young people, particularly those in disadvantaged communities. One is the Food and Fitness Health Promotion Grant Scheme.

Physical activity

School-based initiatives include:

- “The Class Moves!” (25), a classroom-based programme that enables children and teachers to enjoy the benefits of exercise based on activity calendars;
- Dragon Sport, run by the Sports Council for Wales (SCW), which focuses on developing extracurricular and community opportunities in seven sports for children between the ages of 7–11 and also trains volunteers to deliver sporting opportunities;
- the Physical Education and School Sport (PESS) programme, which involves clusters of schools working together to identify practices that will raise standards, test new resources and practice and share results.

Community initiatives targeting children and young people include:

- the Safe Routes to School initiative, which tackles congestion caused by the school rush-hour and promotes healthier lifestyles for children;
- free swimming during school holidays.

Other research

The identification of existing action and evidence from HBSC were supplemented by additional research on children and young people via focus groups that looked at barriers to and facilitators of healthy eating and physical activity.

This research highlighted the need to further consider extracurricular activities offered by schools, look at safe play areas, actively involve parents, publicize available facilities, encourage the development of cooking skills and review catering services in schools and colleges.

New action

The consideration of all the evidence, including an analysis of gaps in provision, resulted in the production of an action plan for consultation. The recommendations are highlighted below and, in many cases, represent an extension of existing action and require a partnership approach to delivery. Consultation responses were very supportive of the action planned, and a final “Food and fitness implementation plan” (8) was launched in June 2006.

Recommendation 1. Extend the Welsh Network of Healthy School Schemes (WNHSS).

There was full support for the recommendation to extend the Welsh Network of Healthy School Schemes. Local healthy school schemes have been offered increased grants to help meet the goals of 75% of maintained schools being involved in WNHSS by March 2008 and 100% by March 2010. A key action of the Children’s NSF (5) final version is that: “All [local education authority] maintained schools participate in the Welsh Network of School Schemes, and specifically implement food and fitness actions during their involvement”. These words are reproduced in the final “Food and fitness action plan” (8).

The additional grant funding has supported the appointment of additional local coordinators, and the Assembly Government is currently running a training programme for these new appointees. A further grant to be distributed locally from 2007 will support the requirement to implement food and fitness actions. This grant can be used for a range of interventions in

schools, including the provision of water coolers, support for fruit tuck shops and healthy vending, the painting of playground markings, provision of cycle racks and the setting up of school gardens.

A further case study publication, “In perspective: food and fitness” (26), has been produced during 2006, incorporating one case study in support of food and fitness from each of the 22 local healthy school schemes in Wales.

Recommendation 2. Improve food and drinks consumed throughout the school day.

There was full support for the recommendation to improve food and drinks consumed by students throughout the school day. Several respondents endorsed the need for improved nutritional standards for school meals, with some stating that these should complement standards in place in Scotland and England or which are the subject of current consultations. Several individual comments raised specific concerns about the school meal experience.

Research has been performed on school meal choices to investigate why pupils choose particular foods.

A Food in Schools Working Group was set up to look at all food provided throughout the school day. The work of this group is presented in a consultation document, “Appetite for life” (27), which was launched in June 2006. The group has considered evidence from the school meal choices research and from HBSC, focus groups and pilot projects on the provision of water and healthy vending. They have also looked at recommendations from Scotland and England. The consultation document makes recommendations for food and drinks served throughout the school day, including breakfast, break-time snacks, school meals and provisions in after-school clubs. It emphasizes the importance of a whole-school approach. Consideration is also being given to the possibility of enshrining some of the recommendations in legislation. Work to support local authorities and schools in implementing the recommendations will be ongoing.

Recommendation 3. Provide high-quality physical education, health-related exercise and practical cookery skills.

The Physical Education and School Sport (PESS) initiative will be extended to include all maintained schools in PESS partnerships by March 2010. Specialist materials will also be developed to promote the teaching of outdoor and adventure activities.

The Dragon Sport concept will be extended into secondary schools alongside increased primary school participation and “The Class Moves!” (25) materials will be modified for trial in special schools.

The implementation plan pledges to explore ways of developing innovative approaches to the teaching of nutrition and cookery skills. A Cooking Bus has been commissioned for Wales to provide practical cookery sessions, initially targeted at primary schools in Communities First areas.

Recommendation 4. Provide an environment that will encourage children and young people opportunities to access physical activity and healthier foods.

Through various initiatives, such as the “Walking and cycling strategy” (28) and the continuation of the free swimming programme, the plan aims to continue to support children and young people to meet and explore a variety of play and physical activity opportunities. This includes an increase in the number of schools involved in Safe Routes to School – an initiative which aims to improve safety for pupils on their way to school to encourage more sustainable forms of travel – through the implementation of 20 new schemes by March 2007.

The Community Chest grant scheme, administered by the SCW and designed to encourage more people to take part in regular physical activity, will also be continued. A minimum of 50% of Community Chest funding supports young people’s physical activity projects and a new round of food and fitness grant funding will be available for projects contributing to the action plan objectives.

Facilitating improved access to healthier foods in places such as leisure centres, youth centres, care homes, pre-school settings and out-of-school clubs is a priority and will be linked to guidance on sponsorship by food companies to limit unhealthy sponsorship of children and young people.

Recommendation 5. Develop skills to enable children and young people to take part in physical activity and prepare healthier food.

Support materials will be provided for health professionals working with parents of young children on topics such as breastfeeding, bottle feeding and first foods. National infant feeding guidelines will also be developed for health professionals and will be available by March 2007.

The action plan pledges to develop cookery skills courses for children and their parents, including those in hard-to-reach groups, based on existing good practice and partnerships with youth services, community food workers and education programmes. The Cooking Bus commissioned for Wales is to be used to deliver practical cookery classes to parents and carers of young children at schools visited throughout the country.

Recommendation 6. Develop and deliver training on food and fitness for those working with children and young people.

This recommendation will be supported through a range of programmes and initiatives. The number and quality of coaches and leaders in sport will be increased through the new Coaching Plan for Wales, which aims to deliver 6000 new coaches and leaders throughout Wales each year until 2008.

The plan will deliver Open College Network Community Food and Nutrition Skills courses to people who work with children and young people following a pilot study. Support materials will complement these courses and integrated physical activity and nutrition training will also be developed.

An evaluation of existing training materials on food and fitness for professionals will be undertaken and, if appropriate, a generic training manual will be developed. In addition, a selection of food and fitness training initiatives will be available to people working with children and young people.

Recommendation 7. Ensure that actions are evidence-based, innovative, evaluated and shared.

There is a commitment to evaluating the plan and any new initiatives taken forward subsequently. The role of HBSC in this evaluation is under discussion. Research into food choices carried out in partnership with the Food Standards Agency Wales is to be published during 2006.

5. Conclusion

A number of government policies in Wales relate to the health of children and young people. We must ensure that policies are supportive of each other, rather than contradictory. Partnerships at national and local level are designed to assist the implementation of policies – they need to continue and be strengthened.

There needs to be national and local decisions regarding the universal provision and/or targeting of initiatives related to health inequalities.

All policies should be evidence-based or innovative, with built-in evaluation. HBSC can contribute to providing both evidence and evaluation.

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“Young Minds”: children’s and young people’s voices in health matters – learning by making a difference

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1. Introduction

Children’s and young people’s participation in research, education and community development initiatives has become imperative in many countries in Europe and elsewhere since the adoption of the United Nations Convention of the Rights of the Child in 1989. Although participation is not a new issue – it is inherent to children’s lives and development – it would be fair to say that effective participation, which implies children engaging in meaningful dialogue with adults and institutions and influencing decision-making processes in matters that concern them, is still in its infancy.

This is as true for child participation in conferences as it is for community development projects and policy discussions (1). Although progress is being made in involving children and young people in health matters that affect their lives, a number of contentious issues need to be examined critically if children’s participation is to become more than mere rhetoric.

This case study draws on an educational research and development project to focus on the importance of integrating school-based participation as part of teaching and learning about health, and in influencing planning and policy development at school and local level. It particularly looks at these issues in relation to nutrition, overweight and obesity.

Obesity is not only connected to eating patterns and physical activity levels, but is also related to young people’s perspectives on food, their tastes and aesthetic sense, and a range of social determinants and policy issues (such as school meal policies, access to quality food and conditions of food production and distribution). All these issues affect young people’s lives and health; having a say in them is both their right and a means to more effective health education and health promotion.

Attempts to address obesity and promote health solely by conveying messages about good nutrition and taking part in regular physical activity have limited impact when they do not take into account children’s and young people’s opinions, visions and ideas for action. Empowerment and ownership are crucial factors contributing to effective health education and sustainable health promotion practices. They imply that young people are guided and are provided opportunities to explore and articulate their own ideas and visions, understand their needs concerning health matters and communicate them with decision-makers.

There is a number of contexts and ways in which children and young people can be involved in shaping and communicating ideas with a view to influencing health-related decision-making at different levels. Schools are undoubtedly indispensable settings because they can create appropriate, inclusive participation processes and can ensure that children are guided in sensitive and responsive ways to develop the necessary knowledge, competence and confidence to participate meaningfully.

The Health Promoting Schools (HPS) initiative, characterised by a democratic approach, a strong emphasis on pupil participation and the development of action competence (2–4), provides a useful framework in this respect. This framework can be utilised to critically explore and develop effective participatory structures and processes at school level which are conducive to positive outcomes in health and education realms.

2. Health-promoting schools and the many faces of participation

Children participation discourse has been reflected in the health promoting school approach through a growing acknowledgement by many educationalists and researchers that learners need to be actively engaged in school matters and should have greater control over the learning process. The aim is to treat children and young people seriously as health agents and democratic participants. This requires balancing classical values of liberty, autonomy and self-expression with the ethics of care, facilitation and empowerment (5) and devoting considerable attention to health and education issues. The concept of pupil participation is becoming a well-established, mainstream issue within the health promoting schools initiative, but its meaning varies considerably, often resulting in confusing and contradictory interpretations and practices.

It is often argued that one of the key features of a health promoting school is the provision of an appropriate arena in which pupils can participate in relevant aspects of decision-making and, consequently, in teaching and learning processes. Participation could be viewed as both a means and an end of a health promoting intervention and as the main constituent of teaching and learning strategies within democratic health education. On the other hand, given the fact that participation means different things to different people and at the same time acknowledging that it is “too serious a matter to be taken lightly” (6), a more detailed discussion about its shades of meaning is required.

“Participation” is associated with a number of related words, such as “taking part”, “involvement”, “consultation” and “empowerment”. Taking the dictionary (Merriam Webster) definition as a starting point, it is possible to differentiate between two groups of interpretations:

- participation in the sense of “taking part in”, “being present”;
- participation in the sense of “having a part or share in something”, which is related to notions such as “empowerment” and “ownership” and refers to both action and connection, and to one’s sense of being taken seriously and being able to make an impact.

“Participation” is often used in the school context to refer to the interactivity and “playfulness” of teaching strategies in helping to improve pupils’ motivation, but without serious consequences for extending their influence. Sometimes, “participation” simply means taking part in a class discussion or debate. Both meanings belong to the first group of interpretations described above, as they refer to pupils simply being involved in pre-designed teaching and learning activities without taking into consideration their real influence.

The issue of pupil participation can be understood as the “voice of the child”, grounded in discussions about the importance of teachers listening to pupils to motivate them and foster their learning and development (7–9). On other occasions, “participation” implies sharing power in making decisions relating to school matters and on learners having an influence on the content and processes of learning. This understanding is embedded in the democratic health education discourse and reflects a sense of self-determination, self-regulation, ownership and empowerment in relation to learning about health.

Pupil participation in the context of the health promoting schools approach is viewed in relation to the characteristics of the school environment in terms of, for example, appropriate democratic and inclusive structures, supportive relationships, positive social norms and values, opportunities for achieving success and developing skills and competences. It presupposes fostering of pupils’ self-awareness, decision-making and communication capacities, connecting pupils with each other and with the school, and empowering pupils and school communities to deal with health issues (3,10,11). It refuses to endorse an empty “participationism” approach through addressing central issues of democracy, personal development and empowerment, which inevitably leads to the sometimes controversial process of challenging traditional power imbalances in schools.

A number of useful typologies have been developed over the last few decades (12–14), based primarily on distinguishing between different degrees of shared power and influence. Hart emphasises that democratic participation cannot be learned in an abstract, scholastic way:

An understanding of democratic participation and the confidence and competence to participate can only be acquired gradually through practice; it cannot be taught as an abstraction. Many western nations think of themselves as having achieved democracy fully, though they teach principles of democracy in a pedantic way in classrooms which are themselves models of autocracy. This is not acceptable (14).

This is especially relevant for school contexts that traditionally use didactic, “spoon-feeding” instructional methods.

Participation can only be “learned” if schools and teachers create democratic classroom and school communities that are inclusive in meaningful ways and in which everyone feels the desire and the responsibility to contribute. It is also critical to note that experience itself is not sufficient; diverse opportunities for participation should be combined with time for dialogue, identifying social perspectives and reflection. In other words, genuine pupil participation, focused on the development of meanings, critical reflection and interaction between the individual and society, is seen as one of the crucial elements of democratic and action-orientated teaching.

Figure 1 illustrates three points of differentiation between token and genuine pupil participation in health education: focus, expected outcomes and target of change (for a more detailed discussion on the model see Simovska (3) and Simovska (15)).

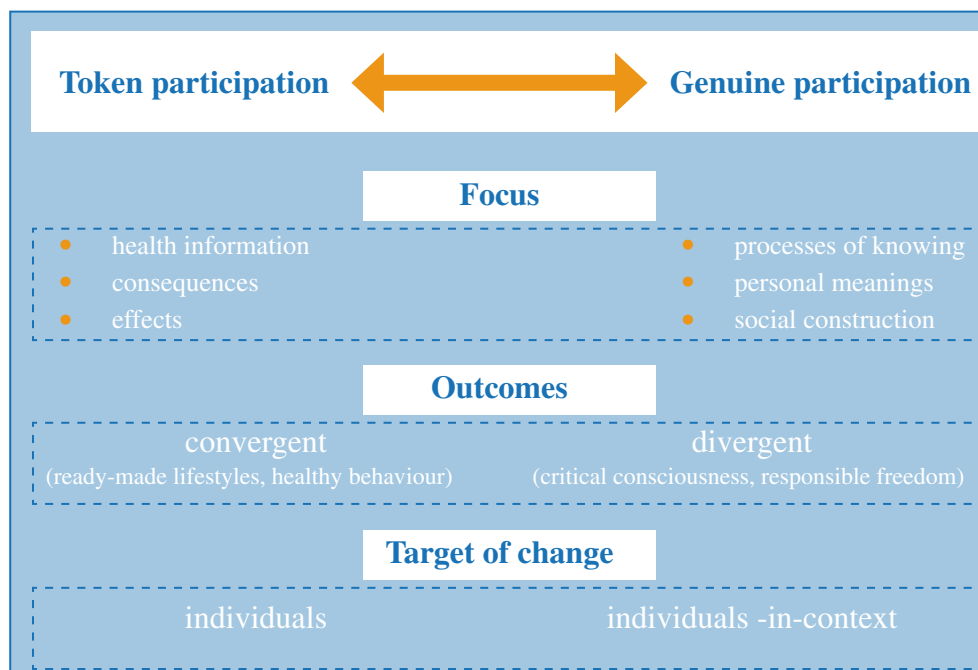


Figure 1:

Three points of differentiation between token and genuine student participation.

In contrast to token participation, which is focused solely on health information and on individual health and behaviour outcomes predetermined by experts, genuine participation encourages development of personal meaning and joint construction of knowledge and divergent education outcomes, and understands that individuals are inseparable from their living environments.

Genuine pupil participation implies that pupils have the opportunity to influence the content and the process of their learning.

It allows for pupil ownership of the learning process, which presupposes that the potential for effective individual and group action is embedded in the knowledge acquired. “Owned knowledge” positions its possessor as an acting subject, able to employ his or her knowledge in dynamic ways (16) by visualizing different alternatives and dealing with complexities of change, which stands somewhat in contrast to traditional school knowledge.

3. Case study: “Young Minds” – exploring food, culture and health

The aim of this case study is to demonstrate the effectiveness of involving young people meaningfully in health education and health promotion processes. It draws on the educational development and research project “Young Minds – exploring links between youth, culture and health” (www.young-minds.net).

Young Minds is an international web-based project in which pupils from a number of schools in different European countries collaborate on issues related to health. The project has been organised in different rounds or phases, with pupils from different countries and schools taking part in each phase. Even though each project phase had a different content focus, they all followed the same overall education design (4,15,17).

The overall purpose of the project was to generate new research-based knowledge on effective methods for engaging primary and early secondary school pupils in learning about health in action-focused, collaboration-focused ways. The educational development of the project draws on the main concepts and principles relating to the democratic approach to health promoting schools.

The aims of the project include:

- developing, exploring and documenting democratic (participatory and action-orientated) health education and health promotion in school;
- investigating the interplay of the participatory and action-orientated educational approach with information and communications technology (ICT) and cross-cultural collaboration within the European Network of Health Promoting Schools (ENHPS);
- facilitating the articulation and communication of young people’s voices on health and well-being and their influence on selected international conferences that address issues of concern to young people.

Democratic teaching and learning processes, allowing for an adequate and flexible level of pupil participation, shaped the educational framework of the project (4,16) to include the following.

Pupil action

Schools’ projects are directed towards taking action and initiating health-promoting change (at school or in the local community) in relation to overall project topics. Children and young people often feel overwhelmed and powerless in relation to health problems, so taking action as part of learning about health is vital if pupils are to be empowered rather than frightened and inhibited. The action-focused teaching emphasizes the importance of close collaboration between the school and the local community. Pupils’ ideas, previous knowledge and their lived experience should play crucial roles in decisions on which changes and actions are to be carried out.

Pupil involvement

Pupils in participating classes are actively involved in deciding about specific issues within the area of health and well-being they wish to investigate. They are engaged in making decisions about strategies to be used to explore these issues and in representing and communicating their findings and reflections. An essential part of the dialogue and decision-making process is a discussion of the significance of the issues to pupils’ everyday lives and to society in a broader sense.

IVAC instructional design

The IVAC (investigation–vision–action–change) approach (2,4,18) is employed as the main framework for structuring and facilitating pupil participation. The approach is modified and adjusted to fit the specifics of each particular context and existing systems of meaning characterising the school culture of participating classes.

Teacher guidance

Teachers have the role of responsible facilitators of project activities and have the task of inspiring, supporting and challenging pupils. They engage in educational dialogue with pupils with the aim of broadening health concepts and health-related knowledge to include social and holistic dimensions, international (global) perspectives, democratic values and strategies for change management.

International collaboration

The project emphasizes the benefits of involvement of pupils from a number of schools and classes from different European countries with diverse educational and cultural contexts, all working on the same overall health issue at the same time and following the same educational principles.

“Real life” action

The main difference of this action compared to other actions undertaken as part of the project is the context in which it is carried out. While actions carried out over the course of the project have their effect in the school, the school’s local environment or the virtual space of the online web forum, the actions taken at the end of the project are carried out in a “real-life” context outside the school frames, at international conferences with high political and professional profiles.⁸

This case study examines pupils’ work on the topics of food and nutrition within the frames of the Young Minds project. Although the research linked to the project focused on 12 participating classes from different countries in Europe working with three health themes (alcohol consumption, food and nutrition and well-being in school), the focus here is on pupils aged 13–16 in three classes in the Czech Republic, Denmark and Scotland who worked with the issues of food and nutrition. Data were obtained through project documentation, and web site contents were produced by participating pupils (www.young-minds.net).⁹

Nutrition, food and health – pupils’ thoughts

Project work in each class involved a brainstorm to help pupils operationalize and delineate the overall health issue, identify specific aspects, prioritise them, and select a few to be explored in greater detail. When asked to brainstorm about food and aspects of food consumption, pupils in all three classes came up with a plethora of ideas that reflected the complexity of the issue (Table 1). Pupils were encouraged and guided by their teachers to explore the topic from a number of different perspectives, including their own diet styles and behaviours, but not to focus exclusively on these. In addition to discussing nutritional value of different types of food and advice for a healthy, balanced diet, pupils reflected on issues relating to food production, the social, cultural and aesthetic aspects of eating, and the availability of healthy food in schools.

⁸ Each of these conferences was initiated and organized by the WHO Regional Office for Europe. The participation of Young Minds was facilitated and supported by WHO.

⁹ Data used in this case study are part of those collected during the entire project for research and evaluation purposes. A research team from the Research Programme for Environmental and Health Education at the Danish University of Education was responsible for project coordination and related research. In 2002, the team members were: Venka Simovska, Bjarne Bruun Jensen, Käthe Bruun Jensen and Monica Carlsson. Their contribution is gratefully acknowledged.

Table 1:

Summary of pupils' conceptualization of the issue of food and nutrition.

Categories	Examples of questions
Food and nutrition	What is healthy eating? What the human body needs? Food advice?
Production of food	Diseases, such as Salmonella? Animal welfare? Food additives?
Food and culture	Habits and traditions of each country? Junk food and fast food? Food in the family?
Food and social life	Media and commercials? Eating disorders? Fatness and the ideal body?
Food and environment	Sustainability? Ecology?
Aesthetic and food	Does it matter what the meal looks like? The importance of good ingredients? A well-set table: how does it look?
Food in school	The School canteen or buffet? Do we have to eat to learn better? What does school teach us about food?

The accounts below, taken from the web site (www.young-minds.net), demonstrate that the pupils have a clear idea of what healthy food is about, and highlight their critical reflections about the quality of food available in school.

In school, the only healthy option is potatoes or pasta, so there isn't much variety. We need nicer fruit and also vending machines that sell healthy food. Cereal bars should be available in the tuck-shop. (S.H., 14 years)

Food in school is tasteless, when it should be tasty. It should not be messy, but easy to eat, and certainly healthier than it is now. It should also be cheap. No junk food, please, but meals which have texture, and are tasty and nutritional. (T.M., 14 years)

Food is about nutrition and healthy eating. Lunch at school should have more fruit and fibre in it. We need healthier choices, crisps, salads and fruits. A quick, cheap and healthy breakfast at school would be good! (A.M., 14 years)

Knowledge about health and pupils' capacity to make a difference

The analysis of the web site sections showed that the health contents pupils dealt with can be categorized in the following types of knowledge (18):

- knowledge about effects: what kinds of health problems can be identified in relation to food and nutrition;
- knowledge about causes: why these problems exist;
- knowledge about change strategies: how these problems might be solved;
- knowledge about alternatives and future possibilities: the “ideal”, desirable situation in regard to the problems at hand.

Table 2 provides examples of these knowledge dimensions in relation to nutrition and food, summarized from the web site (see also 19).

Knowledge dimensions	Examples
Effects	Body nutritional needs. Junk food and fast food. Eating disorders.
Causes	Social factors, such as traditions, culture, family. Food production, organic vs. chemicals; quality standards. Access to quality food in school, at home. Media influence.
Change strategies	Establishing a breakfast club with healthy food at school. Improving the quality standards for food production. Careful management of food at home. Lobbying and awareness-raising for an alternative food pyramid.
Visions about alternatives	Healthy food in the school canteen. Healthy breakfast every morning. Taking into consideration social, aesthetic and nutritional aspects of food (alternative food pyramid).

Table 2:

Different types of knowledge in Young Minds.

The examples epitomize the broad, multidisciplinary knowledge landscape (18,19) believed to be crucial in fostering young people's participation capacities and competence to bring about health-promoting changes in their lives and in the environments that surround them.

The web site also documents health-promoting actions pupils undertook based on their investigation findings, critical reflections and visions about positive alternatives. For example, in one of the classes (the Czech Republic), the pupils took action to improve their school canteen's food quality and physical environment. Among other actions, they interviewed the school principal and communicated their vision about a better canteen, providing healthier food in a more pleasant, pupil-friendly environment. Another Young Minds team (the Scottish class) decided to establish a healthy breakfast club at the school. The pupils approached the action in a systematic way by collecting and taking into account the ideas and opinions of the whole school community (see Box 1 for an example of the action plan).

Box 1. Healthy breakfast at school: action plans made by teams of pupils (source: www.young-minds.net).

NICKY and SARA'S GROUP

Our breakfast club will contain cereal bars, fruit bars [...]. We will also have toast and other hot foods.

We will want to have it during registration, so we will extend registration for this purpose.

We will make each item 20 pence each.

We will have it in the Home Economics Department.

TERRI, ANDREW and CARLY'S GROUP

Survey around school to see people's opinions.

Ask the canteen ladies for permission or have it in the Home Economics Department.

Add five minutes to registration.

Yoghurts, breakfast bars, toast, fruit and hot drinks would all be available.

TAZZ'S GROUP

The location—home economics room.

Time—the breakfast club would be held during registration and register would be conducted there.

What foods would be involved? The choices would be healthy but popular and both hot and cold.

Conclusion: we are now going to approach the Home Economics Department and the School Management Team (SMT) so that we can get permission to start and run the Breakfast Club in our school. We will let you know what happens!

As Box 1 shows, the pupils had a sound idea of what they wanted to do and how to go about doing it. They addressed time and place issues for the breakfast club, attempting to integrate it into the existing school resources and time schedules. They communicated with the other involved departments in the school, including school management, and took into account the opinions of peer pupils on what constitutes “healthy but also tasty” food. This well-thought-through action planning undoubtedly signals that the project’s educational approach and teacher guidance contributed to the pupils’ empowerment and competence for action.

Not surprisingly, as documented on the web site and shared with pupils from other participating countries (Box 2), the action was effective and resulted in the establishment of a breakfast club providing a healthy start to the school day for all pupils in the school. As can be seen in comments on the website, the pupils have very positive feelings about the successful action.

Box 2. Successful change at school brought about by pupils (source: www.young-minds.net).

HALLO, DENMARK and CZECH REPUBLIC!

We have **REALISED THE VISION!** We have begun our Breakfast Club! We are so pleased! It is held in Home Economics room 8:30 every morning and it finishes at two minutes to nine. Then the bell goes for registration. You can see a copy of the menu below.

We are wondering if there is anything on Czech breakfast tables that we might put on our menu?

BREAKFAST CLUB MENU...

The extract in Box 2 offers a glimpse into pupils' positive feelings about the successful action and shows the mutual inspiration, enthusiasm and motivation the cross-cultural collaboration brought to the project. The combination of a participatory approach, cross-cultural collaboration and the use of ICT provided new, stimulating possibilities for joint work across classes, focusing on the viable use of subject knowledge and relating theory and practice. One of the evocative examples on the web site is the joint vision pupils from all the three classes created together – “the alternative food pyramid” (Figure 2). The cross-class collaboration was initiated by the Danish class: the pupils in this class invited peers in the other classes to reflect on the conventional food pyramid and to consider its “revision” to include ideas about social, aesthetic, psychological and other aspects of food they had explored over the course of the project (see also 19).



Figure 2:

The alternative food pyramid
(www.young-minds.net).

In contrast to the conventional food pyramid, the alternative pyramid emphasizes the importance of taking into account the notion of “meals” and the atmosphere around meals when discussing food and health, in addition to the nutritional quality of ingredients.

The Young Minds pyramid was created as a three-dimensional model and was presented at two large international conferences: the ENHPS conference “Education and health in partnership” in Egmond, the Netherlands in September 2002, and the Council of Europe conference “Eating at schools – making healthy choices” in Strasbourg, France in November 2003. Young Minds pupils interacted with conference participants to discuss the importance of a balanced diet for health and well-being, but also attempted to raise awareness about and focus attention on other related aspects such as the social, cultural and aesthetic dimensions of diet. The ultimate aim of the Young Minds pupils’ action at these two conferences was to influence school and local community policies on nutrition, food provision and safety.

4. Conclusion

Analysis of the case study identifies trajectories of participation in which pupils learned about health in intentional, relational and purposeful ways. These participation trajectories were situated in activity structures consisting of a variety of mutual interactions and different forms of participation, including taking “real life” action and initiating health-promoting change. Pupils were engaged in a variety of processes of knowing, including exploring, envisaging solutions to the problems and acting to bring about positive changes in health.

Table 3 gives a summary using the participation model distinguishing between genuine and token pupil participation (15) discussed above. As the table shows, the focus and expected outcomes of pupil participation in teaching and learning activities over the course of the project were open and divergent; they depended on the choices pupils made with their teachers during the teaching and learning process.

Table 3:

Characteristics of pupil participation, with examples concerning nutrition.

Characteristics of participation	Examples
Pupil participation was focused on:	<ul style="list-style-type: none"> ■ enquiry in the area of food, culture and nutrition; ■ creation of shared frames of reference; ■ development of common understandings and visions across classes.
The expected outcomes concerned:	<ul style="list-style-type: none"> ■ pupils' enhanced awareness in relation to food production, consumption, social and aesthetic dimensions; ■ their critical thinking, creative articulation of ideas and planning for action with others.
Pupils' actions targeted:	<ul style="list-style-type: none"> ■ everyday school life; ■ food policies and decision-making mechanisms on a whole-school level; ■ raising awareness of young people's views among policy-makers.

The case study showed that the participatory and action-orientated teaching approach, as employed in the project, extended beyond the traditional focus on the subject matter prescribed by the curriculum. There was no preformulated, fixed content or body of knowledge in the health domain that the pupils had to learn, memorize, recall and employ. Pupils investigated the area in their own ways, guided by their teachers and using the broad possibilities of ICT and cross-cultural collaboration.

The focus of participation was on processes of critical reflection, goal-orientated dialogue and negotiation of meanings related to health matters, rather than acquisition of factual knowledge and “moulding” of pupils’ diet preferences. The fact that the pupils shared responsibility for selecting aspects of topics to be investigated and methods used resulted in an increased sense of ownership of their learning activities. This ownership, in turn, led to increased pupil intent and responsibility, which contributed to building better understanding and competence for taking action.

All these point to genuine participation discourse in which participatory teaching and learning, as opposed to the “transmission” teaching model, was directed at facilitating and extending educational dialogue on nutrition issues of relevance to learners. Learning was situated in pupils’ everyday lives, their interactions and their experiences related to food and eating. The benefits of such participation processes transcend conventional educational outcomes focused on fostering health-related knowledge,

skills and attitudes. They expand to embrace effective health education and promotion practices in a broader sense, including more complex knowledge domains, insight into knowledge-construction processes, action-competence development and, in the longer term, practical benefits for local governance in terms of strengthening sustainability, democracy and civil society.

The case study nevertheless raises a number of questions and challenges for further research and debate.

- How to support the transfer of project-based principles of classroom organization and cross-cultural collaboration into regular health education and the health promoting school curriculum, taking account of pupils' concepts, concerns and everyday experience in relation to food consumption in their social contexts, including social, cultural, emotional, taste, texture and other aspects related to diet.
- How to establish and support effective collaboration structures between schools and local governance to allow for pupils' participation and influence as part of the ongoing teaching and learning processes.
- How to develop a balance between institutional needs in areas such as control and safety and the genuine views of young people on their needs in relation to food consumption. For example, young people may state they want to be able to eat at any time in the classroom, and the school may not find this acceptable.
- How to address the issue of choice and freedom of choice in relation to foods school authorities may not wish to have on the premises, but young people may expect to have available to them – vending machines selling sweet carbonated drinks or confectionery, for instance.
- What are the implications of children's and young people's genuine participation in health policy development, implementation and evaluation, and how can we ensure the participatory and action-orientated health education and health promotion are conducive to informing policy agendas with young people's ideas, needs and visions?

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Annex 1

Agenda

WHO/HBSC FORUM 2006:**Socioeconomic Determinants of Healthy Eating Habits and Physical Activity Levels among Adolescents**

FLORENCE, 10–11 MARCH 2006

AGENDA / PROGRAMME**Friday, 10 March**

08:15–09:00 Registration

09:00–09:15 Welcome and opening statements

Welcome from Forum chair: Clive Needle, Director and EU Policy Advisor, EuroHealthNet

Opening statements:

Enrico Rossi, *Assessore al Diritto alla Salute*, Tuscany Regional Government

Gudjón Magnússon, Director, Division of Health Programmes, WHO Regional Office for Europe

09:15–09:45 Session I: Evidence of the need for action

09:15–09:30 The scientific context: what is the HBSC telling us?

Candace Currie, HBSC International Coordinator and Chair, Child & Adolescent Health Research Unit, University of Edinburgh

09:30–09:45 European evidence sources on child obesity: correlations with social determinants and health inequalities

Francesco Branca, Regional Adviser, Nutrition and Food Security, WHO Regional Office for Europe

09:45–10:55 Session II: Panel on the policy context for promoting healthy eating habits and physical activity among youth

Panellists:

Thorsten Afflerbach, Head of Division, Division of the Partial Agreement in the Social and Public Health Field, Council of Europe

Jonathan Back, Health and Consumer Protection Directorate-General, European Commission

David Parker, Deputy Director, UNICEF Innocenti Research Centre

Vivian B. Barnekow, Technical Officer, Child and Adolescent Health, WHO Regional Office for Europe

Questions and answers

10:55–11:15 *Tea/coffee*

11:15–12:00 Session III: “Children’s obesity: it’s not their fault!”

Tim Lobstein, Childhood Programme Coordinator, International Obesity Task Force

Questions and answers

12:00–13:00 *Lunch*

13:00–15:00 Session IV: Case Studies

13:00–13:40 Case Study: Slovenia

Mojca Gabrijelčič Blenkuš, Head of the Centre for Health Promotion, National Institute of Public Health

13:40–14:20 Case Study: Norway

Anita Andaas Aadland, Director, Department of Physical Activity, Directorate for Health and Social Affairs

[Contributions from Arnhild Haga Rimestad, Director, Department of Nutrition, Directorate for Health and Social Affairs; and Grete Haug, Advisor, Norwegian Directorate of Education]

14:20–15:00 Case Study: Scotland

Ian Young, Head of International Development, NHS Health Scotland

15:00–15:30 *Tea/coffee*

15:30–17:30 Breakout sessions: participants will be split into 10 groups and, guided by facilitators, they will reflect on lessons learnt and policy implications emanating from the case studies and experiences in other countries

17:30–17:45 First day wrap-up: reflections and announcements

Saturday, 11 March

08:50–09:00 Welcome

09:00–10:00 Session V: Children and Young People’s Voices in Health Matters – Learning by Making a Difference

Venka Simovska, Assistant Professor, Research Programme for Environmental and Health Education, The Danish University of Education

Questions and answers

10:00–10:15 *Tea/coffee*

10:15–13:00 Session VI: Topic-specific working sessions

10:15–10:45 Report-back from the panel discussion and case study working groups, and introduction to the topic-specific working groups

Peter Donnelly, Deputy Chief Medical Officer, Scottish Executive Health Department

10:45–12:45 Breakout sessions (same groups as day before) focusing on lessons learnt and policy implications on specific topics relevant to the wider determinants of eating habits and physical activity among adolescents

12:45–13:00 Closing address and announcement of the theme for 2007

Erio Ziglio, Head, WHO European Office for Investment for Health and Development

13:00–14:00 *Lunch*

Annex 2

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Annex 3

Resources

For more information on the WHO/HBSC Forum 2006 process, please write info@ihd.euro.who.int.

Related links

WHO/HBSC Forum 2006 Web site

<http://www.salute.toscana.it/promozione/hbsc/hbsc.shtml>

WHO Collaborating Centre for Health Promotion Capacity Building in Child and Adolescent Health (Health Promotion Programme, A. Meyer University Children's Hospital, Florence, Italy)

<http://www.meyer.it/cc>

Council of Europe

<http://www.coe.int/soc-sp>

European Platform on Diet, Physical Activity and Health

http://europa.eu.int/comm/health/ph_determinants/life_style/nutrition/nutrition_en.htm

International Obesity Task Force

<http://www.ietf.org/>

Health Behaviour in School-aged Children – A WHO collaborative cross-national study

<http://www.hbsc.org/>

UNICEF Innocenti Research Centre

<http://www.unicef-icdc.org/>

WHO European Strategy for Child and Adolescent Health and Development

<http://www.euro.who.int/childhealthdev>

WHO European Ministerial Conference on Counteracting Obesity

<http://www.euro.who.int/obesity/conference2006>

WHO European Office for Investment for Health and Development

<http://www.euro.who.int/SocialDeterminants>

WHO Regional Office for Europe, Nutrition and food security

<http://www.euro.who.int/Nutrition>

Young people's health in context. Health Behaviour in School-aged Children (HBSC) study: international report from the 2001/2002 survey

http://www.euro.who.int/eprise/main/WHO/informationources/publications/catalogue/20040601_1

Annex 4**WHO/HBSC Forum 2006 Task Force and Organizers**

The WHO/HBSC Forum process aims to distil lessons learnt and policy implications for how the health system - in conjunction with other sectors - can promote adolescent health through action on the social, economic and environmental determinants of health. The organization of Forum 2006 was overseen by a dedicated Task Force, comprising:

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Break-out group facilitators during the Forum: Wanda JE Bemelmans, Lena Björck, Paul Bloem, Sue Bowker, Francesco Branca, Goof Buijs, Adriano Cattaneo, Candace Currie, Bent Egberg Mikkelsen, Mojca Gabrijelčič Blenkuš, Emmanuelle Godeau, Catherine Jones, Marina Kuzman, Lennart Levi, Éva Martos, Antony Morgan, Ellen Muehlhoff, Venka Simovska, Nick Spencer, Emma Witney. For affiliations, please see the Forum list of participants, available at: http://www.salute.toscana.it/promozione/hbsc/lista_partecipanti.pdf

Bianca Bortot, Evis Kasapi, Sandra Micheluz and Elisa Radisone of the WHO European Office for Investment for Health and Development (Italy).





The WHO Regional Office for Europe

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